The appreciation of Fairtrade practices

of coffee by consumers.

Acknowledgement

Abstract

This thesis establishes the consumers' appreciation and willingness to pay for different Fairtrade practices through a survey. It does so using coffee as an object of reference. The coffee industry Fairtrade practices are divided into: environmental development standards, labour standards, social business development and trade standards. In a survey consumers are asked to what extent they appreciate and are willing to pay for each of these Fairtrade practices. It is also determined if appreciation of Fairtrade practices is correlated to willingness to pay for these practices. These results help better align the priorities of consumers with the activities of Fairtrade.

The results indicate that all Fairtrade practices are highly appreciated and consumers are willing to pay between 13% and 19% extra for each of them. Labour standards are appreciated the most by consumers and consumers are also willing to pay the most for labour standards.

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1 - Introduction

Fairtrade certification ensures that certified coffee producers adhere to several practices which are not mandatory for traditional, non-certified, coffee production (Fairtrade Labelling Organizations International e. V 2015). These practices can be divided into labour standards, trade standards, environmental development and social business development practices. Maintaining these practices has its costs. For this reason Fairtrade coffee is more expensive than regular coffee. Fairtrade coffee is still being sold, indicating that a part of the consumers are willing to pay for production with these elevated standards. This report is out to examine exactly to what extent these separate practices are appreciated by consumers and aims to put a monetary value on each practice from a consumer point of view..

Coffee is an example of a product that is eligible to obtain a Fairtrade certification. But the research is done on the perceived value of Fairtrade certification by consumers so this research might also apply to other Fairtrade products.

The influence of ethics based certifying of products is growing in its effect on purchase decisions (Annunziata, Ianuario, and Pascale 2011). In the literature, it is extensively described how ethics and individual values influence consumer decision making when buying coffee (de Ferran and Grunert 2007; Pelsmacker, Driesen, and Rayp 2005). However, the degree to which this research aims to discern the value of the different Fairtrade practices from a consumer perspective has not been matched in the literature so far. Besides estimating how the different Fairtrade practices are appreciated by consumers it also aims to put a monetary value on the value of the separate practices which also fills a knowledge gap in the literature.

This research has societal value as well as it helps the concerned parties focus their attention. These parties include Fairtrade and coffee importers. If these parties end up e.g. having a larger focus on paying farmers better instead of environmentally conscious farming due to the results of this research, it will improve the product and benefit consumers since they can buy a product more tailored to their needs.

Coffee is among the world's most common commodities, with its larger share of production in Brazil (42%), Vietnam (19%) and Colombia (9%). Coffee farmers are very dependent on large buyers (Carbajal et al. 2020). In contrast to the large buyers, coffee farmers almost always operate on a small scale. These farmers have very poor bargaining power in contrast to the buyers ("Maxhavelaar" n.d.).

Roasting companies' share of the profits over the supply chain has increased while the farmers share has decreased (Macdonald 2007). The price received for coffee by farmers is very dependent on the free market which results in farmers sometimes receiving less than their production costs.

Fairtrade prevents this by ensuring farmers get a minimum price that covers the production costs for their coffee and improving their negotiation position by uniting farmers (Macdonald 2007; "Maxhavelaar" n.d.). Good pricing is important because a low price drives producers to exploit workers and look for environmentally damaging but cheap ways to expand like deforestation (Blowfield 2003).

In general terms, the power in the supply chain is drawn to the actors that have better access to the market compared to other actors. Limited access can put an actor in a poor negotiating position as it constrains the number of available customers. This is largely influenced by the available information on the coffee market to the actor and the ability to connect to customers through the internet (Lukas 2015).

Fairtrade steps in by making sure farmers are not taken advantage of by the other actors in the supply chain. They help farmers cooperate and manage their own processing and marketing collectively, which frees them of the supply chain that previously took advantage of them. Now the farmers are directly paid by the importers (Linton, Liou, and Shaw 2004) which results in a shorter supply chain. Fairtrade, in essence, uses consumer power to address dysfunctional parts of the coffee economy (Peet, Robbins, and Watts 2010). This shorter supply chain also makes tracking the coffee and making sure Fair trade's ethical standards are adhered to much easier.

Fairtrade is not a coffee exporting company and only certifies companies that do so. Along with certifying for a fee, Fairtrade also checks if the standards that the certification represent are adhered to (Levi and Linton 2003).

Defining the Fairtrade standards

What the Fairtrade standards represent will be determined through the literature and documents Fairtrade offers on its website https://www.fairtrade.net/.

Fairtrade practices can be divided into 4 categories.

- Trade
- Social business development
- Environmental development
- Labour conditions

The trade conditions are so that farmers get the Fairtrade price for coffee. This price is based on the reference market price. This is the ICE New York C contract price ("Coffee C Futures | ICE" n.d.) for arabica beans and the ICE London RC contract price ("Robusta Coffee Futures | ICE" n.d.) for robusta beans. Add to this price the prevailing differential. This price differential is decided between the producer and the importer of the beans. On top of that, a Fairtrade organic differential (only for organic coffee) and a Fairtrade premium can be added. The Fairtrade organic differential and Fairtrade premium are set by Fairtrade and are non-negotiable (Fairtrade n.d.). For example, in 2003, a guaranteed floor price was offered of 2,77 dollar/kg or 0,11 dollar/kg above the current market price (Giovannucci and Koekoek 2003; Linton, Liou, and Shaw 2004). The floor price still exists but has increased along with the market value of coffee (Fairtrade Labelling Organizations International e. V 2015).

Fairtrade's social and business development standards require that the producer and exporter agree on the handling conditions of coffee. Fairtrade is also required to finance up to 60% of contracts as pre-finance to the producer at least 8 weeks prior to shipment (Fairtrade n.d.).

Furthermore, Fairtrade has environmental development practices. These contain several aspects among which the use of pesticides and its risks. If pesticides are necessary to use the bare minimum in terms of toxicity. Proper waste management is also included in the standards which minimizes harm to workers and the environment while maintaining a natural ecosystem surrounding the farms by applying buffer zones where no pesticides, hazardous chemicals or fertilizer is allowed (Fairtrade Labelling Organizations International e. V 2015).

Lastly, Fairtrade labour standard practices are as follows. No discrimination on any basis, no abuse of any kind including verbal and gestures, no forced labour, freedom of unionization and no employment of children younger than 16 with the exception of family businesses where children are allowed to work around school hours. The work also needs to be fit for children and requires adult supervision. No work that can jeopardize the health, safety (e.g. heights or dangerous chemicals), school attendance and morals below 18 years of age (Fairtrade Labelling Organizations International e. V 2015).

In contribution to these standards, Fairtrade has launched the so-called Fairtrade Carbon Credits (FCC's) . These credits represent the costs for reductions in carbon emissions made by farmers. When companies buy these credits they take accountability for the carbon emissions they exhaust. These FCC projects with a lower carbon exhaust are linked to specific projects and farms with more strict environmental standards ("Carbon Credits" 2018). However, there is no way of telling if a product comes from an FCC project or farm or from a regular Fairtrade farm which makes these standards irrelevant to this report.

Mechanisms of Fairtrade accountability

Certification and labelling are well-willed attempts to regulate production and distribution for the greater good (Reed, Reed, and Utting 2013). (Tallontire 2009) stated that the core principles of labelling lie in its standards. In this case representing socially or environmentally aiding practices where the label is awarded to enterprises that adhere to these standards.

Labelling is not only important for informing consumers but also because governments can only govern the beginning and end of the supply chain (depending on whether the country is producing or buying). Labels that can govern the supply chain as a whole are becoming increasingly necessary with the increasing globalisation of the market (Davenport 2013). However, this gives the labels lots of power, and power can corrupt. So in order to prevent this, Fairtrade and most other labels outsource the creation of the standards to other companies like ISEAL and ISO (International standards organisation) which is known for its environmental standards called the ISO14000 series (Davenport 2013).

In the case of Fairtrade, ISEAL creates the standards while Fairtrade Labelling Organizations International (FLO) coordinates Fairtrade labelling at an international level. FLO helps producers reach the requirements for a Fairtrade certification and create more sales. The guidance Fairtrade provides to producers is exercised by the so-called Liaison officers. These turn regular producers into viable business partners ("ISEAL - Fairtrade International" n.d.). FLO is a non-profit organisation. It is the steering organ that connects and governs the national fairtrade organisations ("Fairtrade International" 2019). The

dutch national Fairtrade organisation Max Havelaar is only responsible for expanding the Fairtrade brand in the Netherlands and making consumers more conscious of the importance of buying Fairtrade ("Maxhavelaar" n.d.). So both FLO and max havelaar have no influence over the standards and Max Havelaar has no influence on helping producers reach these standards.

Research question

To what extent do consumers appreciate and are willing to pay for the alleged benefits of Fairtrade coffee?

Sub questions

1. To what extent is the literature unambiguous on consumers' appreciation of trade, social business development, environmental development and labour conditions standards in the production process of Fairtrade labelled goods?
2. To what extent do consumers appreciate and are willing to pay for the Fairtrade practices?
3. To what extent does appreciation of the Fairtrade practices lead to willingness to pay for the Fairtrade practices?

Key concepts

Fairtrade practices - The practices by Fairtrade are all the activities and regulations Fairtrade enforces for producers and importers of Fairtrade goods which are not necessary for non-Fairtrade products from the same region.

Willingness to pay - "Willingness to pay (WTP) is the maximum price at which a consumer will definitely buy one unit of a product." (Hal R 1992).

Fairtrade - Fairtrade is a non-profit multi-stakeholder association which brings together all actors in the fairtrade system to coordinate global strategy in order to change trade for the better ("What Is Fairtrade?" 2019).

Coffee supply chain - The coffee supply chain refers to the processes that describe how food from a farm ends up on our tables. The processes include production, processing, distribution, consumption and disposal ("What Is the Food Supply Chain?," n.d.).

Readers guide

This thesis is divided into chapters, the next chapter is Theory. This chapter describes the underlying literature for the research this thesis is based on. The theory also looks at how similar research is affected in the past, especially consumer behaviour is discussed extensively in this chapter. Furthermore, the possible effect of a gender imbalance in the pool of respondents on the conclusions is examined.

In the Methods chapter is described how the literature review is written and what search terms are used in order to find the literature described. Furthermore, the methods of creating the survey and reaching participants are described. Also some phenomena are mentioned that could influence the results coming forth from the data. Finally, the software by which the analysis of the data is done is mentioned.

In the results chapter the differences in Appreciation and WTP between Fairtrade practices is measured, tested and graphically presented. The positive relationship between appreciation and WTP is also tested for significance along with the influence of the imbalance in the representation of the genders in the data.

Lastly the Conclusion and discussion. The conclusion will answer the main research question: "To what extent do consumers appreciate and are willing to pay for the alleged benefits of Fairtrade coffee?" and will give answers to subquestions 2 to 3. In the discussion the validity of this research is discussed and suggestions for future research are made.

2 - Theoretical background

This chapter gives an answer to subquestion 1. It starts off by describing the literature on consumer opinions on ethically responsible corporate behaviour and to what extent they appreciate and are willing to pay for these efforts. To complement this, the consumer knowledge on ethical labelling is researched so this thesis's survey can be altered accordingly. Afterwards the Fairtrade practices are discussed separately and lastly the literature surrounding the differences between the genders related to appreciation of environmental and ethical corporate efforts is discussed.

Consumer appreciation

Consumers appreciate corporate efforts to protect the environment and respect international labour standards (Smith 2003). One of the ways this is reflected is the notion that 'shopping is voting' is becoming more popular among consumers (Phillips and Tallontire 2019). It is frequently claimed by consumers that a company's corporate social responsibility profile plays a large role in choosing brands (Castaldo et al. 2009). The social features of products are becoming increasingly important selection criteria for consumers when choosing brands (Bhattacharya and Sen 2004). These social features include decent living and working conditions for labourers (Andorfer and Liebe 2012). This is also seen in the increasing market share Fairtrade products are gaining. Even during the recession of 2009 Fairtrade sales rose by 12%. This along with big corporations like Starbucks and Dunkin Donuts switching to all Fairtrade coffee is a clear indicator of growth (Stenzel 2011).

However, these claims about the consumers appreciation of efforts to protect the environment and respect international labour standards are backed up poorly by empirical research. Some studies have found a slightly positive relationship between a firm's reputation and consumer behaviour towards the product while many other studies conclude that this correlation is variable at the consumer or firm level (Bhattacharya and Sen 2004; Basu and Hicks 2008).

In order to elaborate what contributes to consumers choosing Fairtrade over regular products (De Pelsmacker and Janssens 2007) created the model in figure 1 which correlates knowledge and different information factors to consumer buying behaviour of Fairtrade products. All the correlations are significant ($p < 0.05$).
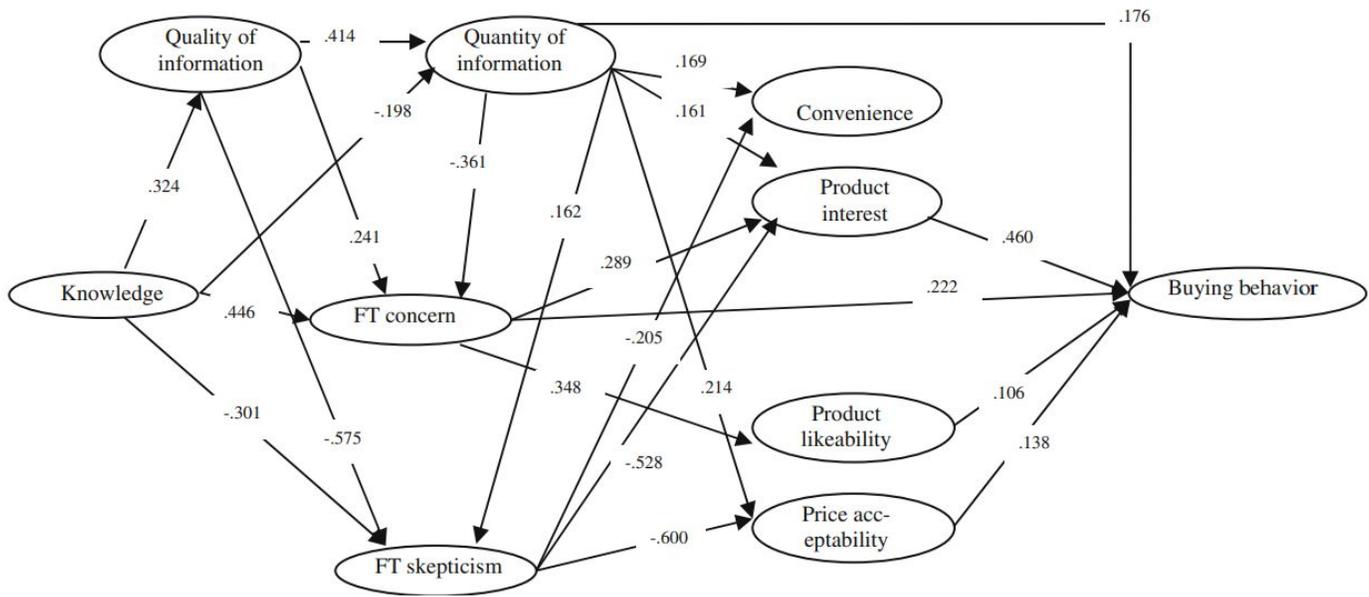
Figure 1 - Model relating several factors to buying behaviour of Fairtrade products (De Pelsmacker and Janssens 2007).

The model states that the more people know about Fairtrade, the more concerned people become and the less sceptical they tend to be. Increased knowledge among consumers leads to a more positive view of the Fairtrade information and good information quality leads to more concern and less skepticism surrounding Fairtrade but surprisingly more information leads to less concern (De Pelsmacker and Janssens 2007).

The literature contains plenty of research that points out that ethical labelling is appreciated by consumers (Patrick 2005), while other studies remain sceptical about the consumers' willingness to pay for ethical labelling (Andorfer and Liebe 2012). Studies on the appreciation of ethical labelling have indicated a very positive opinion of the public towards these labels (Doane 2001). However, according to a study (Pelsmacker, Driesen, and Rayp 2005), Belgian respondents were not willing to pay more than 10% more for coffee with a fair trade label. This was 15 years ago. It is expected that the willingness to pay for ethical labelling has changed the last 14 years with growing awareness and better accessibility to information (De Pelsmacker and Janssens 2007).

In conclusion, a lot is published about consumer appreciation and willingness to pay for ethical and environmentally conscious corporate efforts but very little is published in the literature about what parts of the activities performed are appreciated exactly by consumers and if it is stated, it is never quantitative.

Consumer knowledge of ethical labels and willingness to buy

The use of ethical labels is growing. So much so that in 2012 a total of 432 labels were present worldwide. This overload of labels causes a gap in understanding in what the labels represent. This gap halters the growth of these labels (Comas Martí and Seifert 2013). The main barrier for buying goods with an ethical label is a perceived higher price (in the case of carbon labelling) (Röös 2011). After price, the most mentioned is knowledge of the standards that the labels represent. For products containing animal welfare labelling, knowledge on what the standards are that the label represents can influence consumer purchase decisions with great effect (McEachern and Warnaby 2008). This is also the case for fairtrade as a model made by (De Pelsmacker and Janssens 2007) for Fairtrade buying behaviour contains information quality and quantity as dominant factors. For this reason, point-of-purchase advertising works well for ethical labels (Stratton and Werner 2013) since besides convincing consumers, it also informs them.

In figure 2 the consumers are divided into 4 kinds of ethical consumers based on their ethical awareness and ethical purchase intention. Over the recent years (up to 2001) the amount of consumers in each group has shifted towards being more ethically aware and also having a higher ethical purchase intention (Carrigan and Attalla 2001).

The group of caring and ethical consumers will respond to genuine ethical corporate behaviour and reward it with purchase of their goods. They will typically also discriminate against companies with unethical practices. This group of consumers remains a minority. The confused and uncertain group is well willed but lacks information. This group benefits the most from more information. The cynical and disinterested group cannot be convinced by more information and will only make ethical purchases if there are no downsides to buying ethical products compared to buying unethical products (Carrigan and Attalla 2001). Finally the oblivious consumer is not informed and is also unaware of its own likelyhood to shop ethically. More awareness among these consumers is key in converting this group into caring and ethical consumers (Carrigan and Attalla 2001).

This shows that point-of-purchase advertising works well in order to convince consumers to buy more ethically responsible products. However, if consumers get to the cynical and disinterested category they will only be convinced with lower pricing and convenience (Boulstridge and Carrigan 2000).

Ethical Awareness

	High	Low
High	Caring and Ethical	Confused and Uncertain
Low	Cynical and Disinterested	Oblivious

Ethical Purchase Intention

Figure 2 - Different consumer categories based on ethical purchase behaviour and ethical awareness (Carrigan and Attalla 2001)

Environmental development

Exploitation of natural resources has led to a deterioration of our environment and consumption habits of households have contributed tremendously to this. This environmental deterioration has been an incentive for consumers to change their attitude and choose green products more often (Biswas and Roy 2015). "Green" is, in this context, defined as "Produced without toxic chemicals with a package that is recyclable, reusable, bio-degradable or with only a mild environmental impact" (OECD, Policy Brief 2009).

Some people, mostly women with children and people with strong environmental concerns are willing to pay extra for green or eco-labelled apples. This premium, however, is only 5% (Loureiro, Mccluskey, and Mittelhammer 2002). This increase in willingness to pay is also shown in a study (Biswas 2016) where consumers indicated a higher willingness to pay depending on the availability, environmental performance of the label and quality of the product. Eco-labelling does not include any of the Fairtrade practices besides the environmental practices which indicate that environmental development is valued as a separate practice.

Labour standards

It is hard to conclude that consumers care about labour standards solely from information coming from the food industry because the issue of poor labour standards is always tackled along with poor environmental and trade standards. This makes it hard to deduce what the main reason is for consumers to buy food products containing an ethical label.

Consumer concerns about labour standards become evident when one looks at the clothing industry. The clothing industry's sweatshops are a reality all over the world, especially in South America and Asia. Like in the coffee industry, power is very decentralised leaving workers open for exploitation (Armbruster-Sandoval 2005).

Polls have indicated that many United States citizens are concerned about child labour and sweatshops and are willing to pay a premium to avoid these deviant practices (Rudell 2006). From this public demand several social initiatives in the form of labelling programs were born between 1990 and 2000 (Diller 1999) further proving the consumer concern for worker's labour conditions.

A great example of consumer investment in labour standards is the boycott of Nike in the mid-1990s which went along with media investigation and protests. Reebok suffered none of this criticism due to their big human rights campaign in 1992 after Reebok's terrible working conditions were exposed (Yu 2008).

Social business development

When one looks at social business development by fairtrade it is hard to estimate the appreciation of these activities by itself. Due to it always being accompanied by other beneficial activities. So it is hard to determine what exactly is valued by consumers. In order to look at social business development the effect becomes clear by looking at microfinance institutions (MFIs) which are, in contrast to Fairtrade, not concerned with other ethical beneficial ethical activities. Fairtrade loans credits up to 60% of contracts as pre-finance to the producer at least 8 weeks prior to shipment (Fairtrade n.d.). This makes Fairtrade a MFI as well. Microcredit is a concept that has gained widespread acceptance by international development agencies (Snow and Buss 2001). It is viewed as a way to correct both governmental and market failure (Snow and Buss 2001).

(Stewart et al. 2012) found that microcredit and micro-savings had mixed effects in sub-Saharan Africa. With respect to empowerment they conclude that there is some evidence of empowering effects of

microcredit but it is inconsistent across studies (Duvendack et al. 2011). These inconsistencies in results are not an issue for micro crediting efforts by Fairtrade because Fairtrade does more to help farmers succeed than handing out small loans. Fairtrade guides farmers in developing their farms to a larger scale and modernize their way of working.

On the consumer appreciation of micro crediting activities by consumers no good literature is written, this indicates that this research fills an extra knowledge gap beside the main focus of this thesis.

Trade standards

The Fairtrade trade standards represent a premium price for Fairtrade products which, at minimum, covers the production costs regardless of the market price. Also a bonus on top of the regular market price is added to the price that farmers receive (Fairtrade Labelling Organizations International e. V 2015). When Fairtrade was founded it failed to reach the public and only attracted political activists. The addition of the minimum price and the premium price of several commodities including coffee allowed Fairtrade to gain popularity and become more mainstream (Reinecke 2010). This is soft evidence for the consumer appreciation of trade standards as a separate entity. To what extent trade standards are exactly appreciated by consumers remains unknown as it is not discussed any further in the literature. This research gap in the literature will be addressed by this research alongside the main research.

Gender differences

Research on the antecedents of sustainable consumer behaviour has found a solid "gender effect" (Luchs and Mooradian 2012). Women are more concerned than men about social issues (Eagly et al. 2004) and are more concerned about the environment (Koos 2011) and (von Meyer-Höfer, von der Wense, and Spiller 2013) found that women are 4.7 times more likely to be convinced ethical consumers. The mechanisms behind this effect are not well understood (Vitell 2003). However, it is known that personality traits including agreeableness has shown to have a positive influence on the perception and behaviour towards social and environmental responsibility (Olver and Mooradian 2003; Luchs and Mooradian 2012). Separate research has found that women are more agreeable than men (Rubinstein 2005).

However, according to (Pelsmacker, Driesen, and Rayp 2005; Sikula and Costa 1994) gender has no influence on ethical consumer behaviour. In the case of apparel producing sweatshops the literature

does not come to a single conclusion as well. It is found by (Dickson 2001) that non-sweatshop buyers were mostly female while (Sikula and Costa 1994) found no significant difference.

(Luchs and Mooradian 2012) created a model where sustainable consumer behaviour (SCB) descision making is set up as a function of sex (which is in this situation the same as gender). This model is presented in figure 3. As can be seen from the model most relationships are not significant (indicated by the "*" representing the p-values). The personality traits included in this model which have a significant relationship to sex (gender) are agreeableness, conscientiousness and neuroticism. Agreeableness and conscientiousness lead to a consumer view of sustainability importance but only agreeableness extends itself significantly towards a change in SCB behaviour choice. The effects however, are marginal.
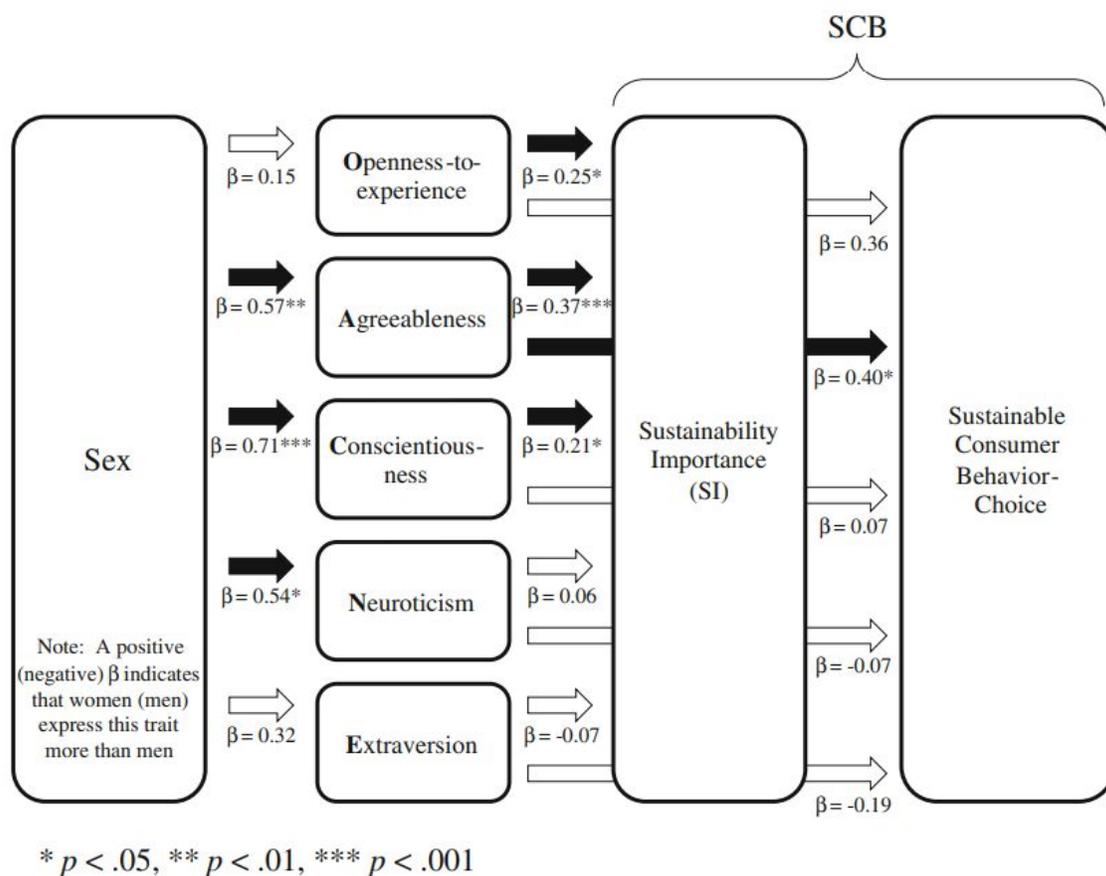
Figure 3 - The relationship between sex (gender), personality, sustainability importance and SCB choice.

Personality is not the only possible link between gender and SCB decision making. For example, (Mostafa 2007) found that men are significantly more knowledgeable on environmental issues than women, that they were more concerned about the environment and were more inclined to make green purchases. The effect of gender on the amount of environmental knowledge was even greater than the

effect of educational background. This study was performed in Egypt and its culture undoubtedly has had its effect on the study. As with studying any specific group of people.

Mostafa's research (Mostafa 2007) seems counterintuitive to the model displayed in figure 3. This does not have to be the case but it does imply that stronger forces are at play that govern SCB decision making besides personality traits.

The literature on the relationship between gender and the appreciation for environmental and ethical efforts are scattered. This failure in giving a solid answer on wherever an analysis on the effect on gender in this thesis should be included, means it should be included.

3 - Methods

This chapter starts off by describing several essential terms and concepts. First, willingness to pay is elaborated and the attitude behaviour gap is explained. This is done in order to later elaborate more clearly on the results. Next, the methods of analysis of the literature is discussed and how the gathering of the data is performed is explained accompanied with a thorough explanation to why these methods are chosen. Lastly the conceptual model is given.

Willingness to pay

Willingness to pay, as stated in the introduction, is the maximum amount of money someone is willing to pay for one product or service (Hal R 1992). (Vecchio and Annunziata 2015) state that the willingness to pay for ethical labelling on chocolate bars is strongly influenced by socio-demographic factors. In the case of these chocolate bars, younger people, women and people from higher-income households are willing to pay more for chocolate bars with an ethical label. Another study (Mai 2014) shows the exact opposite, it found no difference between genders and age groups in their willingness to pay for Ethical labelling on boxes of chocolate. The study did find a correlation between the level of consciousness of ethical attributes and willingness to pay. With a base price of 2.67 euro, British consumers were willing to pay 0.88 euro (33%) extra on average for the same box of premium chocolates with a Fairtrade label (Mai 2014).

In order to raise the willingness to pay for ethical products, it is important to make sure consumers understand why these products are more expensive and why these products are the right choice.

This study (Mai 2014) gave respondents which communicated a low willingness to pay for the premium chocolates containing an Ethical label a chance to comment. It was often stated that these ethical attributes should be standard for all products and should not require additional payment.

Due to the contradiction posed by these two studies (Mai 2014; Vecchio and Annunziata 2015) the survey for this research will include questions on gender, age and income in order to avoid bias and perhaps confirm or reject the notion that gender, age or income has an effect on the appreciation or willingness to pay.

In this research the WTP will be measured in the survey through explaining the term to the respondents and subsequently asking the respondents what their additional WTP is for 5 euro's of coffee (The kind

they would usually buy. It is not important which), but now with a category of Fairtrade practices associated with it.

The attitude-behaviour gap

It is generally acknowledged that consumer behaviour is inconsistent in comparison to their stated attitude (Vermeir and Verbeke 2006). Few consumers translate their ethical concerns into behaviour. This phenomenon could be a cause for a gap between appreciation and willingness to pay (Vermeir and Verbeke 2006).

The disconnect between the consumer's opinion and behaviour are likely due to neutralisation. Neutralisation occurs when bad (or the absence of good) behaviour is rationalised with a range of methods. These include denial of responsibility (it is more expensive than non-fairtrade products and money is tight), denial of injury (Fairtrade is just a marketing ploy) and appearing to higher loyalties (I don't like the flavour of Fairtrade coffee) (Chatzidakis, Hibbert, and Smith 2007). Techniques of neutralisation enable individuals to engage in deviant behaviour while sticking to their beliefs and relieving them from remorse (Harris and Daunt 2011).

The survey in this thesis asks for the appreciation and the willingness to pay related to the different Fairtrade practices. According to the literature just discussed there could be a gap between the appreciation and the willingness to pay which is filled by neutralisation behaviour.

Other causes for the gap between behaviour and appreciation of ethically labelled products are logistic factors. (Pelsmacker, Driesen, and Rayp 2005) shows that Ethical products should be available in supermarkets and should be presented along with the unlabelled variant of the same product and that information about the label should be on the food packaging in order for consumers to choose it. The study (Pelsmacker, Driesen, and Rayp 2005) also found that that ethical labelling is less effective on store brands than on manufacturer brands. The Fairtrade label is rarely found on store brands and is available in supermarkets so it passes these criteria. Logistical factors should not pose issues during the processing of the data obtained by the survey.

Another cause for the appreciation and behaviour gap is the information gap. Consumers are not full-time consumers, they cannot be expected to gather the necessary information to evaluate a company's level of responsibility taken on ethical and environmental matters. Labels look to fix this information gap but consumers are still often unaware of what a label exactly represents (Valor 2008). In the survey posed in this thesis, the different aspects of Fairtrade are explained in a short and concise

manner so participants of the survey are informed on the matter but are not inclined to skip the explanation or not finish the survey.

Data collection

The data collected through this research is based on both a literature review and a survey. The choice for these two types of data collection stems forth from its interaction. The survey is exclusively aimed at collecting numerical data in terms of ratings and monetary values but numerical data by itself has very little meaning. It needs to be put in context with the existing literature to have any value. This way quantitative and qualitative research is combined.

For this study, coffee is used as a case study. Coffee is chosen because it is widely consumed and it makes answering the questions on the survey easier for the respondents when the object of interest is an actual object and not an idea. Hence, it is not important that the literature review is exclusively about coffee as well as this study is about Fairtrade practices and not about coffee.

Since this type of research has not been done before I won't have any data to compare the results of the survey with other than inaccurate anecdotal data and the willingness to pay for Fairtrade products in general without the distinction between the Fairtrade practices. This can be seen as a limitation but also as a clear reason for why this research is necessary.

Literature review

Subquestion 1 can be answered solely from a literary review. This will be done on each separate category of practices in order to find out more about the history of the appreciation of the Fairtrade practices and to later compare the literature to the conclusions of this report. These literature reviews will not be constrained to only coffee products because it concerns the appreciation of these practices in general.

For the environmental development practices the following search query will be conducted in google scholar and Scopus:
("Fairtrade" OR "Fair Trade") AND ("appreciation" OR "Willingness to pay") AND ("Consumer" OR "Customer" OR buyer") AND ("Environment*" OR "Climate") AND ("Development")

The results will be listed from both most cited to least cited to pick out the most influential articles and from these articles the most recent articles are preferred as more recent studies are more relevant to

the current situation than older studies. If a piece of literature is found which correlates well with the goal of this research the abstract will be read. If the article still seems relevant, the conclusion and following the conclusion the rest of the article will be read. From these articles, snowball sampling from the references used in the article will be conducted for more articles on the subject.

Exactly the same approach for finding articles will be used for the other Fairtrade practices but with a different search query

For the Fairtrade trade practices, the query is as follows.

("Fairtrade" OR "Fair Trade") AND ("appreciation" OR "Willingness to pay") AND ("Consumer" OR "Customer" OR buyer") AND ("Trade" OR "Trading" OR "Exchang*" OR "Commerc*")

For Labour condition practices, the query is as follows.

("Fairtrade" OR "Fair Trade") AND ("appreciation" OR "Willingness to pay") AND ("Consumer" OR "Customer" OR buyer") AND ("Labour*" OR "Work*") AND ("Condition* OR "Treatment")

For social business development practices, the query is as follows.

("Fairtrade" OR "Fair Trade") AND ("appreciation" OR "Willingness to pay") AND ("Consumer" OR "Customer" OR buyer") AND ("Social*" OR "Business") AND ("Develop*")

During the literature research, it became evident that more search terms were required to find the appropriate research.

The following searchterm was used because no good results showed up for the search about the WTP and appreciation of social business development and trade standards.

"Business" AND "development" AND ("fair trade" OR "Fairtrade")

("micro credit" OR "microcredit") AND "developing" and "countries"

"Consumer" AND "appreciation" AND ("micro credit" OR "microcredit")

"Fairtrade" OR "Fair trade" AND "minimum price" OR ("Minimum" AND "Price")

The following two searchterms were used to find more information on the willingness to pay, but this time put in different searchterms.

"motivation" AND "buy*" AND "fairtrade"

"willingness to pay" AND "ethical" AND "label*"

"why" AND "consumers" AND "buy" AND "ethical" AND "labels"

These searchterms were used to find a wider range of research concerning the appreciation and willingness to pay of the fairtrade practices that were not found with the initial search term due to a use of different terms.

"eco" AND "label*" AND "consumer" AND "appreciation"

"appreciation" AND "labour OR labor" AND "standards"

"willingness to pay" AND "factors" AND "ethical" AND "label*"

These search terms are all used to find more information on the interaction between the willingness to pay or appreciation of ethical and environmental labelling and consumer behaviour, which was necessary to establish factors that could influence the survey results and allowed the researcher to pose the questions better.

In order to prevent bias based on the imbalance in gender on the gathered data a combination of manipulating the gained data and a literature review is performed in google scholar and scopus. The literature is searched for cases where the different genders show different behaviours when it comes to ethical buying behaviour or different degrees of appreciation of ethical corporate behaviours. The search terms used are as follows. Snowball sampling is used to find more relevant research from the references used in the found articles.

("Gender" OR "Sex") AND differences AND ethical AND label AND appreciation

("Fair Trade" OR "Fairtrade") OR ("women" OR "men") AND appreciation

Consumer AND behaviour AND ("Sex" OR "Gender")

("Sex" OR "Gender") AND attitude AND sustainability

Then, the data is checked for an actual imbalance by splitting the data into male and female. The two datasets will be t-tested against each other for each parameter (appreciation and WTP for each practice) in R. A significant difference between the male and female dataset does not mean that it also significantly affects the final results, this will also be tested in R.

Empirical research

For subquestion 2 a survey is conducted among coffee consumers that pay for their own coffee. In order to get a good representation of Dutch society, this survey aims for 400 people. In order to reach this number, a combination of accidental sampling and snowball sampling will be used as anyone who fills in the survey is asked to suggest more people for the survey. This will be done through the exchange of a treat for entering the survey. Participants will enter the survey with their smartphone by going to a google forms website which allows the researcher to see the results online directly. The poster is made visible in appendix 1. Along with the poster, the researcher also asks his friends and family to fill and spread the survey and send an email to his fellow food technology students asking them to fill in the survey.

The survey will ask subjects to estimate their appreciation of the different Fairtrade practices in coffee farming: 'Trade, social business development, environmental development and labour condition practices' on a scale from 1 to 10. These values will be compared with each other to estimate the appreciation of different fairtrade practices and combinations of practices. This will be done with the R software. To find out if the different Fairtrade practices differ a Kruskal-Wallis test is performed with 3 degrees of freedom as there are 4 different practices. This test is used instead of an ANOVA because the data is not normally distributed. This however only gives us information about the groups being different in general, not Fairtrade practice differs from another. In order to obtain this information a t-test is performed. This is only applicable to normal distributions, with the exception of large populations. The survey in this thesis contains a large pool of respondents so the t-test is applicable here. The differences in between the appreciation values for the Fairtrade practices will be tested for significance through a two sided T-test with a confidence interval of 0.95.

The estimation of the willingness to pay is the same but subjects are asked how much they would be willing to pay extra for 5 euros of coffee with one of the four categories of ethical practices associated with it. Based on the results the monetary value from a consumer point of view can be determined for each Fairtrade practice. These calculations will be done with the R software. The differences in between the appreciation values will be tested for significance through a two sided T-test with a confidence interval of 0.95.

For subquestion 3 the relationship between appreciation and WTP is looked at. This is done through plotting the WTP and appreciation for each Fairtrade practice on the x and y axis. Then the most accurate model of the data points is made through a regression surrounded by a 95% confidence interval area giving insight in the accuracy of the model. This area is created through two more regressions but using the extremes of the 95% interval of each parameter in the regression model. This is done in R.

In order to see if gender has an effect on the results, first the different scores for both appreciation and WTP are separated by gender. These scores are then compared for each separate Fairtrade practice. If the results are significantly different then a new test is performed. In order to test if the imbalance replies to the survey considering the different genders makes a difference a new dataset will be made which follows the same average normal distribution of the genders male/female spread. This new dataset is t-tested against the original.

Coding in R

The dataset was manipulated in Rstudio. The code used for the manipulation of the data is given in appendix 4. As can be seen from the code the column names were renamed because before they had full questionnaire questions as names which were changed into …1, …2 etc. For every column while importing the data into R. After renaming the columns the data were transformed into graphs by making use of the tidyverse package "ggplot2". R was also used for doing all the t-tests and Kruskal-Wallis tests in order to see if differences in results were significant.

Problems and limitations

One of the problems this study could encounter is the number of survey subjects needed for the survey to get an accurate representation of society. Along with this problem comes that the personal circles of the researcher are mostly people with some form of higher education and do not necessarily represent dutch society very well.

A problem with the Fairtrade practice's standards is that these standards are the bare minimum on which Fairtrade operates. Fairtrade could be performing their Fairtrade practices better than the standards prescribed which would make this study slightly inaccurate. The practices mentioned in Fairtrade's official documents can be vague. E.g. the statement "You minimize the use of herbicides by implementing other weed prevention and control strategies." gives very little information about the amounts of herbicide used so it might be hard for subjects to estimate the value of the practices if they are not made from strict guidelines.

In the survey the participants are informed about what the Fairtrade practices are. However, the full explanation which covers all aspects is quite long and might cause confusion with the participants, cause participants to not finish the survey or cause the participants to skip reading the explanation altogether. To solve this the survey uses a simplified explanation of the Fairtrade standards that is less accurate but very easy to grasp.

Conceptual framework
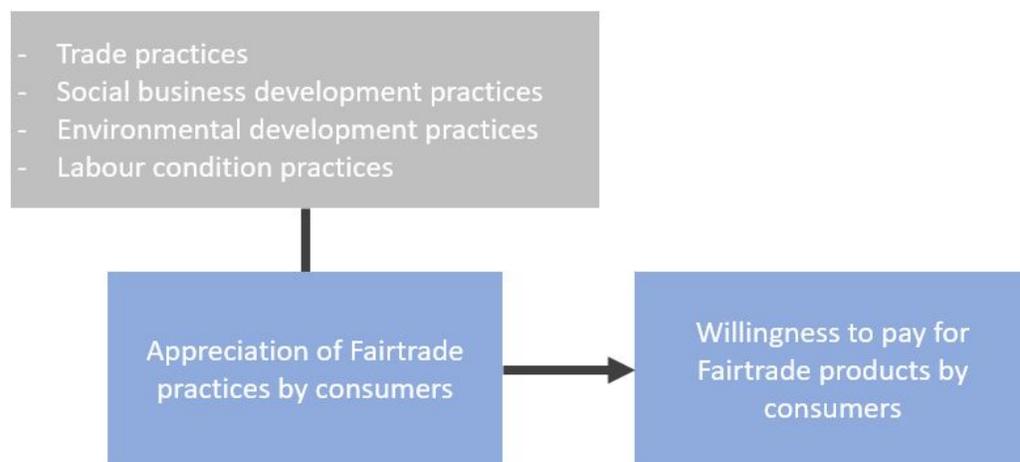

Conceptual framework

4 - Results

This chapter gives answers to subquestion 2 and 3. It answers these questions by analysing if the appreciation and WTP differs between the different Fairtrade practices. Along with this goal, the data will also be checked for differences in the results based on gender. Also the correlation between appreciation and WTP is analysed in order to see if appreciation leads to WTP. Income will be left out due to a lack of data on higher-income groups.

Appreciation for different Fairtrade practices

Graph 1 visualises the appreciation for different Fairtrade practices with a boxplot. The red dots represent the average values. Environmental development and Trade standards are appreciated almost equally while Labour standards is clearly appreciated more and social business development is appreciated a little less. There is also a greater consensus on the appreciation of social business development as the results are much less spread out.

To see if the differences between the appreciation of the Fairtrade practices are significant, first a Kruskall-Wallis test is performed. The test showed that the differences between the Fairtrade practices are significant. To follow up each practice is tested against all other practices with a t-test. The results are given in Table 1. The table shows that only environmental development and trade standards do not differ significantly from each other. In appendix 2 the details of the kruskal-wallis test and the t-tests are given.
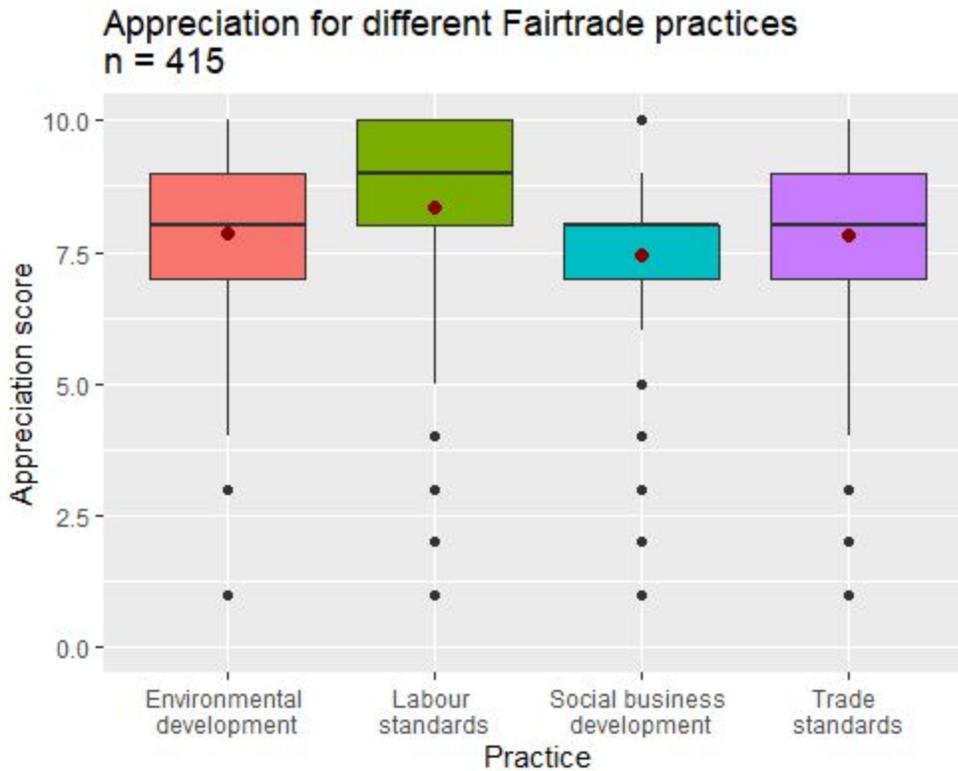
Graph 1 - Appreciation of different Fairtrade practices.

Practice combination (most to least different)	p-value	significantly different
Social business development - Labour standards	2.39e-15	Yes
Trade standards - Labour standards	3.83e-6	Yes
Labour standards - Environmental development	5.52e-5	Yes
Social business development - Environmental development	3.73e-4	Yes
Trade standards - Social business development	5.13e-4	Yes
Trade standards - Environmental development	0.762	No

Table 1 - T-test results of the appreciation of the different Fairtrade practices.

Willingness to pay for different Fairtrade practices

Graph 2 visualises the amount of money people are willing to pay extra for 5 euros of coffee (in any form) with the mentioned Fairtrade practice associated with it through a boxplot. The red dot shows the average values. The amount the participants were willing to pay does not differ by much, but they are willing to pay more for the labour practices and less for the social business. This is displayed in the higher median and mean for the labour practices and the lower median and mean for social business development. The overall high WTP would place the consumers into either the 'Caring and ethical' or the 'Confused and Uncertain' group of consumers described in the literature. These groups both score high in ethical purchase intention but differ on their ethical awareness.

To see if the differences between the WTP of the Fairtrade practices are significant, first a Kruskall-Wallis test is performed. The test showed that the differences between the Fairtrade practices are significant. To follow up each practice is tested against all other practices with a t-test. The results are given in Table 2. This table shows that all practices differ significantly from each other except trade standards in combination with labour standards or environmental development. In appendix 3 the details of the kruskal-wallis test and the t-tests are given.
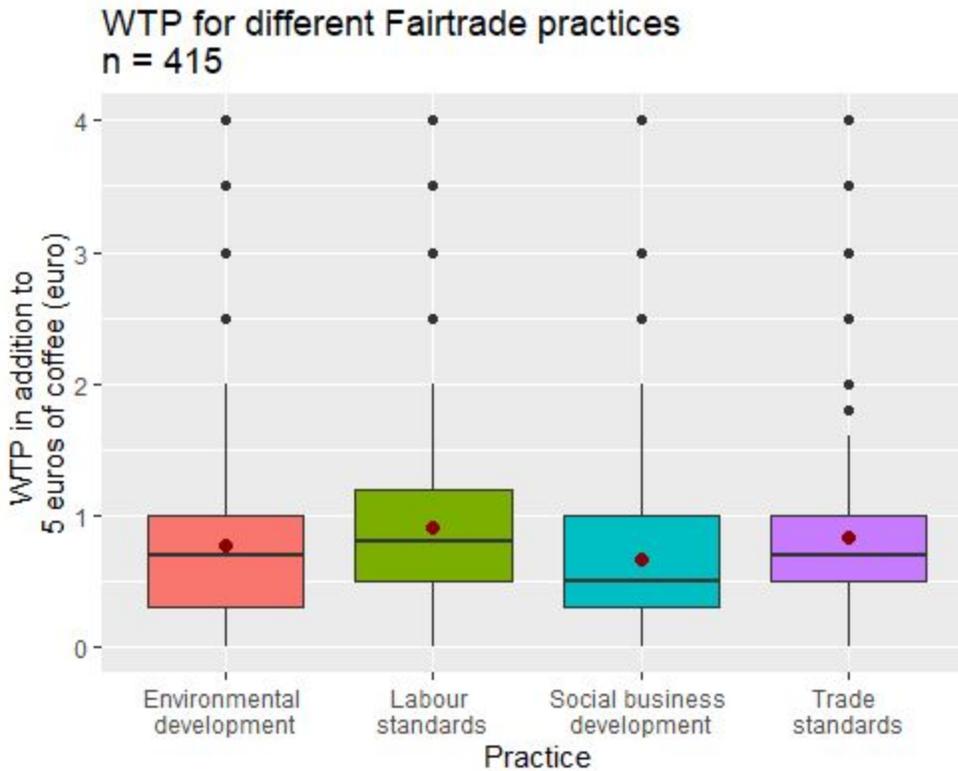
Graph 2 - The WTP of different Fairtrade practices.

Practice combination (most to least different)	p-value	significantly different
Social business development - Labour standards	5.28e-8	Yes
Trade standards - Social business development	1.07e-4	Yes
Labour standards - Environmental development	4.08e-3	Yes
Social business development - Environmental development	0.0143	Yes
Trade standards - Labour standards	0.0641	No
Trade standards - Environmental development	0.236	No

Table 2 - T-test results of the WTP of the different Fairtrade practices.
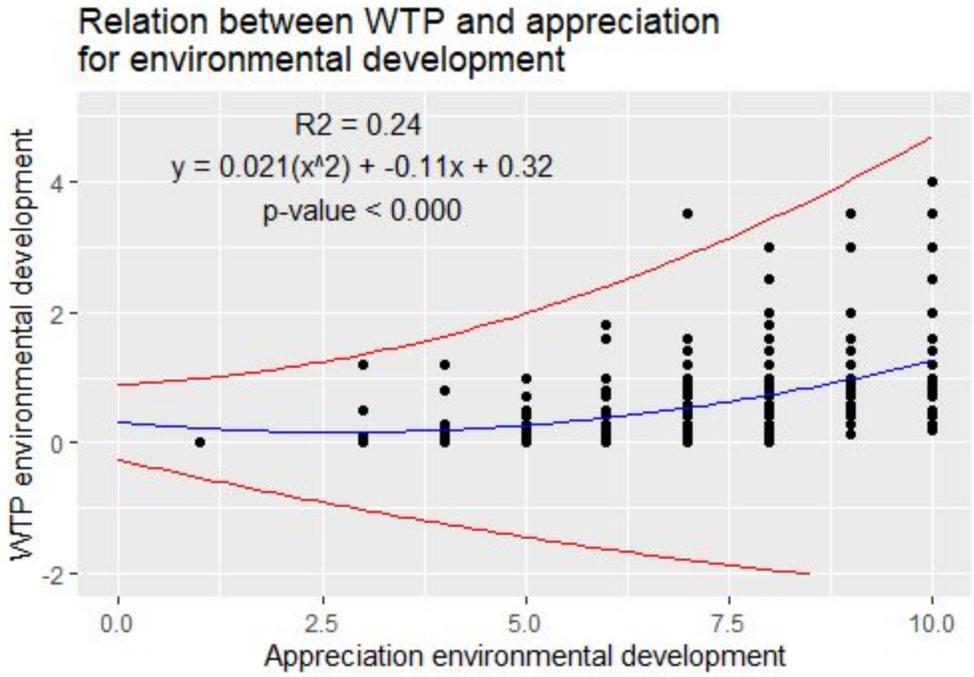
Appreciation and WTP relationship

In graph 3 to 6 it is made visible that the Relationship between the WTP and appreciation for all the different practices is correlated by an exponential model ($y(x) = Ax^2 + Bx + C$) given as a blue line in the graph. The red lines signify the 95% confidence interval of the models accuracy, so the chance that the model in reality lies outside the red lines is 5%. The p-value represents the significance of the correlation between the blue line (the regression model) and the data. It should be kept in mind that one cannot count a dot as one reply to the survey as many participants of the survey answered exactly the same due to the answers being restricted by a drop down menu. So one dot likely represents multiple answers.

The exponential model was chosen instead of a linear model because the model gave a higher R2 value and thus the exponential model explained more variance than the linear model. The data also looks like it has an exponential curve instead of a linear line or logarithmic curve relationship. An exponential model with a ($y(x) = Ax^3 + Bx^2 + Cx + D$) structure would barely make any improvements in the model so for the sake of simplicity the regular exponential model was chosen. The model is added to the graphs as a blue line.

The models for the WTP-appreciation relationship have low R2 values which indicates a big spread in the dataset but still show a positive relationship between the appreciation and WTP.

In order to check if this positive relationship is significant, both sides of the 95% confidence interval will be calculated for the A, B and C values in the ($y(x) = Ax^2 + Bx + C$) models. These values are then put in the graph as functions. If the relationship between WTP and appreciation is not significantly positive with a significance level of 5%, the lower red line (the lower end of the 95% confidence interval) has a downward slope. This can be observed for every Fairtrade practice. Leading to the conclusion that the relationship between appreciation and WTP is not significantly positive.

Graph 3 - *The relationship between WTP and appreciation for environmental development*
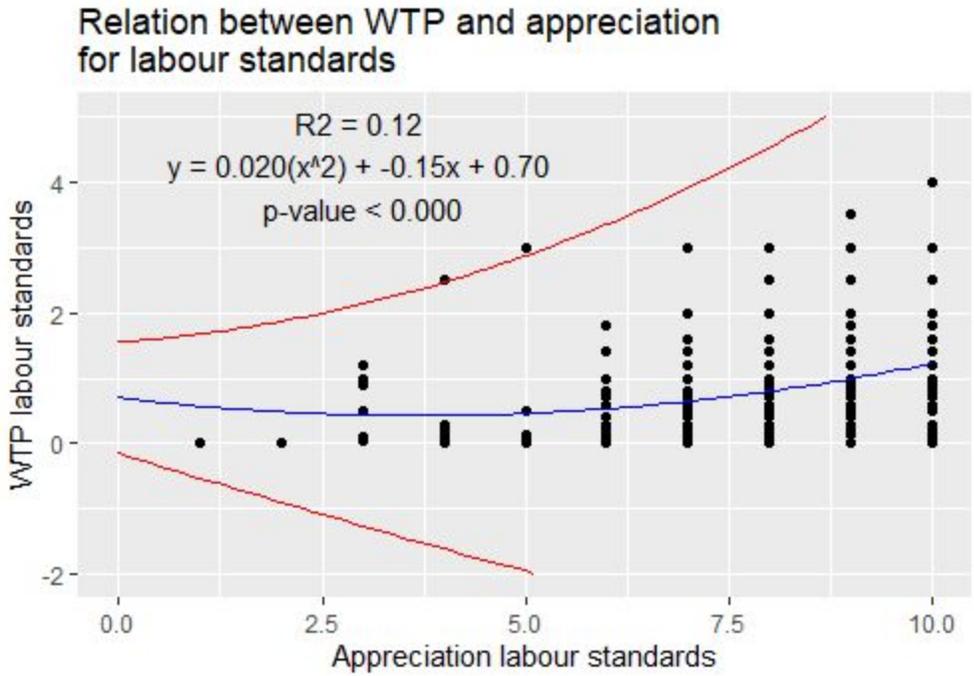
Graph 4 - *The relationship between WTP and appreciation for labour standards*
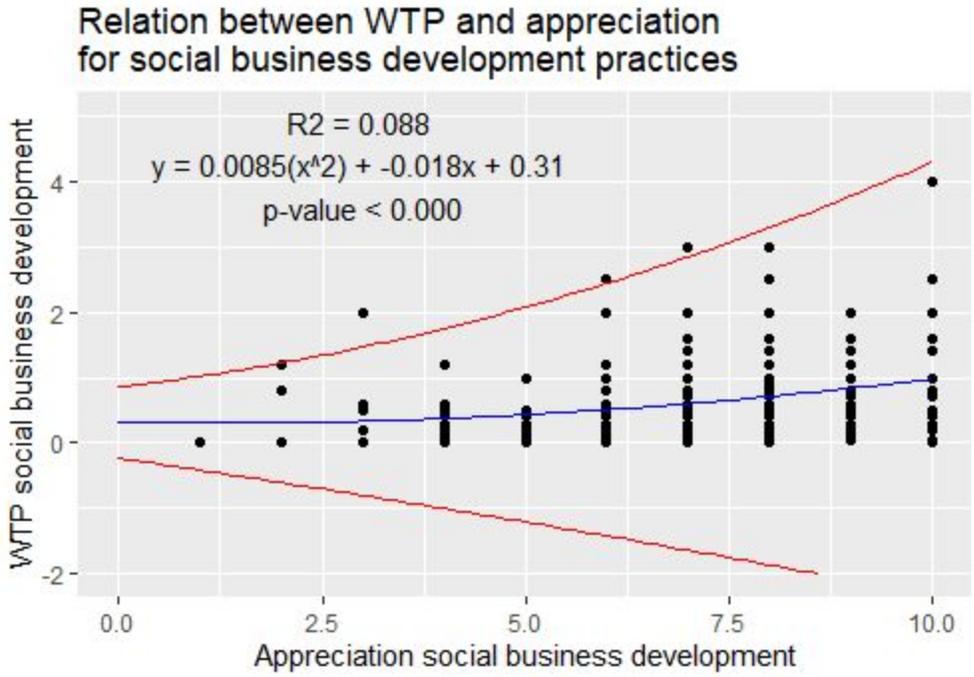
Graph 5 - The relationship between WTP and appreciation for social business development practices

Graph 6 - The relationship between WTP and appreciation for trade standards
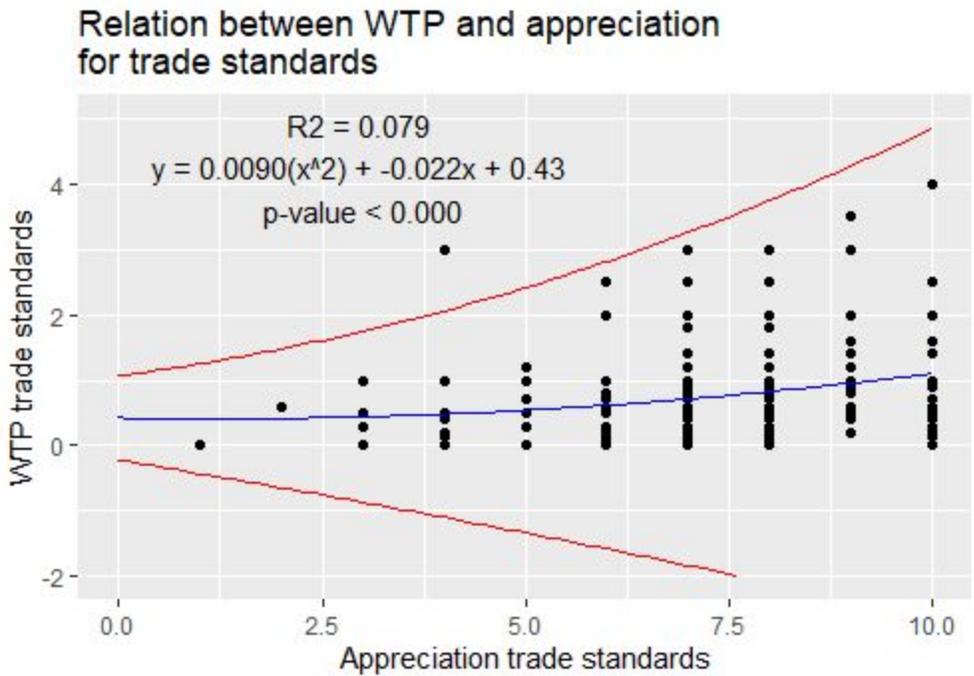
Gender differences

According to the results displayed in table 3. It becomes clear that women appreciate Environmental development, labour standards and trade standards significantly more. It is also shown that for the WTP women are willing to pay significantly more than men for trade standards.

Practice	appreciation or WTP	Male Mean	Female Mean	p-value	Significantly Different
Environmental development	appreciation	7.60	8.04	0.0236	Yes
	WTP	0.706	0.818	0.0889	No
Labour standards	appreciation	8.01	8.56	0.00154	Yes
	WTP	0842	0.956	0.11	No
Social business development	appreciation	7.32	7.56	0.257	No
	WTP	0.632	0.695	0.232	No
Trade standards	appreciation	7.56	8.00	0.00883	Yes
	WTP	0.748	0.876	0.0263	Yes

Table 3 - The T-test results of the WTP and appreciation of the different Fairtrade practices between the different genders.

In graph 7 the appreciation for the different Fairtrade practices are illustrated separately for each gender through a boxplot. It becomes clear that women generally appreciate the Fairtrade practices more than men. Also a much smaller spread in the data for men is measured for trade standards. Apart from a slightly higher appreciation from women for the Fairtrade practices and less spread in the data for men on their appreciation for trade standards there are no significant differences between the two genders.
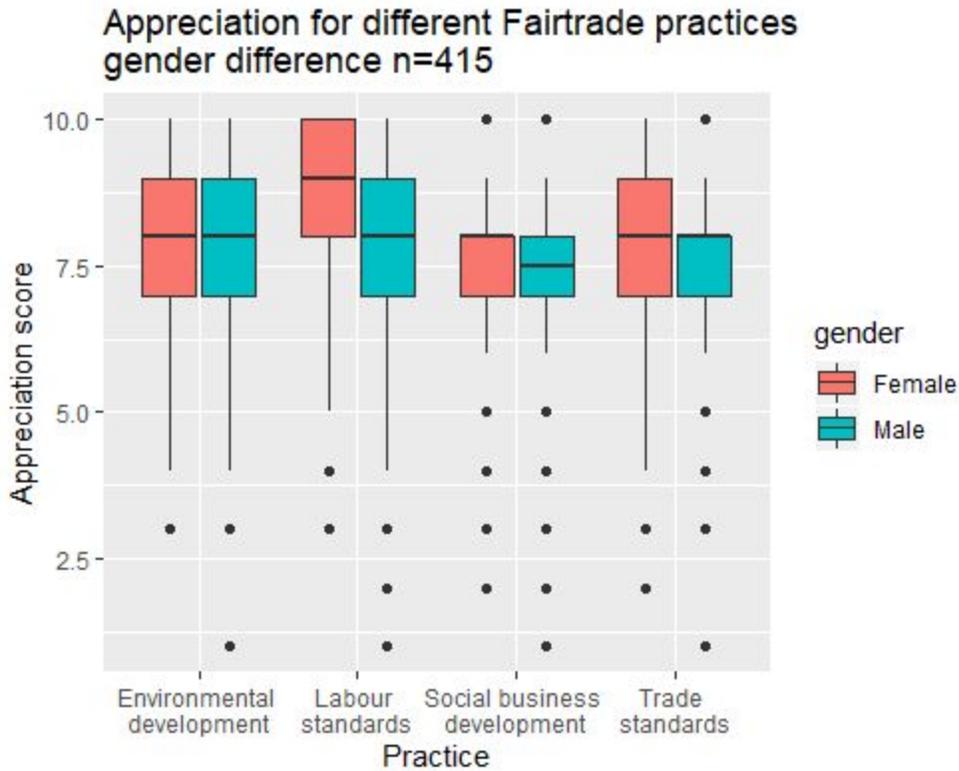
Graph 7 - The appreciation for different Fairtrade practices of the different genders.

In graph 8 the willingness to pay for different Fairtrade practices is illustrated for both genders through a boxplot. What becomes clear from the graph is that the two genders do not differ much from each other. The spread of the data is very similar between the two genders and the medians only vary slightly. Also the spread of the data is very similar for both genders.
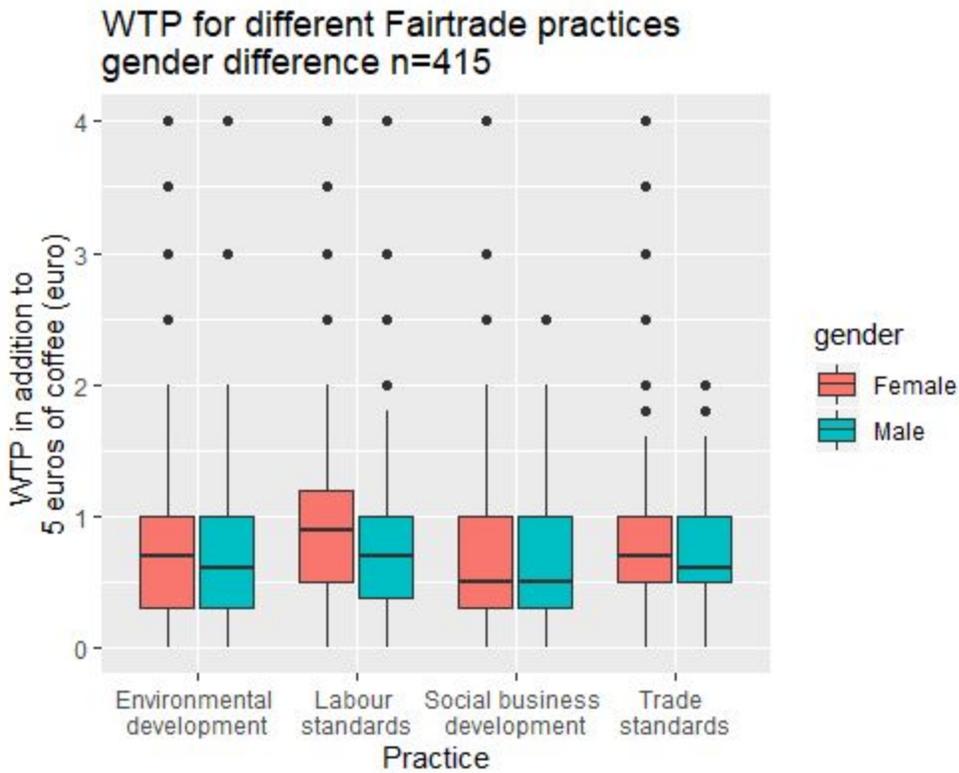
Graph 8 - The WTP for different Fairtrade practices of the different genders.

Even though the differences are significant between genders in some aspects. That does not mean the differences will cause significant differences in the conclusions. The dataset that is analysed in this thesis is 63% female and 37% male. In order to test if gender differences have an effect in this thesis the dataset needs to be t-tested to the same dataset but with a 50/50 male/female ratio.

In order to do this a 100.000 number dataset was created with the same standard deviation and mean for the appreciation of labour standards for only men. The same was done for the appreciation of labour standards for only women. These two datasets were added up to a dataset of 200.000 numbers which consists of 50% artificial male replies and 50% artificial female replies. This dataset was t-tested against the original appreciation for labour dataset. This process was repeated for the appreciation and WTP of every Fairtrade practice. The results are given in table 4.

		P-value	Significantly different
Appreciation	environmental development	0.538	No
Appreciation	labour standards	0.323	No
Appreciation	Social development	0.712	No
Appreciation	Trade standards	0.426	No
WTP	environmental development	0.680	No
WTP	labour standards	0.635	No
WTP	Social development	0.742	No
WTP	Trade standards	0.635	No

Table 4 - The result of t-tests between the real dataset and the artificial gender corrected dataset for the WTP and appreciation of each Fairtrade practice

As can be seen from table 4, no significant differences were found thus for this thesis the imbalance in replies considering the different genders does not make significant differences for the results.

5 - Conclusions

The research question of this thesis is "To what extent do consumers appreciate and are willing to pay for the alleged benefits of Fairtrade coffee?" This thesis follows the research question up by looking at the differences between the alleged benefits, previously described as the different Fairtrade practices.

Subquestion 1 is stated as "To what extent is the literature unambiguous on consumers' appreciation of trade, social business development, environmental development and labour conditions standards in the production process of Fairtrade labelled goods?" The answer to this is that literature does not come to a clear conclusion, which makes this research necessary and allows it to fill a research gap.

In order to answer subquestion 2 ("To what extent do consumers appreciate and are willing to pay for the Fairtrade practices?") the literature was analysed and the results were checked for similarities or incongruencies.

In the theoretical background the comparison between Fairtrade labour standards and sweatshops for apparel is made. American apparel consumers were concerned about the working conditions and were willing to pay extra to avoid these labour conditions (Rudell 2006). From the results can be concluded that from all the Fairtrade practices the labour standards are appreciated the most. Consumers are also willing to pay the most for labour standards which confirms the notion that consumers are willing to pay more for improved labour standards. In the literature nothing was found on the appreciation or WTP for ethical micro crediting activity associated with a product, micro crediting loosely translates to social business development as it both includes lending money in order to build a business out of poverty. Social business development is appreciated the least and consumers are also willing to pay the least amount of money for this practice.

Consumers are willing to pay a premium for products which are associated with environmentally conscious practices (Biswas 2016). The results point out that consumers are willing to pay a 15.6% premium for coffee if it is associated with environmentally conscious practices which confirms the literature. Environmental development and trade standards are placed in between labour standards and trade standards in appreciation and willingness to pay. Trade standards and environmental development do not differ significantly in consumer appreciation and consumers are willing to pay equal amounts of money for both practices. Nevertheless, all practices are regarded as important. (Mai 2014) stated that consumers are willing to pay a significant premium for Fairtrade chocolate. The results of this thesis are in line with the consumer behaviour in this study even though this thesis used coffee instead of chocolate as a case study, the principle remains the same. All practices are very much appreciated by

nearly all consumers and they are willing to pay for each of them separately. The premium price consumers were willing to pay for the separate practices were 15.6% for environmental development, 18.2% for labour standards, 13.4% for social business development and 16.6% for trade standards.

In the literature a division between consumers is made based on ethical awareness and ethical purchase intention (Carrigan and Attalla 2001). This results in the following groups: 'Caring and Ethical', 'Confused and uncertain', cynical and disinterested' and 'oblivious'. By informing the respondents of the survey before answering the questions the respondents become more ethically aware as the exact benefits of each Fairtrade practice is laid out. This moves the respondents from the 'oblivious' or 'confused and uncertain' category to either the 'caring and ethical' or the 'cynical or disinterested' group. The overall high WTP shows that, generally, the respondents are in the 'caring and ethical' group of respondents with few outliers towards the 'cynical and disinterested' group.

Subquestion 3 was stated as "To what extent does appreciation of the Fairtrade practices lead to willingness to pay for the Fairtrade practices?". A lack of positive correlation between appreciation and WTP is described in the methods as the attitude-behaviour gap (Vermeir and Verbeke 2006). The attitude-behaviour gap could not be confirmed or rejected by the results. The relationship between appreciation and WTP seems positive. But due to the large spread of the data the positive correlation is insignificant and thus subquestion 3 could not be answered by the results from this research.

The survey asked for gender in order to see if the participants of the survey might be dominantly male or female. From all of the replies 63% came from women and 37% came from men. The literature (Vecchio and Annunziata 2015) suggested differences in WTP for the genders, large gender differences could shift my conclusions drastically and (Luchs and Mooradian 2012; Koos 2011) found that women are generally more concerned on ethical and environmental issues. On the other hand (Sikula and Costa 1994; Pelsmacker, Driesen, and Rayp 2005) found no significant differences. There was also a study (Mostafa 2007) that found that men were more environmentally conscious.

Besides preventing bias, gender separation also gives more insight into the behaviours of the different genders and allows better tested conclusions. Some significant gender differences were found in the data. The appreciation for Environmental development, labour standards, trade standards and the willingness to pay for trade standards were significantly higher for women than for men. However, these differences did not make the dataset significantly different than the same artificial dataset with a 50/50 division of men and women so the conclusions were not altered by the unbalanced representation of men and women.

The difference in WTP is discussed in the theory where the results of the literature differed on this matter. Therefore the importance of including it in this thesis. The results show overall more

appreciation for every Fairtrade practice among women apart from the appreciation for social business development. Where the appreciation is the same for both genders. The differences are significant but small as the difference is never higher than 0.6 on a scale of 10. For the WTP the differences between genders are smaller. The only significant difference was found for the trade standards where women were willing to pay a 13ct higher premium for 5 euros of coffee than men.

Discussion

This thesis has reached 415 replies on its survey. However, the group from which this data was taken is not random and poorly represents dutch society as a whole thus causing some measuring inaccuracy. Most of the replies came from the email sent to my fellow food students, bachelor and master (about 280). This is a very specific group of people which consists of highly educated people with a greater interest in food products.

This thesis was able to check if the imbalance in gender had any significant effects. However, because the age and income groups were so one-sided (almost everyone was in the lowest income group and was aged between 20 and 27) it was not possible to make a split between age or income groups to compare the results with because the group which represents people not aged 20-27 and medium-high income would be too small. Therefore this thesis should be considered as research among mostly students.

Also, some comments were received while talking to respondents regarding some confusion in estimating the WTP. The question from the survey is as follows: "If you bought 5 euro of coffee. How much would you pay extra for the same coffee with Fairtrade trade practices (Fair salary)." And these are repeated for every Fairtrade practice. The confusion was that if a respondent would pay one euro extra for each practice, the total price of the Fairtrade coffee would be 4 euro higher. This would possibly be regarded as too much and the respondent would follow by lowering the appreciation of each WTP score. However, this is not the question stated by the form. The question states how much the respondent is prepared to pay for a coffee with only one of the practices associated with it. There is no way to check if the respondents did this. In follow-up research this phenomenon should be prevented by stating clearly respondents are not supposed to stack the willingness to pay for each practice in order to calculate if the total price of the accumulated Fairtrade product makes sense to them.

This thesis gives a good indication of what consumers consider valuable, but to get a true confirmation of the results the pool of respondents should be more random. This was not possible during this thesis

due to time and resource limitations as no funds were available to do this research and thus convincing consumers to enter the survey with a significant monetary compensation was not a viable option. In order to circumvent this the researcher awarded 50 euros to a random person who entered the survey (Appendix 1). Also finding respondents was completely based on the researcher using his own network, which has a bias in itself.

Recommendations

This thesis failed to make any conclusions on the attitude-behaviour gap in the form of WTP and appreciation relation due to the extensively large spread of the data. If a solid conclusion is to be made it would require a different approach. In order to make a more accurate model of the WTP-appreciation relationship the question in the survey would need to inquire about the appreciation and WTP for Fairtrade as a whole for more accurate data, this would be easier to estimate and the accuracy of the data would also benefit from a dynamic scale since the largest chunk of respondents scored their appreciation for the Fairtrade practices from 7 to 10. So the dominant part of the data on appreciation only consists of 4 different answers.

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7 - Appendix

Appendix 1

Appendix 2

Kruskall-Wallis test

H0 = The means of the results are the same

H1 = The means are significantly different

Confidence interval = 0.95

The Kruskall-Wallis test was performed with df = 3 as there were four different Fairtrade practices resulting in a chi-squared = 37.163 and a p-value = 4.249e-08. This confirms the H1 hypothesis, the means of the different Fairtrade practices are different measured in WTP.

Results of a t-test for appreciation for each combination of practices

H0 = The means of the results are the same

H1 = The means are significantly different

Confidence interval = 0.95

Lists are not paired

Variance is not equal

T-test is two-sided.

Mu = 0

Appendix 3

Kruskall-Wallis test

H0 = The means of the results are the same

H1 = The means are significantly different

Confidence interval = 0.95

The Kruskall-Wallis test was performed with df = 3 as there were four different Fairtrade practices resulting in a chi-squared = 78.755 and a p-value < 2.2e-16. This confirms the H1 hypothesis, the means of the different Fairtrade practices are different measured in appreciation.

Results of a t-test for WTP for each combination of practices

H0 = The means of the results are the same

H1 = The means are significantly different

Confidence interval = 0.95

Lists are not paired

Variance is not equal

T-test is two-sided.

Mu = 0

Appendix 4

```r
library(tidyverse)

data <- Survey_answers_real

str(data)

#rename columns
data2 <- data %>% rename(time = ...1,
                         mail = ...2,
                         gender = ...3,
                         age = ...4,
                         income = ...5,
                         form = ...6,
                         app_trade = ...7,
                         wtp_trade = ...8,
                         app_social_business_development = ...9,
                         wtp_social_business_development = ...10,
                         app_environmental_development = ...11,
                         wtp_environmental_development = ...12,
                         app_labour = ...13,
                         wtp_labour = ...14)

head(data2)

#
#
#
#

#Willingness to pay fairtrade practices

data_wtp_gathered <- data2 %>% select(wtp_trade,
                                      wtp_social_business_development,
                                      wtp_environmental_development,
                                      wtp_labour) %>%
       gather(practice, score, 1:4)

head(data_wtp_gathered)
```

```r
ggplot(data_wtp_gathered, aes(x = practice, y = score, fill = practice)) +
        geom_boxplot() +
        stat_summary(fun.y=mean, colour="darkred", geom="point",
                        shape=16, size=2,show_guide = FALSE) +
        labs(x = "Practice", y = "WTP in addition to \n5 euros of coffee
(euro)") +
        ggtitle("WTP for different Fairtrade practices\nn = 415") +
        theme(legend.position = "none") +
        scale_x_discrete(labels=c("Environmental \ndevelopment",
                        "Labour \nstandards",
                        "Social business \ndevelopment",
                        "Trade \nstandards"))

#Calculate medians of wtp and t.test
median(data2$wtp_environmental_development)
median(data2$wtp_labour)
median(data2$wtp_social_business_development)
median(data2$wtp_trade)

mean(data2$wtp_environmental_development)
mean(data2$wtp_labour)
mean(data2$wtp_social_business_development)
mean(data2$wtp_trade)

kruskal.test(score ~ practice, data = data_wtp_gathered)

t.test(data2$wtp_labour, data2$wtp_environmental_development)
t.test(data2$wtp_social_business_development,
data2$wtp_environmental_development)
t.test(data2$wtp_social_business_development, data2$wtp_labour)
t.test(data2$wtp_trade, data2$wtp_environmental_development)
t.test(data2$wtp_trade, data2$wtp_labour)
t.test(data2$wtp_trade, data2$wtp_social_business_development)

#
#
#
#

#Appreciaion of fairtrade practices

data_app_gathered <- data2 %>% select(app_trade,
```

```
                                        app_social_business_development,
                                        app_environmental_development,
                                        app_labour) %>%
        gather(practice, score, 1:4)

head(data_app_gathered)

ggplot(data_app_gathered, aes(x = practice, y = score, fill = practice)) +
        geom_boxplot() +
        stat_summary(fun.y=mean, colour="darkred", geom="point",
                        shape=16, size=2,show_guide = FALSE) +
        labs(x = "Practice", y = "Appreciation score") +
        ggtitle("Appreciation for different Fairtrade practices\nn = 415")
+
        theme(legend.position = "none") +
        ylim(0, 10) +
        scale_x_discrete(labels=c("Environmental \ndevelopment",
                                "Labour \nstandards",
                                "Social business \ndevelopment",
                                "Trade \nstandards"))


#mean, median and ttest for appreciation

median(data2$app_environmental_development)
median(data2$app_labour)
median(data2$app_social_business_development)
median(data2$app_trade)

mean(data2$app_environmental_development)
mean(data2$app_labour)
mean(data2$app_social_business_development)
mean(data2$app_trade)

kruskal.test(score ~ practice, data = data_app_gathered)

t.test(data2$app_labour, data2$app_environmental_development)
t.test(data2$app_social_business_development,
data2$app_environmental_development)
t.test(data2$app_social_business_development, data2$app_labour)
t.test(data2$app_trade, data2$app_environmental_development)
t.test(data2$app_trade, data2$app_labour)
```

```
t.test(data2$app_trade, data2$app_social_business_development)




#
#
#
#Correlation between appreciation and WTP for environmental development

environmental_model <- lm(wtp_environmental_development ~
app_environmental_development
                          + I(app_environmental_development^2)
                          , data = data2)

summary(environmental_model)
confint(environmental_model)

fun.env <- function(x) 0.02053*(x^2) + + -0.11255*x + 0.32143
fun.env.low <- function(x) 0.008724881*(x^2) + + -0.279243092*x +
-0.254634225
fun.env.high <- function(x) 0.03234266*(x^2) + + 0.05415304*x + 0.89750359

ggplot(data2, aes(x = app_environmental_development, y =
wtp_environmental_development)) +
        geom_point() +
        stat_function(fun = fun.env, color = "blue") +
        stat_function(fun = fun.env.low, color = "red") +
        stat_function(fun = fun.env.high, color = "red") +
        xlim(0,10) +
        ylim(-2,5) +
        labs(x = "Appreciation environmental development", y = "WTP
environmental development") +
        ggtitle("Relation between WTP and appreciation \nfor environmental
development") +
        annotate("text", x = 3, y = 4.25, label = "R2 = 0.24 \ny =
0.021(x^2) + -0.11x + 0.32\np-value < 0.000")

#correlation for labour

labour_model <- lm(wtp_labour ~ app_labour
                          + I(app_labour^2)
                          , data = data2)
```

```
summary(labour_model)
confint(labour_model)

fun.labour <- function(x) 0.020019*(x^2) + + -0.148189*x + 0.702954
fun.labour.low <- function(x) 0.004360201*(x^2) + + -0.380542024*x +
-0.147507059
fun.labour.high <- function(x) 0.03567727*(x^2) + + 0.08416308*x +
1.55341584

ggplot(data2, aes(x = app_labour, y = wtp_labour)) +
        geom_point() +
        stat_function(fun = fun.labour, color = "blue") +
        stat_function(fun = fun.labour.low, color = "red") +
        stat_function(fun = fun.labour.high, color = "red") +
        xlim(0,10) +
        ylim(-2,5) +
        labs(x = "Appreciation labour standards", y = "WTP labour
standards") +
        ggtitle("Relation between WTP and appreciation \nfor labour
standards") +
        annotate("text", x = 3, y = 4.25, label = "R2 = 0.12 \ny =
0.020(x^2) + -0.15x + 0.70 \np-value < 0.000")

#correlation for social

social_model <- lm(wtp_social_business_development ~
app_social_business_development
                   + I(app_social_business_development^2)
                   , data = data2)

summary(social_model)
confint(social_model)

fun.social <- function(x) 0.008505*(x^2) + + -0.018499*x + 0.314960
fun.social.low <- function(x) -0.003121232*(x^2) + + -0.178341730*x +
-0.229872791
fun.social.high <- function(x) 0.02013192*(x^2) + + 0.14134413*x +
0.85979216

ggplot(data2, aes(x = app_social_business_development, y =
wtp_social_business_development)) +
```

```
        geom_point() +
        stat_function(fun = fun.social, color = "blue") +
        stat_function(fun = fun.social.low, color = "red") +
        stat_function(fun = fun.social.high, color = "red") +
        xlim(0,10) +
        ylim(-2,5) +
        labs(x = "Appreciation social business development", y = "WTP
social business development") +
        ggtitle("Relation between WTP and appreciation \nfor social
business development practices") +
        annotate("text", x = 3, y = 4.25, label = "R2 = 0.088 \ny =
0.0085(x^2) + -0.018x + 0.31 \np-value < 0.000")


#correlation for trade

trade_model <- lm(wtp_trade ~ app_trade
                + I(app_trade^2)
                , data = data2)

summary(trade_model)
confint(trade_model)

fun.trade <- function(x) 0.008950*(x^2) + + -0.021587*x + 0.425188
fun.trade.low <- function(x) -0.003744786*(x^2) + + -0.202718493*x +
-0.219633577
fun.trade.high <- function(x) 0.02164577*(x^2) + + 0.15954519*x +
1.07001017

ggplot(data2, aes(x = app_trade, y = wtp_trade)) +
        geom_point() +
        stat_function(fun = fun.trade, color = "blue") +
        stat_function(fun = fun.trade.low, color = "red") +
        stat_function(fun = fun.trade.high, color = "red") +
        xlim(0,10) +
        ylim(-2,5) +
        labs(x = "Appreciation trade standards", y = "WTP trade standards")
+
        ggtitle("Relation between WTP and appreciation \nfor trade
standards") +
        annotate("text", x = 3, y = 4.25, label = "R2 = 0.079 \ny =
0.0090(x^2) + -0.022x + 0.43 \np-value < 0.000")
```

```
#Gender difference test

#ggplot for gender differences app
data_app_gender_gathered <- select(data2,
                                   gender,
                                   app_trade,
                                   app_social_business_development,
                                   app_environmental_development,
                                   app_labour) %>% gather(practice, score,
2:5)

head(data_app_gender_gathered)

ggplot(data_app_gender_gathered, aes(x = practice, y = score, fill =
gender)) +
        geom_boxplot() +
        labs(x = "Practice", y = "Appreciation score") +
        ggtitle("Appreciation for different Fairtrade practices \ngender
difference n=415") +
        scale_x_discrete(labels=c("Environmental \ndevelopment",
                                  "Labour \nstandards",
                                  "Social business \ndevelopment",
                                  "Trade \nstandards"))

mean(data2$app_environmental_development)
mean(data2$app_labour)
mean(data2$app_social_business_development)
mean(data2$app_trade)

mean(data2$app_environmental_development[data2$gender=='Male'])
mean(data2$app_environmental_development[data2$gender=='Female'])
mean(data2$app_labour[data2$gender=='Male'])
mean(data2$app_labour[data2$gender=='Female'])
mean(data2$app_social_business_development[data2$gender=='Male'])
mean(data2$app_social_business_development[data2$gender=='Female'])
mean(data2$app_trade[data2$gender=='Male'])
mean(data2$app_trade[data2$gender=='Female'])

# t.test genderdifference appreciation
t.test(data2$app_environmental_development[data2$gender=='Male'],
data2$app_environmental_development[data2$gender=='Female'])
t.test(data2$app_labour[data2$gender=='Male'],
```

```
data2$app_labour[data2$gender=='Female'])
t.test(data2$app_social_business_development[data2$gender=='Male'],
data2$app_social_business_development[data2$gender=='Female'])
t.test(data2$app_trade[data2$gender=='Male'],
data2$app_trade[data2$gender=='Female'])

#ggplot for gender differences wtp
data_wtp_gender_gathered <- select(data2,
                                   gender,
                                   wtp_trade,
                                   wtp_social_business_development,
                                   wtp_environmental_development,
                                   wtp_labour) %>% gather(practice, score,
2:5)

head(data_wtp_gender_gathered)

ggplot(data_wtp_gender_gathered, aes(x = practice, y = score, fill =
gender)) +
      geom_boxplot() +
      labs(x = "Practice", y = "WTP in addition to \n5 euros of coffee
(euro)") +
      ggtitle("WTP for different Fairtrade practices \ngender difference
n=415") +
      scale_x_discrete(labels=c("Environmental \ndevelopment",
                                "Labour \nstandards",
                                "Social business \ndevelopment",
                                "Trade \nstandards"))

mean(data2$wtp_environmental_development)
mean(data2$wtp_labour)
mean(data2$wtp_social_business_development)
mean(data2$wtp_trade)

mean(data2$wtp_environmental_development[data2$gender=='Male'])
mean(data2$wtp_environmental_development[data2$gender=='Female'])
mean(data2$wtp_labour[data2$gender=='Male'])
mean(data2$wtp_labour[data2$gender=='Female'])
mean(data2$wtp_social_business_development[data2$gender=='Male'])
mean(data2$wtp_social_business_development[data2$gender=='Female'])
mean(data2$wtp_trade[data2$gender=='Male'])
mean(data2$wtp_trade[data2$gender=='Female'])
```

```
# t.tests gender difference wtp
t.test(data2$wtp_environmental_development[data2$gender=='Male'],
data2$wtp_environmental_development[data2$gender=='Female'])
t.test(data2$wtp_labour[data2$gender=='Male'],
data2$wtp_labour[data2$gender=='Female'])
t.test(data2$wtp_social_business_development[data2$gender=='Male'],
data2$wtp_social_business_development[data2$gender=='Female'])
t.test(data2$wtp_trade[data2$gender=='Male'],
data2$wtp_trade[data2$gender=='Female'])

#Calculate percentage of replies per gender
malefiltereddata2 <- data2 %>% filter(gender == 'Male')
femalefiltereddata2 <- data2 %>% filter(gender == 'Female')
nrow(malefiltereddata2)
nrow(femalefiltereddata2)
nrow(data2)

percentagemale <- nrow(malefiltereddata2) / nrow(data2) * 100
print(percentagemale)
percentagefemale <- 100 - percentagemale
print(percentagefemale)

#Createdataframes for testing Genderdifferences for
app_environmental_development
mean(malefiltereddata2$app_environmental_development)
sd(malefiltereddata2$app_environmental_development)

male.vector.appenvironment <- rnorm(100000,
                                   mean =
mean(malefiltereddata2$app_environmental_development),
                                   sd =
sd(malefiltereddata2$app_environmental_development))

mean(femalefiltereddata2$app_environmental_development)
sd(femalefiltereddata2$app_environmental_development)

female.vector.appenvironment <- rnorm(100000,
                                     mean =
mean(femalefiltereddata2$app_environmental_development),
                                     sd =
sd(femalefiltereddata2$app_environmental_development))
```

```
sd(female.vector.appenvironment)
mean(female.vector.appenvironment)

total.vector.appenvironment <- as.vector(rbind(male.vector.appenvironment,
female.vector.appenvironment))

t.test(total.vector.appenvironment, data2$app_environmental_development)

#Createdataframes for testing Genderdifferences for app_labour
mean(malefiltereddata2$app_labour)
sd(malefiltereddata2$app_labour)

male.vector.applabour <- rnorm(100000,
                               mean = mean(malefiltereddata2$app_labour),
                               sd = sd(malefiltereddata2$app_labour))

mean(femalefiltereddata2$app_labour)
sd(femalefiltereddata2$app_labour)

female.vector.applabour <- rnorm(100000,
                                 mean =
mean(femalefiltereddata2$app_labour),
                                 sd = sd(femalefiltereddata2$app_labour))

sd(female.vector.applabour)
mean(female.vector.applabour)

total.vector.applabour <- as.vector(rbind(male.vector.applabour,
female.vector.applabour))
nrow(total.vector.applabour)

t.test(total.vector.applabour, data2$app_labour)

#Createdataframes for testing Genderdifferences for
app_social_business_development
mean(malefiltereddata2$app_social_business_development)
sd(malefiltereddata2$app_social_business_development)

male.vector.appsocial <- rnorm(100000,
                               mean =
mean(malefiltereddata2$app_social_business_development),
```

```
                                    sd =
sd(malefiltereddata2$app_social_business_development))

mean(femalefiltereddata2$app_social_business_development)
sd(femalefiltereddata2$app_social_business_development)

female.vector.appsocial <- rnorm(100000,
                                    mean =
mean(femalefiltereddata2$app_social_business_development),
                                    sd =
sd(femalefiltereddata2$app_social_business_development))

sd(female.vector.appsocial)
mean(female.vector.appsocial)

total.vector.appsocial <- as.vector(rbind(male.vector.appsocial,
female.vector.appsocial))
nrow(total.vector.appsocial)

t.test(total.vector.appsocial, data2$app_social_business_development)

#Createdataframes for testing Genderdifferences for app_trade
mean(malefiltereddata2$app_trade)
sd(malefiltereddata2$app_trade)

male.vector.apptrade <- rnorm(100000,
                                mean = mean(malefiltereddata2$app_trade),
                                sd = sd(malefiltereddata2$app_trade))

mean(femalefiltereddata2$app_trade)
sd(femalefiltereddata2$app_trade)

female.vector.apptrade <- rnorm(100000,
                                    mean =
mean(femalefiltereddata2$app_trade),
                                    sd = sd(femalefiltereddata2$app_trade))

sd(female.vector.apptrade)
mean(female.vector.apptrade)

total.vector.apptrade <- as.vector(rbind(male.vector.apptrade,
female.vector.apptrade))
```

```
nrow(total.vector.apptrade)

t.test(total.vector.apptrade, data2$app_trade)

#Createdataframes for testing Genderdifferences for
wtp_environmental_development
mean(malefiltereddata2$wtp_environmental_development)
sd(malefiltereddata2$wtp_environmental_development)

male.vector.wtpenvironment <- rnorm(100000,
                                    mean =
mean(malefiltereddata2$wtp_environmental_development),
                                    sd =
sd(malefiltereddata2$wtp_environmental_development))

mean(femalefiltereddata2$wtp_environmental_development)
sd(femalefiltereddata2$wtp_environmental_development)

female.vector.wtpenvironment <- rnorm(100000,
                                      mean =
mean(femalefiltereddata2$wtp_environmental_development),
                                      sd =
sd(femalefiltereddata2$wtp_environmental_development))

sd(female.vector.wtpenvironment)
mean(female.vector.wtpenvironment)

total.vector.wtpenvironment <- as.vector(rbind(male.vector.wtpenvironment,
female.vector.wtpenvironment))

t.test(total.vector.wtpenvironment, data2$wtp_environmental_development)

#Createdataframes for testing Genderdifferences for wtp_labour
mean(malefiltereddata2$wtp_labour)
sd(malefiltereddata2$wtp_labour)

male.vector.wtplabour <- rnorm(100000,
                               mean = mean(malefiltereddata2$wtp_labour),
                               sd = sd(malefiltereddata2$wtp_labour))

mean(femalefiltereddata2$wtp_labour)
sd(femalefiltereddata2$wtp_labour)
```

```r
female.vector.wtplabour <- rnorm(100000,
                                 mean =
mean(femalefiltereddata2$wtp_labour),
                                 sd = sd(femalefiltereddata2$wtp_labour))

sd(female.vector.wtplabour)
mean(female.vector.wtplabour)

total.vector.wtplabour <- as.vector(rbind(male.vector.wtplabour,
female.vector.wtplabour))
nrow(total.vector.wtplabour)

t.test(total.vector.wtplabour, data2$wtp_labour)

#Createdataframes for testing Genderdifferences for
wtp_social_business_development
mean(malefiltereddata2$wtp_social_business_development)
sd(malefiltereddata2$wtp_social_business_development)

male.vector.wtpsocial <- rnorm(100000,
                               mean =
mean(malefiltereddata2$wtp_social_business_development),
                               sd =
sd(malefiltereddata2$wtp_social_business_development))

mean(femalefiltereddata2$wtp_social_business_development)
sd(femalefiltereddata2$wtp_social_business_development)

female.vector.wtpsocial <- rnorm(100000,
                                 mean =
mean(femalefiltereddata2$wtp_social_business_development),
                                 sd =
sd(femalefiltereddata2$wtp_social_business_development))

sd(female.vector.wtpsocial)
mean(female.vector.wtpsocial)

total.vector.wtpsocial <- as.vector(rbind(male.vector.wtpsocial,
female.vector.wtpsocial))
nrow(total.vector.wtpsocial)
```

```
t.test(total.vector.wtpsocial, data2$wtp_social_business_development)

#Createdataframes for testing Genderdifferences for wtp_trade
mean(malefiltereddata2$wtp_trade)
sd(malefiltereddata2$wtp_trade)

male.vector.wtptrade <- rnorm(100000,
                              mean = mean(malefiltereddata2$wtp_trade),
                              sd = sd(malefiltereddata2$wtp_trade))

mean(femalefiltereddata2$wtp_trade)
sd(femalefiltereddata2$wtp_trade)

female.vector.wtptrade <- rnorm(100000,
                                mean = mean(femalefiltereddata2$wtp_trade),
                                sd = sd(femalefiltereddata2$wtp_trade))

sd(female.vector.wtptrade)
mean(female.vector.wtptrade)

total.vector.wtptrade <- as.vector(rbind(male.vector.wtptrade,
female.vector.wtptrade))
nrow(total.vector.wtptrade)

t.test(total.vector.wtptrade, data2$wtp_trade)
```