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Spilling the beans on coffee certifications: Consumer values and knowledge of Fair Trade and USDA Organic coffee

An Environmental Studies Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelors of Science at the University of Vermont
May 2013



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Abstract

Coffee certifications are one of the most prominent ways for consumers to influence environmental and labor practices in producing countries. However, their effectiveness has been seen by some as limited. Going forward, it is important to focus on certifications that are both effective in both producing countries as well as consuming countries. This study sought to determine the level of investment that consumers in Burlington, Vermont have on Fair Trade and USDA Organic certifications, and to assess their knowledge of these two labeling systems. To do this I used a close-ended survey executed through a random sampling approach. Generally, there was a strong positive correlation between the reported value of a certification and consumer knowledge of that certification, although knowledge and reported value were both fairly low. It is possible that more educational campaigns around these two certifications would boost sales, but given the rather contentious nature of certifications today it is unclear that more information will increase consumer buy-in.

Keywords: coffee, consumer, Fair Trade, knowledge, organic, survey, value

Acknowledgements

I would like to begin by thanking the owners and employees of the three coffee shops in which I conducted my research; it was wonderful to begin my (very early) days sampling with a friendly face and a fabulous cup of coffee.

I am also grateful to have had the assistance of Alan Howard; I am especially thankful for his help with statistics and software, as well as survey implementation.

I owe great deal of gratitude to my two advisors, Ernesto Mendez and Sarah Heiss Elek, for their support throughout this process. Sarah's assistance with project design was invaluable, and Ernesto's continued guidance throughout my college career has been instrumental to my success.

Finally, I would like to thank my parents for instilling in me a healthy love of all things coffee, and always making sure there is a fresh pot when I wake up.

Thank you all.

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Introduction

Today, there are many coffee certifications designed to help consumers feel confident their choice is making a difference in the world. From organic to Fair Trade, to migratory-bird friendly dozens of coffee certifications currently exist, but the question of their ability to effect change has been difficult to answer. Studies are beginning to show that Fair Trade and organic certifications are likely not as effective as had been originally hoped (Fridell, 2007; Rappole, King, & Vega Rivera, 2003), and that some of the major changes currently underway may not improve the situation much.

The recent split between the Fair Trade Labelling Organization (FLO) and Fair Trade USA is at the crux of the problem. Fair Trade is a certification that focuses on providing a fair price to producers for their product (Fair Trade USA, 2010b). With the adjustment of Fair Trade USA's requirements for certification now different from the rest of the world's (Fair Trade USA, n.d.-c), new concern is rising about the continued effectiveness of Fair Trade certification (Sherman, 2012). The focus is beginning to shift from small to large scale operations, as well as to increasing sales (Fair Trade USA, n.d.-c). Despite these concerns, the current CEO of Fair Trade USA, Paul Rice, has made it no secret that the group is trying to bring Fair Trade into the mainstream of America (Clark, 2011).

Organic certifications focus more on production methods than prices; organic production does not allow the use of synthetic pesticides or fertilizers, in its efforts to preserve the health of consumers, producers, and the environment. However, it has been surprisingly difficult to quantifiably measure the effects of organic production on the environment (Blackman & Rivera, 2011). Organic production has also been touted as helping maintain shade coffee production, and

therefore creating habitat for many animal species, but the usefulness and value to many species of this highly managed ecosystem is also under debate (Rappole et al., 2003).

In order to utilize certifications to their fullest potential, if we are to do so, changes need to be made not only in producing countries, but in consuming countries as well. Demand in consuming countries will need to continue to rise for certifications to be profitable, but it is not clear that this is happening. What then, keeps consumers from buying more Fair Trade or Organic coffee? Many theories of human decision-making suggest that consumer knowledge and values affect the decision that is ultimately made, particularly the theory of reasoned action put forth by Ajzen and Fishbein (Gass & Seiter, 2011). Because of the need for both value and knowledge of coffee certifications to create consumer demand, I designed a brief survey to assess both in coffee consumers. Today, the effectiveness, reach, and audience of certifications is uncertain. Consumer buy-in will be crucial for continued expansion of certifications, but it is important to know what holds consumers back from purchasing more certified coffee. With this thesis, I hope to shed light on the knowledge and values of coffee consumers as related to certifications, and determine if value, knowledge or both may be holding the market back.

Literature Review

Coffee certification processes have emerged to help inform consumers about available choices, as well as allow consumers to reflect on their value system in their purchasing habits. Coffee certifications are done by a third party (someone who is not the seller or the buyer) and can deal with any range of criteria, including ecological and social. From pesticide use reduction (United States Department of Agriculture Agricultural Marketing Service, 2011), to fair compensation for labor in production systems (Fair Trade USA, 2010a), to bird habitat management (Smithsonian National Zoologic Park), a certification exists for nearly every consumer concern. However, their effectiveness is the subject of much debate. An extensive literature exists, documenting coffee consumption, modern day production concerns, the certifications being used to combat these concerns, and the effectiveness of these certifications in reaching their goals.

History of Coffee Consumption

Several myths seek to illustrate the beginnings of coffee consumption. One describes an Ethiopian goat herder by the name of Kaldi who observed his flock eating red berries off of a particular bush and noticed that the animals were more energetic afterwards (Dicum & Luttinger, 2006). Being curious, Kaldi tried some of the berries for himself, and found it had a similar effect. Another story tells that the beans were given to the prophet Mohammed by the angel Gabriel.

While these stories are likely far more fiction than fact, there is a good bit we do know about the early history of coffee. In accordance with the legend of Kaldi, the coffee plant, *Coffea Arabica* in this case, did originate in Ethiopia. It is now grown around the world in locations surrounding the equator known as the coffee belt, which stretches from the Tropic of Cancer to

the Tropic of Capricorn. Consumption of the plant was originally berries mixed with animal fat, which served as type of “energy bar” to members of Ethiopia’s Galla Tribe warriors as early as 575 C.E.; other tribes later created a type of porridge from the fruit, or a wine of the fermented berries (Dicum & Luttinger, 2006). Several drinks have also traditionally been made from the leaves of the plant, either roasted (known as kati or kotea in Ethiopia) or left to dry for a few days (known as amertassa) (S. L. Allen, 1999).

By the 10th century, the use of coffee as a drink was adopted by Muslims in the Middle East, and was especially popular in Turkey (Dicum & Luttinger, 2006). Travelers from Europe described the consumption of coffee in this region as early as the late 1500s. It was claimed that everything from stomach ailments to labor pains could be treated with the beverage. As travelers returned to Europe with coffee, the beverage quickly gained notoriety, but no beans were permitted to leave the Arab world while still capable of germination, in order to maintain the Arab world’s monopoly on production of the beans. Around 1600, however, beans were smuggled out and the Dutch began cultivation in Java in 1616. With more direct access to the beans, many additional coffee houses opened, and a kind of coffee mania took over Europe, eventually spreading to much of the western world. It became a drink popular in Puritan circles, due to its popularity as a replacement for alcohol.

As European countries expanded their sphere of influence, several colonial powers began to cultivate coffee in their new colonies, including the Caribbean, Sri Lanka, Indonesia, and Africa, (Dicum & Luttinger, 2006). The bean had officially become a global commodity, complete with the worker exploitation typical of colonial rule. As colonies of Europe slowly gained their independence, farmers continued to grow coffee to export to the rest of the world.

The United States consumed approximately 22 million 60-kg bags in 2011 (International Coffee Association, 2011), of the world's 134.4 million 60-kg bags (International Coffee Association, 2012). In 2012, 64% of Americans reported drinking coffee, up from 56% in 2011 and 54% in 2010 (National Coffee Association, 2012). In 2013, Chittenden County, Vermont, the location of this study, had more than 80 shops where customers could purchase a cup of coffee. Burlington alone had more than 25 coffee shops. The University of Vermont campus, not included in the Burlington count, adds another 11 locations, all open to the public.

Current Status of Coffee Markets and Farming

One variable driving coffee production and consumption is price. Today, the price for a pound of commodity coffee is set in the stock exchanges of New York City and London, where the beans are traded. This makes the price prone to sudden spikes and dips (Bacon et al, 2008). Green bean coffee price crises are not uncommon. In the 1960s, the International Coffee Organization created a series of regulations, known as the International Coffee Agreements, or the ICAs, to help prevent such price fluctuation, including export quotas, which restricted how much coffee a single country may export, so as not to flood the market and cause a price crash (Bartels, 2009). In 1989, however, these agreements broke down, and the standing ICA dissolved.

The dissolution of the ICA had many effects on the coffee market. Without export quotas, coffee-producing countries almost immediately flooded the market and the price per pound plummeted below production costs (Bacon et al, 2008). A series of coffee price crisis followed, from 1999 to 2005, corresponding with a rise in production in Vietnam and Brazil, as well the introduction of new technology that allowed for the use poorer quality coffee beans without significantly reducing cup quality.

Also following the dissolution of the ICA, the percentage of profit received by producing countries dropped from 20% to 13% over the course of the 1980s. In contrast the industry in consuming countries saw a rise in profit percentages from 55% to 78% in the same time period (Talbot, 1997). That is why some refer to coffee price crises as ‘green bean price crises’, as they only seem to affect the production side of the industry (E. Méndez, personal communication, May 22, 2013). Despite continued efforts, the International Coffee Organization has been unable to restore stability with initiatives similar to the ICA in 2001 or 2007 (Bartels, 2009). As a result, farmers around the world, particularly those working on small-scale operations, struggle to make a living, maintain their operations, and provide reasonable wages to their workers, when they are able to hire them. .

The issues faced by smallholder coffee farmers today are not only economic – they are also environmental. In the 1970s, concern arose in Central and South America about the spread of a fungus known as coffee leaf rust (Perfecto, Rice, Greenberg, & Van der Voort, 1996). While coffee rust never became the monumental issue expected, it did spark huge advancements in coffee production methods, which later served to support a drastic increase in yields. Many large-scale operations made the switch to “sun coffee,” typically grown on monocultures of high-yield coffee varieties in full sun, allowing the plantation to harvest more coffee faster.

Unfortunately, these full-sun varieties also require enormous quantities of inputs, such as pesticides and fertilizers, and the cutting of shade trees results in biodiversity loss and high rates of soil erosion, especially on slopes, where coffee is traditionally grown (Rappole et al., 2003). These changes in production methods have resulted in large amounts of environmental degradation, and sparking outcry, as well as a demand for environmentally sustainable coffee, in consuming countries.

Certifications as a Solution

The expansion of sun coffee and the growing use of pesticides coincided with concerns regarding labor rights in producing countries for coffee farmers. These two factors have led to initiatives both by consumers and producers to distinguish between coffees produced using different methods (Bacon et al, 2008). Globally, various certifications exist, but two of the largest programs for coffee certification in the United States are organic and Fair Trade.

Fair Trade. One alternative developed to deal with both the environmental and social concerns of coffee production is known as Fair Trade (Fairtrade International (FLO), 2011). The terms Fairtrade and Fair Trade are often used interchangeably in popular publications, but this is incorrect. According to Fairtrade International (FLO), the international governing body for one labeling standard, the term Fair Trade is a broader term referring to “the Fair Trade movement as a whole” and encompasses “labeled and unlabelled goods” and other organizations, including the European Free Trade Association, or EFTA (2011). In this paper, the FLO delineation will be used to help illustrate the differences between specific certification bodies and the general Fair Trade movement.

Fair Trade certifications all share a few key aspects. The first is the idea of a price floor. Farmers selling Fair Trade coffee receive a minimum price per pound to ensure that their profit does not dip below their production costs (Bacon et al, 2008). Fair Trade certifications may also restrict the use of pesticides and fertilizers (Fair Trade USA, 2010b), and provide a Fair Trade premium to farmers that can be used to help develop the cooperative or other community projects (Fair Trade USA, 2010b; FLO, 2011). According to Fair Trade USA (2010b), many farmers take these funds and use them to build schools or certify their coffee as organic. Nearly half of the products certified as Fair Trade by Fair Trade USA are also certified organic.

The history of the Fair Trade movement is convoluted and difficult to trace, but it seems to have begun in the Netherlands in 1988, with the first organized purchases of coffee based on consumer concerns about workers' rights and the environment (Bacon et al, 2008). By 1997 numerous distinct initiatives existed, each with its own standards and labels. In that year, several of these groups joined together to create an umbrella organization known as the Fairtrade Labelling Organizations, or FLO, though the organization eventually changed its name to Fairtrade International (FLO, 2011). Products without a FLO certification label still claiming to be Fair Trade may or may not be certified by another certification body. FLO currently has two official labels, the circular one being the official brand mark and the rectangular one being the official certification mark (Figure 1). Only items with the rectangular symbol are officially certified, the brand mark is simply used to promote the international reach of the organization. Items with FLO certification are guaranteed to be comprised of at least 20% Fairtrade certified ingredients, and all ingredients for which a FLO certification exists must be certified.

Figure 1: The official brand mark and certification mark of FLO.
The brand mark is on the left, and the certification mark is on the right.

Images removed from electronic version, but are available in hard housed in Environmental Program Office at the University of Vermont.

In the United States, the other commonly seen Fair Trade label is that of Fair Trade USA, formerly TransFair USA (Fair Trade USA, 2010c). Transfair USA was formed in 1999, and originally certified only one product: coffee (Fair Trade USA, n.d.-b). Slowly, the organization added a number of additional products, including wine, honey, tea, and sugar. In September of 2011, Transfair USA announced it would resign its FLO membership as of December 31st of the same year, and take the new name of Fair Trade USA. An official press release from Fair Trade USA (2011b) states that though Fair Trade USA and FLO share a mission, they possess “different perspectives” on how to meet their goals. Fair Trade USA (2011a) also announced a

new partnership with the Scientific Certification System (SCS) and a goal to double sales of Fair Trade certified products by 2015. Examples of acceptable Fair Trade USA labels can be seen in figure 2 (Fair Trade USA, 2011c).

Figure 2: The logos for Fair Trade USA certification.

A transition is currently being made from the black and white logo (right) to the color logo (left).

Images removed from electronic version, but are available in hard housed in Environmental Program Office at the University of Vermont.

Following the split, Fair Trade USA launched an initiative known as “Fair Trade for All,” in which, they are developing new standards for many products, beginning with a pilot project on coffee (Fair Trade USA, n.d.-c), their most popular product in the United States (Fair Trade USA, n.d.-b). These coffee standards will allow farmers who are not involved in a growing cooperative, including larger estates and non-associated coffee growers, to become Fair Trade certified as part of an initiative to involve more growers in the Fair Trade system. The standards are currently being tested on several coffee plantations, including a coffee estate in Brazil, known as Fazenda Nossa Senhora de Fatima (FNSF), which is a family-owned farm with 230 hectares under coffee production (Fair Trade USA, n.d.-a). Fair Trade USA has committed on their website to adjusting the standards based on what they learn on this farm in Brazil, as the pilot project is expanded to other farms and countries. While this adaptive management approach could be very successful in the long run, it is unclear how much the certification standards will differ from the original FLO standards, besides the inclusion of larger farms.

Organic. The organic coffee movement has less distinct beginnings than Fair Trade. Organic coffee production has strong roots in a Mexican agrarian organizing, with less focus on meeting the demands of a market than in community organizing and institutional reform (Bray, Plaza-Sanchez, & Contreras-Murphy, 2002). The change was aided in no small part by the pre-existing social capital that had accumulated in the region. Organic production increased in other

countries as well, through the help of numerous groups including religious organizations, coffee cooperatives, and federal governments (Bacon et al, 2008). It is managed on a global scale by the International Federation of Organic Agriculture Methods, or IFOAM. As with Fair Trade's FLO, not all organic certifiers are linked to IFOAM, but unlike FLO IFOAM does not have specific standards that must be met. It serves as a sort of clearing house for standards, dictating what kinds of standards should exist in an organic certification, but not precisely what the standards should be (Bacon et al, 2008). Unlike Fair Trade, which focuses on the trade relationship, organic certification focuses exclusively on the agricultural production process.

In the United States, all products labeled organic must meet standards set by the United States Department of Agriculture (USDA), unless the producer's profits are less than \$5,000 annually from the sale of said products (National Organic Program, 2008). The USDA (2011) defines organic as:

...a labeling term that indicates that the food or other agricultural product has been produced through approved methods. These methods integrate cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used.

Compared to Fair Trade certifications, organic certification is fairly straightforward. The USDA Organic certification prohibits use of all but a select few synthetic pesticides and fertilizers, and then only for very specific purposes (United States Department of Agriculture Agricultural Marketing Service, 2011). While organic coffee often receives a higher price on the market, farmer wages are not a piece of the certification.

Drawbacks and Concerns Regarding Certifications

The split between Fairtrade International and Fair Trade USA has been highly controversial. Chief Executive Officer of Fair Trade USA Paul Rice has been accused of allowing standards to go by the wayside in order to boost sales of Fair Trade USA certified products (Clark, 2011), and help reach new 2015 goals. New standards include labeling of chocolate bars produced with certified cocoa but non-certified sugar. According to a statement given by national coordinator of United Students for Fair Trade, Maria Louzon, these decisions are “unacceptable” as cited in Clark, 2011. Rice claims the decision is “flexible” and intended to help cocoa farmers improve their livelihoods, not injure sugar farmers (Clark, 2011). In an interview with Tom Schueneman (2011), Rice stated that he sees fair trade systems as “the new normal” in the future.

Whether or not Fair Trade, as certified by FLO, Fair Trade USA, or another organization entirely, should be the new normal is the subject of much debate today. According to Fair Trade USA’s website (2010a), “Fair Trade USA enables sustainable development and community empowerment by cultivating a more equitable global trade model that benefits farmers, workers, consumers, industry and the earth.” Although far from unanimous, the current and growing perception, is that Fair Trade certifications are not accomplishing all of the goals they have for producers (Arce, 2009; Bacon et al, 2008; Blackman & Rivera, 2011; Fridell, 2007; Valkila, 2009; Weber, 2011).

There is also more coffee certified as Fair Trade today than there is demand for it in the market; some argue that as such a portion of Fair Trade certified coffee is sold as conventional coffee, without the benefits of the social fund or the price floor, or cannot be sold at all (Bacon et al, 2008). Others, such as Philpott and Dietsch (2003), argue that true success can be seen only when multiple certifications are combined, such as shade grown, organic, and fair trade.

Additional concerns relate to the cost to producers of obtaining a certification. Farmers pay for each certification separately; some are so expensive that they are effectively out of reach of small-scale farmers (Perfecto et al., 1996).

It is hard to determine how well certifications in general work to meet their goals. According to Blackman and Rivera, only 11 “rigorous” studies exist which examine the effects of environmental certifications. Of these 11, only 4 suggest farmers are receiving some economic, social, or environmental benefit (Blackman & Rivera, 2011).

Consumer Knowledge of Certifications

While the ability of coffee certifications to help improve lives and environments is certainly a large part of assessing their potential usefulness, it is not the only factor that determines whether or not certifications should continue to be seen as a solution. Academics are calling for additional education, in order to boost consumer knowledge and investment (P. Allen, 2008). Studies show that consumers are willing to pay more for Fair Trade certified products (Howard & Allen, 2008), and, specifically, for Fair Trade coffee (De Pelsmacker, Driesen, & Rayp, 2005). This is an important factor given that part of the Fair Trade approach involves raising farmer profits per pound, and the additional cost would need to be absorbed somewhere along the supply chain.

Being willing to pay more and actually doing so, however, are distinct. According to one study, of 100 college students interviewed only 49 at least “sometimes” drank Fair Trade coffee, and only 38 at least “sometimes” drank organic coffee (West, 2010). The students who did not report at least sometimes drinking these certified coffees stated that it had never occurred to them to do so or that it was “liberal” or “hippy” (p. 708).

This perception may be changing, however, as Fair Trade USA's CEO Paul Rice had hoped; many large-scale coffee buyers, like Starbucks, are increasing purchases of Fair Trade coffee (Starbucks, 2008). In 2008, the chain announced that it would purchase twice as much Fair Trade certified coffee in 2009 – 40 million pounds worth – making it the world's largest purchaser of Fair Trade coffee. The number has continued to rise from there, and as of today Starbucks has paid over US\$ 16 million in Fair Trade premiums alone (Starbucks, n.d.). The company purchased nearly 10 million pounds of organic coffee in the 2011 fiscal year.

But coffee consumers seem to be sensitive to change. In 2006, Dunkin' Donuts began a series of store and product redesigns and were hit with a wave of complaints from frequent customers, who felt that changes made the stores feel too much like Starbucks (Adamy, 2006). Coffee consumers are routinely divided up for marketing ease into generational groups, each with their own unique take on what the ideal coffee shop looks like (West, 2010). The youngest generation of consumers, those born after 1983, are considered the most likely to purchase specialty coffee, like organic or Fair Trade.

Fair Trade, however, is not the sole focus of consumers; when asked in one study what they would be most likely to support a certification for, consumers ranked living wage third, behind humane treatment of animals and locally grown (Perez & Allen, 2007). Social issues are not necessarily consumers' top priority.

A willingness to pay does not directly lead to a decision to purchase certified coffee, or any product for that matter. The Theory of Reasoned Action proposes that a number of factors are at play in the decision-making process, including a consumer's beliefs about the outcome of a decision, their evaluation of that outcome, their normative beliefs, and their motivation to comply (Gass & Seiter, 2011). This study examines consumers' beliefs about the outcome (their

knowledge of a certification) and their evaluation of the outcome (their reported value of the certification). These are key factors when considering the current impact and likely success of coffee certifications.

Research Questions

Coffee consumers today have access to nearly any kind of coffee they could ask for, but how they make this decision is as of yet unclear. A certification could potentially be a useful, market-based approach to the problems of modern coffee production, but only if the perceptions of the public work to the certification's benefit. At this time, it is unclear what these perceptions are and if they are based on any quantity of knowledge. In what capacity individuals' knowledge affects their coffee purchasing choices is also unclear. Without this information, we cannot be certain which, if any, certifications will be successful in the marketplace, setting aside the problems they are having in producing countries. At whatever point it is determined which certifications have a chance and are effective in coffee-producing countries, this should be compared to which have the most consumer buy-in and knowledge, in order to invest in the most successful certifications.

This study focuses on two pieces of the certification puzzle, namely the value of Fair Trade and USDA Organic coffee certification to consumers and consumer knowledge of these certifications. Specifically, three questions were asked:

RQ1: To what extent do consumers value Fair Trade and USDA Organic certifications? and how much knowledge do consumers have about these certifications?

RQ 2: Is there a relationship between the value of USDA Organic certification for coffee consumers and consumer knowledge of USDA Organic?

RQ 3: Is there a relationship between the value of Fair Trade certification for coffee consumers and consumer knowledge of Fair Trade?

Methods

I conducted the survey in three coffee shops located in the greater Burlington, Vermont area. The survey asked customers to indicate how important Fair Trade and USDA Organic certifications each are in their decision of which coffee to purchase, as well as having them answer several fact-based true or false questions about each coffee certification to test consumer beliefs and knowledge.

The average number of correct answers on per survey indicated consumer knowledge, and the average reported value a sense of how important the certification is in consumers' decisions regarding coffee purchasing. I also looked for a correlation between the reported value and knowledge to determine whether knowledge and values were correlated drivers of consumption.

Instrument

Survey methods were used to assess consumer attitude and knowledge of USDA Organic and Fair Trade coffee certifications. The survey was designed to determine how important several factors are to consumers when they are purchasing coffee for their own consumption, as well as test their knowledge of Fair Trade and USDA Organic coffee certifications. Participants were asked to indicate the value of various factors, including price, flavor, and certifications in their decision of what coffee to buy. Participants then were given 8 statements related to Fair Trade or USDA Organic certification, and asked to indicate if each statement was true, false, or if they were not sure. These statements were selected to represent information that general consumers would likely be familiar with (i.e. that USDA Organic restricts the use of pesticides and fertilizers) and information that would indicate more in-depth understanding (i.e. the status of GMOs in organic certification). The final three survey questions asked about demographic

information, specifically age, education level, and gender. A copy of the survey can be found in Appendix A.

Survey Procedures

The survey was conducted on three weekdays in February of 2013, in three locally owned coffee shops in the greater Burlington area. Coffee shops were selected based on a variety of criteria, including space (ability to host a surveyor), willingness to participate, and availability. All the surveys were conducted between the hours of 7:30am and 11:30am. This time was selected as it is the time of day during which the largest number of people frequent coffee shops, and therefore provides the potential for more participants. In order to gain a representative sample, I used systematic random sampling, at each coffee shop, asking every third customer in line to participate in the survey (Berg & Lune, 2011). If they agreed to participate, they were supplied with a paper copy of the survey on a clipboard and a pencil. For this survey, the response rate was approximately 74.17%, with a total of 112 surveys completed.

Participants

Approximately two-thirds of the respondents were female, compared to one-third male. More than half of the respondents were 34 years old or less (n=63). Education level was fairly evenly spread out across the 5 available categories, with nearly 70% of participants (n=78) reporting a Bachelor's, Master's, or Doctoral degree. Another 26.8% (n=30) reported "some college, with the remaining two participants reporting "high school or below."

Analysis

I numbered the surveys collected at each location and then coded them into an Excel spreadsheet as well as into SPSS Statistics software. The data collected in the true/false section needed additional coding in order to translate participant answers into useable counts of the

number of true/false questioned answered correctly, where an answer of “not sure” counted as incorrect. Once the data was coded, I performed a two-tailed Spearman correlation test to look for correlation between the following categories: number of correctly answered Fair Trade questions, number of correctly answered USDA Organic questions, reported value of Fair Trade certification, and reported value of USDA Organic certification.

Results

To explore research question 1 I examined the percent of correct and incorrect answers for each question, and spread of values in Fair Trade and USDA Organic rankings. These results can be seen in Figures 3 and 4.

USDA Organic Questions

The number of individuals who answered each question correctly varied greatly, as seen in Figure 3. The first USDA Organic question was the most frequently answered correctly of the organic questions. More than 63% of individuals knew that the USDA organic certification restricts the use of synthetic pesticides and fertilizers, which is the most basic tenet of organic certification, and not unique to coffee. Fifty percent of participants were aware that organic coffee could be decaffeinated, which was not surprising as two of the three shops had USDA organic decaffeinated coffee for sale on the day the sample was collected.

Customers were less sure of the answers to the second two questions related to USDA Organic certification; nearly half responded “not sure” when asked about a minimum price for USDA organic certified coffee, and more than half were unsure whether or not genetically engineered coffee could be certified as USDA organic. Both statements were false, indicating that while participants may have had a working definition of organic, as shown in question 1, most do not have a strong grasp of how the certifications work or of the specific regulations.

Given the large number of responses of “not sure” on questions 3 and 4, it is likely that individuals are not misinformed about the meaning of USDA Organic certification, but uninformed.

Fair Trade Questions

I saw a different pattern of correct answers on the Fair Trade section. Sixty-four percent of participants knew Fair Trade certifications were designed to help fund community projects in coffee-growing communities, one of the basic tenets of Fair Trade, and 57% of participants knew that Fair Trade is not equivalent to Free Trade. It is important to note that only 7.1% of individuals thought that Free Trade was another term for Fair Trade, with a much larger percentage admitting to not knowing the answer. As with USDA Organic, this indicates that individuals are not so much misinformed as uninformed about Fair Trade certification standards.

Forty-four percent of participants correctly answered that Fair Trade did not need to be certified organic as well, but even more than this (46.4%) stated that they were unsure. This is possibly due to the large amount of overlap between the two certifications; in the United States, nearly 50% of products certified as Fair Trade are also organic (Fair Trade USA, 2010b).

Only a very small percentage of participants (14.3%) knew that Fair Trade restricts the use of synthetic pesticides and fertilizers. While not to the degree that USDA Organic does, this is another of the major tenets of Fair Trade certification. More participants answered this questions wrong than any other, at 37.5%. It is possible that individuals attempting to differentiate between the two labels being discussed here were not aware that there could be some overlap between them. Given the constant change of certifications today, this is not surprising; certifications have largely independent of each other and only recently has any overlap become prominent.

Correct Answers

No single individual answered all 8 questions correctly, and many declined to answer all 8 questions. The mean number of correct answers in the USDA Organic section was 1.73, and the median was 2. The median reported value of both Fair Trade and USDA Organic coffee was 3, the neutral center of the 1-5 scale given on the survey. Figures 4 and 5 illustrate the spread of the scores and reported values.

Figure 3: Breakdown of answers to each knowledge question, in percentages.
 Bold percentage indicates correct answer.

QUESTIONS	ANSWERS		
	TRUE	FALSE	NOT SURE
Organic Question 1 <i>restricts use of synthetic pesticides and fertilizers</i>	63.4	5.4	31.3
Organic Question 2 <i>can be decaffeinated</i>	50	4.5	45.5
Organic Question 3 <i>farmers receive a minimum price per pound</i>	17.9	32.1	49.1
Organic Question 4 <i>Genetically engineered coffee may be certified</i>	20.5	27.7	51.8
Fair Trade Question 1 <i>restricts use of synthetic pesticides and fertilizers</i>	14.3	37.5	47.3
Fair Trade Question 2 <i>another term for Free Trade</i>	7.1	57.1	32.1
Fair Trade Question 3 <i>must be USDA Organic certified as well</i>	8	44.6	46.4
Fair Trade Question 4 <i>designed to help fund community projects</i>	64.3	4.5	29.5

Figure 4: Frequency of each number of answers correct.

	0	1	2	3	4
Number correct on Organic Portion	29	16	31	28	8
Number correct on Fair Trade Portion	20	23	33	31	5

Figure 5: Frequency of reported values for Organic and Fair Trade certifications.

	1	2	3	4	5
Reported Value of USDA Organic	17	23	28	26	13
Reported Value of Fair Trade	16	15	26	33	18

Correlation

To examine research questions 2 and 3, I used a Spearman’s correlation test. USDA Organic knowledge and USDA Organic value had a positive and significant correlation ($r_s = 0.224$; $p = .021$) (Figure 6).

Figure 6: Correlation between USDA Organic reported value and knowledge.

			Reported value of USDA Organic certification	Number of USDA Organic questions answered correctly
Spearman's rho	Reported value of USDA Organic certification	Correlation Coefficient	1.000	.224*
		Sig. (2-tailed)	.	.021
		N	107	107
	Number of USDA Organic questions answered correctly	Correlation Coefficient	.224*	1.000
		Sig. (2-tailed)	.021	.
		N	107	112

*. Correlation is significant at the 0.05 level (2-tailed).

Research question 3 focused on determining what kind of, if any, correlation existed between the reported value of Fair Trade certification for coffee consumers and consumer knowledge of Fair Trade certifications. Fair Trade knowledge had a positive and significant correlation to Fair Trade value ($r_s = 0.215$; $p = .025$) (Figure 7).

Although not one of the original research questions, correlations were found between several other questions. Correlation coefficients for these and significance levels can be seen in Figure 8. USDA Organic certification knowledge had a strong positive and significant correlation to Fair Trade certification knowledge ($r_s = .490$; $p = .000$). Reported USDA Organic certification value had a strong positive and significant correlation to reported Fair Trade certification ($r_s = .799$; $p = .000$).

Figure 7: Correlation between Fair Trade reported value and knowledge.

			Reported value of Fair Trade certification	Number of Fair Trade questions answered correctly
Spearman's rho	Reported value of Fair Trade certification	Correlation Coefficient	1.000	.215*
		Sig. (2-tailed)	.	.025
		N	108	108
	Number of Fair Trade questions answered correctly	Correlation Coefficient	.215*	1.000
		Sig. (2-tailed)	.025	.
		N	108	112

*. Correlation is significant at the 0.05 level (2-tailed).

Figure 8: Correlations between USDA Organic and Fair Trade knowledge and values.

			Reported value of USDA Organic certification	Reported value of Fair Trade certification	Number of USDA Organic questions answered correctly	Number of Fair Trade questions answered correctly
Spearman's rho	Reported value of USDA Organic certification	Correlation Coefficient	1.000	.799**	.224*	.189
		Sig. (2-tailed)	.	.000	.021	.051
		N	107	106	107	107
	Reported value of Fair Trade certification	Correlation Coefficient	.799**	1.000	.176	.215*
		Sig. (2-tailed)	.000	.	.069	.025
		N	106	108	108	108
	Number of USDA Organic questions answered correctly	Correlation Coefficient	.224*	.176	1.000	.490**
		Sig. (2-tailed)	.021	.069	.	.000
		N	107	108	112	112
	Number of Fair Trade questions answered correctly	Correlation Coefficient	.189	.215*	.490**	1.000
		Sig. (2-tailed)	.051	.025	.000	.
		N	107	108	112	112

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Discussion

Academic Implications

Knowledge. Neither knowledge nor value of USDA Organic and Fair Trade was overwhelmingly positive; the mean number of correct answers in both sections was below 2, and the mean reported value of each certification just above 3, on a scale from 1 to 5. These results are consistent with other studies, which have also shown individuals to have limited knowledge of certifications. Many of the individuals in the study by West (2010) were not necessarily opposed to drinking organic or Fair Trade coffee but did not actively seek it out. Thirty-two individuals in that study “sometimes” drank Fair Trade coffee and 20 people “sometimes” drink organic coffee. This is consistent with my finding, as more than 50% of participants rated each certification as “very unimportant”, “unimportant”, or “neither important nor unimportant,” indicating that there is no strong loyalty to the certification. Consumer knowledge was shown to be poor by West (2010), a trend I also observed in this study. Students who participated in a study at the University of California, Santa Cruz, ranked working conditions of workers 3rd out of 8 food system-related topics which they were interested in learning more about (Perez & Allen, 2007). A considerable percentage of those individuals were also unsure of whether they had ever purchased foods with those labels.

Relationships within certifications. The correlation results indicate a very strong positive correlation between USDA Organic knowledge and reported value, and between Fair Trade knowledge and reported value. This indicates that those who most valued a particular certification were more likely to answer questions related to that certification correctly, and vice versa. While not possible from this data to know if one of these variables is influencing the other, it would be reasonable to run a campaign in order to boost awareness, often cited as a barrier for

consumers (Perez & Allen, 2007; West, 2010) and education. It would be reasonable to consider increasing education, even if it is not causing the reported value, because knowledge is one piece of the consumer decision making process (Gass & Seiter, 2011).

It is unclear whether a positive correlation would continue to exist in a population with better knowledge of certifications. Certifications have been under fire for some time for being ineffective at solving the problems they initially wanted to resolve, and additional research on the part of consumers may end up doing more harm than good. This research did not assess whether or not consumers were aware of the issues developing around Fair Trade and organic, but this is an important piece of determining the future of certifications.

It is also possible that consumers are simply less concerned about these kinds of certifications. In one study, consumers ranked living wage concerns as third most important out of 5 given potential certification topics, behind humane treatment of animals and locally grown (Perez & Allen, 2007). Continued investment in developing knowledge and values around Fair Trade and USDA Organic may not be the most beneficial, if the consumers are looking for certifications related to something else.

Relationships between certifications. There are also strong positive correlations between reported value of Fair Trade and reported value of USDA Organic, as well as knowledge of Fair Trade and knowledge of USDA Organic. There was no a strong correlation of any kind between Fair Trade knowledge and USDA Organic value or Fair Trade value and USDA Organic knowledge. This is significant because it shows that there is not one single factor that is influencing all four variables, but a series of more complicated interactions. It is possible, but not clear, that higher value being placed on one certification is encouraging consumers to value other

certifications more highly as well, but not leading to additional education around these other certifications.

Stakeholder Implications

Producers and buyers. Today, we are still seeing a rise in the percentage of coffee that is certified, but it is certainly still a niche market, comprising only a fraction of the coffee sold. Even if certifications are an effective method in making change for the farmers who participate, they are not affecting the vast majority of farmers or coffee. Producers and buyers will need to consider either the enormous expansion proposed by Fair Trade USA, or alternative routes in order to address the many grievances of modern coffee production.

Retailers. The value consumers place on these certifications seems to be normally distributed, with most consumers reporting that they do not place much weight in their decision-making process on these certifications. These individuals, then, will be unlikely to pay more for certified coffee, and retailers must be careful to cater to the needs of this large group. For retailers interested in making a change to the kind of coffee they purchase in order to attract more customers, it seems unlikely that certifications would be a good option.

That being said, some consumers did report that these certifications were important or very important to their decision. Those individuals generally had more knowledge of the certification than those who did not value it. It is possible, though not certain, that more knowledge is causing the increased value of the certification for some consumers. If a retailer's drive to begin to sell, or increase sales of, certified coffee is because of their belief in the certifications, additional educational materials in shops might help raise values, as well as knowledge.

Conclusion

From the literature, it becomes clear that there is a willingness to pay for certified products related to organic production and workers' rights, which therefore presents certifications as a possible solution to the many issues of coffee production today (Howard & Allen, 2008). However, based on this and other research (West, 2010), the knowledge and values needed for consumers to make the decision to purchase certified products based on simple decision-making theory (Gass & Seiter, 2011) simply do not exist. Because of the strong correlations between values and knowledge related to Fair Trade and USDA Organic certifications, an education and awareness campaign around the certifications may drive up at least one of these categories. Given the dynamic changes in certifications today, it is unclear whether the knowledge that consumers might gain would continue to correlate positively with a higher value of the certification.

Regardless, all of the evidence thus far suggests that consumers are not as knowledgeable and invested in these certifications as their proponents might hope. If more successes through certifications are not seen in producing countries, and consumer investment does not rise, it is unlikely that certifications will prove to be the solution to many of the current coffee industry's problems.

Limitations and Future Directions

It is important to note that the studies done thus far on the topic are limited in scope, focusing on college communities in relatively liberal parts of the United States. Additional research needs to be done in order to determine whether these results are consistent in other regions with different demographics, particularly those with fewer members of the academic

community. This study is especially limited, as more than half of the already-small sample size was collected on a university campus.

Additional research could also be done in different types of coffee shops. All the shops in this study are locally owned, despite the presence of chain coffee shops. The knowledge and values of individuals who frequent these other coffee shops may be different from those who visited the three in this study. Given the market share of these large chains, it is important to see how these consumers respond to USDA Organic and Fair Trade certifications, in order to understand the larger trends in consumers and certifications.

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Appendix

Appendix A: Survey

1. How often do you drink coffee? Please indicate **only one**.

- Never
- Rarely (1x per month)
- Sometimes (1x per week)
- Often (2-4 days per week)
- Almost daily (5-6 days per week)
- Daily
- Multiple times per day
- Other: _____

2. When you buy coffee to drink yourself, how important are each of the following in your decision of which coffee to purchase? Please rank each option from **1 (very unimportant) to 5 (very important)**. Please mark only one number for each category.

	1	2	3	4	5
Price					
Flavor					
Brand					
Caffeine content					
USDA Organic certification					
Fair Trade certification					
Other certification (please specify below)					
Other (please specify below)					

Other certification: _____

Other: _____

4. Please answer **true, false, or not sure** for the following questions related to USDA Organic certification and USDA Organic certified coffee:

	TRUE	FALSE	NOT SURE
USDA Organic certification restricts the use of synthetic pesticides and fertilizers.			
USDA Organic certification can be decaffeinated.			
USDA Organic coffee farmers receive a minimum price per pound for their coffee.			
Genetically engineered coffee may be USDA Organic certified.			

- Please continue on other side -

5. Please answer **true, false, or not sure** for the following questions related to fair trade certification and Fair Trade certified coffee:

Fair Trade certification restricts the use of synthetic pesticides and fertilizers.
 Fair Trade is another term for Free Trade.

Fair Trade certified coffee must be USDA Organic certified as well.
 Fair Trade coffee certification is designed to help fund community projects in coffee-growing communities.

TRUE	FALSE	NOT SURE

6. Please **indicate** your gender below:

7. Please **indicate** your age from the ranges below. Select only one.

- 18-24 years old
- 25-34 years old
- 35-49 years old
- 50-54 years old
- 55-64 years old
- 65 or more years old

8. Please **indicate** the highest level of education you have received. Select only one.

- High School or below
- Some college
- Bachelor's degree
- Master's degree
- Doctorate degree
- Other