

# MASTER'S THESIS

# Willingness to Pay for Sustainable Coffee

*A Choice Experiment Approach*

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## SAMMANFATTNING

Syftet med denna uppsats var att mäta konsumenters betalningsvilja för KRAV-märkt respektive Rättvisemärkt kaffe samt att lägga fram vilka faktorer som är viktiga för att den individuella konsumenten skall göra ett dylikt val. Teorin som användes i uppsatsen var neoklassisk efterfrågeteori och teorin om slumpmässig nytta. Den data som behövdes samlades in genom ett valexperiment som utfördes på 100 slumpmässigt utvalda respondenter, vilken sedan bearbetades i en ekonometrisk modell. Resultaten från denna undersökning visar att det verkar finnas en klar marknad för KRAV- och Rättvisemärkt kaffe då den genomsnittliga konsumenten har en vilja att betala en aning extra för både ekologiskt odlat kaffe och rättvist odlat kaffe. De faktorer som ligger till grund för ett ekologiskt och rättvist val är priset per kaffepaket, hur mycket kaffe individen konsumerar dagligen och om huruvida konsumenten är medlem i någon ideell organisation.

## **ABSTRACT**

The purpose of this thesis was to measure consumers' willingness to pay for ecologically and fair grown coffee and to show the underlying factors for an ecological and fair choice. Applied theories are neoclassical demand theory and the theory of random effects. All data for this thesis was collected by a choice experiment executed on 100 respondents, the data was then worked with in an econometric model. The results from this study show that the average consumer do have a willingness to pay for certified ecological and fair coffee, hence, that there seems to exist a clear market for ecological and fair grown coffee. The underlying factors for an environmental and fair choice are the price of the coffee, how much coffee the individual consumes daily and whether the consumer enjoys a membership in any non-profit organizations.

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# Chapter 1

## INTRODUCTION

### 1.1 Background

During the last decades we have seen a prominent increase in the demand for goods produced with a relatively low impact on the environment. Earlier studies have shown that consumers reveal their commitment for the environment through the choices they make on the market. Hence, consumers are able to make an indirect impact on environmental policies with their income. The existing studies have shown a number of factors explaining the behavior of the typical "green" consumer. These factors, however, have had a limited explanatory value. A number of studies have shown that consumers are only willing to acquire green goods within certain constraints (Bennet et al., 2001). One study displayed that concern for the environment only explained 6 percent why ecologically produced goods were obtained, which in turn means that there are other important factors when the consumer makes the choice. The most important factors in the above mentioned study were price, convenience and value (Roberts, 1996).

98 percent of the coffee producers use considerable amounts of chemical pesticides and artificial fertilizers, substances which can be harmful to both the diversity of flora and fauna but they also expose the workers on the coffee plantations to risks (Svenska Naturskyddsföreningen, 2000). The production of certified organically grown coffee (KRAV-certified coffee) does not contain any chemical pesticides or artificial fertilizers (KRAV, 2002-11-09).

Coffee producers often operate on a small scale, with problems to uphold themselves on the world market as a consequence. Producers are regularly forced to lower their prices, lessen the working condition standards, and sell their coffee to several middlemen. Even though many producers are dependent on the world market, they only have an

insignificant possibility to influence the price on their products. A fair-certified product comes with a price premium, a premium that is paid to the farmer or to the employee (Rättvisemärkt, 2003-01-27).

Ecologically and fair grown coffees are relatively new products and they only constitute for about 3 percent (Personal communication, Calle Åkerstedt, 2002-11-13) respectively 1 percent (Personal communication, Katarina Rosenqvist, 2002-11-26) on the Swedish coffee market. To improve the market shares for organically and fair certified coffees it is important for marketers to know what the factors behind such a choice are.

## **1.2 Purpose**

The purpose of this thesis is to measure consumers' willingness to pay for organically and fair certified coffee and to show the underlying factors for an ecological and fair choice.

## **1.3 Method**

Applied theories are the neoclassical demand theory and the random utility theory. The necessary data for the thesis was collected by applying a choice experiment. To answer the questions put forward in the purpose, the collected data was employed in an econometric model. The employed econometric model was a random effects binary probit model.

## **1.4 Scope and Limitations**

The study is based on the data collected from a choice experiment, which was performed at the grocery store Konsum Björkskatan, Lulea, Sweden. The choice experiment was executed on 100 respondents.

## **1.5 Reliability and Validity**

All data used in this thesis are primary data collected through a choice experiment and should be considered fairly reliable. One problem that might occur during interviews is that the interviewer can ask the specific questions in a biased way. In order to reduce this

problem the survey was pre-tested on a focus group. From the feed-back of the focus group it was understood that the questions were seen as unproblematic. It shall also be noted that the answers from respondents may be biased towards their own individual preferences, meaning that the respondent in the choice experiment may answer in a way that does not coincide with his behavior in the reality. If the socio-economical characteristics of the respondents in this study do not differ too much from the characteristics of the average Swede, it should be reasonable to consider the results of this thesis as being valid for the average Swede.

## **1.6 Outline**

This thesis is divided into six chapters. The first chapter gives an introduction to the thesis; it also describes the purpose, method and limitations of the thesis. Chapter 2 starts with a historical introduction to coffee which is followed by an explanation to the manufacture of coffee, and ends with a presentation of the coffee market. Chapter 3 describes the underlying theory for the analysis in the fifth chapter. Chapter 4 depicts the design of the questionnaire that was used in the choice experiment. Chapter 5 contains the empirical data and the analysis. Finally, conclusions are presented in the sixth chapter.

## Chapter 2

### COFFEE; ITS HISTORY, PRODUCTION AND MARKET

*This chapter begins with a brief presentation of the history of coffee, which is followed by some words concerning the role of coffee in Sweden. After this, a short introduction to the production of coffee is given. Finally is the market for conventional and sustainable coffee described.*

#### **2.1 The History of Coffee**

Coffee has its origin in the mountainous districts in the southwestern parts of Ethiopia. It is believed that coffee was spread to the Arabic peninsula in the 4<sup>th</sup> century. For a start, coffee was considered a religious beverage and a beverage with medical characteristics. It was not until the 11<sup>th</sup> century as the coffee bean was roasted before cooking. The coffee was, via trade routes spread further, both to the east and the west. In the middle of the 15<sup>th</sup> century, the coffee arrived to Europe where it soon came to be regarded as an everyman's beverage. At this time the first coffee houses opened, where coffee was consumed in company with joyful music. These coffee houses soon became natural meeting-points where all the news and gossip were told. The coffee houses in England became a place for the intellectual. People could, for a one penny fee, go there and listen to debates between educated citizens (Dicum et al., 2002).

The colonial powers were quick to see to it that the coffee plantations were spread in the tropics. This was done because coffee was the perfect good to trade. First, it was a good with addictive attributes, it was also highly valuable and demanded in Europe. Additionally, the coffee beans are very tough, which made them endure the long transports. Vast areas with rainforest were devastated to give room for the coffee plantations and large amounts of labor were enslaved, a pattern recognizable still today but where the slaves from yesterday have turned into indebted day laborers (Ibid).

Haiti was the largest coffee producer in the world until 1791, but a slave rebellion, where all plantations on the island were burned to the ground, allowed Sri Lanka to take over the first position. It was around this time Brazil entered the international coffee market. A century later, Sri Lankas' coffee production was ruined by rust; a fungus disease which in the long run kills the plant. This made Brazil the world's leading coffee producer, a position they still maintain (Ibid).

## **2.2 Coffee in Sweden**

The first evidence of coffee existing in Sweden is to be found in the custom papers from 1685, when someone brought a half kilogram coffee over the border. However, the one who accelerated the coffee consumption in Sweden was King Karl XII who had become a big fan of the beverage during his time in Turkey. Each day, several kilograms of coffee were sent from Turkey to the Swedish court and it is said that King Karl XII consumed up to three kilograms a day. Coffee grew to be more popular during the 17<sup>th</sup> century, the beverage coffee competed with was vodka. Coffee was forbidden at a number of times in the 17<sup>th</sup> and the 18<sup>th</sup> century. The first prohibition was carried through by the farmers as retaliation against the fact that they had been denied free production of vodka for household requirement. Later prohibitions resulted since too much currency was needed for the imports of coffee (SKI, 2002-11-12).

Swedish consumers drink the second most coffee in the world, only beaten by the Finnish consumers. At least 100,000 hectares of cultivation is needed to quench the Swedish consumers' thirst for coffee, which is an area three times bigger than what is allocated for the production of potatoes in Sweden (Svenska Naturskyddsföreningen, 2000). The Swedish imports of raw, roasted, and instant coffee summed up in the year 2001 to 77,000 tonnes. The import of coffee has decreased some percentage each year during the last decade (Personal Communication, Calle Åkerstedt, 2002-11-13). Sweden imports most of the coffee from Brazil and Columbia (Gregow, 2000). The average Swedes' annual consumption of coffee is shown in table 2.1.

Table 2.1, Sweden's Annual Coffee Consumption per Capita, in Kilogram, 1996 to 2000

1996	1997	1998	1999	2000
8.4	7.7	7.5	7.5	6.8*

Source: Svenska Jordbruksverket (2002)

\* Preliminary

### 2.3 Production of Coffee

From the more than 20 species in the *Coffea*-family it is two species that represents the major part of the worlds coffee consumption. Arabica, the original coffee that is said to have been found by a shepherd in Ethiopia, is the economically most important, and is generally grown in Central- and South America. Robusta is the other of the two species and is primarily grown in western Africa and Southeast Asia. The Arabica bush is often more sensitive to “bad” soil and diseases than the bush of the Robusta plant. Due to this sensitivity and the fact that Arabica is said to give beans of higher quality, Arabica commands a higher price and is often used in exclusive special blends. Of the coffee produced today,  $\frac{3}{4}$  is Arabica (Dicum et al., 2002).

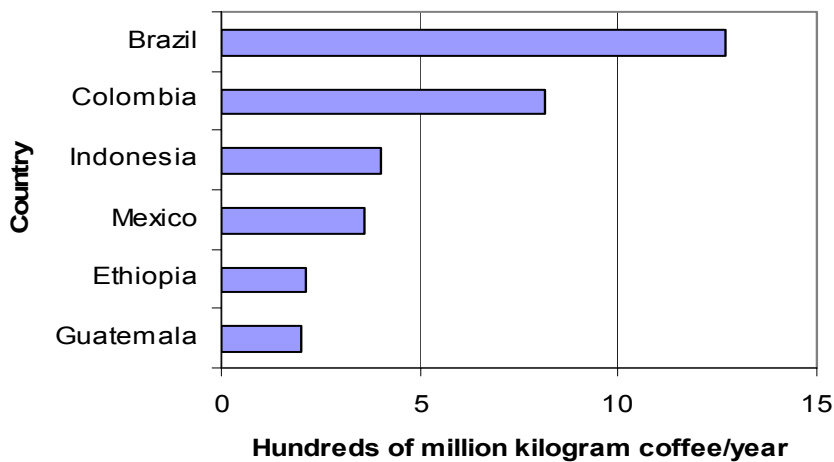


Figure 2.1, The Largest Coffee Producers During the 1990s

Source: Dicum (2002)

Figure 2.1 shows the six largest coffee producing countries in the world during the 1990s. Brazil and Columbia are the most important producers with an annual production of 12.7

and 8.16 hundred millions kilogram coffee, respectively. Indonesia and Mexico are other important coffee producers.

### 2.3.1 From the Shadow into the Sun

Originally, the plant was placed directly under the sun, a method the farmers soon changed by planting trees in the nearby from the coffee plant, so the coffee would receive shade. Another way was to not remove all the original rainforest, but only what was needed for the coffee plant to get space enough. This method of growing coffee gives a lot of side products, products that are not coffee related. The shadow trees are often a source of fire-wood and timber for the farmer. It is also common to use fruit trees as shadow, which provides the farmer with food. These side products serve as insurance for the plantation owners (Rice et al., 1996).

Shade grown coffee comes with a number of advantages. One example is that this type of cultivation is very “bird friendly”. Empirical studies indicate that traditionally grown shade coffee supports an abundance of bird species that is comparable with natural rainforests. Shade trees also provide shelter for the coffee plants from extreme weather conditions, such as wind, rain and cold weather. Another important advantage is that problems with noxious insects will be reduced in shade plantations since the abundance of beneficial insects is higher in a shade plantation. Hence, none, or less chemical pesticides and fertilizers will be needed on a shade plantation (Faminow et al., 2001).

In the middle of the 1970s, Latin America was threatened by a potential attack from a fungus disease. This threat provoked an attempt to modernize the coffee plantations. The modernization would make the plantations more efficient and the plants more durable against diseases and noxious insects. One effect of the modernization was that new coffee species came to be used; species that were resistant towards chemical pesticides. Shading trees were removed to increase the productivity of the plantations and to prevent possible fungus diseases that may be spread in the shading trees. This new form of cultivation had a much higher density of coffee plants; up to five times higher than in traditional plantations (Rice et al., 1996).

The modernized conventional coffee is often cultivated in monocultures that deplete the soil. It also leads to erosion of the soil. These plantations with sun coffee use vast amounts of chemical pesticides and fertilizers against both noxious insects and diseases (Rice et al., 1996). Solely in Brazil, approximately 280,000 people, of whom many are working in the coffee industry, are annually poisoned and injured of fertilizers. This derives from bad knowledge about the usage of fertilizers and often from a lack of protective equipment. Several of the pesticides and fertilizers that are being used at the coffee plantations are prohibited in the developed countries. One example is Paraquat, a fertilizer which when being inhaled or when in direct contact with skin is a deadly poison, even in small doses. In Sweden, Paraquat was forbidden 1983. These chemicals are also dangerous for the nature when being carried out from the plantations and leaking down to the groundwater (Gregow, 2000).

### 2.3.2 KRAV-certified and Fair-certified Coffee

All KRAV-certified products are organic products cultivated on ecological plantations and farms. No chemical pesticides or fertilizers are allowed on an ecological farm. Instead, the ecological farmer is using carefully planned rotation of crops over the time, which creates a balance in the soil. To control weed the farmer use harrows and to get rid of noxious insects mites and other micro organisms are used. Instead of fertilizers it is common that an ecological farm use dung from the animals on the farm (KRAV, 2002-11-09). A KRAV-certified coffee is not always shade grown coffee (Svenska Naturskyddsforeningen, 2000).

Fair-certified coffee is an ethical and social marking with focus on human rights. It is grounded on a trade cooperation that favors social, democratic and economic development in areas where goods are manufactured according to guidelines set out by the organization of Rattvisemarkt (Rattvisemarkt). Fair-certified products promote a less harsh life for people in the poorer parts of the world. A Fair-certified product comes with a price premium, a premium that is paid to the farmer or to the employee. Coffee is the Fair-certified product that has the highest premium compared to products without this

marking, this is due to the fact that the price on conventional coffee is very low (Rättvisemärkt, 2002-11-09).

## 2.4 The Coffee Market

Coffee is, after oil, the second most economically important commodity in the world (Gregow, 2000). The world annual coffee trade is estimated to 11 billion US\$ and each second 3,300 cups of coffee are consumed around the world (Commission for Environmental Cooperation, 1999). The coffee trade is highly characterized by several middlemen and a lot of speculation on the coffee stock exchanges based in London and New York. The coffee price is often pushed up on the stock exchange, which does not necessarily mean that the farmers receive high prices. Actually, the farmer usually receives only, approximately, 5 percent of the price the consumers pay (Dicum et al., 2002). The coffee trade is dominated by three to six companies representing up to 90 percent of the total market turnover. Nestlé and Kraft General Foods are the two largest companies (Gregow, 2000).

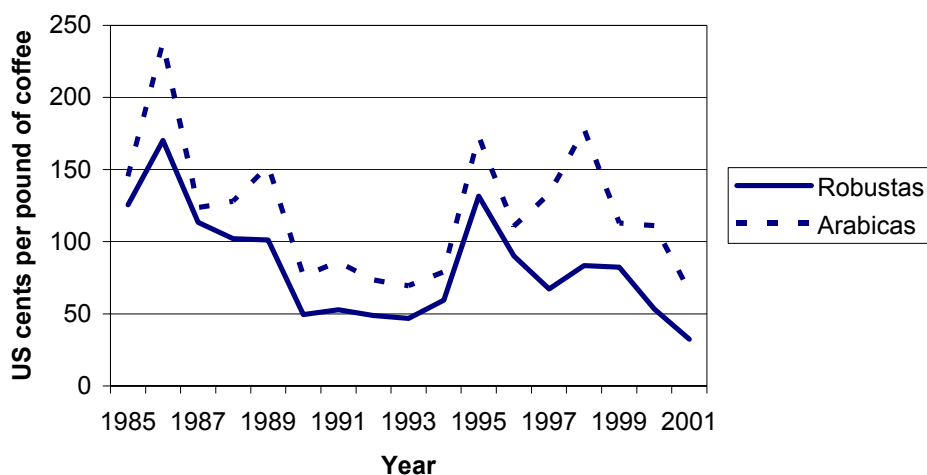


Figure 2.2, Prices on Robusta and Arabica from 1985 to 2001

Source: ICO (2002-12-06)

Figure 2.2 shows the prices on Arabica and Robusta from 1985 to 2001. The prices today are on levels that are obviously significantly lower than the levels 10 to 15 years ago. Actually, the coffee prices today are, relatively seen, the lowest for over 100 years

(Giovannucci, 2001). The figure also shows that the Arabica bean is the more expensive of the two coffee beans.

As seen in the diagram, the coffee market is volatile with movements in price level on a regular basis. This is derived from the fact that markets for raw materials have a low elasticity of supply in the short run. However, there are other factors contributing to these coffee cycles. First, coffee trees do not bear fruit until one to three years after they have been planted, suggesting a low elasticity of supply in the short run. Until that, the farmer will earn his living on other products, of which some arise from the shade trees. In the end of its life, the coffee plant is pulled up with its roots to give space for a new plant. Furthermore, the plants are often following a two year cycle, with good and bad harvests by turns (Dicum et al., 2002).

When the world market price, for some reason, is increasing, a lot of farmers will perceive this as an incentive to increase the number of coffee trees on their plantation and even switch from other crops to the production of coffee. Since the farmer will not be able to harvest any coffee until about five years after the production shift, the market price will be on lower levels again when the farmer can harvest coffee. This pattern is seen globally, with new plantations triggered from the higher price, which in turn will lead to an over supply on the market and decreasing prices. Throughout history, periods with high prices have lasted for two years while periods characterized by low prices may last for decades. In addition, the production of coffee is, by the very nature, highly unpredictable where one cold night can ruin the coffee plantations of a whole country (Ibid). To sum up, the supply elasticity for coffee is higher in the long run.

Niche coffees, such as shade coffee, organic coffee and fair coffee – so called sustainable coffees – meet a higher and more stable price. In a study from 2001, executed on 2098 coffee related businesses in the US and Canada, it was shown that the market was well aware of the meaning of sustainable coffee and that the average price premium, through the whole channel of distribution, compared to non-sustainable coffee, was between 53 to 62 US cents per pound. The study also reported that most of the respondents increased

their sales of sustainable coffee during the year 2000 and that the estimated annual growth in the sector for the two coming years was 27 percent (Giovannucci, 2001). In another study from North America from 1999 it was shown that 28 percent of the coffee consumers in the US was willing to pay 1 US\$ extra per pound for shade grown coffee. The same figure in Canada was 42 percent while it was 50 percent in Mexico City (Commission for Environmental Cooperation, 1999).

KRAV-certified and fair-certified are relatively new products in Swedish stores. Consumers could buy the first KRAV-certified coffee in the summer of 1992 (Personal Communication, Anna Lundström, 2002-11-21). Today, KRAV-certified coffee constitutes 3 percent of the total market. Table 2.2 shows the market share in Sweden for KRAV-certified coffee the last five years.

Table 2.2, Market Share for KRAV-certified Coffee in Sweden from 1997 to 2001

<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
0.8	1.2	1.8	2.7	3.0

Source: Personal communication, Calle Åkerstedt (2002-11-13)

The first Fair-certified coffee was introduced to the Swedish market in 1997. There are no sources of data concerning the sales of Fair-certified coffee, but you could generally say that Fair-certified products represent 1 percent of their respective market (Personal Communication, Katarina Rosenqvist, 2002-11-26). Today, most of the coffee companies offer at least one ecological alternative for sale. Many sorts of coffee are both KRAV-certified and Fair-certified. The individual farmer receives 0.18 Swedish kronor more per cup of a certified coffee than from a conventional coffee, which is due to the involvement of fewer middlemen (Gregow, 2000).

To sum up, the willingness to pay for organic and fair coffee is useful to investigate. If the study shows a willingness to pay a premium for KRAV- and Fair-certified coffee, it will imply that there exists a clear market for those products. Furthermore, it is important to know how these labels (organic and fair) are valued relatively, since if the KRAV-

certified coffee proves to generate a higher impact on the utility of the consumer, it implies that the KRAV-certified coffee should be priced with a higher premium compared to the Fair-certified coffee. Moreover, since the underlying factors behind an ecological and fair choice are not determined, it is crucial for the marketers of such products to have better knowledge about these factors and to understand the reasoning of the consumer's in the choice situation.

## Chapter 3

### THEORY

*This chapter starts with a presentation of neoclassical demand theory and ends with an introduction to the theory of random utility.*

#### **3.1 The Demand for Coffee**

When behavior on the individual level is to be explained you need a theoretical foundation with assumptions on which the analysis is to be built upon. In economics, this foundation is often based on the assumption of utility maximizing agents, which means that if the consumers are free to decide their actions it is reasonable to believe that these consumers will choose to consume goods they find giving them some sort of pleasure, or utility, while they will not consume goods they dislike (Varian, 1999).

##### 3.1.1 The Demand Curve

To derive a demand curve all presumptive consumers' reservation price must be regarded. The reservation price is the maximum amount of money an individual is willing to accept and still buy the good in question (Ibid). In figure 3.1 these reservation prices have been put together. The vertical axis shows the price while the horizontal axis shows the number of individuals prepared to pay this price, or more. Let us assume an example for the demand of coffee. Here we see that when the market price for coffee is above 50 kronor, zero individuals are willing to buy a package of coffee. When the price is between 50 kronor and 45 kronor, two packages of coffee will be demanded.

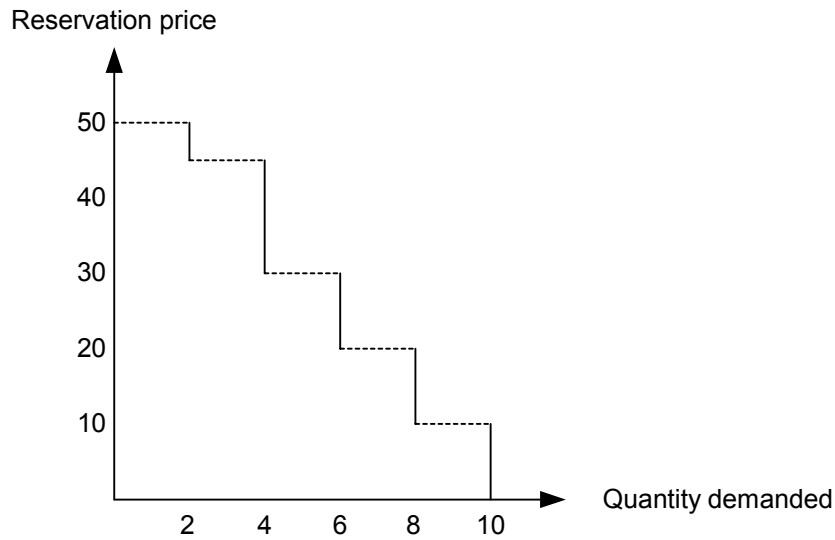


Figure 3.1, Reservation Prices

Source: Varian (1999)

If we assume that our coffee has a substantial number of buyers, then the steps between each price level will become so small that the curve from figure 3.1 will straighten out and look like the demand curve  $D_1$ , illustrated in figure 3.2.

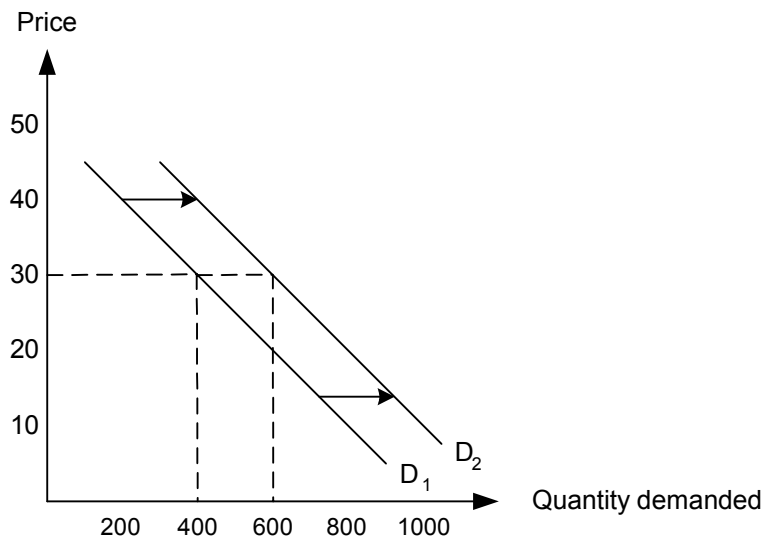


Figure 3.2, Demand Curves

Source: Varian (1999)

The demand curve relates the price of the good to the quantity demanded and shows how many consumers that are willing to buy the good at a specific price. The shape of the demand curve implies that the lower the price is the more consumers will demand the good. A price change will result in a movement along the demand curve (ibid).

Price is not the only factor determining the quantity demanded of a good. Other important factors are the consumers' specific preferences towards the good, prices on substitutes, prices on complements, and income level. A change in one of these factors will result in a shift of the demand curve. This shift is illustrated in figure 3.2. According to the figure, the demand curve shifts out and more coffee will be demanded at the same price level (ibid). A simple demand function for coffee may have the following expression:

$$Q_{\text{coffee}} = f(P, \text{Pref}, P_s, P_c, I),$$

where  $Q_{\text{coffee}}$  is the total quantity demanded of coffee,  $P$  is the price of coffee,  $\text{Pref}$  represents the preferences of the individual,  $P_s$  is the price on substitutes,  $P_c$  is the price on complements, and where  $I$  represent the income level of the individual. Individual preferences are believed to be important in this thesis. It is reasonable to believe that if KRAV-certified and Fair-certified coffee are considered important this will result in a higher willingness to pay for such coffee. On the other hand, if the consumers do not care if the coffee they consume is produced in an environmentally friendly and fair way this will be reflected in a lower willingness to pay. Hence, there are no expectations of the sign of this variable. A similar discussion was shown to be realistic in a study concerning willingness to pay for electricity from renewable resources, conducted in the US (Farhar, 1999).

The elasticity shows how sensitive the demand is to changes in any of the variables. This is done by comparing the relative change in one factor in relation to the relative change in another factor. Price elasticity measures how changes in the coffee price will alter the demand for coffee and is calculated by dividing the percentage change in demanded quantity with the percentage change in the price, which is then multiplied by the ratio of

price to quantity (Nicholson, 2002). Price elasticity for coffee, which is assumed to be a normal good, is expected to be negative. This means that a rise in the coffee price will induce a decreased demand for coffee.

Calculation of the income elasticity for coffee is done by dividing the percentage change in demanded quantity with the percentage change in income level (Ibid). This elasticity is expected to be positive for coffee, meaning that the demand for coffee will increase if income reaches higher levels. Would not this be the case, it can be concluded that coffee is not a normal good, but an inferior good, whose demand decreases when income is increased.

### **3.2 Choice Experiments**

There are a number of possible methods to use to calculate consumers' willingness to pay for different goods. A choice experiment is applied in this thesis to measure the willingness to pay for KRAV-certified and Fair-certified coffee. The utilized method was chosen due to its advantages over traditional valuation methods (contingent valuation). One of the benefits of using a choice experiment is that it allows valuation of non-monetary attributes<sup>1</sup>. Respondents of a choice experiment are asked to choose between different bundles. The method is based on the perception that the value, or the utility, is derived from the goods' specific attributes (Bennet et al., 2001). This is in line with the theory developed by Lancaster in the middle of the 1960s. According to Lancaster, consumers choose goods on the basis of the services they provide. These services can be differences in quality, brand status and environmental attributes (Lancaster, 1966). One could simply say that a choice experiment is a structured technique to generate data. The experiment is based on carefully designed questions whose purpose is to clarify the underlying factors behind an individual's choice (Hanley et al., 1998).

The theory of random utility is the foundation of the empirical analysis of the respondent's behavior in a choice experiment. Random utility is based on the assumption that individuals base their choices on observable attributes the different goods have

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<sup>1</sup> For a further discussion on choice experiments versus contingent valuation, see (Bennet et al., 2001).

(objective component), this together with an unknown unit of randomness (random component). The random component may arise from the randomness in the preferences of the individuals, or because of the fact that the person performing the experiment does not have complete information concerning the respondents (Bennet et al., 2001). The different bundles the respondent may choose from, distinguish from each other through the goods' varying attributes. One attribute is often the price of the good. The indirect utility function,  $U_{ij}$ , for the individual  $i$ , in choice situation  $j$ , may be expressed as following (Louviere et al., 2000):

$$U_{ij} = V_{ij} (\beta x_{ij}) + \varepsilon_{ij}, \quad (1)$$

where,  $x_{ij}$  is a vector of observed attributes and socio-economic factors interacting with these attributes, and where  $\beta$  is a vector of the parameters to be estimated. The indirect utility function contains one observable (deterministic) component,  $V_{ij}$ , and one random (stochastic) component,  $\varepsilon_{ij}$ . Individuals' choice are usually predicted with the help of the assumption that the individuals act as to maximize their utility, i.e. the individual choose alternative  $j$  over  $k$ , if and only if  $U_{ij} > U_{ik}$ . In this study, discrete choices will be made, so a binary model will be employed. If we define a binary variable  $y_{ij}$  which is 1 if the individual choose alternative  $j$ , then the probability,  $P$ , that the individual  $i$  choose alternative  $j$  is given from (Ibid):

$$P (y_{ij} = 1) = P (\varepsilon_{ij} > - V_{ij} (\beta x_{ij})). \quad (2)$$

The observations from the choices of the different individuals are typically assumed to be independent in a choice experiment study. This assumption may however be disregarded since the respondents are asked to make repeated choices. Hence, the observations from the individual level may be dependent (correlated random component) (Ibid). This error term may be specified as:

$$\varepsilon_{ij} = u_i + v_{ij}, \quad (3)$$

with  $u_i \sim N(0, \sigma^2 u)$  and  $v_{ij} \sim N(0, \sigma^2 v)$ ,

where  $u_i$  is the non-observable individual effect,  $v_{ij}$  is the remaining factor of disturbance and where  $\sigma^2$  is the variance in  $u$  and  $v$ . The distribution of the random component is with this specification independent between different individuals, although correlated within individuals, and we get a binary probit model with standardized random components (Ibid):

$$\text{Corr}(\varepsilon_{ij}, \varepsilon_{ik}) = \rho = \sigma^2 u / \sigma^2 u + \sigma^2 v, \quad (4)$$

which assumes equal correlation between each choice. When using this model, it will in a choice experiment imply that the preferences for a given individual are stable and that there will not be any learning effects present during the time for the experiment (Ibid).

By using a random effects binary probit model, environmental goods (organic and fair coffee) are valued in terms of their attributes. When making one of these attributes a monetary or price term, marginal utility estimates can be converted into willingness to pay estimates for changes in attribute level (Hanley et al., 2002). The implicit prices,  $IP$ , is the marginal rate of substitution between one of the attributes and the monetary attribute and are, assuming a linear utility function, given from the negative relation between the non-monetary attribute and the monetary attribute, so that (Louviere et al., 2000):

$$IP_z = - (\beta_z / \beta_c), \quad (5)$$

where  $\beta_z$  is the coefficient for attribute  $z$  and where  $\beta_c$  is the coefficient for the monetary attribute, which usually is the price of the current good. If the resulting implicit price is positive it can be interpreted as a measure of the marginal willingness to pay for the change in attribute level. Negative implicit prices reflect that the individual claims some sort of compensation for a change. This will only be theoretically correct as long as the status-quo alternative is included in the model (Ibid).

## Chapter 4

### DESIGN OF THE CHOICE EXPERIMENT

*This chapter describes the course of action during the construction of this investigation's questionnaire.*

The technique to generate the required data for this thesis was through a combined interview and questionnaire executed on 100 respondents. The fundamental idea behind the choice experiment is to mimic a coffee choice situation in the reality. To imitate a real-life choice situation each respondent got to choose between two different sorts of coffee. These different coffees were shown to the respondent through a number of cards. Table 4.1 shows an example of a card from the choice experiment.

Table 4.1, An Example of a Card from the Choice Experiment

#### **Card 1**

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If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1	Alternative 2
26 kronor per package	30 kronor per package
No KRAV-certification	No KRAV-certification
No Fair-certification	With Fair-certification

The survey was first carried out on a randomly chosen focus group consisting of nine persons, with ages ranging from 21 to 56 years and occupying a wide range of jobs. By

the use of this test survey, it was brought to attention that some parts of the choice experiment were problematical to understand and that these parts should be reviewed. One thing that was expressed as hard to grasp was the difference between the status-quo alternative and the second alternative on the cards. Furthermore, a need for more alternatives in the debriefing section was stated. Otherwise, the test survey performed well, where most of the respondents felt the choice experiment to be easy and straightforward, and where the questions were seen as relevant and no question was regarded as too personal. Moreover, according to the results of the pretest, none of the questions were perceived to be non-neutral or biased. Changes were made on the basis of the feed-back from the focus group before the real survey was carried out. The most significant modification was the design of the cards. Also, some more alternatives in the debriefing section were added. In the final layout, there were 13 debriefing alternatives.

The entire investigation was carried out at one chosen store in Lulea. The interviews were done during different times of the day for the sample to be as representative as possible. The first part of the final version of the survey was the choice experiment. In this part, each respondent got to choose between two alternatives of coffee. Each card had one alternative, "Alternative 1", that was constant, a so called status-quo alternative. The coffee in the status-quo alternative had a fixed price of 26 kronor and was never KRAV-certified or Fair-certified. The attributes for the second alternative, "Alternative 2", were changing all the time and were never carrying the same attributes as the status-quo alternative.

The coffee alternatives had three different attributes of which one was a monetary attribute. This monetary attribute represented the price per package of coffee. The price in the status-quo alternative was 26 kronor, which was the average price of the 19 coffees offered for sale at the time for the investigation in the store where the survey was done. The price in "Alternative 2" varied between three price levels: 26 kronor, 30 kronor and 34 kronor. These price levels were finally chosen after considering the feed-back from the focus group. An average price for the KRAV-certified coffees, in the above mentioned store, was also calculated to use as an early benchmark for these price levels.

The highest price in the monetary attribute was chosen to be slightly higher than what the actual premium for KRAV-certified coffee was. The two non-monetary attributes were whether the coffee was KRAV-certified and Fair-certified, or not.

With the present design, each respondent would have been asked to make 12 different choices of preferred coffee alternative (3x2x2). The cards with only a change in price were however eliminated so the respondents would not have to choose between identical coffees except for the fact that “Alternative 2” would have been 0 kronor, 4 kronor and 8 kronor more expensive. The result of this change was that each respondent had to state their choices in nine different coffee alternatives. The order in which the cards were to be shown to the respondents was randomly drawn.

The choice experiment was followed by a debriefing question where the respondents got to choose one or several alternatives that best clarified their way of reasoning in the different choice situations. The concluding part of the choice experiment contained socio-economic questions such as sex, age, level of education and whether the respondent was engaged in some non-profit organization. One socio-economic question was specifically formulated to reveal the daily coffee habits of the respondents. The entire questionnaire can be found in Appendix 1. For a Swedish version of the questionnaire, see Appendix 2.

## Chapter 5

### EMPIRICAL RESULTS

*This chapter starts with a presentation of the survey logistics. The chapter proceeds with a presentation of the variables and the descriptive statistics used in the econometric analysis, which is followed by the empirical results of estimating the random effects binary probit model. Finally, the results from the debriefing questions are displayed.*

#### 5.1 Survey Logistics

The socio-demographics of the respondents are shown and contrasted to the average Swede in table 5.1.

Table 5.1, Socio-Demographic Comparison

<b>Variable</b>	<b>Sample</b>	<b>Population in Sweden</b>
<i>Sex (% females)</i>	58.0%	50.5% (2000)
<i>Age (% &lt; 45 years)</i>	55.0%	57.0% (2000)
<i>Education (% university level)</i>	49.0%	24.0% (2001)
<i>Family (% 2 or more adults with children)</i>	64.0%	30.0% (1997)
<i>Mean household income</i>	28 250 kronor	26 525 kronor (1999)
<i>Environmental organization (% membership)</i>	12.0%	4.2% (2000)

Source: SCB (2001), SCB (2001)

As the table shows, there was an over-representation of females in the sample compared to Sweden in general. The relatively high share of female respondents may arise because it is often the woman in the household that is in charge of the grocery shopping. When it comes to the age-distribution, the sample is almost exactly alike the Swedish population. The level of education was in the sample remarkably higher than the general level in Sweden. One explanation to this may be that the part of Lulea where the study was

performed is inhabited, to a large extent, by educated people. It is also worth mentioning that some of the respondents that during the time of the choice experiment were undergoing studies at university level, may have stated that they had completed an university-level education.

With respect to the family-comparison, the sample has a much higher degree of households with two or more adults with children. There may be two reasons for the high representation of family-households. First, the basis of the customers of the store where the survey was done comes from an area with a high degree of households with nuclear families. In addition, many of the respondents were on maternity leave, with a low opportunity cost of time; a fact that may have skewed the family distribution.

The mean income among the respondents compares well with the typical Swedish household. When it comes to membership in environmental organizations the sample obviously indicate a higher share of people with a membership in such an organization. The over-representation of “environmentalists” is somewhat hard to explain. It may indicate a sample selection bias, a bias that was also found in a study on the African elephant (Vredin, 1997). However, it shall be noted that the statistics are not fully comparable since the interpretation of the variable “environmental organization” is a bit vague.

## 5.2 Empirical Results from the Choice Experiment

The 100 respondents all made nine choices in this experiment, which generated a total of 900 observations. Table 5.2 shows a variable specification, how the variables were coded and the descriptive statistics which were employed in the econometric analysis.

Table 5.2, Variable Specification and Descriptive Statistics

<b>Variable</b>	<b>Definition and coding</b>	<b>Mean</b>	<b>Std.dev.</b>	<b>Min</b>	<b>Max</b>
<i>Choice</i>	1 if Alternative 2 was chosen	0.6		0	1
<i>Price</i>	26, 30 or 34 kronor	30	0.02	26	34
<i>KRAV-certified</i>	1 if Alternative 2 was chosen	0.66	0.14	0	1
<i>Fair-certified</i>	1 if Alternative 2 was chosen	0.66	0.14	0	1
<i>Not willing</i>	1 if not willing to change coffee habits	0.14	0.17	0	1

<i>Fair-cert. important</i>	1 if Fair-certified is important	0.25	0.23	0	1
<i>Coffee consumption</i>	1 if drinking 5 cups or more per day	0.51	0.13	0	1
<i>Non-profit org.</i>	1 if member in a non-profit organization	0.24	0.16	0	1

The 900 choices that were done in the study were distributed evenly with one third on each price level. 264 of the respondents chose “Alternative 2” when the price was the same as in the status-quo alternative, while 167 of the respondents chose “Alternative 2” when the price was 30 kronor per package. When the price in “Alternative 2” was 34 kronor it was chosen by 112 of the respondents. These results may be explained by the fact that one of the price levels for certified coffees was lower in the choice experiment than in reality. Another reason might be that respondents tend to exaggerate when answering questionnaires.

Under the condition that the respondents hold ecological and altruistic preferences the non-monetary attributes are expected to have a positive sign in the econometric analysis, since they comprise KRAV-certified and Fair-certified coffee, which should increase the utility of the consumer. Conversely, the sign of the monetary attribute is expected to be negative since a higher price will reduce the consumers’ utility.

There are also some socio-economic variables included in the analysis. *Coffee consumption* shows how much coffee the respondent consumes at an average, per day. It is expected that the willingness to buy KRAV-certified and Fair-certified will be lower if the respondent drink much coffee, given that these sorts of coffee often are relatively expensive. Hence, this variable is expected to have a negative sign. *Non-profit org.* informs if the respondent is a member in some non-profit organization, for example Save the Children or the Red Cross. This variable is expected to be positive in the econometric analysis because a membership in such an organization should, generally speaking, imply a bigger commitment regarding environmentally and fairly produced goods. Other socio-economic variables that proved not to be significant for the econometric analysis are not presented.

One debriefing question was also included in the study. The purpose of the debriefing question was to reveal how the respondents reasoned during the choice situations. It was

shown that two of these attitudinal variables were significant for the model and that they held the expected sign. *Not willing* says that the respondent can not see any reasons to change the daily coffee habits. This should indicate that the respondent will choose the status-quo alternative in most of the cases. The sign of this variable is expected to be negative. *Fair-cert. important* means that the respondent regards this type of certification as important and chose alternatives exclusively based on this. This variable is expected to be positive.

The results from the estimated random effects binary probit model are presented in table 5.3. A likelihood test of the hypothesis that all coefficients are zero was done on a chi-squared value of 108.78<sup>2</sup>. With 1 degree of freedom the critical value on the 1-percent level is 6.64, which implies that the hypothesis of all coefficients being zero may be rejected.

Table 5.3, Random Effects Binary Probit Model Results

<b>Variable</b>	<b>Coefficient</b>	<b>t-statistic</b>
<i>Constant</i>	11.12***	19.41
<i>Price</i>	-0.39***	-18.86
<i>KRAV-certified</i>	0.97***	4.16
<i>Fair-certified</i>	0.59**	2.31
<i>Not willing</i>	-1.77***	-3.79
<i>Fair-cert. important</i>	3.41***	7.57
<i>Coffee consumption</i>	-0.66*	-1.92
<i>Non-profit org.</i>	0.77*	1.79
<b>Summary statistics</b>		
Sample size:	100	
Log-likelihood:	-298.06	
Chi-squared:	108.78	

\*\*\* Statistically significant at the 1-percent level

\*\* Statistically significant at the 5-percent level

\* Statistically significant at the 10-percent level

The constant is statistically significant and positive. This implies that the alternatives conveying KRAV-certification and Fair-certification are, on average, preferred to the status-quo alternative. The monetary attribute is significant and has, as expected, a

<sup>2</sup> For further information about Chi-square and other econometric discussions, see (Dougherty, 1992)

negative sign. This negative sign means that the price is important from the consumers' point of view; the higher the price premium on KRAV-certified and Fair-certified coffee is, the less will be demanded. The two non-monetary attributes are both positive and statistically significant. This implies that coffee alternatives with KRAV-certification and Fair-certification will, by the average consumer, be chosen to a larger probability. Furthermore, the results show that KRAV-certified involves the highest relative impact on the utility of the average respondent, of the attributes contained in the experiment.

From the socio-economic variables it can be seen that a high coffee consumption will contribute to a lower willingness to choose ecologically and fairly produced coffee. This was expected since the certified brands often come at a higher cost. On the other hand it can be seen from the estimated parameter concerning membership in a non-profit organization that a membership in such an organization increases the probability for a consumer to choose "Alternative 2"<sup>3</sup>.

Additionally, the results from the attitudinal variables shows that respondents who expressed that they had no reason to change their coffee habits have, as expected, a low probability to choose KRAV-certified and Fair-certified coffee. Finally, the results indicate that respondents who stated that they regard Fair-certification important will, according to the results, choose brands holding such certifications. Fair-certification proved to be the attitudinal variable giving the consumer the highest relative utility.

The implicit prices reflect the relative importance the respondents put on each of the non-monetary attributes, or the trade-offs, the individuals are prepared to make among the non-monetary attributes included in the experiment. As previously mentioned, negative implicit prices reflect that the individual claims some sort of compensation for a change. When the implicit price has a positive sign it represents a willingness to pay for the

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<sup>3</sup> Alternative models, containing a higher number of socio-economic variables, were tested for. The results from these tests, however, proved not to be statistically significant.

current change. The implicit prices are shown in table 5.4. The t-statistic for the implicit prices in this model was calculated using the delta method<sup>4</sup>.

**Table 5.4, Implicit Price Estimates, Kronor per Package of Coffee**

<b>Attribute</b>	<b>Coefficient</b>	<b>t-stat</b>
<i>KRAV-certified</i>	2.48***	4.71
<i>Fair-certified</i>	1.49**	2.44

\*\*\* Statistically significant at the 1-percent level

\*\* Statistically significant at the 2-percent level

The estimated implicit prices for KRAV-certified and Fair-certified coffee are positive as expected. The implicit prices calculated on the basis of this study shows that the average consumer, *ceteris paribus*, is willing to pay a premium of 2.48 kronor for a package of KRAV-certified coffee. The willingness to pay for a Fair-certified coffee was a bit lower, namely 1.49 kronor extra per package. The coefficient for KRAV-certified coffee is statistically significant at the 1-percent level while the coefficient for Fair-certified coffee is statistically significant at the 2-percent level. The willingness to pay for KRAV-certified coffee can be compared with the average price premium at the time for the study, which was slightly lower than six kronor per package. Hence, the willingness to pay shown in this study is noticeably lower than the present price premium in the stores.

That the average respondent is ready to pay a 2.48 kronor premium to receive an environmentally friendly grown coffee and a 1.49 kronor premium to get a fairly produced coffee is fully reasonable, since the premium will only lead to an annual increase in total household expenditure on coffee with 60 kronor, if two packages of coffee are consumed every month. One should though, bear in mind that when these implicit prices reflect the willingness to pay for ecological and social attributes, it is under the assumption that all other attributes are held constant. As a consequence, it is possible that a respondent that in this study had a positive sign on the implicit price would in the real life choose to acquire another coffee alternative; an alternative that would satisfy the respondents' preferences for other attributes in a better way (i.e. dark roast/light roast and mocha/hazelnut).

<sup>4</sup> For additional information concerning the delta method, see (Greene, 2000).

Table 5.5 demonstrates how the 100 respondents chose to answer among the 13 alternatives in the debriefing question. As many as 65 percent indicated that they could pay a bit extra for KRAV-certified and Fair-certified coffee, as long as the premium does not get too high. The second most chosen variable was that the respondents chose the alternative that gave them the most value for the money. 30 respectively 25 percent of the respondents expressed that they regarded KRAV-certified and Fair-certified coffee important and that they only chose such alternatives, while 9 respectively 15 percent expressed a wish to buy KRAV-certified and Fair-certified coffee but they could not afford it. As much as 22 percent of the respondents were of the opinion that the public should not have to pay premiums to receive environmentally friendly goods. Slightly less than 20 percent chose the KRAV-certified alternative since they wanted to ensure themselves to avoid getting any remainders of chemical substances in their coffee, while 5 percent chose KRAV-certified coffee based on the belief that such coffee has a purer taste. 14 percent of the population sample expressed they had no reason to change their coffee habits, and 8 percent stated they did not care whether the coffee they consumed is KRAV-certified or Fair-certified.

Table 5.5, Results of the Debriefing Question

<b>Attitudinal variable</b>	<b>Frequency</b>
<i>I chose the alternative giving me the most value for the money</i>	40
<i>I see no reason to change my coffee habits</i>	14
<i>I find Fair-certified coffee important, and chose exclusively such alternatives</i>	25
<i>I don't care whether the coffee I buy is KRAV-certified or Fair-certified</i>	8
<i>I hesitate to chose KRAV-certified coffee since I don't know how it taste</i>	6
<i>I find KRAV-certified coffee important, and chose exclusively such alternatives</i>	30
<i>I can't afford to pay a higher price for KRAV-certified coffee</i>	9
<i>I don't think the public should have to pay premiums for Green products</i>	22
<i>I chose alternatives with KRAV coffee because I believe it has a purer taste</i>	5
<i>I exclusively chose the cheapest alternative</i>	23
<i>I wish I could pay more for fairly produced coffee, but I can't afford it</i>	15
<i>I chose KRAV-alternatives to avoid possible chemical substances in my coffee</i>	19

## **Chapter 6**

### **CONCLUSIONS**

The purpose of this study was to measure the willingness to pay for KRAV-certified and Fair-certified coffee, and to find the underlying factors for an ecological and fair choice. The analysis shows that the monetary attribute has a significant impact for the experienced utility of the consumer. This implies that an environmentally friendly and socially fair choice has to come at a minor cost for the consumer. The KRAV-certified attribute proved to generate a higher impact on the utility for the consumer than did the Fair-certified attribute. This was also reflected in a higher willingness to pay for KRAV-certified coffee.

That the cost is of great importance was also shown in the analysis of the socio-economic variables where it was pointed out that individuals consuming much coffee were less likely to buy KRAV-certified and Fair-certified coffee. In addition, it was shown that individuals being members in some non-profit organization tend to be more likely to buy ecological and fair coffee. From the analysis of the attitudinal variables it was made clear that consumers with the belief that Fair-certified coffee is important also are more probable to buy sustainable coffee.

These results clarifies that there exist a clear market for both KRAV-certified and Fair-certified coffee. Consumers are ready to pay a premium for a coffee that has been produced in an ecological and fair manner. The study also elucidates that if the

organizations behind KRAV-certified and Fair-certified coffees could lower the premiums they would have a major opportunity of increasing the market shares for their brands. Another fact that might be useful in the marketing of organic coffee is the fact that almost 20 percent of the respondents expressed that they chose the alternative with organically grown coffee since they wanted to prevent to get any chemical substances in their coffee. Consequently, the health aspect should be utilized to a higher degree in the marketing.

## REFERENCES

### BOOKS, ARTICLES AND REPORTS

Bennet, J, & Blamey, R, (2001), *The Choice Modelling Approach to Environmental Valuation*, Edward Elgar Publishing Limited, Cheltenham.

Commission for Environmental Cooperation, (1999), "Measuring Consumer Interest in Mexican Shade-grown Coffee: An Assessment of the Canadian, Mexican and US Markets".

Dicum, G, & Luttinger, N, (2002), *Kaffe. Från böna till kopp*, Ordfront förlag, Stockholm.

Dougherty, C, (1992), *Introduction to Econometrics*, Oxford University Press, Oxford.

Faminow, M, & Rodriguez, E, (2001), "Biodiversity of Flora and Fauna in Shaded Coffee Systems", Commission for Environmental Cooperation, Montreal.

Farhar, B, (2001), "Willingness to Pay for Electricity from Renewable Resources: A Review of Utility Market Research", National Renewable Energy Laboratory, Golden.

Giovanucci, D, (2001), "Sustainable Coffee Survey of the North American Specialty Coffee Industry", Commission for Environmental Cooperation, Montreal.

Greene, W.H, (2000), *Econometric Analysis, 4<sup>th</sup> Edition*, Prentice Hall, New Jersey.

Gregow, K, (2000), *Hur Många Svenskar Tål Världen?*, Svenska Naturskyddsföreningen, Stockholm.

Hanley, N, & Wright, R.E, & Adamowicz, V, (1998), "Using Choice Experiments to Value the Environment", *Environmental and Resource Economics*, vol. 11.

Hanley, N, & Wright, R.E, & Adamowicz, V, (2002), "Do Choice Experiments Pass the scope test? A Test of Scope in a Choice Experiment Examining the Benefits of Water Quality Improvements", EAERE/AERE World Congress, Monterey, 2002

Lancaster, K, (1966), "A New Approach to Consumer Theory", *Journal of Political Economy*, 74, pp, 132-157.

Louviere, J, & Henscher, D, & Swait, J, (2000), *Stated Choice Methods – Analysis and Application*, Cambridge University Press, Cambridge.

Nicholson, W, (2002), *Microeconomic Theory – Basic principles and Extensions*, Thomson Learning Inc.

Rice, R, & Ward, J, (1996), "Coffee Conservation and Commerce in the Western Hemisphere", Report, Smithsonian Migratory Bird Center, Washington.

Roberts, J.A, (1996), "Green Consumers in the 1990s: Profile and Implications for Advertising", *Journal of Business Research*, 31, 217-231.

SCB, (2001), "Statistisk Årsbok 2002".

SCB, (2001), "Föreningslivet i Sverige 1992-2000".

Svenska Jordbruksverket, (2002), "Jordbruksstatistisk Årsbok 2002".

Svenska Naturskyddsföreningen, (2000), "En Kopp Ekologiskt Tack".

Varian, H, (1999), *Intermediate Microeconomics: A Modern Approach*, W.W. Norton & Company Inc, New York.

Vredin, M, (1997), "The African Elephant; Existence Value and Determinants of Willingness to Pay", Licentiate Thesis, Department of Economics, Umeå University

#### PERSONAL COMMUNICATION

Lundström, Anna, KRAV Ekonomisk Förening, (2002-11-21).

Rosenqvist, Katarina, Rättvisemärkt, (2002-11-26).

Åkerstedt, Calle, Svensk Kaffeinformation, (2002-11-13).

#### WEB PAGES

Information from KRAV Ekonomisk Förening, KRAV

<http://www.krav.se/fyraben.htm#miljo> (2002-11-09).

Information from Rättvisemarkt

[http://www.rattvisemarkt.se/article.asp?Article\\_Id=865](http://www.rattvisemarkt.se/article.asp?Article_Id=865) (2002-11-09).

[http://www.rattvisemarkt.se/article.asp?Article\\_Id=874](http://www.rattvisemarkt.se/article.asp?Article_Id=874) (2003-01-27).

Information from Svensk Kaffeinformation, SKI

[www.kaffeinformation.se](http://www.kaffeinformation.se) (2002-11-12).

Information from International Coffee Organization, ICO

<http://www.ico.org/frameset/priset.htm> (2002-12-06).

## Appendix 1

### Card 1

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
30 kronor per package
No KRAV-certification
With Fair-certification

### Card 2

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
30 kronor per package
With KRAV-certification
No Fair-certification

### Card 3

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
26 kronor per package
With KRAV-certification
No Fair-certification

**Card 4**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
30 kronor per package
With KRAV-certification
With Fair-certification

**Card 5**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
34 kronor per package
With KRAV-certification
No Fair-certification

**Card 6**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
34 kronor per package
With KRAV-certification
With Fair-certification

**Card 7**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
34 kronor per package
No KRAV-certification
With Fair-certification

**Card 8**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
26 kronor per package
No KRAV-certification
With Fair-certification

**Card 9**

If you could only choose one of the two following alternatives of coffee, which would you choose?

Alternative 1
26 kronor per package
No KRAV-certification
No Fair-certification

Alternative 2
26 kronor per package
With KRAV-certification
With Fair-certification

1. Which of the following statements describes best how you reasoned while choosing between the alternatives on the nine cards? Mark one or more statements.

- I chose the alternative giving me the most value for the money
- I see no reason to change my coffee habits
- I find Fair-certified coffee important, and chose exclusively such alternatives
- I don't care whether the coffee I buy is KRAV-certified or Fair-certified
- I hesitate to choose KRAV-certified coffee since I don't know how it tastes
- I find KRAV-certified coffee important, and chose exclusively such alternatives
- I can't afford to pay a higher price for KRAV-certified coffee
- I don't think the public should have to pay premiums for Green products
- I chose alternatives with KRAV coffee because I believe it has a purer taste
- I exclusively chose the cheapest alternative
- I wish I could pay more for fairly produced coffee, but I can't afford it
- I chose KRAV-alternatives to avoid possible chemical substances in my coffee
- I can pay a certain premium for certified coffee, as long as the premium isn't too high

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For the interviewer

Card 1	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 2	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 3	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 4	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 5	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 6	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 7	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 8	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Card 9	1	<input type="checkbox"/>	2	<input type="checkbox"/>

2) Sex?                      ( ) Female              ( ) Male

3) How old are you?        \_\_\_\_\_ years

4) What is your highest education?

( ) Compulsary School      ( ) High School

( ) Folk High School        ( ) University or College

( ) Other, namely: \_\_\_\_\_

5) Which of the following alternatives is best fitting in to your current family situation?

( ) Single, no children              ( ) Single, with children under 18 years

( ) Two or more adults, no children ( ) Two or more adults, with children under 18 years

6) How many cups of coffee are you having, at an average, per day?

( ) Two cups a day      ( ) Five cups a day      ( ) More than five cups a day

7) Are you a member in some non-profit organization? (Ex. Save the Children, the Red Cross)

( ) Yes      ( ) No

8) Are you a member in some environmental organization? (Ex. The Swedish Society for Nature Conservation)

( ) Yes      ( ) No

9) About how much is the monthly total income for your household, before taxes?

( ) Less than 5 000 kronor                      ( ) Between 25 001 and 30 000 kronor

( ) Between 5 001 and 10 000 kronor                      ( ) Between 30 001 and 40 000 kronor

( ) Between 10 001 and 15 000 kronor                      ( ) Between 40 001 and 50 000 kronor

( ) Between 15 001 and 20 000 kronor                      ( ) Between 50 001 and 60 000 kronor

( ) Between 20 001 and 25 000 kronor                      ( ) More than 60 000 kronor

## Appendix 2

### Kort 1

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
30 kronor per paket
Utan KRAV-märkning
Med Rättvisemärkning

### Kort 2

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
30 kronor per paket
Med KRAV-märkning
Utan Rättvisemärkning

### Kort 3

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
26 kronor per paket
Med KRAV-märkning
Utan Rättvisemärkning

**Kort 4**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
30 kronor per paket
Med KRAV-märkning
Med Rättvisemärkning

**Kort 5**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
34 kronor per paket
Med KRAV-märkning
Utan Rättvisemärkning

**Kort 6**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
34 kronor per paket
Med KRAV-märkning
Med Rättvisemärkning

**Kort 7**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
34 kronor per paket
Utan KRAV-märkning
Med Rättvisemärkning

**Kort 8**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
26 kronor per paket
Utan KRAV-märkning
Med Rättvisemärkning

**Kort 9**

Under förutsättning att du enbart skulle kunna välja mellan nedanstående två alternativ, vilket skulle du då välja?

Alternativ 1
26 kronor per paket
Utan KRAV-märkning
Utan Rättvisemärkning

Alternativ 2
26 kronor per paket
Med KRAV-märkning
Med Rättvisemärkning

1. Vilket eller vilka av följande påståenden förklarar bäst ditt resonemang när du valde mellan alternativen på de 9 korten? Markera med kryss.

- Jag valde det alternativ som gav mig mest för pengarna.
- Jag ser ingen anledning till att förändra i mina kaffevanor.
- Jag tycker att Rättvisemärkt kaffe är viktigt, och valde enbart sådana alternativ.
- Jag bryr mig inte alls om huruvida det kaffe jag dricker är KRAV- eller Rättvisemärkt.
- Jag tvekar att välja KRAV-kaffe eftersom jag inte vet hur det smakar.
- Jag tycker att KRAV-märkt kaffe är viktigt, och valde enbart sådana alternativ.
- Jag har inte råd att betala ett högre pris för miljövänligt kaffe.
- Jag tycker inte att allmänheten skall behöva betala mer för att erhålla miljövänliga varor.
- Jag valde de alternativ med KRAV-kaffe för jag tror det kaffet har en renare smak.
- Jag valde uteslutande det billigaste alternativet.
- Jag skulle vilja betala mer för kaffe som producerats på ett rättvist sätt men har inte råd.
- Jag valde alternativen med KRAV-kaffe för att slippa få i mig rester av kemiska medel.
- Jag kan tänka mig att betala en aning extra för KRAV- och Rättvisemärkt kaffe så länge det inte blir för mycket extra per paket.

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Kort 1	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 2	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 3	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 4	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 5	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 6	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 7	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 8	1	<input type="checkbox"/>	2	<input type="checkbox"/>
Kort 9	1	<input type="checkbox"/>	2	<input type="checkbox"/>

2) Är du kvinna eller man?                      ( ) Kvinna                      ( ) Man

3) Hur gammal är du?                      \_\_\_\_\_ år

4) Vilken högsta utbildning har du?

( ) Grundskola eller realskola                      ( ) Gymnasium

( ) Folkhögskola                      ( ) Högskola eller universitet

( ) Annan, nämligen: \_\_\_\_\_

5) Vilket av följande alternativ passar bäst in på din familjesituation?

( ) Ensamstående, utan barn under 18 år                      ( ) Ensamstående, med barn under 18 år

( ) Två eller fler vuxna, utan barn under 18 år                      ( ) Två eller fler vuxna, med barn under 18 år

6) Hur mycket kaffe dricker du ungefärligen per dag?

( ) Två koppar per dag                      ( ) Fem koppar per dag                      ( ) Mer än fem koppar per dag

7) Är du med i någon ideell organisation? (Ex. Rädda Barnen, Röda Korset etc.)

( ) Ja                      ( ) Nej

8) Är du med i någon miljöorganisation? (Ex. Fältbiologerna, Svenska Naturskyddsföreningen)

( ) Ja                      ( ) Nej

9) Ungefär hur stor är ditt hushålls sammanlagda inkomst per månad, före skatt? (Räkna med alla slags inkomster, till exempel eventuell sjukpenning, föräldrapenning, studiemedel eller arbetslöshetsersättning)

( ) Mindre än 5 000 kronor                      ( ) Mellan 25 001 och 30 000 kronor

( ) Mellan 5 001 och 10 000 kronor                      ( ) Mellan 30 001 och 40 000 kronor

( ) Mellan 10 001 och 15 000 kronor                      ( ) Mellan 40 001 och 50 000 kronor

( ) Mellan 15 001 och 20 000 kronor                      ( ) Mellan 50 001 och 60 000 kronor

( ) Mellan 20 001 och 25 000 kronor                      ( ) Mer än 60 000 kronor