Interviewer Effects on the Valuation of Goods with Ethical and Environmental Attributes

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Abstract: This paper investigates the impact of interviewer effects on willingness to pay (WTP) estimates. Face-to-face surveys were conducted with two interviewers. Both interviewers used a transcript and conducted the survey at the same location and at same time. We found that responses to the WTP questions differ across eco-labeled products and by interviewer. This interviewer effect is particularly relevant when we analyze the impact on WTP estimates for eco-labeled products grown in countries associated with the origin of one of the interviewers.

I. INTRODUCTION

The contingent valuation method (known as CVM) is a stated preference method used to assess the values of non-market commodities such as environmental programs, and cultural and social amenities. It involves asking people directly (in person, by telephone, or by mail) how much they are willing to pay (or to accept) for the enjoyment (or to forego the consumption of) an environmental or non-market commodity. Even though CVM is widely used, it is well documented that the fact that the method relies on subjective responses may introduce bias or inaccuracy in the analysis. Bias can be defined as the difference between the distributions of hypothetical bids obtained from a survey and the distribution of bids that would be obtained in an actual demand revealing market setting (Schulze et al., 1996).

Many researchers have studied different sources of bias in CVM, such as sampling error, information bias, non response bias, and hypothetical bias (see among others Ajzen, Brown, and Rosenthal, 1996; Dalecki, Whitehead and Blomquist, 1993; Edwards and Anderson, 1987; Loomis and Kling, 1994; Messonier *et al*., 2000). However, less research has been conducted regarding interviewer effects and social desirability bias. This is particularly surprising since face-to-face surveys were recommended as the preferred survey mode by the NOAA panel (Arrow *et al*., 1993). Our study focuses on the bias introduced by the interviewer in the valuation of market goods with quasi-public and socially correct attributes (in the context of valuation of eco-labels and organic programs), and its effects on willingness-to-pay (WTP) responses. Thus, the interviewee might be willing to support these socially desirable attributes given

that he/she may want to give the impression to the interviewer that he/she cares about the messages conveyed by these labeling programs. As a case study, we look at the valuation toward eco-labeling programs for coffee promoting fair working conditions (fair trade labeled coffee), environmentally friendly attributes (shade coffee), as well as an organic certification program (organic coffee). One might expect that a considerable majority of respondents would want the interviewers to believe that they favor fair working conditions and a clean environment, *ceteris paribus*. This phenomenon is usually referred to as social desirability bias, which is the tendency of individuals to make themselves look good when answering survey questions.

II. LITERATURE REVIEW

Drawing from social science literature, there are abundant references that point out the existence of interviewer effects on surveys, although these studies do not look at interviewer effects in the context of CVM studies. Race bias in one of the most widely covered topics in the social science literature. For example, Hatchett and Schuman (1975) analyze how white people from the Detroit metropolitan area respond differently in surveys conducted by black interviewers compared to those conducted by white interviewers. They conclude that white respondents do not express their true thoughts when they face a black interviewer, introducing a bias in the results. Campbell (1981) extends previous studies about interviewer bias focusing on adolescents in Atlanta. He finds no sign of an interviewer race-effect when questions are not related to race issues. However, when the questions are related to race issues, blacks appear to be more pro-

white with white interviewers than with black interviewers, and the opposite is true for the white interviewees. Davis (1997), on the other hand, finds that black interviewees do not reveal their true opinion to white interviewers concerning race questions. Cotter, Cohen and Coulter (1982) use data from a telephone survey containing questions about political and social issues. They find that when the survey is conducted by phone, there is no race-effect on non-racial questions. However when it is conducted face-to-face, the race of interviewer has an effect on respondents.

Other type of bias covered in the literature is gender bias. Regarding gender bias, different studies report that respondents will often answer the same question differently, depending on whether the interviewer is a male or female. For example, Kane and Macaulay (1993) find that interviewees demostrate a more critical attitude toward existing gender inequalities to female interviewers. Besides race and gender, other sources of bias pointed out in the literature are due to association with the interviewer's profession. Atkin and Chaffee (1972) look at these *ingratiating* patterns, in which respondents who knew that the interviewer was a firefighter gave significantly more favorable opinions of that occupation.

More recently, Kleckner *et al.* (2002) assess interviewer bias in the context of face-to-face and self-administered surveys. They find that face-to-face surveys provide higher WTP estimates than self-administered surveys, and that WTP varies among interviewers. However, they do not discuss whether differences in WTP responses are motivated by socio-demographic differences in the interviewers.

Other studies in the CVM literature also document differences in responses motivated by the presence of the interviewer. Whittaker *et al.* (1998) find that phone

respondents were more likely than mail respondents to vote in favor of an admission fee increase for Colorado state parks. They attribute this difference in part to social desirability created by the presence of an interviewer. However, Ethier *et al.* (2000) find no significant difference in WTP estimates between mail and telephone surveys in a study of consumers' WTP for "green" electricity. They do, nevertheless, find evidence of social desirability bias in telephone survey responses to three non-WTP questions.

This paper adds to the literature of interviewer effects in the valuation of eco-labeled products when two interviewers from different races and countries of origin were used in the data collection process. We find that WTP responses differ across eco-labeled products and by interviewer. In particular, we hypothesize that the interviewees empathize more with an interviewer from Africa, expressing consequently higher WTP estimates for eco-labeled products. This is particularly evident when the valuation questions refer to eco-labeled products that aim to provide workers with fair working conditions in Third World countries.

III. DATA DESCRIPTION

A consumer survey was used to analyze interviewer effects in the context of valuation of the fair trade, shade, and organic coffee labels. The fair trade labels are awarded to goods imported from developing countries that have been produced according to social and environmental instruments such as the International Labor Organization Conventions and the United Nations' Agenda 21 recommendation (European Commission, 1997). Additionally, the shade coffee label promotes the environmentally

friendly procedures that are used in the harvesting and growing of this particular crop. In the 1970s the economic need of Central America, Colombia, Mexico, and the Caribbean to maximize coffee production made many coffee producers switch to agricultural techniques which harm the environment. To maximize production and yields, large tracts of rainforest were cleared to make way for new kinds of coffee plantations where all of the coffee bushes are grown in full sun. This conversion has had serious environmental implications, and currently different labeling programs are rewarding producers who grow coffee while protecting the traditional landscape and bird habitat. Finally, organic coffee is mainly grown without synthetic pesticides, herbicides or chemical fertilizers that can potentially endanger the environment.

We pre-tested the survey in February 2002 and carried it out in late spring in supermarkets in four of the following locations in the state of Colorado: Boulder, Fort Collins, Loveland, Greeley, and in one city in Wyoming (Cheyenne). In order to obtain a diverse sample the survey was conducted during the week as well as the weekend, from 10:00 a.m to 6:00 p.m. Two male interviewers participated in the data collection: one white from the United States and one black, originally from Africa. To avoid the effect of other types of biases, both of them followed a transcript and interviewed in the same stores at the same time. Interviewers were instructed to approach every third customer who entered into the store.

In total 284 completed surveys were collected. The majority of the sample were main shoppers (77 percent) (those who purchase most of the groceries for the household), white (85 percent), and female (66.45 percent), and with an average age about 43 years, as summarized in Table 1. The mean household income was calculated about 47,615 per

year in 2001, and the average education of the sample was "some years of college." Compared to the U.S. Census, respectively, our sample over-represents female respondents (54 percent in the United States), and under-represents minorities (with 67 percent whites in the U.S.). However, the over-representation of female respondents is somehow desirable since they are the ones making most of the food purchasing decisions for the household.

The survey solicited information regarding respondents' purchasing habits, attitudes about the environment, and altruistic behavior toward others, in addition to their familiarity with, perceptions of, and WTP for the fair trade, shade and organic labels. Finally socio-demographic information was collected. All respondents were read a short paragraph explaining the meaning of these labels before they were presented with the valuation questions (see the Appendix for the actual text). Following the NOAA panel recommendations (Arrow *et al.*, 1993), we included a budget constraint reminder, which is reported verbatim in the following paragraph.

The crucial valuation question was: *Suppose that in order to buy fair trade, shade coffee, or organic coffee, you have to pay a premium over the regular coffee price. Indicate below how much of a premium (if any) you are willing to pay for the different types of coffee. I would like to remind you that it is perfectly fine if you are not willing to pay any premium, given that paying EXTRA for any of these coffees will leave you with less disposable income for other products or savings.* Consumers were presented with three payment card formats corresponding to each labeling program with bid intervals from 1 cent/lb to 81 cents/lb. The bid amounts used to elicit WTP were selected based on results of the initial pre-testing of the survey. In the pre-test the vast majority of the

participants indicated that they would only be willing to pay premiums smaller than $0.80/lb.

It is important to emphasize that both interviewers followed the same set of instructions which help to collect a comparable data set. In general, there are no observable differences between the socio-demographic characteristics of the sub-sample collected by the white and the black interviewer (see Table 3). This could occur because of sample selection bias, where some respondents could be more likely to participate in the survey based on the race of the interviewer who approached them. Additionally, we do not observe differences with respect to environmental and welfare preferences elicited in the survey. This makes our results more robust since differences in the WTP estimates are not due to the fact of having two different observable samples. However, as in all surveys, general sample representativeness is always a concern. There could be some degree of sample selection bias, in which the people who were more interested in eco-labels and fair trade practices chose to participate in the survey. Thus, we acknowledge that there are limitations regarding the extent to which the findings can be fully generalized to broader populations. However, a mitigation factor is that the response rates are fairly high for both interviewers, 61.45 percent for the white and 72.99 percent for the black interviewer. According to the NOAA panel (Arrow et *al*.,1993) measurable sampling and non-response bias does not appear to be a big concern when the response rates approach the recommended threshold of 70 percent.

Information about environmental and welfare attitudes of the respondents was obtained by presenting trade-off situations between environmental quality and job creation, and between their own current welfare, and the welfare of other countries or

future generations (see Appendix for questions). Eliciting these attitudes with trade-off scenarios was an effective way of ensuring that survey information was informative as well as useful for empirical modeling purposes. For example, without the tradeoff, most respondents would say that they value the environment highly. This lack of variation in response caused by the omission of a frame of reference for the evaluation could lead to statistical insignificance of the effect of the environmental variable. Analyzing these trade-off questions concerning the sample preferences for the environment, 54.48 percent of the sample strictly prefer to save the environment at all cost, while 15.4 percent prefer saving jobs at all costs, being the rest of the sample indifferent. Additionally, 59.44 percent of the participants are more concerned with the welfare of future generations or the welfare of people living in other parts of the world than with their own, versus 11.19 percent who stated that they are mainly concerned with their own welfare.

The distributions of responses per bid to the valuation questions are presented in Table 4. We observe that the distribution of responses per bid for the black interviewer is generally higher than that for the white interviewer. This is particularly evident when analyzing the distribution of bids for the fair trade and shade grown labeling questions.

III. METHODS

Cameron and Huppert (1989) developed a maximum likelihood framework that suits data gathered using a payment card. To motivate this model let us assume that if the respondent's true valuation or willingness to pay *(W)* lies within the interval defined by lower and upper thresholds t_{li} and t_{ui}, then $(log\ W_i)$ lies between $(log\ t_{li})$ and $(log\ t_{ui,})$. It

is generally presumed that $E(\log W_i \mid x_i)$ is some function $g(x_i, \beta)$, for which a linear-in-parameters form is computationally convenient. In the simplest case, we have:

(1) $\log W_i = x'_i \beta + u_i$,

where u_i is distributed normally with mean 0 and standard deviation σ. Let's suppose that x'_i is a vector of explanatory variables that potentially affect consumers' willingness to pay for the labeling programs at hand, such as respondents´ socio-demographic characteristics, and environmental and welfare attitudes. This semi-log specification has the advantage that the estimated coefficients can be loosely interpreted as percent changes on the WTP function (Cameron, 1988).

We can standardize each pair of interval thresholds for *(log Wi)*, expressing the probability that the true valuation lies in between both thresholds as:

(2) $\Pr(W_i \subseteq (t_{li,} t_{ui})) = \Pr((\log t_{li} - x'_i \beta)/\sigma < z_i < (\log t_{ui} - x'\beta)/\sigma)$,

where z_i is the standard normal random variable. After this transformation the probability expressed in (1) can be rewritten as the difference between two standard normal cumulative distributions, and expressed as:

(3) $\Pr(W_i \subseteq (t_{li}, t_{ui})) = \Phi(z_{ui}) - \Phi(z_{li})$.

Therefore, the likelihood function is given as:

$$(4) \quad LogL = \sum_{i=1}^{n} \log[\Phi(z_{ui}) - \Phi(z_{li})].$$

The estimation of this likelihood function will make it possible to draw conclusions about how the interviewer as well as other individual socio-demographic characteristics affect consumers' WTP for environmental and ethical labeling programs.

IV. EMPIRICAL MODEL AND HYPOTHESES

In order to empirically test the interviewer effect on the stated WTP values, we estimated the following three WTP equations:

$$(5) \quad WTP_{ij} = \beta_{1j} Female_{ij} + \beta_{2j} Education_{ij} + \beta_{3j} Income_{ij} + \beta_{4j} Age_{ij} +$$
$$\beta_{5j} Enviro_{ij} * Welfare_{ij} + \beta_{6j} African_{ij} + \beta_{7j} American_{ij} + \varepsilon_{ij},$$

where $i = 1,...,281$ and $j = 1(1 = FairTrade), 2(2 = Shade), 3(3 = Organic),$

in which the WTP elicited from each individual and for each labeled coffee (WTP_{ij}) is modeled as a function of consumer socio-demographic characeretiristics and the elicitation by each particular interviewer. In the above specification the variable *Female* is a dummy variable that denotes a female respondent; *Education* represents the level of education of each respondent; *Income* indicates the mean income per household during the year 2001 expressed in dollars; *Age* is a continuous variable representing the respondent's age, and *Enviro*Welfare* is the interaction term between both the environmental and welfare attitudes of the respondent. These two variables were elicited, as previously mentioned, by employing trade-off questions. Finally, in order to test for

the interviewers' effect we included two indicator variables denoting, respectively, whether the interviewer is black and from Africa *(*variable *African)* or white from the United States (variable *American*). The introduction of both indicator variables allows us to compare and analyze each interviewer effect separately, and also whether there is a marginal difference between the WTP values elicited by both interviewers. Summary statistics and complete definition of variables included in this regression are presented in Tables 1 and 2.

We expect consumers to empathize more with the African interviewer, given that the message conveyed by the fair trade and the shade labels are more closely related to his origin. Thus, we expect that the effect of the of the presence of the African interviewer with respect to the American will be positive when eliciting WTP values for the fair trade, environmentally friendly, and organic labels. Formally, our research hypothesis can be stated as follows:

(6) $\qquad H_o : \beta_{6j} = \beta_{7j}, \quad j = 1,2,3.$

where the alternative hypothesis is formulated as:

(7) $\qquad H_1 : \beta_{6j} \geq \beta_{7j}.$

In order to test these conjectures, we conducted three independent t-tests based on the difference of parameter estimates for each WTP equation.

The results from the estimation of the three WTP equations (5) are presented in Table 5. Results make economic and intuitive sense and all coefficients have the expected relationship with the dependent variables. With regard to the fair trade WTP equation, all coefficients except the one denoting that the interviewer is American are

statistically significant at $\alpha = 0.01$ or below. In the shade coffee WTP equation, results are similar to the fair trade equation in terms of associated signs with all coefficients, except the one denoting the American interviewer, being statistically significant. Finally, in the organic WTP equation, all coefficients except the coefficients associated with the variable *Education* and the *American* interviewer are statistically significant.

Results show that the statistically significant variables which positively affect the subjective WTP values for all three coffee labeling programs are: the gender of the respondent (*Female*), the household income (*Income*), the cross product of the respondents' sensitivity toward environmental and welfare issues (*Enviro*Welfare*), and the indicator variable denoting the African interviewer (*African*). On the other hand, the age of the respondent (*Age*) has a negative and statistically significant effect on WTP for all three credence goods. Thus, female respondents with higher income, and more sensitivity toward environmental and welfare issues are more likely to pay a premium for fair trade, shade, and organic coffee, while older consumers are less likely to pay a premium for these differentiated goods. Finally, the variable *Education* is positive in the three equations, but only statistically significant in the fair trade and shade labeled WTP equations.

We expected that female, wealthier, and more educated respondents would be more likely to pay premiums for goods perceived as ethical and environmentally friendly. In general, our socio-demographic variables provide results that are consistent with previous research in the credence goods literature. For example, Blend and Ravenswaay (1999) showed that educated and wealthier consumers are more likely to choose eco-labeled apples over regular-labeled ones. Additionally, and consistent with our results,

they also show that male and older respondents are less likely to select eco-labeled apples. In the present study, as mentioned previously, the variable *Education* is not a statistically significant factor that induces a higher WTP for organic coffee. This could be explained by the fact that consumers with higher education may not place too much importance on health benefits associated with organic coffee consumption, particularly if they are aware of the health risks derived from caffeine intake. Additionally, and as expected, the cross product of the importance of environmental attitudes and the welfare of others or future generations *(Enviro*Welfare)* has a positive effect on WTP for the three labeling programs. We expected that this would be the case, since more altruistic individuals would be more likely to support these differentiated products with ethical and environmentally sound attributes. The coefficient denoting that the interviewer is the American (β_7)-has a positive although not statistically significant effect on any of the labeling programs. However, the coefficient representing the African interviewer (β_6) is positive and statistically significant for the three WTP equations, and additionally its magnitude is larger. Because it is the difference between the latter and the former coefficients that represents the marginal impact on WTP values, the estimated overall effect of the African interviewer on WTP is positive compared with the American interviewer.

Given the semi-log specification used in this model, calculating the difference in the coefficients will provide us with the percentage change on the WTP estimate based on the interviewer's race and origin. Thus, from the fair trade equation we can infer that the WTP obtained with the African interviewer is about 19.17 percent higher than that for the American interviewer. This large difference decreases for the shade and organic coffee

labeling, in which the WTP obtained from the African interviewer is about 13.57 and 9.61 percent, respectively, higher than that from the American interviewer. It is interesting to highlight that the fair trade and shade labeling programs signal attributes easily identifiable with the origin of the African interviewer. Thus, our results provide evidence that surveys conducted by different interviewers may result in statistically significant different results.

In order to evaluate the statistical significance of our previous results, we test the null hypotheses represented in (6) against the alternative hypotheses in (7) by independent t-tests of the difference of the estimated coefficients. The calculated t-values for the three estimated hypotheses are presented in Table 6. Since all associated p-values are less than 0.01, our statistical tests provide evidence in favor of rejecting the three null hypotheses at $\alpha = 0.01$. Coupled with the values of the estimated β_j's satisfying the relationship described in (7), we conclude that the fact that the African interviewer conducts the survey affects WTP values for ethical and environmentally friendly products, mainly grown in developing countries. Therefore, social desirability bias or ingratiating patterns may be present, and are larger when the African interviewer conducts the survey. Notice that the presence of the American interviewer is not statistically significant for any of the three WTP equations.

V. CONCLUSIONS AND IMPLICATIONS

In this paper, we analyzed how the presence of two different interviewers affects consumers' WTP fair trade, shade, and organic coffee. We conducted a face-to-face

survey in supermarkets where consumers were randomly selected to participate in this study. Two male interviewers of different races and origin were used in the data collection process. Interviewers followed the same set of instructions and questionnaire transcripts. We estimated a multiple-bounded probit model that suits data gathered from a payment card format, and analyze consumers' WTP for different eco-labeling and ethical labeling programs. We found that there are substantial differences between the impact on premiums elicited by the American and African interviewer, particularly for the fair trade and eco-labeled coffee. This makes intuitive sense since these two labeling programs carry a strong identification with the working conditions and natural habitat of developing countries. Thus, our results are further proof of the sensitivity of WTP values when face-to-face interviews are conducted. In this context, we are able to conclude that different interviewers have different effects on the elicited WTP values. This finding suggests that social desirability bias may not be constant across personal interviewers, even in the case when all follow the same transcript and training procedure.

The current study has clear implications for CVM practitioners. Traditionally, in CVM studies in order to mitigate interviewer effects, interviewers are trained in a systematic fashion and required to follow a transcript. The present study shows that although this set of instructions may help in order to collect comparable samples among interviewers and obtain fairly close response rates, still large differences in WTP values may emerge depending on the characteristics of each particular interviewer. More research is needed in order to address how to deal with these potential sources of bias.

Table 1: Demographic Profile of the Entire Sample(*)

Variable name	Description	Frequency	Mean	Standard Deviation
Gender	a) female =1 b) male =0	a) = 66.45% b) = 33.55%	0.66	0.47
Shoppers	a) if main shopper =1 b) otherwise=0	a) = 77.42% b) = 22.58	0.77	0.41
Education	a) % with only some school b) % with high school c) % with some college d) % with Bachelor/ Professional Degree e) % with Graduate degree	a) = 0.68% b) = 12.97% c) = 33.79% d) = 32.76% e) = 19.80%	2.58	0.97
Employment	a) % full time=1 b) %otherwise=0	a) = 51.20% b) = 48.80%	0.51	0.50
Income (U.S. dollars)	a) if less than $20,000 b) if between $20,001-$30,000 c) if between $30,001-$50,000 d) if between $50,001-$70,000 e) if between $70,001-$100,000 f) if more than $100,000	a) = 19.93% b) = 14.60% c) = 28.83% d) = 13.52% e) = 12.45% f) = 10.67%	47,615	31,418
Age (years)	a) if between 18-25 years old b) if between 25-30 years old c) if between 30-40 years old d) if between 40-50 years old e) if between 50-60 years old f) if more than 60 years old	a) = 14% b) = 9.9% c) = 17.06% d) = 27.64% e) = 18.43% f) = 12.97%	42.77	13.69
Race	a) if White b) if Black c) if Hispanic d) if Asian e) if Native-American f) if respondent belongs to another race	a) = 84.93% b) = 1.71% c) = 7.20% d) = 2.05% e) = 1.03% f) = 3.08%	----	---

(*) Variables expressed in interval form were recoded using the mean point value of each interval.

Table 2: Consumer Information and Perception Variables

Variable Name	Description	Frequency	Mean	Standard Deviation
Reason not to pay for fair trade	1= don't trust label 2= think labeled and unlabeled product is the same 3=need more information 4=do not have enough resources	1=3.5% 2=5.27% 3=47.37% 4=43.86%	---	--
Reason to pay for fair trade	1=help farmers in developing countries 2=help developing countries to reduce problems in our own country 3= believe everybody should get a fair salary	1=43.26% 2=12.66% 3=44.08%	---	---
Environmental concern	Scale from 1 to 10 with 1=save jobs at all costs, 10=save environment at all cost	1=3.22% 2=0.72% 3=5.38% 4=6.09% 5=30.11% 6=14.34% 7=10.75% 8=11.83% 9=3.58% 10=13.98%	6.23	2.24
Welfare concern	Scale from 1 to 10 with 1=care only about your well-being, 10=care only about other people's and future generation's well-being	1=2.80% 2=0.35% 3=3.50% 4=4.54% 5=29.37% 6=11.19% 7=14.69% 8=16.08% 9=5.24% 10=12.24%	6.47	2.13

Table 3: Sub-sample and Socio-demographic Characteristics per Interviewer

Variable Name	Description	Means and Std. Dev. of Black Interviewer's Sub-sample	Means and Std. Dev. of White Interviewer's Sub-sample
Age	Age of consumer a) if 18-25 b) if 25-30 c) if 30-40 d) if 40-50 e) if 50-60 f) if >60	42.439 (12.924)	43.416 (15.065)
Shopper	a) 1=if main shopper b) 0=otherwise	0.775 (0.418)	0.772 (0.420)
Buyer	a) 1=if coffee buyer b) 0=if not	0.335 (0.681)	0.284 (0.594)
Education	a) 1=if some school b) 2=if High school c) 3=if some college d) 4=if Bachelor's/ Professional e) 5=if Grad degree	2.638 (0.951)	2.470 (1.002)
Employment	a)1= if Full time b) 0= Otherwise	0.555 (0.498)	0.431 (0.497)
Income	a) if<20,000 b) if 20,000-30,000 c) if 30,000-50,000 d) if 50,000-70,000 e) if 70,000-100,000 f) if >100,000	48,989.071 (31,595.657)	45,051.020 (31,084.312)
Environmental concern	Scale from 1 to 10 with 1=save jobs at all costs, 10=save environment at all cost	6.266 (2.225)	6.178 (2.301)
Welfare concern	Scale from 1 to 10 with 1=care only about your well-being, 10=care only about other people´s well-being	6.513 (2.095)	6.393 (2.216)

Table 4: Distribution of Respondents per Question and Interviewer's Race

Payments intervals (cents)	Fair trade coffee		Shade grown coffee		Organic coffee	
	Black Interviewer (%)	White Interviewer (%)	Black Interviewer (%)	White Interviewer (%)	Black Interviewer (%)	White Interviewer (%)
0	8.11	32.00	9.86	32.67	21.13	37.62
1-10	14.86	17.00	14.08	15.84	16.90	11.88
11-20	18.92	11.00	22.54	10.89	18.31	11.88
21-30	4.05	9.00	5.63	4.95	5.63	7.92
31-40	10.81	4.00	7.04	5.94	4.23	3.96
41-50	28.38	10.00	28.17	10.89	18.31	6.93
51-60	2.70	5.00	2.82	4.95	5.63	4.95
61-70	2.70	3.00	2.82	0.99	1.41	0.99
71-80	0.00	2.00	0.00	3.96	2.82	1.98
>81	9.46	7.00	7.04	8.91	5.63	11.88

Table 5: Interviewer Effect on WTP for Ethically and Environmentally Sound Products.

Variables	Fair Trade WTP Regression Coefficients(+)	Shade Coffee WTP Regression Coefficients	Organic Coffee WTP Regression Coefficients
FEMALE	11.5236**	7.9584*	8.6536*
	(4.2578)	(4.3125)	(4.8726)
EDUCATION	6.1074**	6.0539**	1.4005
	(2.1793)	(2.2155)	(2.4918)
INCOME	0.0001*	0.0001*	0.0001*
	(0.0000)	(0.0000)	(0.0000)
AGE	-0.5790***	-0.7479***	-0.7789***
	(0.1527)	(0.1580)	(0.1774)
ENVIRO*WELFARE	0.2157*	0.2972***	0.4264***
	(0.0857)	(0.0878)	(0.0995)
AFRICAN	23.7985**	27.0398**	24.7258**
	(9.7195)	(9.8456)	(11.1119)
AMERICAN	4.6264	13.4626	15.1097
	(9.8680)	(10.008)	(11.3450)
Sigma	30.8580***	31.1426***	34.6950***
	(1.7002)	(1.7158)	(2.0320)
Log-likelihood Value	-562.2685	-559.5234	-547.4961

(+) Standard errors are presented in parenthesis.

(***), (**), and (*) represent statistically significant coefficients at $\alpha = 0.001, \alpha = 0.01,$ and $\alpha = 0.1,$ respectively.

Table 6: Hypothesis Testing

Hypothesis testing	T-value	P-value
$H_0 : \beta_{6FairTrade} = \beta_{7FairTrade}$ $H_1 : \beta_{6FairTrade} \geq \beta_{7FairTrade}$	4.4613	0.0000
$H_0 : \beta_{6Shade} = \beta_{7Shade}$ $H_1 : \beta_{6Shade} \geq \beta_{7Shade}$	3.1289	0.0008
$H_0 : \beta_{6Organic} = \beta_{7Organic}$ $H_1 : \beta_{6Organic} \geq \beta_{7Organic}$	1.9643	0.0247

Appendix: Survey Questions

In general, where would you place yourself on a scale from 1 to 10 if saving jobs at all costs is a 1 and saving the environment at all costs is a 10. (CIRCLE JUST ONE)

1   2   3   4   5   6   7   8   9   10

Overall, where would you place yourself on a scale from 1 to 10, if 1 represents that you only care about your well-being and your family's, and 10 represents that you only care about the well-being of future generations or people leaving in other countries. (CIRCLE JUST ONE).

1   2   3   4   5   6   7   8   9   10

References

Arrow, K., J. Solow, P. Portney, E. Leamer, R. Radner, and E. Howard Schuman. (1993). *Report of the NOAA Panel on Contingent Valuation*. Federal Register, 58(10), 4601-14.

Ajzen, I., T. C. Brown, and L. Rosenthal. (1996). "Information Bias in Contingent Valuation: Effects of Personal Relevance, Quality Information, and Motivational Orientation." *Journal of Environmental Economics and Management* **30**:43-57.

Atkin, Charles K., and Steven H. Chafee. (1972). "Instrumental Response Strategies in Opinion Surveys." *Public Opinion Quarterly* **36**(1):69-79.

Blend, J.R and E.O. Van Ravenswaay. (1999). "Consumer Demand for Eco-labeled Apples: Results from Econometric Estimation." *American Journal of Agricultural Economics* **81**:1072-1077.

Cameron, Trudy Ann. (1988). "A New Paradigm for Valuing Non-market Goods Using Referendum Data: Maximum Likelihood Estimation by Censored Logistic Regression." *Journal of Environmental Economics and Management* **15**: 355-379.

Cameron, Trudy Ann and Daniel D. Huppert. (1989). "OLS Versus ML Estimation of Non-market Resource Values with Payment Card Interval Data." *Journal of Environmental Economics and Management* **17**: 230-246.

Campbell, Bruce A. (1981). "Race-of-interviewer Effect Among Southern Adolescence." *Public Opinion Quarterly* **45**(2): 231-244.

Cotter, Patrick R., Jeffrey Cohen, and Philip B. Coulter. (1982). "Race-of-interviewer Effects in Telephone Interviews." *Public Opinion Quarterly* **46**(2): 278-284.

Dalecki, Michael G., John C. Whitehead, and Glenn C. Blomquist. (1993). "Sample Non-response Bias and Aggregate Benefits in Contingent Valuation: an Examination of Early, Late and Non-respondents." *Journal of Environmental Management* **38**: 133-143.

Davis, Darren W. (1997). "Nonrandom Measurement Error and Race of Interviewer Effects Among African Americans." *Public Opinion Quarterly* **61**(1):183-207.

Desvousges, William H. and, Sara P. Hudson and Melissa C. Ruby. (1996). Evaluating CV Performance: Separating the Light from the Heat. *The Contingent Valuation of Environmental Resources*. Edited by David J. Bjornstad and James R. Khan. *Oak Ridge National Laboratory*, US. Edward Elgar.

Edwards, Steven F., and Glen D. Anderson. (1987). "Overlooked Biases in Contingent Valuation Surveys: Some Considerations." *Land Economics* **63**(2):168-178.

Ethier, Robert G., Gregory L. Poe, William D. Schulze, and Jeremy Clark. (2000). "A Comparison of Hypothetical Phone and Mail Contingent Valuation Responses for Green-pricing Electricity Programs." *Land Economics* **76**(1): 54-67.

Ferber, Robert and Hugh G. Wales. (1952). "Detection and Correction of Interviewer Bias." *Public Opinion Quarterly* **16**(1): 107-127.

Goldar, Bishwanath and Smita Misra. (2001). Valuation of Environmental Goods: Correction for Bias in Contingent Valuation Studies Based on Willingness-To-Accept. *American Journal of Agricultural Economics* **83**(1): 150-156.

Hatchett, Shirley and Howard Schuman. (1975). "White Respondents and Race-of-Interviewer Effects." *Public Opinion Quarterly* **39**(4):523-528.

Kane, Emily W., and Laura J. Macaulay. (1993). "Interviewer Gender and Gender Attitudes." *Public Opinion Quarterly* **57**(1):1-28.

Kleckner, Naomi S, Christopher G. Leggett, Kevin J. Boyle, John Duffield and Robert Cameron Mitchell. (2002). Evidence of Social Desirability Bias in Contingent Valuation Survey Administered Through In-Person Interviews. Paper presented at the II World Congress of Environmental Economics, Monterey, CA.

Messonnier, Mark L., John C. Bergstrom, Christopher M. Cronwell, R. Jeff Teasley, and H. Ken Cordell. (2000). "Survey Response-Related Biases in Contingent Valuation: Concepts, Remedies, and Empirical Application to Valuing Aquatic Plant Management." *American Journal of Agricultural Economics* **82**(2):438-50.

Schulze, William, Gary McClelland, Donald Waldman, and Jeffrey Lazo. Sources of Bias in Contingent Valuation. (1996). *The Contingent Valuation of Environmental Resources*. Edited by David J. Bjornstad and James R. Kahn. *Oak Ridge National Laboratory,* U.S. Edward Elgar.

Whittaker, D., J.J. Vaske, M. P. Donnelly, and D. S. DeRuiter. (1998). "Mail versus Telephone Surveys: Potential Biases in Expenditure and Willingness-to-Pay Data." *Journal of Park and Recreation Administration* **16**(3):15-30.