

**“Are People Willing to Pay More for Socially Responsible Products: A Meta-Analysis”**

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### Abstract

Many companies have made significant investments in socially responsible products. Environmentally safe cleaning products, fair trade coffee, and sustainable seafood are just a few examples. In this paper, we conduct a meta-analysis of eighty-three published and unpublished research papers across a large number of product categories and countries and using different data collection methodologies to better understand differences in willingness to pay for socially responsible products. We use two dependent variables: the percentage premium people are willing to pay and the proportion of respondents who are willing to pay a positive premium. We find that the mean premium is 17.3% and that this percentage is lower for durable than for non-durable goods and higher for goods where the behavior benefits humans (e.g., labor practices) than animals (e.g., bigger cages) or the environment. On average, 60% of respondents are willing to pay a positive premium and this does not vary by whether the good is durable. Further, along with products that benefit humans, products that benefit animals are shown to increase the number of people willing to pay a premium compared to environmentally friendly goods. Implications for retailers, manufacturers, and future research are discussed.

*Keywords:* meta-analysis, social responsibility, willingness-to-pay, environment, fair trade, animal rights

Socially-responsible or “green” goods and services are becoming more important than ever for retailers as their presence continues to increase dramatically. Environmentally safe cleaning products, fair trade coffee, and sustainable seafood are just a few examples of this growing trend. Recently, Levi Strauss announced a line of jeans with a pitch “These jeans are made of garbage.” The Waste<Less jeans are composed of at least 20 percent recycled plastic (*BusinessWeek* 2012). Although companies offering socially responsible products provide a benefit to society, economic incentives are often a catalyst for, or at least an input into, the decision by a firm to adopt socially responsible practices (Karnani 2012). Understanding consumers’ willingness to pay (WTP) for socially responsible products is important for the future success of such endeavors.

Despite the growth in this product area and previous research on WTP, there are still many unanswered questions about consumers’ WTP for socially responsible products. For instance, it is unclear how much more consumers on average are willing to pay for socially responsible products. As might be expected from the rise in socially responsible product offerings, many studies have found that consumers are willing to pay a relatively large premium for socially responsible products (e.g. Aguilar and Vlosky 2007; De Pelsmacker, Driesen, and Rayp 2005; Saphores et al. 2007). However, a smaller number of studies have reported premiums closer to zero (e.g. Grönroos and Bowyer 1999) or even to be negative in rare cases (e.g. Akkucuk 2011). Retail sales also put into question WTP for socially responsible products. Clorox’s widely-heralded line of Green Works cleaning products has had considerable difficulty gaining traction with retailers and consumers. The importance of price relative to the benefits of social responsibility was found by a market research firm Gfk and Yale University (2008) and also in a recent paper by Gleim et al. (2013). The latter results suggest that price is one of the top

barriers to green consumption. Therefore, quantifying consumer WTP for socially responsible products is still an open question.

Beyond the average WTP for socially responsible products, another open question is what the differences are in WTP across product types, types of social responsibility, and contextual factors like location and method of elicitation. The research looking at individual differences that can explain variations in WTP for socially responsible products (e.g., Balderjahn 1988; Roberts 1996) suggests that understanding systematic differences in WTP for socially responsible products is important. Similarly, understanding the economic value of implementing different types of socially responsible practices to consumers is of interest to society, manufacturers, and the retailers who distribute the manufacturers' products.

The current literature makes it difficult to identify WTP differences across product categories or type of social responsibility. For instance, is providing fair wages to employees more or less likely to increase a consumer's WTP compared to using environmentally friendly tactics? If you can only invest in green practices for one of your product lines, will the type of product you choose affect the WTP premium or the proportion of consumers willing to pay a premium? This is not a trivial matter. A recent article in *Forbes* said that many corporate leaders, realizing lackluster return on social responsibility investments, want to know the best way to increase the value of these investments (Klein 2012). In the same article, the President and CEO of Business for Social Responsibility contends that for social responsibility to be long-term, businesses need to choose socially responsible strategies that align with their self-interest. These arguments suggest that companies need to know how consumers will respond to different types of social responsibility or the different products for which socially responsible practices are adopted.

A few studies have made some attempts to look at multiple products. For instance, Akkucuk (2011) finds significant differences in how much consumers are willing to pay for recycled furniture compared to other products such as tires or cell phones. Consumers were also found to be willing to pay a lower price premium over the base price for an environmentally-friendly new home compared to other environmentally-friendly wood products such as a kitchen remodeling job or a ready-to-assemble chair (Ozanne and Vlosky 1997). However, it is unclear if these differences are due to meaningful differences in WTP across product type or because of differences in base price. Only two articles in our literature review yielded studies that looked across multiple types of beneficiaries of socially responsible products. Loureiro and Lotade (2005) look at WTP for fair trade coffee (which benefits people) and shade-grown coffee (which benefits the environment). The estimates of WTP across these two types of products are nearly identical. Carlsson et al. (2010) found similar results. While this might suggest that beneficiary does not matter, this small sample size makes it difficult to generalize. The vast majority of studies on WTP for socially responsible goods focuses on one product type (e.g. coffee) and one socially responsible characteristic (e.g. fair trade) so it is hard to make conclusions across product category and social responsibility type.

Meta-analysis is a good means of understanding variation in WTP across different products and types of social responsibility. Using each study in a paper to be used as one data point permits an analysis of multiple product categories and types of social responsibility. For instance, by looking across studies, we can identify whether socially responsible durable goods command a higher or lower price premium than socially responsible non-durable goods and whether consumers are likely to pay a larger or smaller premium for socially responsible goods that benefit the environment compared to those that benefit human working conditions. There

have been other meta-analyses of socially responsible WTP studies (Lagerkvist and Hess 2011; Gallastegui 2002; Anderfer and Liebe 2012; Cai and Aguilar 2013). However these meta-analyses have largely concentrated on one product category (e.g. wood products) or one type of social responsibility (e.g. fair trade). Broader generalizations about WTP for socially responsible products may be made by widening the set of studies included in the meta-analysis.

Meta-analyses have also been widely used in marketing. Some well-known examples are in the areas of advertising (Assmus, Farley, and Lehmann 1984; Sethuraman, Tellis, and Briesch 2011), pricing (Tellis 1988), and diffusion models (Sultan, Farley, and Lehmann 1990). These meta-analyses have helped the marketing field develop a large set of empirical generalizations (Hanssens 2009).

The goal of this meta-analysis is to generate a set of findings about consumer WTP that are not conditional on the particulars of any single study, product type, or socially responsible tactic and to provide researchers, policy makers, and companies with a concise synthesis of the research results. Given the increasing amount of research in the area of social responsibility and the many types of behavior that can be considered socially responsible, we do not claim to provide a comprehensive review of the social responsibility WTP literature. However, we have collected a reasonably large and representative sample of studies on the WTP for socially responsible products for analysis.

In the next section, we provide definitions of social responsibility and methods used to measure willingness to pay. We then discuss our method of selecting studies for analysis and whether and to what extent publication bias is of concern in our sample; we also describe the data collected. Detailed results of a meta-regression analysis are then presented. The final section offers concluding remarks, suggestions for future research and policy implications based on the

meta-analysis.

## **Definitions**

### **Social responsibility**

The ISO 26000, an organization tasked with standardizing guidelines for social responsibility, defines social responsibility as the “responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour” (2010, p. 3). Thus, socially responsible products provide a benefit to society at large. This definition also asserts that benefits of socially responsible products can benefit the people of a society, the animals in a society, or the environment.

### **Willingness-to-Pay**

The literature on WTP is huge and cuts across a number of disciplines. Many books (e.g., Anderson, Kumar, and Narus 2007) have emphasized the importance of understanding customers’ WTP when determining a price to charge. Consequently, the marketing literature in this area is very large to which recent reviews attest (e.g., Jedidi and Jagpal 2009).

Definitions of customer value or WTP vary. A commonly-used definition is the economic term, reservation price, or the maximum amount a customer is willing to pay for a good (more precisely, the price at which the good leaves the choice set). However, there are many other definitions (see Jedidi and Jagpal 2009 for an extensive set of alternative definitions of WTP). In this meta-analysis, and because many of the papers did not differentiate types of WTP, we treat all dependent measures as though they are measuring the same construct.

There are many methods used to elicit WTP. Open-ended responses allow a respondent to supply their own value of WTP. Alternatively, multiple choice methods provide respondents with a range of options from which they can choose.

Another approach, often used by economists to value natural resources, is called contingent valuation. Two types of contingent valuation are possible. A within-subjects method provides a respondent with a starting price and continues to increment or decrement the price from this point until a consumer reveals their WTP. For the purposes of this meta-analysis, a contingent valuation technique such as this was classified as open ended since the respondent's WTP was not restricted to a specific range. A between-subjects contingent valuation technique gives different prices to each respondent and asks them whether or not they would buy the product at the stated price in yes or no form. The sum of all the respondents' answers to the single question allows for the creation of a demand curve. This type of contingent valuation approach was coded as multiple choice.

Conjoint analysis estimates WTP for an attribute by estimating the indirect utility function,  $V$ , based on the experimental design and then estimating the marginal rate of substitution (MRS) between an attribute ( $m$ ) and price ( $p$ ) using the following relationship:

$$(1) \quad \text{MRS} = -(\partial V / \partial m) / (\partial V / \partial p).$$

Auctions, both those that are naturally occurring and those that are staged as part of an experiment, can also be used to estimate WTP. In an auction, consumers bid on the right to buy the item up for auction. Real purchase data can be used to estimate WTP. Hedonic analyses typically use cross-sectional data where there is variation in product prices for different levels of product attributes. Alternatively, field experiments can be run varying prices and product characteristics. The resulting sales can be used to infer the demand and WTP for the manipulated product features.



### **Data Collection**

Data were collected using electronic databases (i.e. the ISCWeb of Knowledge, Google Scholar, NYU Library Catalogs “Bobcat”) and reference lists from identified studies including meta-analyses (farm animal welfare: Lagerkvist and Hess 2011; eco-labels: Gallastegui 2002; fair trade: Anderfer and Liebe 2012; certified wood: Cai and Aguilar 2013). The literature search used the following keywords, individually and in combination: eco-label, environment, ethical, fair trade, green, labor, willingness to pay, social, and WTP.

We included both published and unpublished literature since publication bias could skew the results of our meta-regression (Stanley 2005). To further encourage the inclusion of unpublished papers on the topic, we also searched the websites of authors who have an established history of conducting social responsible WTP studies. Just under ten percent of the included papers are working papers. In addition to including unpublished works, the final sample includes studies from a broad range of journals, totaling 52 different outlets. Further, as we will find later, there is no empirical evidence of publication bias.

In order for the study to be included, it had to meet a range of criteria. In general, we wanted the products restricted to those having a benefit conferred on society as opposed to the individual, and that any incremental WTP would solely be due to this societal benefit. Thus, the social responsibility element had to be inherently part of the product itself. For instance, the company could use socially responsible practices in the types of materials used, the production methods employed, or the labor required in making or testing the product. Alternatively, studies regarding other goodwill that the company generates outside of the sale of a product, such as donations to charity, are excluded from our analysis. In addition, the socially responsible element could not confer private benefits. This was necessary to ensure that any changes in WTP could

be solely attributed to the social benefit the product bestowed. As a result, studies on organic foods, which are commonly believed to provide health benefits, and studies on hybrid vehicles and energy reducing appliances, which provide economic incentives, were excluded from our analysis. Without this requirement, personal differences in valuations of the private benefits may artificially inflate the valuations of the WTP for the socially responsible element.

### **Dependent Variables**

Two dependent variables were considered in our meta-analysis. We considered both the percentage change in WTP from a base price for the socially responsible product as well as the proportion of participants willing to pay a price premium for a socially responsible product. These two dependent measures were chosen due to their frequency in reporting as well as their ability to make meaningful comparisons across studies. Further, these two dependent variables capture related, but not conceptually overlapping aspects of consumers' WTP, as evidenced by their moderate correlation in studies that report both ( $r = .54$ ).

### **Percentage Difference in Willingness to Pay Over the Base Price**

The percentage difference from the base price that consumers are willing to pay allows us to quantify the increased value that consumers place on the socially responsible element. If a socially responsible element is costly to implement, this measure can be useful in determining whether the increased cost can be offset by the increased WTP. However, as the percent difference in WTP is both a function of the number of people who are willing to pay a premium and the actual valuation placed on the socially responsible element, the results must be interpreted with caution. For instance, if the average premium in WTP is 25%, this might be because the average respondent is willing to pay 25% more or it might be because half of the respondents are willing to pay a 50% premium and the other half of the respondents will not pay

any premium. Because of each of their strengths and limitations, we feel both dependent measures are important to be able to understand meaningful differences in WTP in a meta-analysis. Further, differences in these dependent variables across analyses are of theoretical and practical interest.

### **Proportion of Participants Willing to Pay a Premium**

The proportion of participants who are willing to pay a premium of any size can be seen as an indicator of market size. As this percentage gets larger, it suggests that a greater proportion of the population value the socially responsible element to some extent. However, this dependent measure cannot quantify the change in WTP. For instance, a study in which every single person is willing to pay a 1% premium and a study in which every person is willing to pay a 30% premium would both show 100% of the participants willing to pay a premium. However, clearly these outcomes have important differences when determining both customer value and pricing for a socially responsible good.

### **Calculating the Dependent Variables**

Many papers directly report one or both of the dependent measures. For papers that did not directly report one of both measures, we attempted to compute the dependent variables from empirical results provided in the paper. When multiple choice responses offered ranges, the midpoint of the range was used as the WTP for that option. When conjoint analysis was used and WTP estimates were not provided by the authors, we used expression (1) to calculate the marginal WTP based on the utility function estimates. In rare cases, social responsibility was described as being negative (i.e. the product is harmful to the environment or employees in some way). For these studies, the sign of the percentage change of WTP was reversed. If a study did

not provide sufficient information to calculate a dependent variable, that paper was not used as part of the observation set for that dependent variable.

### **Independent Variables**

#### **Product Type**

The studies included in the meta-analysis span a wide range of product types and categories. One dimension of interest in such a meta-analysis is that of durable versus non-durable products. There is reason to believe that consumers may be willing to pay a greater premium for socially responsible products that are durables. Durables, by definition, last beyond a couple of years. Therefore, any premium paid can be amortized over the life of the product. Looked at in a slightly different light, the premium on a durable product may be seen as a one-time expense whereas the premium on a non-durable is incurred on a regular basis. While these reasons suggest that socially responsible durable goods should elicit a higher WTP, norms and social pressure may play a larger role for non-durable products. There is greater publicity for and awareness of socially responsible non-durable goods such as fair trade coffee and environmentally friendly hotel rooms than there is for socially responsible durable goods such as environmentally friendly furniture and electronics. This is particularly true for the types of products in our sample where appliances and cars (which confer a private benefit) are excluded from the analysis.

#### **Socially Responsible Benefit**

There are three main beneficiaries of socially responsible undertakings: animals, the environment, or people. Products which provide positive social benefits to animals provide better living conditions for animals through free range practices, more humane types of castration etc. Environmentally friendly products protect rainforests, reduce pollution, and preserve water

sources, for example. We also categorized practices such as sustainable seafood as benefitting the environment since the use of these practices is more about eco-system sustainability than it is about providing benefits to the sea animals themselves. Finally, people can be beneficiaries of socially responsible products when the product provides fair wages or good working conditions to its employees. In some papers, there were multiple recipients of the socially responsible element. These were coded as “multiple” independent of which combinations were used in the study.

### **Certification**

Certification was coded as present if a third party validated the socially responsible element. Certified socially responsible products should yield a higher WTP than a socially responsible product without any certification. Though this is rather obvious, the meta-analysis allows us to quantify how much certification is worth.

### **Certification Interactions**

It is possible that certification is more important for some types of socially responsible products more than others. We explore this possibility by looking for interactions of certification by beneficiary of socially responsible product.

### **Base Price**

When the base price was given in a currency other than US dollars, the price was converted to US dollars using the year of the study or the year of the paper if the year of the study was not provided. We expect that the base price will negatively affect the percentage premium participants are willing to pay for socially responsible products since this increases the overall price premium consumers will pay. The dependent measure that looks at the proportion of participants willing to pay a premium is capturing the number of people who place any

incremental monetary value on a social benefit. We have no a priori reason to believe that people are less likely to value social benefits when a product's price is higher. Therefore, we predict that base price will have no effect on this measure.

### **Location**

Each study was coded for the continent where the study took place. This was done to examine if there are meaningful differences in WTP for socially responsible products between cultures.

### **Elicitation Method**

We categorized each study as using conjoint analysis, multiple choice, open-ended, auction, or purchase data as described in the Willingness to Pay section. We also coded whether the elicitation method was incentive compatible. An incentive compatible approach is any method in which there are real repercussions for the consumer's decision such as when the respondent has an actual chance of receiving and/or paying for their choice. Obviously, real purchase data are incentive compatible. However, other data collection methods can be modified to be incentive compatible.

Given the wide variety of approaches to estimating WTP, it is not surprising that there are a number of studies that attempt to compare them. The most comprehensive comparison study in the marketing literature was conducted by Miller et al. (2011). The results showed that the incentive-based methods (BDM and incentive-based conjoint) had much lower bias against the "real" criterion than the "hypothetical" methods. Thus, we expect that methods that are incentive compatible and those that use real purchase data will elicit lower WTP for socially responsible products than methods that are not incentive compatible.

We also coded whether the method of elicitation allowed participants to respond with negative changes in WTP. Papers measuring incremental WTP do not always permit respondents to indicate negative values. For instance, a question that asks, “How much more would you be willing to pay if the product were environmentally friendly?” does not allow a respondent to provide a negative WTP even if the respondent is allowed to respond in an open-ended format. Such a question is likely to skew WTP upwards. Thus, we expect that methods that do not allow negative WTP estimates will estimate higher WTP for socially responsible products compared to methods that do.

### **Peer-Reviewed**

This is a dummy variable for whether the paper was published in a peer-reviewed outlet (1) or not (0). Possible publication bias would produce significant positive coefficients on this variable indicating that peer-reviewed papers tended to have higher values of WTP and thus result in higher likelihood of publication.

### **Self-Calculated DVs**

This is a dummy variable for whether we computed the dependent variable from empirical evidence in the paper (1) or whether it was directly provided (0). This is a check on whether we introduced any bias into the analysis.

## **Empirical results**

In total, the full data set includes eighty-three usable papers yielding 180 observations. Thirty-eight papers (97 observations) are included in both dependent measures data sets. Eight papers (9 observations) are unique to the proportion of participants DV set and thirty-seven papers (74 observations) are unique to the percent difference from base price DV set. Papers used in the analyses are identified in the reference list with a superscript notation.

The models were first estimated using a base set of independent variables (Model I) including both substantive and methodological variables. Model II includes the log of the base price, and Model III adds the interaction effects.

It is well-known that meta-analysis models suffer from heteroscedasticity (Farley and Lehmann 1986). This is from two sources. First, the effects are estimated in each individual study with varying amounts of precision and different sample sizes. Second, multiple effects are taken from the same study using similar methodology. As a result, we estimated the models using Stata's robust estimator that employs White's "sandwich" approach (Greene 2003, p.220).

### **Descriptive Statistics**

The percentage difference in WTP over the base price across studies ranged from -24.3% to 87.1%.<sup>1</sup> The mean difference in WTP over the base price is 17.3%, SD = 18.8 ( $t = 9.54, p < .001$ ). Thus, across the 75 papers where we could get a measure of the percent WTP, people are willing to pay a substantial premium over the base price for a product with a socially responsible element. Table 1 shows the distribution of observations by independent variable for each dependent variable. We note that about 2/3rds of the studies focus on the environment as the beneficiary of the socially responsible element. This shows a lack of studies using people, animals, or any combinations of the three.

----- Insert Table 1 about here -----

The empirical results from the percentage difference dependent variable are shown in Table 2. Nested model F-tests indicated that the most parsimonious model is Model II including the natural log of the base price.

----- Insert Table 2 about here -----

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<sup>1</sup> We eliminated 4 observations whose percentages differences in WTP were over 5 standard deviations above the mean.



The mean proportion of participants who were willing to pay a premium across the 106 observations is 60.1%,  $SD = 20.9$  ( $t = 29.59, p < .001$ ). This proportion ranged from 9.8% to 92.6%. We note that about 80 percent of the studies focus on the environment as the beneficiary of the socially responsible element. Thus, as with studies measuring the percent difference dependent variable, there is a significant lack of studies using people, animals, or any combinations of the three.

These empirical results for the proportion of participants willing to pay a premium are shown in Table 3. F-tests showed that the most parsimonious model is Model I without the natural log of the base price or the interactions.

----- Insert Table 3 about here -----

### **Product Type**

Even after controlling for the base price, consumers are willing to pay a smaller price premium for durable goods than for non-durables. As suggested previously, the non-durable goods prevalent in the studies included in the meta-analysis tend to be goods with greater socially responsible social norms (e.g., coffee) than the durable goods (e.g., furniture). This suggests that social norms may be playing a role in the amount of premium consumers are willing to pay. There were no significant differences in the proportion of participants willing to pay a premium. This is somewhat surprising given the results of the price premium dependent measure. Perhaps social norms play a smaller role in determining whether a consumer will pay a premium than in determining the amount of premium a consumer is willing to pay.

### **Socially Responsible Benefit**

Results show that a greater proportion of consumers are willing to pay a premium and the overall difference in WTP is greater for products where the social responsibility involves

humans compared to products that benefit the environment (the omitted base). There is no difference in percentage WTP over the base price between products benefitting animals and those benefitting the environment. However, a larger proportion of consumers are willing to pay a premium for products benefitting animals than those benefitting the environment. Products offering more than one socially responsible beneficiary show a significantly lower WTP than all of the individual benefits on the price premium measure, but an increase in proportion willing to pay a premium compared to products benefitting the environment.

The results of the beneficiary are interesting for two reasons. First, the biggest push for new products has been for those based on environmental concerns such as the Clorox Green Works line mentioned in the introduction. The current results suggest that products that offer human benefits such as good working conditions may be able to obtain a greater price premium and have wider appeal than those focusing on animal or environmental benefits. Second, as we noted from the results in Table 1, the vast majority of research in this area has focused on environmental benefits. More research is needed on WTP for products that benefit humans and animals.

### **Certification**

Certification increases the percentage WTP over the base price suggesting that people are WTP considerably more when the good in question has some kind of official certification. There was no difference in proportion of consumers willing to pay a premium for certified versus non-certified products.

### **Certification Interactions**

None of the interactions of certification by beneficiary of socially responsible product were found to be significant. It is difficult to tell if this lack of significance is due to the fact that there are no differences or because some of the interactions had very few observations.

### **Base Price**

In accordance with expectations, higher base prices lead to a lower percentage WTP. Base price did not impact the proportion of consumers willing to pay a premium.

### **Location**

Europeans and Australians are willing to pay more for socially-responsible products than North Americans (the contrast group) and significantly more than South Americans and Asians. While we do not have any academic literature to support these results, this is in line with a survey conducted in 2007 by the European Lifestyles of Health and Sustainability that found that Europeans are 50 percent more likely than U.S. residents to buy “green” products, from hybrid cars to organic food and personal care products (Thompson 2007). In contrast, a greater proportion of consumers from Asia and Australia are likely to pay a positive amount for socially responsible goods relative to North Americans (the contrast group), South Americans, and Europeans. This suggests that while socially responsible goods in Europe may obtain a higher percentage premium, the market size in Asia may be larger. The results of locations outside of Europe and North America should be interpreted with caution, however, as the sample sizes were considerably smaller.

### **Elicitation Method**

Studies using real purchase data demonstrate a significantly lower WTP than those using more artificial approaches (conjoint analysis, open-ended questions, and the omitted category,

multiple choice). Those studies using actual purchasing data also result in a lower proportion WTP a positive amount than any other data collection method. Auctions provided mixed results. Auctions resulted in significantly larger proportions of people WTP a premium. In the percentage WTP over base price, auctions show a strong directional effect similar to real purchase data suggesting that it reduces the percent premium consumers are willing to pay, although this difference is not significant.

It is clear that studies that do not allow respondents to declare a lower WTP for socially-responsible goods are potentially biased as those that do show a markedly lower WTP. This is also true for the proportion of participants willing to pay a premium.

Contrary to expectations, papers using incentive compatible methods show a significantly higher WTP. We note that papers using real purchase data are by definition incentive compatible and, as seen in the previous section, result in lower WTP. Thus, the incentive compatible dummy variable is detecting those papers that used some other incentive-compatible data collection method, for example, a conjoint analysis design that gave respondents a chance to win or buy one of their chosen options. These results suggest that incentive-compatible research approaches not using real purchase data are not any better at mimicking real purchase decisions than non-incentive compatible methods. There were no studies in the sample for the proportion of participants dependent measure that were not real purchase data that used incentive compatible methods.

**Peer-Reviewed**

One would expect that published papers would have a higher percentage WTP and a greater proportion of consumers WTP a premium than those that are rejected or otherwise unpublished. There is no significant difference in the percentage WTP over base price for papers that are peer reviewed compared to those that are not. Directionally, those papers that have not gone through a peer review process report higher WTP than those that have. Papers that are peer-reviewed have a significantly lower proportion of respondents WTP a positive amount for socially-responsible goods. Thus, there does not appear to be any evidence of publication bias in our sample as one would expect that it would be more difficult to publish a paper producing a low or null effect.

### **Self-Calculated DVs**

The insignificant results on self-calculated dependent variables show no bias for papers where we had to calculate the dependent variable rather than it being self-reported.

### **Conclusions**

Our meta-analysis included studies from over 80 with 180 unique observations. It is, to our knowledge, the largest meta-analysis on WTP for socially responsible goods and the only meta-analysis that looks at WTP across beneficiary and product type. By including such a diverse set of papers, the results of our meta-analysis provide important implications for retailers. First, overall people are willing to pay a positive and significant premium for socially responsible products. On average socially responsible products demand a 17.3% premium over products without socially responsible features. Further, more than half of participants (60.1%) are willing to pay some type of premium for these products. Because we excluded products that conferred any type of private benefit, the results suggest that average consumer is willing to pay extra for benefits that do not directly benefit themselves.

In terms of the relative value of socially responsible products, results from both dependent variables suggest that manufacturers' historical emphasis on the development of products that demonstrate an environmental benefit may be suboptimal for profitability as products with human beneficiaries obtain a greater price premium across both types of dependent measures. All else equal, it appears offering good working conditions and benefits such as fair trade may yield greater price premiums and market share. Further, products that offer benefits to animals appear to have a larger potential market size than environmental products according to the proportion of participants willing to pay any type of premium. These results have implications for retailers' pricing flexibility as well as any influence that retailers have on manufacturers' new product investments. In addition, it appears that retailers can obtain larger price premiums for frequently-purchased socially responsible goods than for durable socially responsible products even after controlling for the price levels.

Our meta-analysis does have some limitations. First, with the broad area of socially responsible products, it is likely that not every study on the topic was included in our meta-analysis. However, we did have a relatively large sample size and feel that the papers are broad and representative. The main limitation of our meta-analysis is the inability to test interactions. While we did formulate several interactions, they were all insignificant and limited in number due to lack of variation of many of the factors. This limitation could however be seen as an important direction for future research. While we were not able to find significant interactions in our dataset, it is likely that some may exist. For instance, trust is a driver of socially responsible product sales (Osterhus 1997). Therefore, external certification may be more important for certain product types or retailers than others.

Another limitation of our meta-analysis was the inability to test differences in willingness to pay over time. In the last few years sales of some eco-friendly options, such as cleaning supplies, have been in decline (Clifford and Martin 2011; Kurutz 2011). A number of other articles have pointed to the fact that eco-friendly products have found a smaller segment since the economic problems of 2007-8 (*Advertising Age* 2012)., While we would have liked to test whether WTP has declined over the years and during economic recessions, the majority of studies did not report the year(s) in which data were collected. From the papers that did provide collection dates, collection years were often vastly different from publication date. Therefore, we did not feel justified to infer collection dates from publication dates in papers that did not publish collection date information. Future research in this area would be fruitful.

As can be seen from Table 1 and the reference list, prior research on WTP for socially responsible products has been dominated by researchers interested in natural resources. More studies are needed that have both people and animals as the beneficiaries of the socially responsible activity. Further, future research is needed to understand the underlying reason that consumers are willing to pay more for products that benefit other humans compared to those that benefit the environment. A simple interpretation may be that people view benefits to other people as more important and are therefore more willing to pay a premium. However, alternative reasons are also plausible. For instance, Gleim et al. (2013) found that a major impediment of WTP for environmentally friendly products was consumers' belief of a lack of expertise. Perhaps consumers feel a greater sense of expertise in understanding labor conditions and fair wages than they do about ways to help the environment. A similar, but distinct explanation could be in regards to perceived consumer effectiveness (Balderjahn 1988; Roberts 1996). It is possible that consumers feel as though the difference they make when choosing socially responsible products

that benefit other people makes more of an impact than purchases that benefit the environment. Research that can identify the cause of this disparity in WTP could introduce useful interventions to increase WTP for socially responsible products that benefit the environment.

In addition, a greater geographic spread of studies is necessary to better understand cross-cultural differences. Our results suggest there may be meaningful differences across continents in terms of WTP for socially responsible products. Future research could try to disentangle if these differences are the result of variations in belief structures and values across cultures or if they are a function of external factors like social norms or how common such goods are in a society. Such results would be useful for international companies looking to expand socially responsible products to different areas of the world. Additionally, if the causes are externally founded, cross-cultural differences could also be used to understand how different types of interventions may be useful to stimulate greater interest in socially responsible products.

On a methodological note, we found that, unsurprisingly, studies that did not allow for negative responses for the dependent variable produced a significant upward bias for both dependent variables. This is a simple yet crucial fix for any future WTP study in this area. Studies that do not provide participants with the ability to pay less for socially responsible products will inflate WTP both in terms of market size and size of premium.

This meta-analysis synthesizes the results of a large stream of literature conducted over the last few decades and provides important insights. We hope that this paper provides a roadmap for future research attempting to better understand consumers' WTP for socially responsible products.



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<sup>a</sup> = paper used in percentage WTP over base price

<sup>b</sup> = paper used in proportion of participants WTP a premium

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**Table 1. Number of Observations by Independent Variable for Each Dependent****Variable**

		DV: Percent Difference WTP over Base Price	DV: Proportion of Participants WTP a Premium
<b>Variable</b>		<b># of Observations</b>	<b># of Observations</b>
Willingness to Pay		171	106
Base Price		147	83
Peer Reviewed		153	92
Durable		65	57
Beneficiary	Environment	113	85
	People	23	12
	Animals	26	4
	Multiple	9	5
Certified		87	61
Location	NorthAmerica	81	52
	Europe	70	32
	SouthAmerica	1	2
	Asia	14	15
	Australia	5	5
Form of Elicitation	Conjoint	38	5
	Multiple Choice	86	78
	Open-Ended	20	19
	Auction	14	2
	Purchase Data	13	2
Hypothetical		140	102
Incentive Compatible		33	4
Allow Negative		88	29
Interactions	CertifiedXEnvironment	66	53
	CertifiedXPeople	11	4
	CertifiedXAnimals	2	0
	CertifiedXMultiple	8	4

**Table 2. Results: Percentage Difference Willing to Pay Over Base Price**

Variable	Model I: Base Model	Model II: Model with Base Price*	Model III: Model with Base Price and Interactions
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	26.386 (5.153) <sup>a</sup>	24.968 (5.850) <sup>a</sup>	23.252 (5.590) <sup>a</sup>
Peer-Reviewed	-12.037 (4.196) <sup>a</sup>	-6.123 (4.303)	-6.671 (4.182)
Durable	-9.306 (2.875) <sup>a</sup>	-7.869 (4.660) <sup>c</sup>	-8.974 (4.471) <sup>b</sup>
Beneficiary: People	11.987 (4.734) <sup>a</sup>	9.438 (4.320) <sup>b</sup>	18.034 (9.417) <sup>c</sup>
Beneficiary: Animal	8.667 (5.619)	0.463 (5.071)	0.801 (4.795)
Beneficiary: Multiple	7.740 (7.056)	-16.473 (4.046) <sup>a</sup>	-10.923 (3.624) <sup>a</sup>
Certified	6.101 (3.880)	10.914 (4.515) <sup>b</sup>	13.651 (4.160) <sup>a</sup>
Europe	4.410 (3.358)	8.940 (3.507) <sup>a</sup>	10.868 (3.601) <sup>a</sup>
South America	0.550 (3.376)	-8.758 (3.963) <sup>b</sup>	-9.232 (4.024) <sup>b</sup>
Asia	-7.749 (2.819) <sup>a</sup>	-9.639 (3.218) <sup>a</sup>	-10.070 (3.167) <sup>a</sup>
Australia	8.036 (2.338) <sup>a</sup>	6.941 (2.539) <sup>a</sup>	6.605 (2.508) <sup>a</sup>
Purchase Data	-28.342 (13.371) <sup>b</sup>	-29.470 (13.300) <sup>b</sup>	-28.340 (13.524) <sup>b</sup>
Conjoint	3.699 (4.269)	-1.895 (5.377)	-1.095 (5.372)
Open-Ended	-2.740 (4.282)	5.183 (5.206)	5.581 (5.591)
Auction	-24.784 (14.261) <sup>c</sup>	-19.182 (15.303)	-15.875 (15.395)
Allows Negatives	-13.375 (3.626) <sup>a</sup>	-9.097 (3.933) <sup>b</sup>	-9.928 (4.063) <sup>b</sup>
Self-Calculated DVs	3.509 (3.391)	2.943 (2.931)	1.925 (3.259)
Incentive Compatible	36.460 (12.616) <sup>a</sup>	30.238 (13.153) <sup>b</sup>	29.709 (13.401) <sup>b</sup>
Ln Baseprice		-1.520 (0.497) <sup>a</sup>	-1.368 (0.457) <sup>a</sup>
CertifiedXPeople			-11.516 (10.497)
CertifiedXAnimals			1.303 (22.808)
CertifiedXMultiple			-6.255 (4.202)

R<sup>2</sup>

0.394

0.761

0.766

<sup>a</sup>  $p < .01$ , <sup>b</sup>  $p < .05$ , <sup>c</sup>  $p < .10$ 

\* Preferred Model

**Table 3. Results: Proportion of Participants Willing to Pay a Premium**

Variable	Model I: Base Model*	Model II: Model with Base Price	Model III: Model with Base Price and Interactions
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
Constant	-83.621 (7.451) <sup>a</sup>	88.486 (8.563) <sup>a</sup>	84.975 (12.188) <sup>a</sup>
Peer-Reviewed	-23.955 (7.155) <sup>a</sup>	-21.120 (9.409) <sup>b</sup>	-18.599 (11.202) <sup>c</sup>
Durable	-0.753 (4.052)	-5.189 (6.381)	-7.300 (7.851)
Beneficiary: People	24.120 (5.064) <sup>a</sup>	12.129 (5.732) <sup>b</sup>	17.513 (6.932) <sup>a</sup>
Beneficiary: Animal	29.065 (5.938) <sup>a</sup>	22.609 (8.556) <sup>a</sup>	23.233 (8.589) <sup>a</sup>
Beneficiary: Multiple	29.163 (8.095) <sup>a</sup>	21.625 (9.068) <sup>b</sup>	19.897 (5.666) <sup>a</sup>
Certified	-0.879 (6.548)	-1.189 (5.790)	2.258 (8.461)
Europe	-7.348 (6.000)	-10.912 (6.785)	-7.277 (9.983)
South America	-3.483 (15.330)	6.824 (6.441)	4.366 (7.322)
Asia	13.475 (7.110) <sup>c</sup>	14.790 (6.052) <sup>b</sup>	15.041 (6.043) <sup>b</sup>
Australia	15.766 (4.278) <sup>a</sup>	17.260 (4.251) <sup>a</sup>	17.125 (4.367) <sup>a</sup>
Conjoint	-11.338 (7.131)	-11.087 (6.894)	-14.581 (8.685) <sup>c</sup>
Open-Ended	-2.645 (8.829)	-4.355 (9.720)	-7.052 (11.016)
Auction	29.897 (8.708) <sup>a</sup>	12.515 (10.790)	13.128 (11.450)
Purchase Data	-37.060 (12.905) <sup>a</sup>	-35.110 (11.461) <sup>a</sup>	-31.410 (8.762) <sup>a</sup>
Allows Negatives	-21.563 (6.011) <sup>a</sup>	-10.535 (6.209) <sup>c</sup>	-10.094 (8.388)
Self-Calculated DVs	-2.275 (5.804)	0.799 (5.352)	0.509 (5.619)
Ln Baseprice		-0.700 (0.801)	-0.734 (0.820)
CertifiedXPeople			-15.486 (9.989)
CertifiedXMultiple			-0.211 (18.088)

R<sup>2</sup>

0.545

0.55

0.566

<sup>a</sup>  $p < .01$ , <sup>b</sup>  $p < .05$ , <sup>c</sup>  $p < .10$ 

\* Preferred Model