# The Influence of Environmental Claims on Consumers' Willingness to Purchase

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**Abstract** Marketing environmental friendly products can be educational and create consumer awareness if it is done with accuracy, truthfulness, and legitimacy. However consumers have become increasingly skeptical of "green" marketing schemes such as when environmental claims are advertised on products that are in fact harmful to the environment. General environmental claims have been most scrutinized as being manipulative while specific environmental claims have been studied to be more trusted by consumers. This two-part study investigated the relationships between types of environmental claims, consumers' willingness to pay a 10% premium for green stationary products and different consumer types (non-green, light green and dark green). Interviews showed that the majority of participants preferred a product labeling design combining specific environmental details and a numerical rating system when purchasing products on a website. Surveys reveal that the type of environmental claim generally did not influence consumers' willingness to pay more for all consumer types. Using results and comments from the study, it was recommended that general claims be avoided in online and in-store product labeling. Online rating systems for individual companies must be simple and transparent in order to gain consumers' trust and understanding. This study adds to the literature of green consumer behavior and consumer skepticism of green marketing.

**Introduction**

The recent surge of "green" or environmentally-friendly consumer products has inevitably created new strategies in marketing and advertising. Effective marketing of green products is vital to inform consumers of products whose methods of manufacturing, use or disposal are more ecologically sound than conventional products. "Green marketing" can also generate consumer awareness of environmental problems caused by the use of mainstream consumer products. To appeal to green consumers, increasing numbers of manufacturers have been printing environmental claims such as "All Natural", "No CFCs", and "Organic ingredients" on products in order to inform or convince consumers of the product's environmental attributes. A survey of grocery store products in the United States found that 66% of the nearly 400 products examined had some type of environmental claim (Mayer et al. 1996). The motivations for making environmental claims are multi-faceted; not only do they give brands and companies a green imprint but consumers also show a demand for products with environmental labels and are willing to pay a premium for them (Blend and Ravenswaay 1999; Suchard and Polonsky 1991).

However, many consumers tend to associate environmental claims with "greenwashing". Greenwashing is a term used to characterize measures in advertising, marketing or public relations adopted by organizations to create an image of environmental-friendliness or to mask their environmentally-destructive practices (Bruno 2001). One recently publicized case of greenwashing involved an Australian supermarket that was found to be making false claims on its brand of "recycled" toilet paper. Its paper was in fact made of pulp harvested from pristine Indonesia forests (Alberici 2007). In 2007, TerraChoice, an environmental marketing company, found 1,018 consumer products in conventional department stores flaunting a total of 1,753 environmental claims. Only one of the products' claims was found to be entirely true and verifiable; all others were either discovered to be false or written to mislead consumers. Due to this recent phenomenon of greenwashing, many consumers react to environmental claims with skepticism and find them to be "gimmicky" (Environmental Research Association 1990). In 1990, Moore found that environmental claims were perceived as exaggerated and "hyped up". Consumers felt that products with environmental claims are "no better for the environmental than brands that do not make environmental claims" (Mayer et al. 1993).

It is important however to remember not all environmental claims are universally perceived as misleading. General and specific environmental claims are perceived differently by consumers. General claims such as "Better for the Environment" were found to not have enough

information for a consumer to verify that a product is green (Ford et al. 1990). Additionally consumers feel that these claims give them less leverage to hold producers accountable for false advertising (Hoch and Ha 1986). Specific claims such as "100% Post-Consumer Recycled" and "Compostable" refer to specific attributes or processes that are environmentally friendly (Maronick and Andrews 1999). Several studies have shown that the more specific and tangible a product label is written, the more believable and more effective it is in creating brand awareness (Andrews et al. 1998; Snyder 1989; Stafford 1996). Shimp (1986) found that consumers lack understanding of environmental claims unless it provides more context to the claim. For example, explaining that a product is eco-friendly because it uses biodegradable solutions is more tangible and informative than the terms "eco-friendly" or "biodegradable" alone. General environmental claims have historically been the type of claims legally questioned due to their inherent ambiguity (Maronick and Andrews 1999). More important it was found that green consumers are less likely than non-green consumers to be influenced by general environmental claims (Schuhwerk and Lefkoff-Hagius 1995). Though meaning behind specific claims are usually clearer, there still are stringent guidelines written by the Federal Trade Commission (FTC) on the use of certain specific claims such as those regarding biodegradability and ozone friendliness, the two most commonly scrutinized (Scammon and Mayer 1995). For instance, some manufacturers of aerosol cans continue to use the specific claims "No CFCs" and "Ozone Friendly" even though aerosol cans with CFCs were banned in 1978 (NIEHS 1996). These claims are deceptive because it leads consumers to think that only labeled cans are free of CFCs.

Third party certifications are often sought as a way to build credibility for products or brands. In the United States, federal organizations are responsible for certain certification programs such as the United States Department of Agriculture's (USDA) Certified Organic program and the Environmental Protection Agency's (EPA) Energy Star program. Some private organizations such as the Forest Stewardship Council and the Biodegradable Products Institute also issue product certifications (Satkofsky 2002; Cashore 2002). A second, more innovative way to display a product's green attributes is administered mainly over the internet. Websites created by organizations such as the Environmental Working Group and Alonovo show environmental ratings of products based on specific ingredients, materials, and manufacturing processes. The ratings are usually displayed through a numerical scale of 0-10 or 0-5 stars. Because a webpage can provide much more information about a product than a simple label, consumers can choose

to view as little information as the general environmental rating or as much as the specific details that make up the rating as they desire.

Current research on green marketing has a broad theoretical scope that is less focused on consumer behavior. Related research before the mid 1990s strongly focused on green consumer habits (Kilbourne and Beckman 1998) and showed that green consumers have distinct purchasing habits, demography, psychology and values. Consumers who purchase green tend to have less brand loyalty, go out of their way to purchase green products and are less impulsive purchasers than non-green consumers. Most significantly, green consumers are more skeptical of advertising than non-green consumers (Shrum et al. 1995). Green consumers in the UK were more likely to live sustainable lifestyles and to buy green if there was tangible evidence of a product's environmental attributes (Gilg et al. 2005). Because of the obvious disparity between green and non-green consumers, studying the difference in perception of consumer claims will provide greater depth to the literature of environmental claims.

According to Ottman (1998), a large percentage of people claim that they are "green" but that self-proclaimed statement does not necessarily translate into green consumer behavior in reality. In past studies, levels of eco-literacy have been used to identify non-green and green consumers; however several studies have determined environmental knowledge as a poor predictor of actual purchasing behavior (Laroche et al. 2001; Ralston de Benedetto 1994; Maloney and Ward 1973). Moreover claims of green behavior do not indicate a consumer's willingness to pay more for a green product (Laroche et al. 2001). Price is an important factor in green purchasing due to the increased costs that firms must pay to adopt green practices (Prakash 2002). Teisl (2001) found that the labels were least influential in a consumer's purchasing decision when the products were high-priced.

This study hopes to add more depth to the literature of environmental labels by examining green purchasing behavior and population segmentation into non-green and green consumers. This research attempted to answer the following questions: Which consumers are skeptical of online rating systems for green products? Which consumers are more likely to pay a premium for a green item with a specific environmental claim? Are non-green consumers skeptical of general environmental claims? Do environmental claims make a difference in purchasing choice for expensive products such as furniture?

The content of the research was based on the website of The Green Office, an online retailer of green and conventional office products. To promote their environmentally-friendly products,

at least one of four descriptive icons accompany all green products. All non-green products are accompanied with an icon labeled "Conventional".

The first part of this research involved in-depth interviews to analyze consumers' use and comprehension of The Green Office's product labeling system and determine how their purchasing experience on the website changed if a greenness rating system was used instead. The second part of the research placed survey participants in imaginary purchasing situations to determine their willingness to buy. Interview and survey participants were divided into categories of non-green (purchasing decisions are based only on price and/or quality), light green (purchasing decisions are primarily based on price and/or quality; secondarily on environmental attributes); and dark green (environmental attributes are equally or more important than price and/or quality). The categorization of consumers was based on answers to a survey question regarding the importance of environmental attributes when purchasing stationary items.

To differentiate the behaviors of non-green and green consumers, the follow hypotheses were tested:

*Hypothesis 1A: Non-green consumers prefer the greenness rating system over The Green Office's current labeling system.*

*Hypothesis 1B: Light green consumers prefer a combination of the greenness rating system and The Green Office's current labeling systems.*

*Hypothesis 1C: Dark green consumers prefer The Green Office's current labeling system.*

*Hypothesis 2A: For each non-expensive product category, significantly more non-green consumers will choose the green option in the General Catalog than in the Specific Catalog.*

*Hypothesis 2B: For each non-expensive product category, there will be no difference in the number of light green consumers who choose the green option between the two catalogs.*

*Hypothesis 2C: For each non-expensive product category, significantly more dark green consumers will choose the green option in the Specific Catalog than in the General Catalog.*

*Hypothesis 3: For each expensive product category and for all consumer groups, there will be no significant difference in consumers who chose the green option between the two catalogs.*

## Methods

**Interviews** Six The Green Office customers and six non-customers participated in thirty minute interviews. Most participants were office product purchasers for their organizations and all were verified consumers of office products. The purpose of the interview was to evaluate people's opinions of The Green Office's current labeling system and two new designs. The participants were asked to navigate the Green Office's website and purchase a ream of paper for their workplace. They were also asked to explain the features of the website they used or looked at while making their purchase and the level of environmental attributes they needed to know about the paper. Afterwards, they were also asked for their open-ended opinions on the current The Green Office labeling system and a rating system that assigned a "percentage greenness" for each item. In this system, a "100% Green" rating for a product suggested that it contained every environmental attribute possible for their product category. Lastly participants were asked for their preference between three types of labeling designs: Design 1, the current design which places at least one of five square icons to the right of each product image; Design 2, which frames each product image with a green border and includes a "% Green" label on the frame; and Design 3, a combination identical to Design 2 but incorporates Design 1 by including the environmental icons on the bottom of the frame. Design 1 represented product labeling with specific claims, Design 2 represented a general claim, and Design 3 was a combination of the two.

After the interview, participants answered a survey question asking if product's environmental attributes were less, equally or more important than price and/or quality when purchasing stationary products. According to their responses, participants were placed into consumer groups of non-green, light green and dark green.

**Surveys** Surveys were completed by 450 participants at public events and over the internet in a three month period. Live surveys were administered at two public events in the San Francisco Bay Area, California in February and March 2008. Links to the online survey were posted up on public websites and emailed to personal contacts. Volunteers were asked to answer the survey questions using an office products catalog that displayed seven categories of office products (chairs, paper plates, pens, binders, all-purpose cleaner, calendars and shelves). Each product category gave the participant two items to choose from, one with an environmental claim and one without. Each pair of items had an identical image and description but differed in price. The prices of the environmentally friendly items were set at 10% more than the non-green items. The

prices do not actually reflect market price; instead they were adjusted to gauge consumers' willingness to pay a 10% premium on products that are marked as green.

Two catalogs were designed for the survey. Half of the participants completed the survey using the Specific Catalog while the other half was given the General Catalog. The General Catalog only displays the general claim "Eco-friendly" for the green items whereas the Specific Catalog only makes use of specific environmental claims such as "30% Post Consumer Recycled" and "Compostable". To ensure that the survey population reflects actual consumers of office products, only the responses from participants who confirmed that they purchase stationary products at least once a year were analyzed. In the beginning of the survey, participants were told that they had to purchase one item in each of the seven product categories for their office or home. In order to create a basic level of financial constraint, participants were asked to answer the questions if they were making a real purchase with their own personal money. A set budget was not given however as it would prevent people who would choose all of the green items in a real purchasing situation from doing so in the survey.

The survey participants were categorized into groups of non-green, light green and dark green consumers in the same method as the interview participants. To analyze population demographics, participants were also asked for their age range and occupation type. At the end, those who opposed to making a choice for any product category were asked to explain their reason for doing so. As an incentive to complete the survey, five gift cards were raffled off to survey participants.

Data results were analyzed using the statistical software JMP using a p-value of .05. A nominal logistic regression was used to calculate a chi square and p-value in order to test Hypothesis 2 and 3. Statistical tests were conducted for each individual product category rather than for a total number of green items chosen for the entire catalog due to the distinct characteristics of each product category.

## Results

**Interviews** Nine of the 12 participants (75%) preferred Design 3, the combination design. All Non-TGO customers and all non-green participants chose this design and described it as easiest to understand and aesthetically appealing. Two people preferred Design 2 while one preferred the current labeling system. Both were current The Green Office customers and light green consumers. Both discussed their trust of the company's criteria of green products and

therefore do not need to see the specific details of the products. They also remarked that Design 2's clean design layout would make it easier for them to quickly purchasing an item. Only one participant, a dark green TGO customer, preferred the original labeling design, Design 1, mainly due to skepticism of the rating system used for Design 2 and 3. Although Design 2 and 3 were more graphically more appealing than the original design, the participant found the rating system misleading because the computation of the given greenness percentages was not obvious.

Table 1. Design preferences of interview participants. The 12 participants were categorized as TGO or Non-TGO customer and non-green, light green and dark green consumers.

| | Consumer | Design 1 | Design 2 | Design 3 | Total |
|---|---|---|---|---|---|
| TGO | Non-green | | | | 0 |
| TGO | Light green | | 2 | 3 | 5 |
| TGO | Dark green | 1 | | | 1 |
| Non-TGO | Non-green | | | 4 | 4 |
| Non-TGO | Light green | | | 1 | 1 |
| Non-TGO | Dark green | | | 1 | 1 |
| | Total | 1 | 2 | 9 | 12 |

Because all non-green consumers preferred Design 3, Hypothesis 1a was not supported. Hypothesis 1b was only partially supported as results showed that four of the six light green consumers preferred Design 3. Because there were only 2 dark green participants, one which preferred Design 1 and one of which preferred Design 3, this data was insufficient to determine whether Hypothesis 1c was supported or rejected.

**Surveys** More dark green customers chose the green item for every product category than light green and non-green consumers despite the type of claim (Figure 1a, 1b; $p<.0001$). Likewise more light green consumers selected green compared to the non-green consumers (Figure 1a, 1b; $p<.0001$). There were only three cases of significant difference in green item selection between the two catalogs. More dark green consumers purchased green in the Specific cCatalog within the calendar and shelf category (Figure 3c; $p= .030$, $p=.006$). More non-green consumers chose the green shelf in the Specific Catalog than in the General Catalog (Figure 3a; $p=.033$).

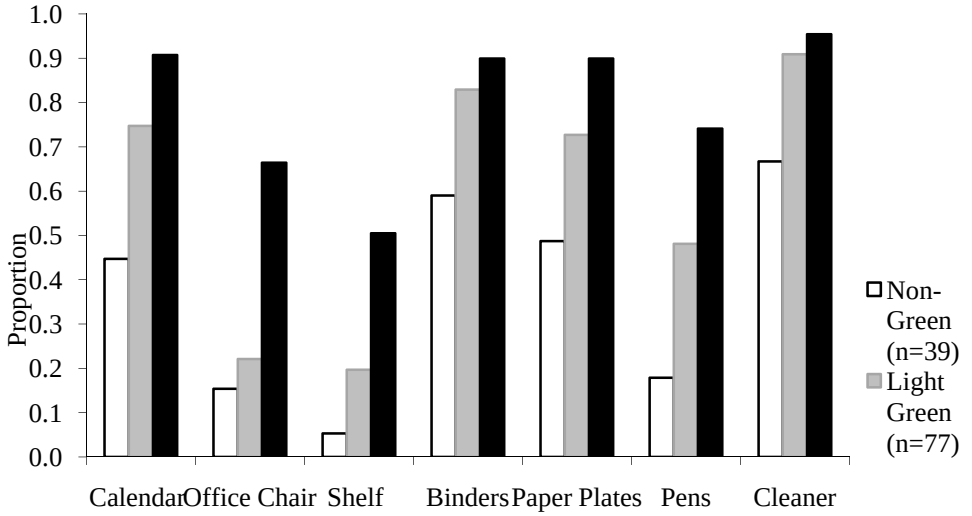


Figure 1a. Proportion of non-green, light green and dark green consumers that chose green option in the General Catalog. Nominal logistic tests yielded p<.001 for all product categories.

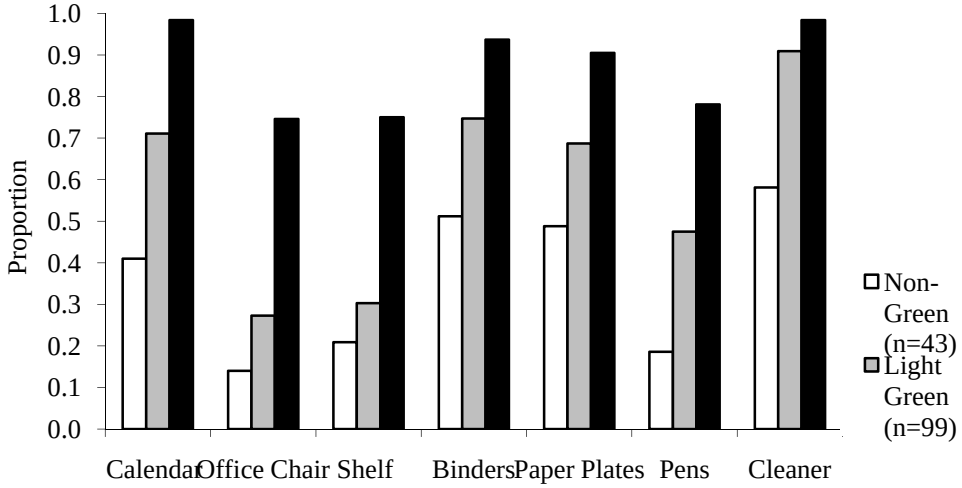


Figure 1b. Proportion of non-green, light green and dark green consumers that chose green option in the Specific Catalog. Nominal logistic tests yielded p<.001 for all product categories.

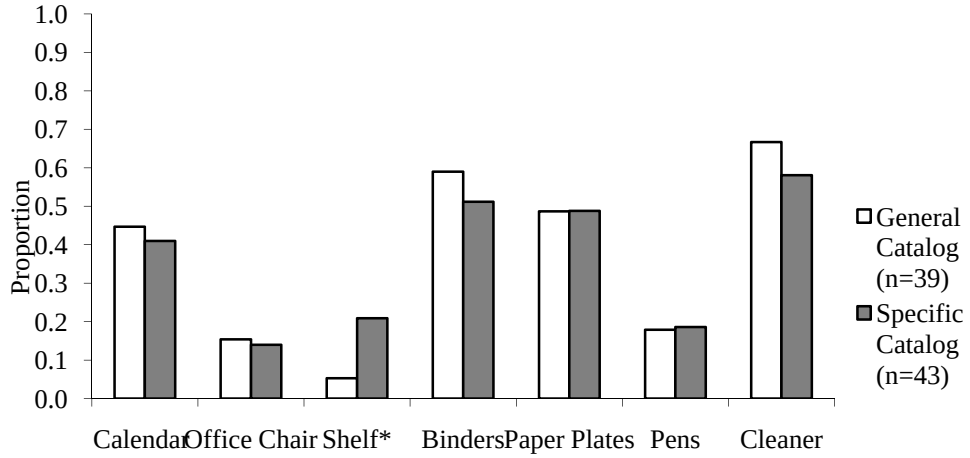


Figure 2a. Proportion of non-green consumers that chose green option in the General and Specific catalog. Product categories with an asterisk (*) indicate a significant difference between choice of green option in the two catalogs (Shelf, p=.033)

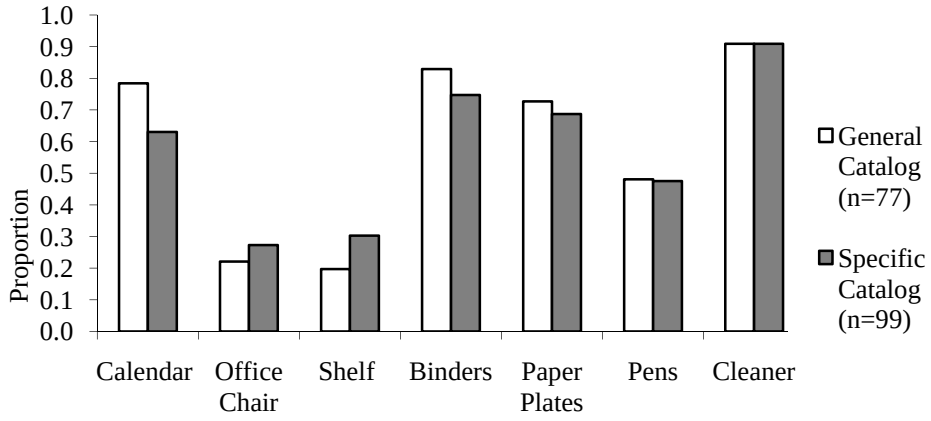


Figure 2b. Proportion of light green consumers that chose green option in General and Specific catalog. Product categories with an asterisk (*) indicate a significant difference between choice of green option in the two catalogs.

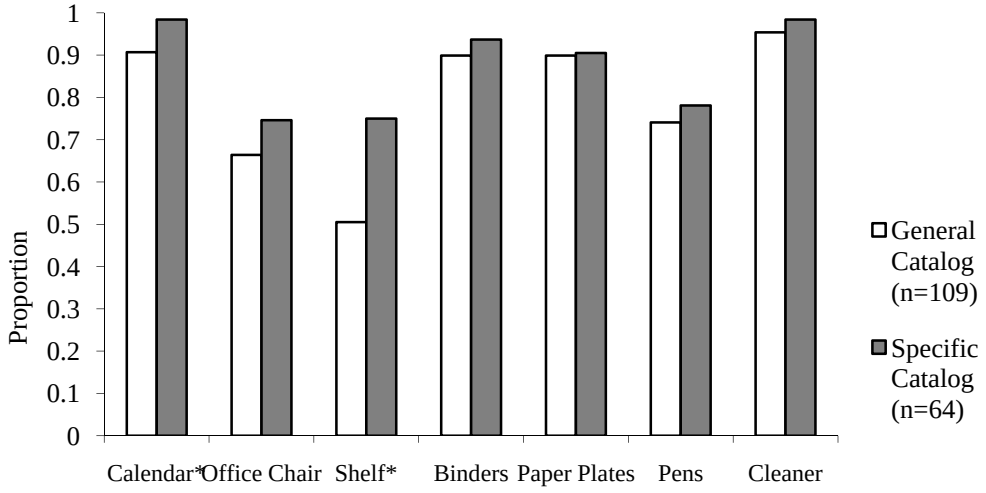


Figure 2c. Proportion of dark green consumers that chose green option in General and Specific catalog. Product categories with an asterisk (*) indicate a significant difference between choice of green option in the two catalogs (Calendar, p=.030; Shelf, p=.006).

Hypothesis 2a was not supported since non-green consumers did not show a preference towards the general environmental claim. Hypothesis 2b, which predicted that there would be no significant difference in choice for light green consumers, was supported by the survey results. Because dark green consumers only indicated a difference of choice within two categories, Hypothesis 2c was only partially supported. Hypothesis 3, which stated that there would be no difference in purchases in the chair and shelf category, was only partially supported since two cases showed a significant difference.

**Discussion**

**Interviews** The majority of the interview participants chose Design 3 as the best design. However when asked how they interpreted the actual percentage rating of the design, all of the participants were either unsure of what the percentage greenness meant or incorrectly interpreted it as percentage of recycled content. When probed more deeply about their choice of Design 3, all participants commented that the design was aesthetically pleasing and made it more apparent that a product is green or conventional. On the other hand, some participants found that the system added more complexity to the products and created confusion for the user due to the lack of clarification of the actual number.

It was predicted that non-green participants would be confused by the current labeling system due to the specificity of the environmental claims. However two of the four non-green consumers commented that the environmental icons act would actually help educate them about green products. The non-green consumers had less understanding of the environmental details but still found them to be valuable in combination with the rating system.

The participant who was skeptical of the rating system may have been representative of the dark green consumer group. Green consumers have been reported to be more skeptical of environmental claims than non-green consumers therefore companies should be particularly mindful of how dark green consumers interpret their green claims.

**Survey** Surveys results revealed that dark green consumers were willing to pay more for a green item than non-green and light green consumers despite the type of environmental claim. Dark green consumers only favored the specific claim in two product categories although it was expected that this would be the case for all product categories. This stemed from the original misconception that all product categories would be identically perceived. However survey results and comments show that participants had different interpretations and feelings about each

type of product in the catalog. For example some participants opposed to purchasing anything with vinyl material. Some commented that the pens were too expensive while others felt that the chairs looked uncomfortable. These expressed feelings about the products inevitably influenced the participants' purchasing decisions.

Even though results for most categories did not show a preference for either type of claim, many survey participants expressed their objection to the eco-friendly claim. Some even commented that because the price difference for most of the products was trivial, they still chose the green option even though if they did not understand or trust the general environmental claim. In the General Catalog, all three consumer types expressed confusion at how one option could be green while the other was not. Without the specific details, it was difficult for consumers to identify the environmental feature of a green product.

Comments from participants that viewed the Specific Catalog were must less pessimistic. However some expressed confusion about the specific claims for the paper plates, chair and binders. In the paper plates category, participants questioned if the "compostable" product was really more environmentally friendly than the normal paper plate. There is an overall assumption that the regular paper plates are already compostable. In the chair and binder categories, the only two products made of vinyl, there were a significant number of dark green consumers commenting that vinyl products are not environmentally friendly whether or not the vinyl is recycled. Although they had to make a choice between the two items in the survey, some stated that they would not purchase some of these products in real life, most notably the vinyl binders and the chair.

**Implications** It is recommended that product claims cater to the most skeptical consumers which in this case were the dark green consumers. This consumer segmentation is particularly valuable because dark green consumers are likely the most frequent and consistent buyers of green products. In order to appeal to all consumer types, product manufacturers and online catalogs should commit to using specific environmental claims so as not to lose the appeal of the dark green consumer. Unless rating systems can be clearly and easily explained to website users and consumers, it is recommended that companies not use a numerical rating system for their products. Although the trust of existing customers may already be ensured, this system of rating green products could potentially deter future customers. However in order to make green products appear more prominent, websites should graphically highlight green products using distinct colors, shapes or borders.

The survey results also suggested that companies need to strategize on the appropriate level of detail to include on labels for different types of products. For products using materials with a negative public image such as vinyl, companies may need to provide more information to convince consumers that the product is in fact environmentally-friendly.

**Limitations and Recommendations for Future Studies** In order to gauge the optimal labeling design to be used on a website, designs other than the "% Green" design used in this research should be evaluated. A simpler design with a less complicated numerical system (such as a 0-10 scale) could have changed participants' level of trust and understanding of the label. It is likely that a different and more transparent rating system would be better understood and more useful to consumers.

Some of the specific claims that were used in the survey could have been more carefully worded so as not to evoke any confusion or skepticism amongst the participants. For example the potentially misleading specific claim "Biodegradable" was used on the all-purpose cleaner category. According to the 1992 FTC Green Guides, biodegradable claims should "be substantiated by evidence that the product will completely break down and return to nature, that is, decompose into elements found in nature within a reasonably short period of time after consumers dispose of it in the customary way" (FTC 1992). Because the "Biodegradable" claim currently is still being misused by manufacturers, the claim should have been phrased differently (i.e. Quickly biodegrades in natural waterways, does not stay in ecosystem for long periods of time) to ensure that participants do not associate the claim with greenwashing. In future related studies, all specific claims should be written according to FTC recommendations.

Because the survey was mainly completed over the internet, the demographics were skewed towards young college students. At least 30% were students, 33% were between ages 21 and 30 and at least 50% lived in California. Future studies should conduct a survey that is representative of American consumers in geography and age.

Another limitation of this study was the disproportionate amount of green consumers compared to non-green consumers who participated in the survey. Because the majority of participants resides in California, a state with a high population of environmentally conscious people, the number of green consumers was overrepresented compared to the low number of non-green consumers. The disproportionate consumer populations therefore may have skewed the statistical results. Additionally, because there was no systematic method to equalize the consumer populations, as a result, the number of dark green consumers who used the Specific

Catalog (n=29) was significantly less than those who used the General Catalog (n=71). Ensuring that there are equal numbers of participants in each group will increase the statistical strength of the results.

The most accurate way to determine a consumer's willingness to pay more for an item is to create a simulation where participants actually use real money to make real purchases. Because the simulation in this research was imaginary, participants may have made choices based on idealistic rather than realistic conditions. In addition to creating a more realistic simulation, it would also be useful to conduct a similar study using several relative differences in price between the non-green and green product (e.g. 20%, 30%, and 50% differences) to assess the price range at which the environmental information becomes insignificant to purchasing choices.

For this study, only one question was used to determine a participant's level of greenness. However, to heighten the accuracy of this categorization, it is recommended that multiple questions be asked to determine a consumer's level of greenness in future studies. It is possible that people under or over exaggerated the importance of green attributes in their purchasing decisions. Requiring people to answer several related questions will prevent miscategorization.

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## APPENDIX A

**General Catalog**

| | Non-Green (n=39) | Light Green (n=77) | Dark Green (n=109) | Chi-square | p |
|---|---|---|---|---|---|
| Calendar | 0.447 | 0.747 | 0.907 | 32.533 | <.0001 |
| Office Chair | 0.154 | 0.221 | 0.664 | 48.120 | <.0001 |
| Shelf | 0.053 | 0.197 | 0.505 | 37.994 | <.0001 |
| Binders | 0.590 | 0.829 | 0.899 | 15.906 | <.0001 |
| Paper Plates | 0.487 | 0.727 | 0.899 | 27.629 | <.0001 |
| Pens | 0.179 | 0.481 | 0.741 | 40.774 | <.0001 |
| Cleaner | 0.667 | 0.909 | 0.954 | 18.833 | <.0001 |
| Average | 0.368 | 0.587 | 0.796 | | |

**Specific Catalog**

| | Non-Green (n=43) | Light Green (n=99) | Dark Green (n=64) | chi-square | p |
|---|---|---|---|---|---|
| Calendar | 0.410 | 0.711 | 0.984 | 45.480 | <.0001 |
| Office Chair | 0.140 | 0.273 | 0.746 | 49.080 | <.0001 |
| Shelf | 0.209 | 0.303 | 0.750 | 38.138 | <.0001 |
| Binders | 0.512 | 0.747 | 0.937 | 25.924 | <.0001 |
| Paper Plates | 0.488 | 0.687 | 0.905 | 22.906 | <.0001 |
| Pens | 0.186 | 0.475 | 0.781 | 39.950 | <.0001 |
| Cleaner | 0.581 | 0.909 | 0.984 | 34.140 | <.0001 |
| Average | 0.361 | 0.586 | 0.870 | | |

**Non-Green Consumers**

| | General Catalog (n=39) | Specific Catalog (n=43) | Chi-Square | p |
|---|---|---|---|---|
| Calendar | 0.447 | 0.410 | 0.108 | 0.742 |
| Office Chair | 0.154 | 0.140 | 0.033 | 0.855 |
| Shelf* | 0.053 | 0.209 | 4.566 | 0.033 |
| Binders | 0.590 | 0.512 | 0.505 | 0.477 |
| Paper Plates | 0.487 | 0.488 | 0.000 | 0.991 |
| Pens | 0.179 | 0.186 | 0.006 | 0.939 |
| Cleaner | 0.667 | 0.581 | 0.634 | 0.426 |
| Average | 0.368 | 0.361 | | |

**Light Green Consumers**

| | General Catalog (n=77) | Specific Catalog (n=99) | Chi-Square | p |
|---|---|---|---|---|
| Calendar | 0.784 | 0.630 | 0.267 | 0.605 |
| Office Chair | 0.221 | 0.273 | 0.628 | 0.428 |
| Shelf | 0.197 | 0.303 | 2.558 | 0.110 |
| Binders | 0.829 | 0.747 | 1.708 | 0.191 |
| Paper Plates | 0.727 | 0.687 | 0.341 | 0.559 |
| Pens | 0.481 | 0.475 | 0.006 | 0.939 |
| Cleaner | 0.909 | 0.909 | 0.000 | 1.000 |
| Average | 0.593 | 0.575 | | |

**Dark Green Consumers**

| | General Catalog (n=109) | Specific Catalog (n=64) | Chi-Square | p |
|---|---|---|---|---|
| Calendar* | 0.907 | 0.984 | 4.734 | 0.030 |
| Office Chair | 0.664 | 0.746 | 1.291 | 0.256 |
| Shelf* | 0.505 | 0.75 | 7.633 | 0.006 |
| Binders | 0.899 | 0.937 | 0.734 | 0.392 |
| Paper Plates | 0.899 | 0.905 | 0.008 | 0.931 |
| Pens | 0.741 | 0.781 | 0.361 | 0.548 |
| Cleaner | 0.954 | 0.984 | 1.184 | 0.276 |
| Average | 0.795571429 | 0.869571429 | | |

**APPENDIX B**

## CATALOG SURVEY

How often do you purchase stationary/office products such as pencils, paper, and mailing supplies for your home or office?

___ Several times per week
___ Several times per month
___ Several times per year
___ Never

**INSTRUCTIONS:**

For the next 7 questions, imagine that you are looking at product descriptions from a real office supplies catalog.

You want to purchase the following 7 items for your home or office **using your own personal money.** Please select one item in each product categories as if you were making a real purchase.

The descriptions in the catalog are all of the information that will be provided to you about each product. Additionally the environmental symbols are not arbitrary; they are intentionally designed and used by this office products company to describe the product's environmental features.

Please select the product you would most likely buy in a real-life purchasing situation.

| | **Item on LEFT** | **Item on RIGHT** |
|---|---|---|
| Wall Calendar | ____ | ____ |
| Office Chair | ____ | ____ |
| Steel Shelf | ____ | ____ |
| Ring Binders | ____ | ____ |
| Paper Plates | ____ | ____ |
| Ballpoint Pen | ____ | ____ |
| All Purpose Cleaner | ____ | ____ |

## Questionnaire

**Age Range:** 18-20 21-30 31-40 41-50 51-60 61-70 71+

**Which occupation category/categories do you work in?**

- ☐ Administration/ Clerical
- ☐ Marketing/Sales
- ☐ Education
- ☐ Business Management
- ☐ Non-profit Management
- ☐ Technical Support
- ☐ Student
- ☐ Other

**Which of the following statements BEST describes your purchasing decisions for stationary supplies?**

- ○ When shopping for stationary supplies, I make purchasing decisions primarily based on price and/or quality.

- ○ When shopping for stationary supplies, I make purchasing decisions primarily based on price and/or quality and secondarily on the product's environmental attributes.

- ○ When shopping for stationary supplies, the product's environmental attributes are equally important to me as its price and/or quality.

- ○ When shopping for stationary supplies, I make purchasing decisions primarily based on environmental attributes and secondarily on price and/or quality.

- ○ When shopping for stationary supplies, I make purchasing decisions primarily based on environmental attributes.

**Thank you for taking this survey!**