The Effect of Perceived Sustainability in Product Descriptions on Purchase Behavior
Aiyanna Herrera, Disney Rattanakongkham, Naser El-Dehaibi, Dr. Erin MacDonald

Out of 3 American consumers, 2 are willing to pay more for a sustainable product [1]. However, this is not necessarily reflected in actual trends of purchase decisions. Our experimental design involves a customized Amazon webpage with modified product descriptions, generated using research from a previous study that extracted key phrases from online reviews that piqued sustainable perception [2]. This project seeks to explore whether the solution to selling sustainability is in the language of a product's description.

**Research Questions**

**Question:** What language can designers use to communicate sustainability of a product in online markets to increase customer purchasing decisions for sustainable products?

**Hypotheses:**
- **Null:** Modified product descriptions containing sustainability perceptions will not impact purchasing decisions.
- **Alt:** Modified product descriptions with sustainability perceptions will impact purchasing decisions.

**Experiment Design**

Identify 10 Amazon candidates
Create an Amazon experience (e.g., product photographs, reviews) for each product
distribute surveys on Amazon Mechanical Turk

**Methods**

**Background**

Pillars of sustainability
- **Economic:** product price, cost saving, innovation, job creation
- **Environmental:** material use, energy & water consumption, durability, waste & recycling
- **Social:** health & safety, education, community, human rights

**Methods**

**Experiment Design**

Create an Amazon shopping experience
Modify product descriptions using sustainability criteria
Conduct chi-squared test to evaluate significance

**Results**

data points of interest:
- product 1 purchased more with original description in all iterations
- products 1, 6, 10 consistently more popular, product 3, 8 less popular

CHI-SQUARED TEST FOR INDEPENDENCE OF 3 AGGREGATED DATASETS:

<table>
<thead>
<tr>
<th>Description Type</th>
<th>Code</th>
<th>Original</th>
<th>Modified</th>
<th>df</th>
<th>p values</th>
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**Conclusions**

Given the inconsistency of the chi-squared test results, there is not sufficient evidence to confirm whether or not a relationship between product descriptions and purchase decisions exists. Modifying our product descriptions to isolate 2 of the 3 sustainability criteria (economic, environmental, and social) did not increase consumers’ purchasing decisions for sustainable products in a way that was significant.

As identified in our data points of interest, there seem to be variables in our study that require more attention to control. It is possible that factors that were meant to contribute to shopping realism, such as the small differences in prices, the standardized reviews, or the professionalism of photographs of the product, significantly impacted the customers’ perceptions. Additionally, the inclusion of 10 different products might have complicated or confused the participants’ decision process.

This study lays the foundation for a more detailed study into how product descriptions affect consumer purchases.

**Limitations**

1. Confounding variables in the holistic Amazon shopping experience (e.g., product photographs, reviews) may have biased the consumers’ purchase decisions.
2. Attempts to randomize modifications vs. non-modifications of product descriptions might have skewed the data in chi-squared test.
3. Original descriptions contained known perceptions of sustainable features, sometimes from all categories.

**References**

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**Experiment Design**

1. **Identify 10 Amazon French press candidates**
2. **Modify product descriptions using sustainability criteria**
3. **Create Amazon shopping experience**
4. **Distribute survey versions on Amazon Mechanical Turk**
5. **Test:** conduct chi-squared test to evaluate significance

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**Methods**

<table>
<thead>
<tr>
<th>pillars of sustainability</th>
<th>ECEN: economic &amp; environmental</th>
<th>ECSO: economic &amp; social</th>
<th>ENSO: environmental &amp; social</th>
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<td>- innovation marketing</td>
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<td>- energy &amp; water</td>
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<td>- community</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Paired pillars of sustainability**

By isolating each modified description to 2 of 3 sustainability pillars, we can later investigate the relationship between different aspects’ interactions.

**Results**

- **Chi-squared test for independence of 3 aggregated datasets:**
  - **ECEN:** rejects the null hypothesis
  - **ECSO:** displays no relationship
  - **ENSO:** rejects the null hypothesis
  - **original > modified**

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References:
Experiment Design

- **identify 10 Amazon French press candidates**
- **modify product descriptions using sustainability criteria**
- **create Amazon shopping experience**
- **test**: conduct chi squared test to evaluate significance
  - economic
  - environ
  - social
- **control**: use original Amazon description
- **modification**: use modified Amazon description
- **distribute** survey versions on Amazon Mechanical Turk
French Presses

- Frieling USA Double Wall French Press: $29.99
- GROSCHEN Terra Recycled French Press: $27.99
GROSCHIE Madrid French Press Coffee & Tea Maker
by GROSCHIE

Price: $28.98 †prime & FREE Returns

Available at a lower price from other sellers, potentially without free Prime shipping.

Model Name: GROSCHIE Madrid
Material: Borosilicate Glass, Stainless Steel
Capacity: 34 ounces / 1000 milliliters
Item Weight: 1.65 pounds
Model: GR 171
Item Dimensions L x W x H: 6 x 4.25 x 8.75 inches

About this item
- Every GROSCHIE French Press Coffee and Tea Maker sold helps raise funds for the Safe Water Project, which provides over 50 days of clean water to those in need, making each product worth the price. The company offers jobs with living wages and only works with verified environmentally compliant factories. Since 2010, our company has been carbon neutral, producing a net zero carbon footprint.
- GROSCHIE Madrid high quality French press coffee and tea maker features a well made chrome housing and Pyrex France Borosilicate glass beaker carafe that is very durable and heatproof. This solidly constructed beaker is dishwasher safe and is easy to clean after removing glass from the metal chrome frame. Its French press replacement glass is easily available and reasonably priced. The