

Factors Affecting Consumers' Perceptions and Behaviors toward Apparel Products Made of Recycled Materials

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Background, Literature Review, and Purpose

Fashion is widely considered as one of the most polluting and destructive industries to the environment and is a resource-intensive industry in which opportunities to reduce environmental impacts abound. Clothing made of recycled materials brings significant environmental benefits because using recycled materials lessens the need to extract raw materials and requires less energy and water than their virgin counterparts. In response, a growing number of clothing brands (*both known and unknown*) are selling products made of recycled materials as an effort to reduce the harmful environmental impact of the garment industry.

Today, the demand for apparel products made of recycled or upcycled materials is fast rising, especially among eco-conscious consumers. Previous studies suggest that consumers with high eco-consciousness are more likely to engage in more sustainable clothing purchase and consumption behaviors (e.g., recycling clothes) (Lee, 2003; Park, et al., 2013). While more US consumers want to buy products with recycled content, some consumers may be concerned that clothing made of recycled materials might be less durable and less valuable since the products are made of discarded materials (Kim, et al., 2021). This may become more of a concern for high-performance apparel products (e.g., sportswear) because high-performance materials are the key component in those products (McLoughlin and Sabir, 2017). Prior research has suggested that brand name/reputation is the most frequently used signal that consumers rely on to reduce their uncertainty about product or service quality and evaluate the products they purchase in a marketplace (Dodds, et al., 1991; Dawar and Parker, 1994; Purohit and Srivastava, 2001).

To the best of our knowledge, no other study has been conducted to examine different factors influencing consumers' perceptions and purchase behavior towards apparel products made from recycled content. Thus, this study examines how product-related and consumer-related factors (*ecological consciousness, brand reputation, and product type*) affect young consumers' attitudes, perceptions, and purchase intention towards apparel products made of recycled materials. The conceptual model is shown in Figure 1.

FIGURE 1: The Conceptual Model

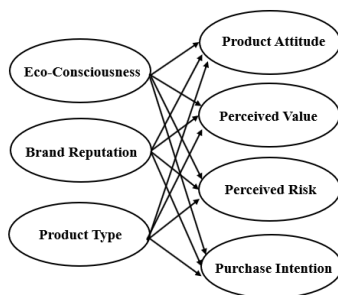


TABLE 1. Fractional Factorial Design

Attributes	Levels
1. Eco-consciousness	1. Low: consumers with weak environmental consciousness 2. High: consumers with strong environmental consciousness
2. Brand reputation	1. Well-known: Patagonia 2. Unknown: L&M (a fictitious brand)
3. Product type	1. Low performance apparel: casual T-shirt 2. High performance apparel: running tights

Research Design and Methodology

The experiment we conducted used a 2 x 2 x 2 fractional factorial design. Brand reputation (*Patagonia for a well-known brand or L&M for an unknown brand*) and product type (*casual T-shirt or running tights*) were manipulated at two levels. Ecological consciousness was also manipulated at low and high levels, implying that participants were classified as consumers with either a low degree or higher degree of eco-consciousness. See *Table 1* for detailed information. Four product advertisements were developed to manipulate brand reputation and product type, which were embedded in each version of the product advertisement. An example of the simulation scenarios is provided in *Figure 2*. The four dependent variables and eco-consciousness were measured by existing scales (Lee, et al., 2008; Yu and Lee, 2019; Agarwal and Teas, 2001; Roberts, 1995).

Participants were recruited from students enrolled in two large public universities in the US. One hundred ninety-six participants completed an online survey through the survey platform Qualtrics. Each participant was randomly assigned to one of the four versions of ads. Participants were first asked to review the assigned advertisement carefully. After ad exposure, participants were told to complete an attached questionnaire that collected information on the dependent measures, manipulation check for brand reputation, and standard demographics.

Results and Implications

Of the 196 collected questionnaires, 167 responses were considered valid and were used in the study. The majority (90%) of the participants were aged 18-24 years, and 84% of the sample were females.

We conducted a multivariate analysis of variance (MANOVA) on four dependent variables. From the results shown in *Table 2*, we could find that eco-consciousness *has a positive and significant main effect on product attitude, perceived value, and purchase intention*. These results imply that consumers with high eco-consciousness have more favorable attitudes and higher value perceptions towards apparel products made of recycled materials, and they are also more willing to buy those products. The results also suggest that *there is a significant positive relationship between brand reputation and perceived value and a significant negative relationship between brand reputation and perceived risk*. These results indicate that a positive

brand reputation can help increase consumers' perceived value and decrease their perceived risks towards the apparel products with recycled content. Besides, *there is a significant two-way interaction between eco-consciousness and brand reputation for purchase intention*. The subsequent analysis and simple effects tests indicate that consumers with low eco-consciousness are more likely to purchase apparel products made of recycled materials from companies with a good reputation based on their CSR initiative, such as Patagonia.

However, there is no significant effect of product type on consumer perception of and purchase intention toward apparel products made of recycled materials.

Our research is the first empirical effort to investigate the impact of both product-related factors (*brand reputation and product type*) and consumer-related factors (*eco-consciousness*) on young American consumers' perceptions and purchase intention towards apparel products made of recycled materials. Thus, the findings can be used by brands selling those products to consumers with different levels of eco-consciousness and help them create more tailed retailing and promotional strategies.

FIGURE 2: An Example of Simulation Scenarios



TABLE 2. MANOVA and Univariate Results

Variable	MANOVA Results		Product Attitude		Perceived Value		Perceived Risk		Purchase Intention	
	Wilks' Lambda	F	Mean Square	F	Mean Square	F	Mean Square	F	Mean Square	F
Eco-consciousness (A)	0.91	3.65**	2.86*	6.16	3.15	12.16***	0.43	1.12	8.94	11.12***
Brand Reputation (B)	0.92	3.39**	0.33	0.68	2.12	7.14**	2.69	7.27**	1.31	1.54
Product Type (C)	0.95	1.84	0.07	0.16	0.06	0.20	0.41	1.07	1.24	1.46
A x B	0.95	2.98*	0.03	0.06	0.07	0.24	0.25	0.68	3.20	4.07*
A x C	0.96	1.62	0.06	0.14	0.22	0.77	0.36	0.94	2.22	2.81
B x C	0.98	0.92	0.35	0.72	0.05	0.18	0.04	0.12	0.12	0.14
A x B x C	0.99	0.15	0.17	0.35	0.01	0.01	0.02	0.03	0.05	0.06

NOTE: *p < .05; **p < .01; ***p < .001

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