

Exploring the Consumer Market for Industrial Hemp Fiber Textiles and Clothing: The Development of a Conceptual Model and Research Propositions

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Keywords: hemp fiber, industrial hemp, cognitive dissonance, halo effect, sustainability

Industrial hemp, an ancient, cultivated plant originating from Central Asia, has historically been a crop with multiple uses as food and medicine and has been valued for its fiber. The number of potential industrial applications for hemp is expanding, especially in using hemp fiber in textiles and clothing because of hemp fiber's superior attributes to all the other natural fibers or man-made fibers. Hemp fibers have good dye absorption and turn softer and more comfortable with long-term use. Therefore, hemp is a great source of yarns or fabrics for textiles and clothing products. Also, hemp is resistant to mold and ultraviolet light, making it ideal for home textiles and furnishing applications. Hemp clothing could be extensively adopted by global consumers because of its lightweight, absorbent nature, durability (three times the tensile strength of cotton), UV, mold resistance, and low cost. Hemp fiber can also blend with other fibers to create varied desirable clothing properties (DataBridge, 2022; Duque Schumacher et al., 2020).

The textile and clothing industry is one of highest polluting industries in the world (Dottle & Gu, 2022). As a natural, renewable, and biodegradable material with a lower ecological footprint than other natural fibers, such as cotton, hemp has obvious advantages in addressing environmental issues (Gedik & Avinc, 2020; Schumacher et al., 2020). The use of hemp fibers as industrial materials has increased in recent years as a response to the increasing demand for developing biodegradable, sustainable, and recyclable materials (Schumacher et al., 2020; Shahzad, 2012). Hemp also creates one of the most eco-friendly fabrics in the world (DataBridge, 2022; Fortenbery & Bennett, 2004; Gedik & Avinc, 2020). Hemp fiber can be used to produce broad categories of environmentally friendly textiles and clothing products, including fabrics, denim, fine textiles, canvas bags and accessories, and carpets (DataBridge, 2022). Therefore, hemp fiber holds tremendous promise for the textile and apparel industry, and it's believed that the future of hemp lies in its long-term use in the textiles and apparel industry (Dhondt & Muthu, 2021). Many industry experts predict fiber will eventually be the predominant use for hemp (Bennett, 2020).

Recent market research estimates the global hemp textile and clothing market was 6.8 billion in 2021 but is expected to reach 63.04 billion by 2029 with a CAGR of 32% from 2022 to 2029 (DataBridge, 2022). Although the industrial hemp fiber clothing market has been growing, it is still challenging to realize that market potential. The pace and success of developing the hemp fiber economy in textiles and clothing ultimately depend on consumers' awareness of, knowledge about, and acceptance of hemp fiber products (Greibitus et al., 2017). However, global consumers have *little*

knowledge about hemp fiber textiles and clothing products (Kolodinsky & Lacasse, 2021). Since hemp was included in the Controlled Substance Act of 1970, the history of hemp-related research has been limited (c.f., Colclasure et al., 2021). After the 2014 Farm Bill was passed, growing research has been conducted to explore the benefits of hemp and to develop innovative processing and manufacturing techniques, however, there is little knowledge of consumer perceptions, attitudes, and behaviors toward hemp products. Extant limited consumer research mainly focuses on hemp cannabidiol products, hemp food, or hemp medical ingredient, and rarely is there any research focusing on consumers' knowledge, perceptions, and attitudes towards hemp fiber textiles and clothing products (Colclasure et al., 2021; Kolodinsky & Lacasse, 2021).

Consumer knowledge, perceptions, evaluations, and attitudes are the keys to regaining and keeping hold of marketing hemp fiber products.

The economic theory of demand and hierarchical decision-making delineates that as a necessity (Kolodinsky, 1997; McGrath, 2017).

Industrial hemp's historic and close association with marijuana might have created cognitive dissonance, namely internal conflict, among consumers' perceptions, negatively affecting their attitudes and eventually deterring them from adopting and accepting hemp fiber products (Colclasure et al., 2021; Cummings & Venkatesan, 1976; Korgaonkar & Moschis,

1982). However, to our knowledge, no research has systematically examined whether consumers hold any cognitive dissonance toward hemp fiber textile and clothing products and to what degree such cognitive dissonance affects consumers' attitudes and acceptance of hemp textiles and clothing products.

Global consumers' awareness of environmental issues caused by the textile and fashion industries has been increasing. More consumers consider environmental attributes when selecting textiles and clothing products. Consumers with high eco-consciousness are willing to pay a higher price to purchase sustainable products (Cowan & Kinley, 2014; Henninger et al., 2016). Hemp-fiber products are much more environmentally friendly than cotton products or man-made fiber products (Duque Schumacher et al., 2020). Hemp fiber textiles and clothing offer many environmental benefits throughout the whole value chain. For instance, hemp does not require the use of chemical pesticides or fertilizers to grow, and hemp fiber is renewable and recyclable (DataBridge, 2022; Gedik & Avinc, 2020). All these eco-friendly benefits of hemp fiber textiles and clothing products might be able to generate halo effects that may serve as a buffer to reduce cognitive dissonance

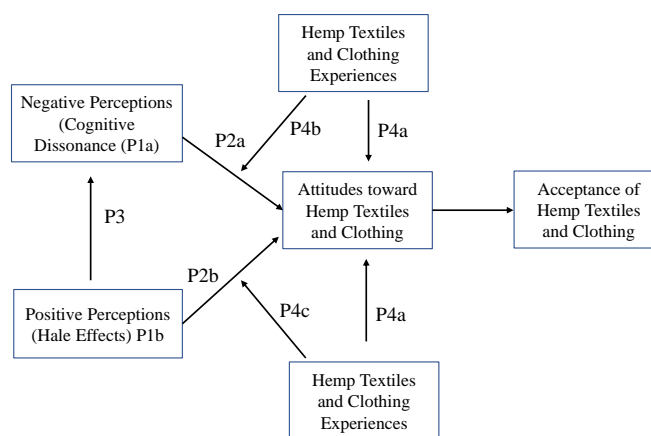


Figure 1: Conceptual Model

caused by negative perceptions among consumers with high eco-consciousness. Consequently, consumers with knowledge about hemp fiber and high eco-consciousness might have a high propensity to adopt hemp-fiber textiles and clothing. It is meaningful to examine to what degree the perceived environmental benefits of hemp fiber products can generate halo effects and if the halo effect buffers cognitive dissonance. Based on the above discussion and review of the literature, we developed a conceptual model (figure 1). Also, we proposed the following research propositions:

P1: consumer perceptions about the industrial hemp fiber textile and clothing come from two sources (a) positive sides, including healthy benefits (anti-bacterial, anti-fungal, and anti-microbial) and environmental impact, and (b) negative perceptions associated with marijuana, which may generate cognitive dissonance for individuals to

P2: The overall attitudes depend on the strength of (a) positive halo effects generated from perceived benefits and (b) negative cognitive dissonance caused by associations with marijuana.

P3: When the positive halo effect is salient enough, it can offset negative cognitive dissonance.

P4: Consumer experiences (even trials) with hemp textiles and apparel products facilitate (a) weakening cognitive dissonance; (b) strengthening perceived environmental halo effect, and (c) strengthening positive attitudes toward hemp textiles and clothing production.

In conclusion, while the industrial hemp fiber clothing market has significant growth potential, consumer knowledge, perceptions, evaluations, and attitudes are the keys to the success of the hemp fiber economy. Promoting hemp fiber textile and clothing products involves educating consumers about the benefits, highlighting sustainability, and establishing a positive image for the product. Also, providing accessible product experiences is critical to enhancing consumers' acceptance and building a robust and sustainable market.

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