

## An Investigation of Young Consumers' Acceptance of Hemp Fashion Products Using Partial Least Squares Structural Equation Modeling Analysis

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**Research Rationale.** Hemp, recognized as one of the oldest and most ecologically sustainable natural fibers, finds applications across diverse fields including textiles, automotive, sound insulation, composites, and construction (Ruth et al., 2022). Despite its versatility, global cultivation of hemp has historically faced restrictions due to its association with marijuana which contains high-level (3%-15%) tetrahydrocannabinol (THC), causing hallucinogenic (Ruth et al., 2022). However, recent regulatory reforms in many countries have led to a resurgence in hemp production and applications worldwide (Kaur & Kander, 2023). In the United States, the 2018 Farm Bill clarified that industrial hemp must contain no more than 0.3% THC to mitigate concerns about its psychoactive effects (Kaur & Kander, 2023). Cultivating industrial hemp offers numerous environmental benefits, such as suppressing weed growth, enhancing biodiversity, preventing soil erosion, detoxifying soil contaminants, absorbing carbon emissions, and reducing reliance on herbicides or pesticides (Zimniewska, 2022). Given the increasing demand for sustainability and the reemergence of industrial hemp, understanding its market potential from consumers' perspectives is crucial.

Schumacher et al. (2020) conducted a study comparing hemp and cotton, indicating that industrial hemp fiber could offer economic viability and serve as a more environmentally friendly option than cotton in the textile industry. Importantly, hemp-based apparel and textiles offer wearers enhanced comfort and skin benefits attributed to their unique properties, including thermal insulation, antioxidant, antibacterial, anti-mold, and anti-UV radiation qualities (Zimniewska, 2022). However, despite these advantages, hemp fashion remains a niche market in the U.S., highlighting a significant research gap regarding consumer acceptance of hemp fashion. It is crucial to understand how young consumers like Generation Z perceive, evaluate, and adopt hemp fashion, as they prioritize sustainability and lead the future purchasing power (Zhang et al., 2024). Hence, this study aims to empirically investigate young consumers' acceptance of hemp fashion products and the underlying factors influencing their adoption.

**Research Model and Hypotheses Development.** The Theory of Consumption Value (TCV) has been extensively applied in consumer research (Sweeney & Soutar, 2001). The Spiral of Silence Theory (SST), often associated with contentious social issues, explores how individuals perceive public opinion and how these perceptions influence their responses (Noelle-Neumann, 1974). The reemerging industrial hemp is notably influenced by the socio-political landscape and yields effects on society and the public (Cherney & Small, 2016).

Therefore, we proposed a research model and corresponding hypotheses (see Figure 1) by employing TCV and SST as the theoretical guidance and conducted empirical testing using Partial Least Squares Structural Equation Modeling (PLS-SEM). The link between consumers' attitudes and purchase intention has been validated in consumer studies, such

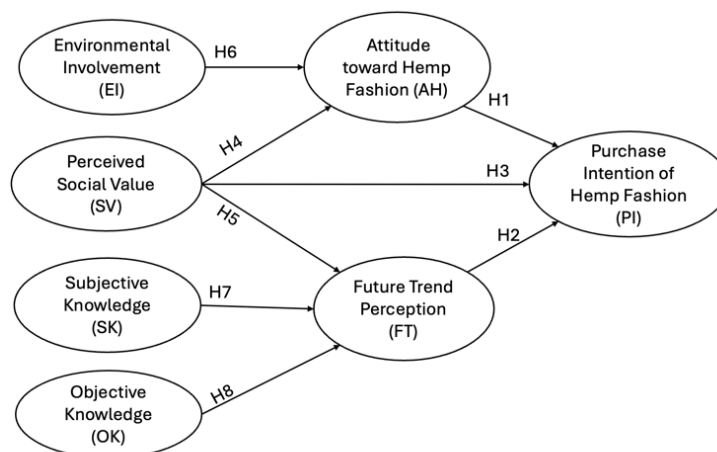


Figure 1. Research model and hypotheses

as Spears and Singh (2004). Consumers' perceived social value, derived from TCV, is pivotal in sustainable fashion consumption, as fashion serves as a means for individuals to express their identities, impress others, signify social status, and gain social approval (Jeong & Ko, 2021). SST suggests individuals' perceptions of public opinion like future trends impact their behaviors (Noelle-Neumann, 1974). Thus, we proposed that consumers' Purchase Intention (PI) of hemp fashion products is directly affected by their Attitudes Toward Hemp (AH) fashion (H1), Future Trend (FT) perception of hemp fashion (H2), and perceived Social Value (SV) (H3). Moreover, SV directly impacts AH (H4) and FT (H5). Consumers' Environmental Involvement (EI) plays a crucial role in sustainable consumption (Cheng et al., 2020). Therefore, we proposed AH is impacted EI (H6). The formation of public opinion is often an evidence-based process (Noelle-Neumann, 1974), so we hypothesized that FT is influenced by consumers' Subjective Knowledge (SK) of hemp (H7) and their Objective Knowledge (OK) of hemp fiber (H8).

**Research Design.** An online survey was designed and distributed through Qualtrics, containing multi-item scales adapted from previous studies to measure constructs of PI and AH (Spears & Singh, 2004), FT and OK (Ruth et al., 2022), SV (Sweeney & Soutar, 2001), SK (Rampold et al., 2021), and EI (Zaichkowsky, 1985). All constructs were assessed using seven-point semantic or Likert scales. A convenience sample was recruited, consisting of 175 college students aged 18 to 25 from a U.S.-based university. Data analysis, including exploratory factor analysis (EFA) and

PLS-SEM, was conducted using the R programming language and RStudio software. PLS-SEM well-suits small sample sizes, offering greater statistical predictive power without strict assumptions of multivariate normality compared to covariance-based SEM (Hair Jr et al., 2021).

**Results and Findings.** The measurement model exhibits acceptable reliability and validity. The  $R^2$  values for three endogenous variables are PI (0.501), AH (0.389), and FT (0.538) respectively. Results show that this structural model exhibits a high out-of-sample predictive power as all five PI indicators in the PLS path model exhibited lower root-mean-square error (RMSE) values compared to the Linear Modeling (LM) model benchmark (Hair Jr et al., 2021). Results of hypotheses testing using the bootstrapping (10,000 samples) procedure reveal all eight proposed hypotheses were supported (see Table 1). Findings show that among young consumers, the intention to purchase

hemp fashion products is primarily influenced by attitude, followed by perceived social value and future trend perception. These indicate young consumers prioritize their own assessments of hemp fashion products while considering societal or others' opinions. Perceived

**Table 1.** Results of hypotheses testing

Hypotheses	Path coefficients	T-values	2.50% CI	97.50% CI	Result
H1 AH → PI	0.357	5.334**	0.235	0.499	Supported
H2 FT → PI	0.227	2.792*	0.061	0.379	Supported
H3 SA → PI	0.294	4.043**	0.145	0.432	Supported
H4 SA → AH	0.288	4.178**	0.162	0.431	Supported
H5 SA → FT	0.326	5.714**	0.202	0.427	Supported
H6 EI → AH	0.468	4.751**	0.249	0.633	Supported
H7 SK → FT	0.250	4.244**	0.136	0.367	Supported
H8 OK → FT	0.354	5.835**	0.239	0.475	Supported

Notes: CI, Confidence Interval; \*\*,  $p$ -value < 0.001; \*,  $p$ -value < 0.01

social value directly impacts attitude and purchase intention, indicating social benefits embedded in hemp fashion play a crucial role in consumer acceptance. Marketers should enhance personalized services, cultivate a positive brand image, foster online and offline communities, and offer diverse social benefits to attract consumers. For instance, leveraging social media campaigns can engage young consumers in challenges and content creation, thereby shaping and spreading fashion trends. Consumers with high-level environmental involvement tend to develop a favorable attitude toward hemp fashion, highlighting the importance of targeting this demographic. Consumers' subjective and objective knowledge regarding hemp and hemp fiber significantly impacts their perceptions of future trends in hemp fashion products, emphasizing the need for collaborative efforts to educate the public and enhance understanding. Overall, this study contributes to expanding current knowledge and providing actionable insights for industry practitioners.

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