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Beyond Intention: The Value-Attitude-Behavior Cascade in Sustainable Fashion Consumption Among Gen-Z in Pakistan

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Abstract

The fashion industry's environmental footprint has intensified scholarly interest in sustainable consumption, yet the psychological pathway from personal values to actual purchase behavior remains poorly understood, particularly in developing-country contexts. This study develops and tests an extended cognitive hierarchy model of sustainable fashion consumption among Gen-Z consumers in Lahore, Pakistan. Building on Cognitive Hierarchy Theory, the model positions self-transcendence values, environmental concern, and fashion leadership as antecedents of attitude toward sustainable fashion, which in turn drives sustainable purchase intention and, ultimately, sustainable purchase behavior. Data were collected from 400 Gen-Z respondents (aged 18-27) using online and face-to-face structured questionnaires, and hypotheses were tested using SmartPLS 4. Results show that self-transcendence values, environmental concern, and fashion leadership each significantly predict attitude toward sustainable fashion, and jointly explaining 31.2% of its variance. Attitude significantly predicts purchase intention but the intention-behavior link is comparatively weak, explaining only 3.2% of the variance in purchase behavior. These findings confirm the cascading structure proposed by cognitive hierarchy theory while revealing a pronounced attitude-behavior gap.

Keywords: Sustainable fashion consumption, Cognitive hierarchy theory, Gen-Z consumers, Purchase intention, Attitude-behavior gap

1. Introduction

The fashion industry is at a crossroads of environmental concerns and consumeristic practices. As an industry, it produces approximately ten percent of the world's carbon emissions and utilizes a substantial amount of water, energy, and materials (Ohaegbulam, 2026). Moreover, the fast fashion business model aggravates the issues of overproduction, overconsumption, and waste, thus creating the necessity to consider sustainable alternatives that would satisfy both environmental and consumer demands (Schiaroli et al., 2024). Sustainable fashion aims to fulfill the role of regular fashion, serving expressive and decorative functions while introducing ethical production and consumption paradigms (Ritch et al., 2026). Even though the importance of sustainable fashion has been acknowledged by the public in terms of environmental and social concerns (Dabas and Whang, 2022), the attitude-behavior gap remains one of the central concerns studied

by researchers who aim to understand how the public acknowledges the necessity for sustainable production but fails to support it financially (Bocti et al., 2021).

The impact of the fashion sector on the environment presents a serious threat to the world's water supply with 118 billion cubic meters predicted to be used globally for clothing production (Rausch and Kopplin, 2021). The threat posed by climate change and general environmental decline is transforming business and consumer behavior at an unprecedented level. The question of sustainable consumption is therefore becoming increasingly relevant by the day. Schiaroli et al. (2024) identified that high price, skepticism, and availability as barriers to sustainable consumption while product quality, style, and technology acted as significant drivers. In addition, the impact of ecological factors on personal values seemed to play a lesser role, meaning that the path from ecological literacy to purchasing behavior probably includes additional steps.

Sustainable fashion consumption research has been dominated by two theoretical families 1) Theory of Planned Behavior (TPB) and 2) Value-Belief-Norm (VBN) theory that have largely developed in isolation despite addressing overlapping psychological terrain (Jebarajakirthy et al., 2024). VBN and TPB factors mediate the value-intention relationship inconsistencies across studies are scientifically explained by cultural moderators that exposes the limits of decontextualized theoretical models. While cognitive frameworks dominate the field and social influence remain under-integrated (Ritch et al., 2026). What remains absent is a framework that positions values and fashion-specific orientations as hierarchically organized antecedents flowing through serial mediation rather than parallel or independent pathways. Without specifying this cascade, the field cannot determine whether attitude and intention function as mere stepping-stones in a single cognitive chain or as independently sufficient motivators a distinction with profound implications for intervention design.

The present study responds to several interrelated gaps in the literature. First, despite the proliferation of research on sustainable fashion attitudes and intentions, studies that trace the full sequential pathway from personal values and domain-specific beliefs through context-specific attitudes and behavioral intentions to actual purchase behavior remain remarkably sparse (Kochuveetil et al., 2026). Most empirical models terminate at the intention stage, leaving the intention and behavior translation under-examined (Rausch and Kopplin, 2021). Second, the role

of fashion leadership a fashion-specific personal orientation as an independent antecedent of attitude toward sustainable fashion has received limited attention, particularly in developing-country contexts where fashion consumption patterns differ from those Western and East Asian markets (Hasan, 2025). Third, prior studies conducted in Western, educated, industrialized, rich and democratic (WEIRD) populations may not generalize to Pakistan's collectivist, religious, and price-sensitive consumer environment (Rasheed et al., 2024). The cognitive hierarchy model provides a robust theoretical lens for addressing these gaps, as it explicitly models the hierarchical flow from abstract values to mid-range cognitions to specific behaviors (Milfont, 2010).

Anchored in Cognitive Hierarchy Theory, the present study develops and tests an extended cognitive hierarchy framework of sustainable fashion purchase behavior. Self-transcendence values are positioned as broad personal values, environmental concern as a domain-specific environmental belief and fashion leadership as a fashion-specific personal orientation. Therefore, these three constructs independently shape attitude toward sustainable fashion, which subsequently drives sustainable purchase intention and sustainable purchase behavior in a sequential mediation chain. By modelling both the distal and proximal determinants of behavior within a single integrated framework, and by situating the investigation within the under-researched context of Gen-Z consumers in Pakistan, this study aims to contribute both theoretical refinement and empirical novelty to the sustainable fashion consumption literature.

2. Literature Review, Theories and Hypothesis

Human cognition is organized in a hierarchical structure where personal values shape more specific beliefs, which influence mid-range attitudes and behavioral intentions. According to Cognitive Hierarchy model, the direction of causal influence flows from the most stable cognitions to increasingly situational and malleable cognitions like attitudes and intentions. This hierarchical representation has received substantial empirical validation in recent sustainable fashion research. Self-transcendence values exert a notable effect on sustainable purchasing behavior and environmental concerns, thereby supporting the cognitive hierarchy framework in the fashion domain (Madinga et al., 2025). Whilst using an integrated Value-Attitude-Behavior and Theory of Planned Behavior framework with Gen-Z consumers, personal values and attitudes play significant roles in both sustainable and fast fashion consumption (Kang and Badal, 2025).

In the sustainable consumption domain, the cognitive hierarchy model has been widely adopted as a theoretical scaffolding. Similarly, sustainability as fashion and attitude sequentially mediate the impact of TPB constructs on intention to purchase sustainable clothing, providing further evidence for the cognitive hierarchy's applicability in the fashion domain (Hasan, 2025). These mixed findings suggest that the cognitive hierarchy framework requires contextual refinement regarding the mediating mechanisms through which values influence behavior.

The present study extends the cognitive hierarchy model in three important ways. First, it incorporates both self-transcendence and environmental concern as distal antecedents, consistent with the theory's premise that values operate at different levels of abstraction. Second, it includes fashion leadership as a fashion-specific personal orientation that independently contributes to attitude formation and sustainable fashion behavior that shaped not only by environmental concern and universalism but also by fashion-specific motivations (McCoy et al., 2021; Chen, 2025). Third, it models the full sequential pathway through attitude and intention to behavior by addressing the common limitation of studies that stop at the intention stage (Rausch and Kopplin, 2021; Khan, 2025).

2.1. Self-Transcendence Values and Sustainable Fashion

Schwartz's theory of basic human values identifies self-transcendence as a higher-order value dimension encompassing universalism and benevolence, which reflect concern for the welfare of others and the natural environment (Lima et al., 2026). Self-transcendence values sit in direct opposition to self-enhancement values and have been consistently identified as significant predictors of pro-environmental attitudes and behaviors (Onel, 2024; Lian and Chen, 2024). The theoretical rationale for this relationship is straightforward who prioritize the welfare of others. Empirical evidence for the role of self-transcendence values in sustainable fashion consumption is growing but presents a complex picture that self-transcendence values positively influence consumers' levels of ethical concern regarding environmental degradation and worker welfare within the fast-fashion industry, and these concerns subsequently affect intentions to purchase marketed fashion products (Stringer et al., 2020). Self-transcendence exerts an overall positive effect on green consumption through multiple indirect pathways, including nature connectedness and social connectedness. Where self-enhancement orientations impede sustainable behaviors

(Lian and Chen, 2024). Whereas, no substantial impact of self-transcendence values on attitudes toward sustainable fashion among South African millennials, though self-transcendence did significantly affect environmental concerns and sustainable purchasing behavior directly (Madinga et al., 2025).

In Pakistan's socio-cultural context, characterized by strong collectivist orientations and religious values that emphasize communal welfare and stewardship of natural resources, self-transcendence values are likely to play a particularly salient role in shaping environmental beliefs and sustainable consumption orientations (Schiaroli et al., 2024). Pakistani university students who endorsed pro-environmental values were significantly more likely to form green purchase intentions, although this did not always translate into actual green purchasing behavior (Rasheed et al., 2024). Building on these observations, the present study posits that self-transcendence values operate as a distal antecedent within the cognitive hierarchy, influencing sustainable fashion purchase behaviour indirectly through attitude toward sustainable fashion and sustainable purchase intention.

Based on this Review we proposed that:

H1: Self-transcendence values are positively associated with attitude toward sustainable fashion.

However, some studies suggested that self-transcendence influence sustainable fashion but their effects are weak (Geiger and Keller, 2018). Values are not always solid with attitude and behavior (Nazirova and Borbala, 2024). Thus, more attention should be paid to the possible mediating and moderating roles between self-transcendence and attitude towards sustainable fashion.

2.2. Environmental Concern: A Domain-Specific Environmental Belief

Within the extended cognitive hierarchy framework, environmental concern operates as a domain-specific belief, an awareness of affective response to ecological problems that functions as an antecedent to attitude toward sustainable fashion rather than as a parallel predictor of intention. This positioning aligns with the cognitive hierarchy's prediction that domain-specific beliefs influence behavior through context-specific evaluations rather than bypassing those. The challenge, however, is that environmental concern has demonstrated robust direct effects on purchase intention in some studies but negligible effects in others, creating an unresolved debate about whether it primarily operates directly on intention or indirectly through attitude (Razi, 2026).

On the one hand, studies in emerging markets suggest a relatively direct concern-intention pathway. In Italy, environmental concern positively affects purchase intention and willingness to pay for sustainable fashion across product types (Dangelico et al., 2022), while in Indonesia, reporting a strong positive effect of environmental concern on purchase intention ($\beta = 0.738$) (Razi, 2026).

On the other hand, environmental concern had no significant impact on sustainable fashion purchase intentions among Korean consumers, an unexpected result attributed to the possibility that environmental concern was absorbed by the more proximal attitude variable in the model (Lee et al., 2025). Furthermore, environmental concerns and awareness appear to play a secondary role compared to product-specific attributes such as quality and style. The contradiction between direct-effect findings and null-effect findings can be theoretically reconciled if environmental concern primarily shapes attitudes rather than intentions directly. This reconciliation aligns with Cognitive Hierarchy Theory's prediction that domain specific beliefs influence behavior through context-specific evaluations. Environmental concern boosts the relationship between positive emotions and intention while personal values moderate these pathways, indicating that environmental concern operates within a mediated cognitive architecture rather than as a standalone predictor (Garnelo-Gomez et al., 2025). By positioning environmental concern as a domain-specific belief that flows through attitude in the cognitive cascade, the present study provides a direct test of this reconciliation.

Based on this Review we proposed that:

H2: Environmental concern is positively associated with attitude toward sustainable fashion.

2.3. Fashion Leadership and Sustainable Consumption

Fashion leadership refers to the degree to which an individual influences others' fashion choices and adopts fashion innovations early. As a fashion-specific personal orientation, fashion leadership occupies a distinctive position within the cognitive hierarchy but broader than attitude toward any particular fashion attribute or product category (Chen, 2025). Fashion leaders are characterized by high involvement with fashion, greater awareness of fashion trends, and a propensity to explore and experiment with new styles. Fashion leadership drove positive attitudes toward clothing

subscription rental services among Chinese youth when sustainability was perceived as innovative (Myin et al., 2023). Conversely, fashion leaders were unwilling to trade off hedonic or utilitarian attributes for eco-friendliness, though prevention-focused fashion leaders were more willing than promotion-focused ones (Hyun et al., 2021).

The relationship between fashion leadership and sustainable fashion consumption has generated considerable scholarly interest, with evidence suggesting that fashion leaders can serve as either enablers or impediments to sustainable purchasing. On the one hand, fashion opinion leadership was a more powerful determinant than environmental concern in predicting consumer intention to purchase clothing products made of sustainable fabrics (Yoo et al., 2018). Fashion leadership significantly affects Gen-Z consumers intentions to use apparel rental services, with attitude mediating the relationship between fashion leadership and intention (McCoy et al., 2021). Fashion leaders may be particularly receptive to sustainable fashion innovations. On the other hand, higher fashion involvement tended to show less environmental concern and to engage in fewer environmentally sensitive behaviors, while fashion consciousness as a barrier rather than an enabler of sustainable fashion purchase behavior.

This apparent contradiction may be resolved by distinguishing fashion leadership from fashion consciousness. Fashion leaders are not merely passive followers of trends but active opinion generators who take pleasure in discovering and promoting new fashion alternatives, including sustainable ones. In developing countries like Pakistan, where fashion consumption is increasingly informed by global social media influences and where sustainability is becoming a marker of cosmopolitan sophistication among urban Gen-Z consumers, fashion leaders may serve as critical intermediaries in the diffusion of sustainable fashion (Kochuveetil et al., 2026).

Based on this Review we proposed that:

H3: Fashion leadership is positively associated with attitude toward sustainable fashion.

2.4. Purchase Intension

The attitude-intention relationship is the most consistently supported link in sustainable consumption research. Attitude had the highest impact on purchase intention (Rausch and Kopplin, 2021) whilst attitude partially mediates the green perceived value-intention link among Indian

Generation Z (Arora and Manchanda, 2022). Similarly, attitude was the second strongest TPB predictor after perceived behavioral control (Hasan, 2025). However, the relationship is not universally robust so, attitude non-significant in an integrated TPB model among environmentally aware German consumers, suggesting a ceiling effect (Sharma, 2026) while attitudes non-significant for ethical fashion consumption in Turkey and Kuwait (Güner et al., 2025). These exceptions suggest that subjective norm and perceived behavioral control may override attitudinal influence in certain populations.

However, the intention-behavior relationship is neither automatic nor invariant. Previous studies factor elaborates that weaken the intention-behavior linkage that includes perceived aesthetic risk and greenwashing concerns while there is significant gaps between purchase intention and purchase experience for recycled and upcycled fashion products (Park and Lin, 2020). Furthermore, price, availability, knowledge, transparency, image, inertia and consumption habits are barriers of translation of sustainable fashion intentions into actual purchasing (Wiederhold and Martinez, 2018). These findings underscore the importance of examining the intention-behavior link within the specific cultural, economic, and market context under investigation whilst in Pakistan, where sustainable fashion options may be less available and where price sensitivity is high among young consumers, the intention-behavior relationship may be particularly susceptible to structural and situational constraints (Rasheed et al., 2024). The present study addresses this by modelling sustainable purchase intention as the direct antecedent of self-reported sustainable purchase behavior.

Based on this Review we proposed that:

H4: Attitude toward sustainable fashion is positively associated with sustainable purchase intention.

H5: Sustainable purchase intention is positively associated with sustainable purchase behavior.

3. Methodology

This study adopted a quantitative, cross-sectional survey design. A cross-sectional design was appropriate given the study's aim of testing a set of a priori hypothesized relationships derived from Cognitive Hierarchy Theory (Milfont et al., 2010) at a single point in time. While a

longitudinal or experimental design would permit stronger causal inference, the cross-sectional survey approach is consistent with the majority of prior sustainable fashion consumption research (Rausch and Kopplin, 2021; Hasan, 2025) and was considered proportionate to the exploratory-cum-confirmatory nature of the extended cognitive hierarchy framework being tested.

3.1. Study Design

The target population for the study was Gen-Z consumers aged between 18 to 27 years in Lahore, Pakistan. Lahore was selected as the prime location for conducting the survey because it is one of the largest fashion and retail hub in Pakistan. The sample was selected through non-probability sampling using convenience and purposive methods. The study excluded a formal sampling frame because there is no readily available and reliable list of Gen-Z sustainable fashion consumers in Lahore. Therefore, questionnaires were distributed to potential participants through online platforms, particularly Google Forms, and face-to-face structured interviews were conducted at fashion and retail spots popular among young people in Lahore. Before proceeding to the main body of questions, two screener questions were asked to determine whether the respondent met the inclusion criteria of this study. These included age (18-27) and whether the participant had purchased or considered purchasing a fashion or apparel product within the past year.

3.2. Conceptual Framework

Drawing on the theoretical base and the empirical literature, this study suggested an empirical framework that portrays the relationship between the study variables. The framework is thus displayed these factors; Environmental Concern, Self-Transcendence Value and Fashion Leadership as an independent variable, Attitude Towards Sustainable Fashion as 1st and Sustainable Purchase Intention as the 2nd Mediator and Sustainable Purchase Behavior as a Dependent Variable.

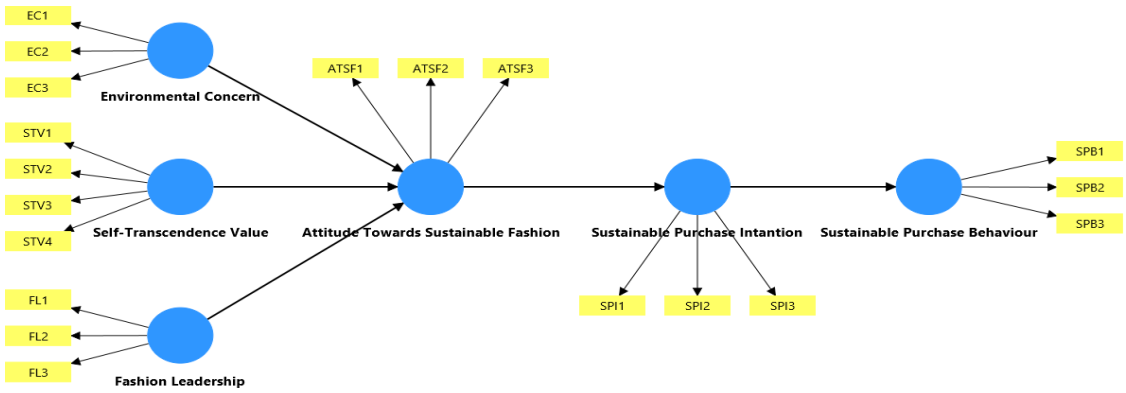


Figure 3.1 Conceptual Framework

3.3. Data Collection and Measurement Instruments

This study adopted a quantitative research approach to examine Generation Z's attitudes, values, and behaviors toward sustainable fashion in Lahore, Pakistan. Data was collected through an online survey on google form, face-to-face interview and structured questionnaires. A total 463 questionnaire and interviews was distributed and conducted respectively to Gen-Z individuals aged 18-27. A total of 400 valid response were consider for analysis. Before analyzing the data, the responses were checked in MS Excel to make sure they were reliable. First, the standard deviation of each respondent's answers was calculated. Responses with a standard deviation less than 0.3 were eliminated due to flat lining. Responses that showed biased or unrealistic answering patterns, such as selecting the same response for each item, were also eliminated. Surveys that were not completed or in which participants omitted questions were also disqualified. There were 400 valid responses left for analysis after this cleaning procedure was finished.

All of the measurement items used in the study were adapted from existing scales within the literature related to sustainable consumption and fashion. More specifically, the questionnaire included the following reflective constructs:

Table 1: Summary of Measurement Instruments

Construct	Abbreviation	No. of Items	Adapted From
Self-Transcendence Value	STV	4	Roster (2024)
Environmental Concern	EC	3	Dangelico et al. (2022); Rasheed et al. (2024)

Fashion Leadership	FL	3	McCoy et al. (2021)
Attitude Towards Sustainable Fashion	ATSF	3	Hasan (2025)
Sustainable Purchase Intention	SPI	3	Rausch and Kopplin (2021)
Sustainable Purchase Behavior	SPB	3	Khare and Kautish (2022)

Table 2: Items Grouped/Organized by variable

Variables	Items
ATSF	• (ATSF 1) I have a positive attitude toward purchasing sustainable clothing. • (ATSF 2) Choosing sustainable fashion products is a wise decision for me. • (ATSF 3) I believe that sustainable purchasing by me will help in conserving natural resources
SPI	• (SPI 1) I believe that sustainable purchasing by me will help in conserving natural resources. • (SPI 2) Whether I buy sustainable fashion is entirely up to me. • (SPI 3) I know where to find sustainable fashion brands and products.
SPB	• (SPB 1) I keep my wardrobe up-to-date with the changing fashions. • (SPB 2) I usually have one or more outfits of the new style. • (SPB 3) I discover sustainable fashion brands through social media.
EC	• (EC 1) I am concerned about environmental problems caused by the fashion industry. • (EC 2) I prefer purchasing clothing from brands that prioritize environmental sustainability. • (EC 3) It is important to me that the clothing I buy comes from brands that focus on recycling and producing long-lasting products
STV	• (STV 1) It is important to me to protect the environment. • (STV 2) I would like to learn about environmentally friendly clothes. • (STV 3) Donating gently used clothing reduces textile waste and extends the lifecycle of fashion items. • (STV 4) Choosing sustainable fashion brands promotes environmental protection and global equality.
FL	• (FL 1) I am aware of fashion trends and want to be one of the first to try them.

	• (FL 2) It is important for me to be a fashion leader. • (FL 3) I am usually the first to know the latest fashion trends.

Note: ATSF stands for Attitude towards Sustainable Fashion, SPI (Sustainable Purchase Intension), SPB (Sustainable Purchase Behavior), EC (Environmental Concern), STV (Self-Transcendence Value), and FL is Fashion Leadership.

For all items, a five-point Likert scale response format 1 to 5 (strongly disagree to strongly agree) was employed. Items used for measuring were chosen and adjusted according to their conceptual applicability in the context of sustainable fashion so that content validity and research relevance could be assured.

Table 3: Demographical Information

Category		No of Respondents	Percentage
Gender	Male	176	44 %
	Female	224	56 %
Total		**400**	**100 %**
Age	18-20	118	29.5 %
	21-23	125	31.25%
	24-27	157	39.25%
Total		**400**	**100 %**
Residential Area	Rural	64	16 %
	Urban	336	84 %
Total		**400**	**100%**
Monthly Income	<50,000	126	31.5%
	50,001- 100,000	172	43%
	100,001 – 150,000	71	17.75%
	>150,000	31	7.75%
Total		**400**	**100%**
Education Level	Matric	0	0%
	Intermediate	0	0%
	Undergraduate	236	59%
	Graduate	118	29.5%

	Master and above	46	11.5%
Total		**400**	**100%**

Source: Author's own calculations

3.4. Data Analysis

The data is analyzed using the partial the least squares structural equation modeling (PLS-SEM). The two-step procedure that Hair et al. (2019) suggested for this analysis method was followed. This method of analysis was chosen because of several factors. The first aspect is that the research model combines prediction and theory extension with new constructs, which corresponds to the strength of PLS-SEM in exploratory and predictive studies. Second, the model incorporates a complex structure containing multiple exogenous and endogenous constructs. This complexity is advantageous for PLS-SEM performance. Thirdly, the PLS-SEM is appropriate for analyzing distributions that are not normal (which is typical in survey-based research). Smart-PLS 4 softwere was utilized for all analyses.

4. Results

4.1. Measurment Model

Prior to testing the hypothesized relationships which ranged from 0.725 (STV3) to 0.901 (EC3), exceeding the recommended threshold of 0.70 (Hair et al., 2022) for all constructs in the model.

Table 4: Reliability and validity assessment

	Cronbach's α	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude Towards Sustainable Fashion	0.716	0.716	0.841	0.638
Environmental Concern	0.794	0.866	0.876	0.703
Fashion Leadership	0.818	0.828	0.892	0.733
Self-Transcendence Value	0.795	0.813	0.867	0.62
Sustainable Purchase Behavior	0.752	0.770	0.856	0.665

Sustainable Purchase Intention	0.783	0.784	0.873	0.697

This table presents indicator items having Cronbach's α, composite reliability (rho_a and rho_c) and Average variance extracted (AVE), where Cronbach's α and composite reliability should exceed the recommended values of 0.70 (Hair et al., 2021). Cronbach's α values ranged from 0.716 to 0.818, composite reliability (rho_c) values ranged from 0.841 to 0.892, composite reliability (rho_a) values ranged from 0.716 to 0.866 and confirming that all constructs met the minimum reliability standard. These values are broadly consistent with comparable sustainable fashion consumption studies. Roster (2024) reported Cronbach's α values ranging from 0.784 to 0.945 for lower-order constructs measuring personal values, placing the present study's reliability estimates at the lower but still acceptable end of that range. The relatively modest α for Attitude Towards Sustainable Fashion (0.716) mirrors a pattern noted in prior PLS-SEM apparel research, where attitude constructs adapted across cultural contexts often show somewhat lower internal consistency than values-based constructs (Hair et al., 2021).

Convergent validity was evaluated using average variance extracted (AVE), which should exceed 0.5 to indicate that a construct explains more variance in its indicators (Fornell and Larcker, 1981; Hair et al., 2021). AVE values in this study ranged from 0.62 to 0.733 of Self-Transcendence Value to Fashion Leadership respectively. All constructs comfortably exceeding the 0.50 threshold and thereby establishing convergent validity. This pattern closely parallels Roster's (2024) findings, where AVE values for higher-order constructs ranged from 0.650 of Clothing Style Confidence to 0.878 of Self-Enhancement Values; also well above the recommended minimum. The comparability of AVE estimates across both studies suggests that despite differences in cultural context (Pakistani Gen-Z consumers versus U.S. adult consumers) and construct composition, the adapted measurement items performed consistently well in capturing their intended underlying constructs, supporting the cross-contextual robustness of value- and attitude-based scales in the sustainable fashion consumption literature (Rasheed et al., 2024; Roster, 2024).

Discriminant validity was assessed using the HTMT ratio of correlations, this method recommended over the traditional Fornell and Larcker (1981) criterion for PLS-SEM, particularly when indicator loadings vary only slightly across constructs (Henseler et al., 2015). HTMT values below 0.90 indicating that constructs are empirically distinct from one another. All HTMT values

in the present study ranged from 0.044 to 0.609 that is below the conservative 0.90 threshold, confirming that discriminant validity was established across all constructs in the model.

Table 5: Discriminant Validity (HTMT) Ratio

	ATSF	**EC**	**FL**	**STV**	**SPB**	**SPI**
Attitude Towards Sustainable Fashion (ATSF)						
Environmental Concern (EC)	0.238					
Fashion Leadership (FL)	0.338	0.055				
Self-Transcendence Value (STV)	0.609	0.074	0.059			
Sustainable Purchase Behavior (SPB)	0.076	0.070	0.075	0.044		
Sustainable Purchase Intention (SPI)	0.432	0.125	0.142	0.238	0.228	

The highest HTMT value observed, between Attitude Towards Sustainable Fashion and Self-Transcendence Value (0.609), is notably higher than the other pairwise comparisons, though it remains well within the acceptable range. This is theoretically expected, since self-transcendence values are hypothesized as a direct antecedent of attitude toward sustainable fashion in the present model, and constructs that are causally and conceptually closer typically show somewhat elevated HTMT ratios.

Table 6: Fornell-Larcker matrix

	ATSF	**EC**	**FL**	**STV**	**SPB**	**SPI**
Attitude Towards Sustainable Fashion	**0.799**					
Environmental Concern	0.188	**0.838**				
Fashion Leadership	0.261	-0.013	**0.856**			
Self-Transcendence Value	0.464	-0.015	0.046	**0.788**		
Sustainable Purchase Behavior	-0.025	-0.001	0.048	-0.023	**0.815**	
Sustainable Purchase Intention	0.324	0.097	0.115	0.184	0.179	**0.835**

This pattern is comparable to Roster (2024), who similarly reported that the highest HTMT value among lower-order constructs (0.954, between power and achievement values) remained below

the 0.90 threshold for related but distinct value dimensions, and who noted that constructs forming the same higher-order dimension are expected to correlate more strongly without threatening discriminant validity. By contrast, the lowest HTMT values in the present study indicate that behavioral outcomes are clearly empirically separable from the values and attitudinal antecedents that precede them in the model, consistent with the sequential, cascading structure proposed by the value-attitude-behavior hierarchy (Homer and Kahle, 1988).

4.2. Structure Model

Table 7: Collinearity Statistics (VIF)

	VIF
Attitude Towards Sustainable Fashion →Sustainable Purchase Intention	1.000
Environmental Concern →Attitude Towards Sustainable Fashion	1.000
Fashion Leadership →Attitude Towards Sustainable Fashion	1.002
Self-Transcendence Value → Attitude Towards Sustainable Fashion	1.002
Sustainable Purchase Intention → Sustainable Purchase Behavior	1.000

Prior to evaluating the structural model, collinearity among predictor constructs was assessed using variance inflation factors (VIF). Values ranged from 1.000 to 1.002 across all inner model paths. All values fell well below the conservative threshold of 3.0 recommended by Hair et al. (2021), confirming that collinearity was not a concern in the model and that path coefficient estimates were not distorted by predictor redundancy. This result is consistent with Roster (2024), who reported similarly low VIF values that are below 2.0 across all inner model paths, indicating that the absence of problematic collinearity is a common and expected outcome in well-specified PLS-SEM models with theoretically distinct constructs.

Table 8: Structural Path Estimates and Significance Testing

Hypothesized Path	Original sample	Sample mean	Standard deviation	T statistics	P values
Attitude Towards Sustainable Fashion → Sustainable Purchase Intention	0.324	0.326	0.048	6.790	0.000

Environmental Concern → Attitude Towards Sustainable Fashion	0.198	0.202	0.039	5.105	0.000
Fashion Leadership → Attitude Towards Sustainable Fashion	0.242	0.244	0.039	6.154	0.000
Self-Transcendence Value → Attitude Towards Sustainable Fashion	0.456	0.457	0.037	12.207	0.000
Sustainable Purchase Intention → Sustainable Purchase Behavior	0.179	0.185	0.046	3.859	0.000

This table reports the standardized path coefficients, bootstrap standard errors, t-values, p-values, and 95% confidence intervals for the hypothesized structural paths, based on a 5,000-subsample bootstrapping procedure applied to the composite construct scores. None of the bootstrap confidence intervals for any path include zero, and all paths are significant at $p < .001$, indicating that H1 to H5 are all statistically supported.

The structural model evaluated to test the study's hypothesized direct relationships. First Hypothesis showed that the path between Self-Transcendence Value and Attitude was positive (β= 0.456). Second Hypothesis path is also positive (β = 0.198). Third Hypothesis results also showed a positive path (β= 0.242). Together, these three antecedents explained 31.2% of the variance in Attitude Towards Sustainable Fashion.

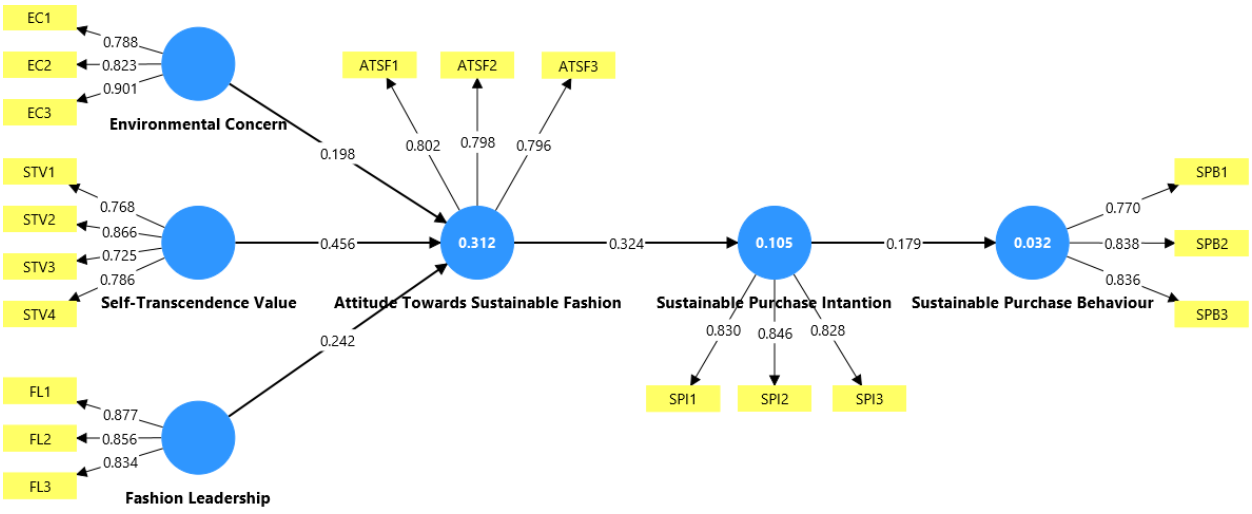


Figure 2: PLS-SEM Path Diagram

Fourth Hypothesis path is positive (β = 0.324) with Attitude explaining 10.5 percent of the variance in Sustainable Purchase Intention. Finally, Fifth Hypothesis path was also positive (β= 0.179), though Sustainable Purchase Intention explained only 3.2 percent of the variance in Sustainable Purchase Behaviour that is the weakest explanatory result in the model. Overall, the progressive weakening of both path coefficients and explained variance across the model traces the theoretical cascade proposed by the hierarchical value-attitude-behavior model (Homer and Kahle, 1988), with the intention-behaviour link emerging as the weakest segment.

4.3. Model Statistics

The explanatory power of the structural model was assessed using R^2 values for each endogenous construct, where values of 0.67, 0.33, and 0.19 represent substantial, moderate, and weak levels of explained variance, respectively (Chin,1998).

Table 9: Structure Model R square and Adjusted R square

	R-square	**Adjusted R-square**	**Q-Square**
Attitude Towards Sustainable Fashion	0.312	0.306	0.297
Sustainable Purchase Behavior	0.032	0.029	-0.001
Sustainable Purchase Intention	0.105	0.103	0.049

Attitude Towards Sustainable Fashion recorded an (R^2 = 0.312) and (Adjusted R^2 = 0.306) indicating that Self-Transcendence Value, Environmental Concern, and Fashion Leadership jointly explained approximately 31 percent of the variance in attitude, a level just on approximately lower bend of the moderate value. Sustainable Purchase Intention had an (R^2=0.105) and (Adjusted R^2 = 0.103) while Sustainable Purchase Behavior had the lowest R^2 of the three endogenous constructs at (R^2=0.032) and (Adjusted R^2 = 0.029). Finally, the Q-square values of Attitude towards Sustainable Fashion (Q^2= 0.297) and Sustainable Purchase Intention (Q^2= 0.049) has positive values that show strong and weak predictive relevance respectively. While Sustainable Purchase Behavior (Q^2 = -0.001) has negative value that shows fail to predict the actual purchase behavior.

This pattern of relatively modest explained variance is broadly consistent with comparable PLS-SEM studies in the sustainable fashion literature. Roster (2024) similarly reported a modest R^2 for the model's primary behavioral outcome, Interest in Upcycled Clothing $R^2 = 0.255$, and noted that small to moderate explained variance is common in consumer psychology research, since most consumer behaviors are shaped by multiple co-occurring influences beyond any single theoretical model (Dias et al., 2023). However, the present study's R-Square for Sustainable Purchase Behavior ($R^2 = 0.032$) is considerably lower than Roster's (2024) outcome variable, suggesting that the present model explains actual purchase behavior far less effectively than Roster's model explained interest in upcycling. This discrepancy may reflect the well-documented intention behavior gap frequently reported in sustainable fashion consumption research (Park and Lin, 2020), or may point to unmeasured situational or economic constraints such as price sensitivity or product availability, specific to the Pakistani Gen-Z consumer context that limit the translation of purchase intention into actual behavior.

Table 10: F Square calculation

	f-square
Attitude Towards Sustainable Fashion → Sustainable Purchase Intention	0.117
Environmental Concern → Attitude Towards Sustainable Fashion	0.057
Fashion Leadership → Attitude Towards Sustainable Fashion	0.085
Self-Transcendence Value → Attitude Towards Sustainable Fashion	0.301
Sustainable Purchase Intention → Sustainable Purchase Behavior	0.033

Effect sizes (f^2) were assessed to determine each predictor's individual contribution to its endogenous construct, Cohen (2013) guidelines of 0.02, 0.15, and 0.35 for small, medium, and large effects respectively.

Self-Transcendence Value towards Attitude towards Sustainable Fashion showed the strongest effect ($f^2 = 0.301$), while Attitude Towards Sustainable Fashion towards Sustainable Purchase Intention is ($f^2 = 0.117$) medium effect and Fashion Leadership and Environmental Concern towards Attitude Towards Sustainable Fashion are small ($f^2 = 0.085$ and $f^2=0.057$). Sustainable Purchase Intention towards Sustainable Purchase Behavior recorded the weakest effect ($f^2 =$

0.033). This pattern aligns with Roster (2024), found that self-transcendence values to be the strongest predictor in the model, noting that modest effect sizes are typical in consumer psychology given the multiple influences shaping consumer behavior (Dias et al., 2023).

5. Discussion

This study set out to test an extended cognitive hierarchy model of sustainable fashion purchase behavior among Gen-Z consumers in Lahore, Pakistan, positioning self-transcendence values, environmental concern, and fashion leadership as distinct antecedents of attitude toward sustainable fashion, which was hypothesized to flow sequentially through purchase intention to actual purchase behavior. All five hypotheses were supported, but the strength of support varied considerably across the model and this pattern of results speaks directly to ongoing debates in the literature.

Consistent with H1, self-transcendence value emerged as the strongest predictor of attitude toward sustainable fashion ($\beta = 0.456$, $f^2 = 0.301$), corroborating prior evidence that values concerned with the welfare of others and the environment translate into favorable evaluations of sustainable options (Lian and Chen, 2024), and reinforcing the salience of these values in Pakistan's collectivist, religious cultural context (Rasheed et al., 2024). Environmental concern (H2) and fashion leadership (H3) also positively predicted attitude, but with substantially smaller effect sizes ($f^2 = 0.057$ and 0.085 respectively). The comparatively modest role of environmental concern supports the reconciliation rather than acting as a strong direct driver, environmental concern appears to operate primarily by shaping attitude, consistent with findings among Korean consumers where its direct effects were negligible (Lee et al., 2025) rather than the strong direct effects reported in some emerging-market studies (Razi, 2026). The positive but modest effect of fashion leadership supports the view that fashion leaders can act as intermediaries for sustainable diffusion (Kochuveetil et al., 2026) without fashion involvement overwhelming environmental considerations, as has been found elsewhere (Hyun et al., 2021).

The most striking pattern in the results is the progressive weakening of explanatory power along the hypothesized cascade: attitude explained a moderate 31.2% of variance, intention explained only 10.5%, and behavior explained just 3.2%, with a negative Q^2 for purchase behavior indicating

essentially no predictive relevance at this final stage. This mirrors the well-documented attitude-behavior and intention-behavior gaps in sustainable consumption research (Park and Lin, 2020; Rausch and Kopplin, 2021) and suggests that in Pakistan's price-sensitive, availability-constrained market, structural and situational barriers -- price, product availability, and habitual consumption patterns (Wiederhold and Martinez, 2018) -- may exert a stronger influence on actual purchasing than psychological antecedents captured within the cognitive hierarchy alone. This finding is consistent with the view that sustainable purchase intention, while a necessary precursor, is far from a sufficient condition for sustainable purchase behavior in resource-constrained developing-country contexts.

6. Conclusion

This study tested an extended cognitive hierarchy model linking self-transcendence value, environmental concern, and fashion leadership, through attitude and purchase intention, to sustainable purchase behavior among Gen-Z consumers in Pakistan. All hypothesized paths were supported, with self-transcendence value emerging as the dominant antecedent of attitude and the intention-behavior link emerging as the weakest segment of the cascade. These findings extend cognitive hierarchy theory into an under-researched fashion-specific and cultural context, and underscore that closing the sustainability gap in emerging markets will require attention not only to consumers' values and attitudes but also to the structural barriers that stand between favorable intentions and actual purchasing behavior.

7. Theoretical Implications

This study contributes to the sustainable fashion literature in three ways.

- First, it provides one of the few empirical tests to trace the full sequential pathway from values and beliefs through attitude and intention to self-reported behavior within a single integrated model, directly addressing the gap noted by Rausch and Kopplin (2021) regarding models that terminate at the intention stage.
- Second, it establishes fashion leadership as an independent, fashion-specific antecedent of attitude alongside the more commonly studied value- and belief-based constructs, extending

the cognitive hierarchy model beyond its traditional generic-value formulation (Milfont, 2010) into a fashion-specific domain.

- Third, by situating the investigation within Pakistan's collectivist, religious, and price-sensitive Gen-Z market, the study extends cognitive hierarchy research beyond the WEIRD populations that dominate the literature (Rasheed et al., 2024) and offers a useful point of comparison for future cross-cultural work.

8. Practical Implications

- Lead marketing messages with altruistic framing, not just eco-facts. Self-transcendence value was by far the strongest driver of attitude. Campaigns built around care for others and community welfare will likely outperform pure environmental-fact messaging.
- Use fashion leaders/micro-influencers as diffusion agents. Since fashion leadership positively predicts attitude, brands should collaborate with fashion-forward opinion leaders to normalize sustainable fashion as stylish rather than sacrificial.
- Treat the intention–behavior gap as the primary business problem, not the attitude gap. With SPI explaining only 3.2% of SPB variance and a negative Q^2, the real bottleneck is converting stated intention into a completed purchase. These points to price interventions, improved availability, and point-of-sale nudges as higher-leverage interventions than further attitude-building campaigns.
- Policy angle: subsidies or tax relief for sustainable apparel manufacturers could directly target the price-sensitivity barrier repeatedly cited as a constraint in Pakistan's Gen-Z market, addressing the structural gap the psychological model alone cannot close.
- For future managerial research: given the weak explanatory power for actual behavior, brands would benefit more from a follow-up study measuring actual transaction data and testing price/availability as moderators of the intention–behavior link directly.

9. Limitations and Further Research

Several limitations should be acknowledged:

- First, the cross-sectional design precludes causal inference; the hypothesized directional pathways, while theoretically grounded, cannot rule out reverse or reciprocal relationships between attitude, intention, and behavior.
- Second, purchase behavior was self-reported rather than observed, which may introduce social desirability bias, particularly given the socially sanctioned status of sustainability in the sample's urban Gen-Z context; future studies could triangulate self-reports with actual purchase or transaction data.
- Third, the sample was drawn primarily from Lahore and skewed toward urban respondents (84%), which may limit generalizability to rural Pakistani populations.
- Fourth, common method bias arising from single-source, single-time survey data cannot be fully ruled out, although the use of established, validated scales, the online/interview mixed collection method, and the modest to weak explained variance at the behavioral stage make substantial common method inflation unlikely to fully account for the pattern of results.

Future research should test the model longitudinally, incorporate objective or observed behavioral measures, and examine moderators, such as price sensitivity, product availability, and greenwashing skepticism that may account for the sizeable unexplained variance in the intention-behavior link identified here.

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