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PATHWAYS TO SUSTAINABLE CHOICES: A SEQUENTIAL MEDIATION ANALYSIS OF EMOTIONAL AND BEHAVIORAL DRIVERS AMONG E- COMMERCE CONSUMERS

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Abstract

This research effectively contributes the TPB through integrating the moral emotions such as the eco-shame, environmental concern as well as the environmental guilt to elucidate sustainable-fashion-consumption in e-commerce context. The traditional TPB constructs-such as the subjective norms, attitude and perceived-behavioral control somehow fail to completely capture the moral and emotional dimensions that persuade the pro- environmental behavior. This study hence, scrutinizes how the study variables actually interact throughout the emotional cognitive apparatuses to contour the behavioral-purchase intentions (BPI) towards the sustainable fashion. A primary data was collected quantitatively through a survey from 406 online fashion consumers in Lahore, Pakistan to test the four sequential hypotheses using the Hayes' PROCESS Macro-Model 6. All the four analysis examined how the eco-shame (ES), sustainable-consumption attitude (SCA), subjective-norms (SN) and the perceived-behavioral control (PBC) influence the purchase intentions through the environmental-concern (EC) and the environmental guilt (EG). The findings divulge a clear moral-emotional sequence: ES/SCA/SN/PBC heightens the EC then EC evokes the EG and EG drives the BPI. This sequence of all the variables in the mediations paths sustains the conjectural argument that the moral-emotions conduit the cognitive-behavioral gap in the sustainable choices. The research enriches the TPB frame-work through highlighting empirical-evidence that the sustainable-consumption is not exclusively driven through coherent attitudes but by the emotional accountability and moral cognition as well.

Introduction

The global-fashion and retail-landscape have practiced an extraordinary transformation throughout the past decade, mainly driven through the technological transformation of commerce and the developing inclinations of younger-generations such as the Millennial and Generation Z (Prits, 2019). These associations are renowned for their keen awareness of social and environmental problems and their choral support for the ethical and the sustainable consumption. Conversely, their definite consumption performances time and again oppose these expressed values, predominantly surrounded by the realm of fast-fashion. The expediency, the affordability and the immediacy presented through the e-commerce platforms have hastened the consumption patterns, re-shaping not just how the individuals shop but also how-they distinguish the value, quality and sustainability (Becker- Leifhold, 2018; Niinimäki et al., 2020).

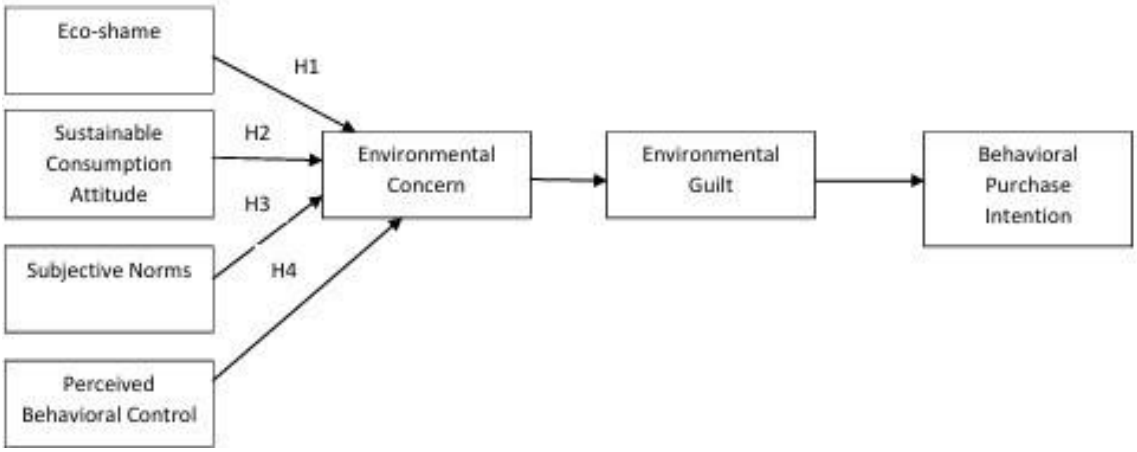
Nonetheless, these economic prosperity approaches at the price of a frightening annual-disposal of over-four million-tons of textile. The mass production of the short-lived and in- expensive outfits brings about this rotation of the accelerated dumping (Ozdamar Ertekin, 2015). This disproportion between the consumers' stances and sustainable consumption behaviors is mystifying (Ciasullo et al., 2017). The Theory of Planned Behavior has appeared as an effective frame-work for probing the factors impacting the intentions to obtain the sustainable-products (Kumar et al., 2021). The TPB conjectures that the individuals-make the rational and the systematic-decisions founded upon their attitude towards the behavior, the subjective-norms and the perceived-behavioral-control (Ajzen, 1991). In the following context, the online- marketplaces like the Temu and the Daraz have appeared as the powerful-mediators of the consumer-behavior. In the urban-centers such as Lahore city, in Pakistan, these plat-forms have transfigured the shopping-culture making the fashion further accessible, more diverse and more affordable, yet concurrently reinforcing the unsustainable- consumption-patterns. The sales events like 11.11, Black Friday of Daraz and the seasonal-promotions are essential in driving the mass-purchases, time and again encouraging the impulse-buying that over-shadows the sustainability-concerns-(Augustinah, 2023; Mukendi et al., 2020). This research investigates the connections among the TPB constructs as well as the BPI towards the Sustainable-Fashion-Products. Furthermore, the environmental-concern and the environmental-guilt serve up as the vital mediators in this research's theoretical pathways. The environmental-concern imitated the extent to which the persons are conscious of and are worried regarding the environmental-degradation. It can intensify the-effects of the eco-shame, subjective-norms, sustainable-consumption-attitudes and the perceived-behavioral-control through motivating these persons to support their-actions with their environmental-values (Augustinah, 2023). Likewise, the environmental-guilt, can additionally and effectively mediate the contact of the independent variables on the on the behavioral-purchase- intentions.

This study contributes to the growing but still underdeveloped literature on emotional determinants of sustainable consumption by embedding eco-shame, environmental concern, and guilt within the TPB framework**.** It pioneers the exploration of sequential mediation pathways**,** which can reveal how emotional responses translate into sustainable behavior. Furthermore, the research provides context-specific insights by focusing on young consumers in Lahore, a major urban hub where global fashion trends and digital retail platforms converge. It also examines behavior during high-impact sales events a setting often ignored in sustainability studies (Brosch, 2021). This study contributes to the expanding field of sustainable consumer behavior by addressing a critical limitation in traditional models: the neglect of emotional and moral drivers in explaining pro-environmental decisions. The Theory of Planned Behavior (TPB) has long served as a reliable framework to predict behavior through constructs like sustainable consumption attitude*,* subjective norms*,* and perceived behavioral control (Ajzen, 1991). However, the TPB's cognitive focus is increasingly criticized for failing to account for moral emotions which often serve as the real triggers or barriers in high-stakes decision-making contexts like sustainability (Antonetti & Maklan, 2014; Bissing-Oslan, 2022.This study also addresses this theoretical gap by integrating eco-shame**,** environmental concern and environmental guilt into the TPB framework. It offers a sequential mediation model, where emotional constructs mediate the relationship between social/cognitive drivers and behavioral intention. By doing so, the study not only enriches TPB with affective dimensions but also provides a process-oriented understanding of how sustainable intentions form particularly in fast-paced digital consumption contexts. While constructs like environmental guilt and concern have been examined individually, their interactive and sequential roles have rarely been tested in fashion-related behavioral models. This research adds methodological value by testing sequential mediation, a relatively underutilized design in sustainability research, allowing for a deeper exploration of causal pathways rather than isolated variable relationships. The study has major implications for marketers, policymakers, educators, and sustainability advocates**, e**specially in emerging markets. While

sustainability campaigns often emphasize awareness, they overlook the emotional dissonance consumers face particularly those in fast-fashion cultures who care about the planet yet continue to shop unsustainably (Xue et al., 2022). By identifying eco-shame as a potentially transformative trigger and tracing its influence through concern and guilt, the study offers actionable insights for nudging behavior change through emotional appeals.

This study aims to examine a sequential mediation theoretical model where the environmental concern and the environmental guilt function as connected mediators between the (TPB) theory of planned behavior constructs: the sustainable-consumption-attitude (SCA), the eco-shame (ES), the subjective-norms (SN), the perceived- behavioral-control (PBC) and the sustainable-fashion behavioral purchase-intention. And to promote the empirical evidence and provide effective theoretical insights that will surely enhance the understanding of expressively determined sustainable consumption in the emerging e-commerce market ecosystems contributing the implications for the policymakers, marketers and the sustainability supporters.

Figure 1: Theoretical Framework



Literature review and hypothesis development

The (TPB) Theory of Planned Behavior has developed as a very valued structure for exploring the aspects impacting the purchase-intentions to the sustainable-products- (Lionço et al., 2019; Kumar et., 2021; Abrar et al., 2021). TPB speculates that the individuals sort systematic and rational-decisions grounded on their, sustainable consumption attitude towards the behavior, the subjective-norms as well as perceived-behavioral-control (Ajzen, 1991). This research presents a substantial theoretical progression through encompassing the theory-of-planned- behavior (TPB) to comprise the pioneering construct of the eco-shame in assessing behavioral-purchase intention towards the sustainable-fashion goods (Brosch, 2021). This progression satiates a distinguished gap in the prevailing literature because the empirical researches positioned on the eco-shame persist meager. This research retorts to the demand for discovering the new paradigms in the TPB model, directing to put light on the convolutions of intention concerning the sustainable-clothing purchases.

Environmental Concern and Environmental Guilt with Eco-shame and Behavioral Purchase Intention (H1):

Prior studies indicate that the shame on its own may not unswervingly envisage the behavior but then again can activate the emotional guilt and cognitive concern, which consequently stimulate the reparative arrangements (Amatulli et al., 2019).The environmental-concern here performs a cognitive part: where the individuals that are aware of the environmental significances of fast fashion become progressively perceptive to their own unsustainable performances (Hanss & Böhm, 2012). The environmental-guilt then trails as the self-regulatory feeling, inspiring reparative movements like the sustainable buying (Antonetti & Maklan, 2014; Rahmafitria & Kaswanto, 2024). This effective and novel sequential pathway that resonates compellingly in the sustainable- fashion, where the consumer's shame regarding the over consumption is, frequently transmuted into the guilt driven curative buying (Lionço et al., 2019). For instance, Rahmafitria & Kaswanto (2024) discovered that the consumers undergoing the guilt after the environmental-appeals presented sturdier purchase-intentions for the sustainable-fashion. Similarly, Ogunbode et al (2023) established that the environmental-concern interprets the emotional uneasiness into the constant pro-environmental obligations. Consequently, the eco-shame is prone to fuel the environmental-concern (the awareness of the ecological-damage) plus consequently induce the environmental-guilt (that is a self-directed intellect of the responsibility) that mutually augments the purchase- intentions toward the sustainable goods.

The relationship amid the eco-shame and the environmental-concern can consequently be scrutinized as the process of the moral-cognition where the affective distress fuels the awareness for the ecological-damage. This explication aligns with the recent results by the Hickman et al (2021), who detected that the self-conscious sentiments such as the shame serve up as the ethical barometers directing the consumers towards the reflective consciousness of the environmental problems. After this the cognitive-concern is stimulated, it elicits the environmental-guilt which is the emotion entrenched in the comprehension of the one's involvement to the environmental dreadful conditions (Onwezen et al., 2013). Guiltiness, dissimilar to the shame is potential oriented as well as reparative hence motivating the corrective actions like the waste-reduction or the sustainable- purchasing (Shipley & Van., 2022). The empirical substantiation maintains this sequential-moral-emotional procedure. Nguyen, Lobo and Greenland (2016) exhibited that the shame initially triggers the moral indication (which mean the concern) that then induces the guilt which boosts the behavioral-intentions. This progression is above all pertinent in the collectivist ethnicity as the Pakistan where the social reflection and the moral status are intensely entwined with the consumption-behaviors (Yousaf & Li, 2015). In the contexts like these, the eco- shame functions as the socially affixed cue that then switches into the personal-moral responsibility, strengthening the guilt motivated behavioral rectification. Accordingly, the path from the Eco-shame ES → Environmental- Concern (EC) → Environmental-Guilt (EG) → Behavioral-Purchase-Intention (BPI) reveals a moral alteration procedure where the emotional uneasiness evolves in the cognitive comprehension and the lastly in the sustainable shopper actions. Thus, this effectively hypothesizes:

H1: *Environmental concern and environmental guilt sequentially mediate the relationship between eco-shame and purchase behavioral intention.*

Environmental Concern and Environmental Guilt with Sustainable-Consumption-Attitude and Behavioral- Purchase-Intention (H2):

The sustainable consumption attitude represents a auspicious evaluations towards the sustainable-consumption plus are also one of the sturdiest interpreters of the purchase-intentions (Al-Swidi & Saleh, 2021). Yet, the scholars edge the perseverance of the attitude-behavior gap (Deenmamode, 2025) while signifying that the constructive attitudes solo, do not pledge the sustainable-purchasing. Mediators such projected in this research, the environmental-concern and the environmental-guilt aids to bridge this gap. Jin et al., (2024) realized that the positive attitudes and the knowledge towards the up cycled craze predicted the purchase-intention only when the environmental-concern was triggered. Furthermore, Antonetti and Maklan (2014) presented that the environmental guilt performs a reparative part by impelling the consumers to bring into line the attitudes with the corrective actions. This sequential path warrants that the favorable attitude is transmuted into the distinct purchase-intentions through the enhanced concern plus guilt. The environmental-concern strengthens the ethical salience of the sustainable-choices, whereas the environmental-guilt guarantees accountability through generating an emotional uneasiness when the actions diverge from the optimistic attitudes (Antonetti &Maklan, 2014). Therefore, customers with the auspicious sustainability-attitudes are most likely to objectify such attitudes in the intentions when the environmental-concern is triggered and highlighted by the environmental-guilt (Hasan, 2025).

Modern research emphasizes that the attitudes towards the sustainable-consumption symbolize not merely the lucid evaluations of the eco-friendly performance as well as the effective and moral directions that are embedded inside the broader-value-systems (White, Habib & Hardisty, 2019; Watkins et al., 2016). Inside the structure of the (TPB)-Theory-of-Planned-Behavior, the sustainable- consumption-attitudes have been recognized as the main determinant of the behavioral-intention-(Ajzen, 1991) nevertheless, their extrapolative power is extensively augmented when they are integrated with the ethical emotions as the guilt and the concern (Culiberg et al., 2023; Jin et al., 2024). The relationship between the sustainable-consumption-attitude and the environmental-concern is soundly established in the environmental-psychology. The persons who embrace the favorable-attitudes to the sustainability are highly to demonstrate the cognitive-awareness of the ecological-degradation plus to distinguish the environmental fortification as an element of the people's moral individuality (Lavuri et al, 2023). This environmental-concern then molds to become a mental depiction of the responsibility hence strengthening the ethical salience of the sustainability on a daily basis decision-making- (Deenmamode, 2025). As the concern intensifies, it escorts to the environmental-guilt that is an emotional rejoinder coming up from perceived discrepancy between the one's behaviors and the ideals (Culiberg et al., 2023). This evolution replicates the cognitive to the affective cycle that is central to the moral emotion hypothesis, where the awareness of the harm directs to the self-imposed guilt plus the inspiration to repair it (Antonetti & Maklan, 2014).

The empirical confirmation from the fashion-e-commerce circumstance and the sustainability sustains this sequential-path. For example, as the Hasan (2025) discovered that the pro-sustainability mind-sets extensively forecast the environmental-concern that in turn induces the guilt and coerces the moral fashion-purchase intentions. Correspondingly, Sorubini and Krishnan (2025) stated that the environmental-guilt doles out as the expressive mediator converting the favorable-attitudes into the reparative-behavioral findings, particularly between the Gen Z customers who construe the sustainability as the moral appearance of the individuality.

The sentimental link between the envi-concern and the envi-guilt therefore enlightens why the attitudes unaided often drop short in the envisaging behavior (Kautish, Paul & Sharma, 2019).In the perspective of the e-commerce- fashion-consumption this sequential framework increases the additional significance. The online-shopping diminishes the physical prompts of the sustainability and the frequently encourages the impulsive-buying therefore the emotional rendezvous becomes very critical to prolong the principled decision-making (Adelia & Supriadi, 2025). The H2 pathway which is: Sustainable-Consumption-Attitude (SCA) → Environmental-Concern (EC) → Environmental-Guilt (EG) → Behavioral-Purchase-Intention (BPI) imprisons this interplay, exemplifying that the sustainable-behavior upshots not merely from the cognitive principle however from the emotionally- moralized-awareness-(Shipley et al., 2022).

H2: *Environmental concern and environmental guilt sequentially mediate the relationship between sustainable consumption attitude and purchase behavioral intention.*

Environmental Concern and Environmental Guilt with Subjective-Norms and Behavioral Purchase-Intention (H3):

The independent variable of subjective-norms portrays the social compression to imitate to the pro-environmental actions (Fishbein & Ajzen, 2011). In the collectivist principles, these compressions sturdily impact the sustainable-consumption- (Kumar et al., 2021; Choi & Johnson, 2019). Though, subjective-norms un- accompanied might lack the expressive salience. The mediators like the environmental-concern and the environmental-guilt make prescriptive influence more individually meaningful. Yu, Yang and Wang (2025) emphasized that the consumers with elevated environmental-concern levels, were more expected to interpret the normative pressures into the sustainable-fashion intentions more particularly when cynical of the green-washing. In addition, Lionço et al., 2019 established that the guilt strengthened the pathways from the social inspiration to the sustainable-purchasing as the persons are required to evade the emotional distress by conforming with the eco- friendly norms. Therefore, the subjective-norms are likely to influence the behavioral-purchase-intentions over the combined mediating outcomes of the environmental concern and the environmental-guilt.

The modern studies have highlighted that the subjective-norms influence the behaviors obliquely by being assimilated as the moral-concern that then subsequently induces the guilt when the individual actions diverge from these publicly-valued-norms (Xu et al., 2022). Therefore, the-sequential string Subjective-Norms (SN) → Environmental-Concern (EC) → Environmental-Guilt (EG) → Behavioral-Purchase-Intention (BPI) detains a social to the moral alteration procedure where the external anticipations progress into the internal ethical inspiration. The pragmatic evidence sustains this hypothetical sequence. The Wibowo et al (2024) revealed that the subjective-norms optimistically envisage the environmental-concern through nurturing the perceived-social compulsion towards the sustainability. Once the individuals assimilate these societal expectations, they tend to feel honorably answerable for the environmental-degradation (Lionço et al., 2019). This assimilation leads to the environmental-guilt, a-self-conscious-emotion that surfaces when the individuals distinguish the inconsistencies between the social-standards and the individual behavior-(Demirović Bajrami et al., 2025). The guilt like this serves like a psychological connection, converting the societal influence into the individual deed. Outstandingly, the environmental-concern and the environmental-guilt sequence entails that the moral sentiments do-not function in the seclusion although are molded by the socio-cultural milieu that delineates what is considered the responsible-consumption (Zhang, 2024).

From the cultural point of view, moralization of the subjective-norms is predominantly prominent in the collectivist civilizations like the Pakistan, where sustaining the social consent plus the family repute considerably impacts the behavior (Iram et al., 2023). At this time, the subjective-norms operate as the social prompt that enhances the moral-consciousness that through the concern and the guilt, concludes in the sustainable-intentions (Xu et al., 2022). Thus, sequential pathway Subjective-Norms (SN) → Environmental-Concern (EC) → Environmental-Guilt (EG) → Behavioral-Purchase-Intention (BPI) therefore demonstrates how the social anticipations evolve in the assimilated moral-imperatives so driving the sustainability not through the external imposition however through the emotionally beached self regulation.

H3: *Environmental concern and environmental guilt sequentially mediate the relationship between subjective norms and purchase behavioral intention.*

Environmental Concern and Environmental Guilt with Perceived Behavioral Control and Behavioral Purchase Intention (H4):

The last independent variable of this study which is: perceived-behavioral-control (PBC) is referred to as the consumers' professed ease or the difficulty in carrying out sustainable-purchasing (Ajzen, 1991). Findings show that the advanced PBC envisages sturdier purchase-intentions nonetheless the contextual blockades frequently deteriorate the absolute relationship (Armitage & Conner, 2001; Emekci, 2019). The mediators deliver an explanatory complexity that the consumers who feel in control, are more probable to progress environmental- concern about the environmental influences and to go through the environmental-guilt when declining to perform sustainably. Hasan (2025) discovered that in the industrialized economies, the perceived-behavioral-control (PBC) projected sustainable-clothing utilization implicitly through the concern and the guilt, accentuating the role of the emotional and cognitive-mediators. Similarly, White, Habib and Hardisty (2019) has emphasized that the concern and the guilt form a bond between the perceived-behavioral-control (PBC) and the behavioral-purchase-intentions, intensifying the motivation hence to act dutifully. Consequently, perceived- behavioral-control (PBC) is hypothesized to influence the behavioral-purchase-intention (BPI) sequentially within the environmental- concern and the environmental-guilt. The empirical researches from the years 2023–2025 have strengthened this twofold cognitive-emotional progression. Halkos and Gkargkavouzi (2024) discovered that the people who identify the elevated behavioral-control over the eco-friendly procedures, they testify a heightened environmental- concern since they deem their deeds can significantly mitigate the harm. This intensified awareness frequently leads to the environmental-guilt when the behaviors do not succeed to match the perceived accountability-(Luchs et al., 2015). Likewise, Kautish, Paul, and Sharma (2022)-argue that the sustainable-self-efficacy leads the persons to the moral indication, where the concern interprets into the emotional strain, driving the reparative- intentions. In this scope, PBC serves not merely as the predictor of the perceived capability rather as the mechanism for the moral rendezvous.

When the environmental-concern amplifies, it induces the environmental-guilt that is an emotional reaction to the perceived-moral contradiction (Zhang, 2024). The environmental-guilt after that develops into the emotional locomotive transforming the cognitive comprehension into the behavioral obligation-(Yao et al., 2025). This development supports the recent discoveries by-(Salleh et al., 2024) that exposed that the perceived-control obliquely encourages the sustainable-intentions throughout the moral sentiments, indicating that the empowerment single-handedly is inadequate without the affective configuration. In the e-commerce-fashion findings where the customers are continuously out in the open to the fast-paced inclinations the PBC frequently interacts with the moral individuality. All the Gen Z customers, especially, significance authenticity and the agency; their intellect of the control above the purchase assessments enhances both the moral-awareness as well as the emotional-accountability (Huang

et al., 2025). When the individuals believe they are capable yet incompatible by way of their environmental-values, the guilt happens, inspiring the reparative performance, like purchasing the eco-friendly clothes or evading the impetuous fast-fashion-consumption. This cognitive to the emotional revolution strengthens that the PBC should be ethicalized so that the behaviorally well-organized control/beliefs generate the concern, then the environmental-concern stimulates the guilt, and then the guilt influences the sustainable-purchase-intention (Salleh et al., 2024).Furthermore, in the communalist societies like the Pakistan, the perceived-control functions within the social and the cultural-boundaries. The individuals' intellect of the efficacy is frequently molded by the family anticipations, the affordability and the admittance to the sustainable options- (Rahmafitria & Kaswanto, 2024). In the contexts like the moral-emotions, the guilt amplifies the part of the control principles through assimilating the social accountability. Therefore, sequential- pathway Perceived-Behavioral-Control PBC) → Environmental-Concern (EC) → Environmental-Guilt (EG) → Behavioral-Purchase-Intention exhibits how the moral-cognition and the emotion co-adapt to alter the perceived- ability into the moral compulsion plus eventually into the sustainable-consumer-behavior.

H4: *Environmental concern and environmental guilt sequentially mediate the relationship between perceived behavioral control and purchase behavioral intention.*

Methodology

The research design that this study adopted to examine the relationships between the constructs without any manipulation is non-experimental, quantitative and co-relational without any manipulation directed towards the variables. The data was collected through the online as well as the printed surveys in a non contrived, natural setting aiming for the consumers/shoppers who engage actively with the e-commerce platforms. This naturalistic method is very apposite for exploring the cognitive-evaluations (SCA, SN & PBC) and the emotional rejoinders (ES, EG, EC) within the factual world decision setting. As highlighted by Creswell (2017) the quantitative- research in the natural contexts reveals evocative behavioral outlines, whereas Robson (2016) pin points that the non-experimental strategies are critical for understanding the social plus psychological dynamics where the manipulation is unethical. The targeted population embraces the Pakistani shopper/consumers that are involved in the digital-fashion consumption, regardless of the gender hence ensuring the diverse standpoints. The sampling technique that was opted for is non-probability convenience-sampling technique, focusing on the individuals vigorously purchasing from Daraz and Temu. An overall of 406 effective responses was collected, positioning with the recommendations by Kline (2023) and Hair et al. (2021) who contemplates that the samples of 200 to400 are acceptable for the robust operational sequential-mediation. A self-administered questionnaire was formulated to collect the responses that involve both the demographic and study constructs evidences. For the ES, SCA, SN & PBC a 7-point Likert-scale (1 = strongly disagree to 7 = strongly agree) was used whereas for EC and EG a 5-point Likert scale was used. The questionnaire was pretested on a pilot sample to ensure clarity, reliability, and internal consistency. The data collected was analyzed using the SPSS (Statistical Package for the Social Sciences) for data-screening, descriptive-statistics and the reliability-testing while structural relationships and mediation were tested through the Hayes' Process Macro-Model

Results

Descriptive Statistics:

The sample constitutes of 216 females (53.2%) with 190 males (46.8%), demonstrating a moderately balanced gender depiction. A large segment of the study respondents is affiliated with the younger age members/respondents (18–24 years: 41.6%, 25–34 years: 39.4%), together taking into account, for more than 80% of the sample. In terms of education, 36.2% participants are in high school or below, 18.5%

participants have the bachelor's degrees, 29.8% have master's degrees, and 15.5% are reported with postgraduate qualifications. With regard to salary, the majority of the respondents earned less than-PKR/ 40,000 (40.1%) or amid PKR/ 51,000– 60,000 (32.5%), whilst the smaller scope fell in the PKR 41,000–50,000 (19.2%) with the above 61,000 (8.1%) range.

The descriptive-statistics that are presented in the Table 1 below provide an inclusive overview of the participants' trends across this study's prime constructs, conforming to the extended (TPB) Theory of Planned Behavior structure that amalgamates the cognitive and emotional dimensions impacting the sustainable-fashion- consumption. The observations specifies that the respondents described a fairly high-level of (ES) eco-shame with (M = 5.75, SD = 0.93), highlighting a solid sense of embarrassment or moral unease when compelling in the behavior-perceived as environmentally-harmful. Correspondingly, the mean for the (SCA) sustainable consumption attitude is (M = 5.89, SD = 1.11) that highlights that the respondents hold extremely affirmative attitudes to the environmentally-responsible buying. The mean score for (SN) subjective-norms is (M = 5.06, SD

= 1.09) which signifies that respondents practice moderates to the sturdy social- influence concerning the sustainable-consumption. In terms of the (PBC) perceived-behavioral-control the mean and standard deviation is (M = 5.93, SD = 1.00), that is comparatively high which signifies that the participants normally consider that they own the resources, ability and the opportunities to operate sustainably. Regarding the behavioral-purchase- intention the mean and the SD value which is (M = 5.29, SD = 1.05) suggest that participants articulate a reasonably high enthusiasm to employ in the sustainable-fashion buying. The modest mean scores highlighted for the (EC) environmental-concern (M = 4.20, SD = 0.89) and the (EG) environmental-guilt (M = 3.95, SD = 1.09) additionally light up this dynamic.

Measurement Validation:

As revealed in the Table 1, all of this study's constructs displays Cronbach's-alpha scores that each meet plus exceed the minimum benchmark of: 0.70, verifying reliability of the measurement tools implemented in this study. The study variable (ES) eco-shame exhibits an alpha-coefficient of 0.777, signifying an adequate-level of the internal-consistency amongst the items of ES. The independent variable, (SN) subjective-norms presented a somewhat lower reliability-coefficient ($\alpha = 0.645$), which although is marginally under the usual threshold level, it can be considered still as appropriate in exploratory social-science study, predominantly while addressing with the intricate socio-psychological variables/constructs- (Peterson, 1994). The (SCA) sustainable-consumption- attitude extent yielded a Cronbach's-alpha value of: 0.825, highlighting very-good internal-consistency. Likewise, the (PBC) perceived-behavioral-control presented a high-reliability value ($\alpha = 0.822$), indicating the participants' steady perception of their ability to employ the sustainable-purchasing. Particularly, the (BPI) behavioral-purchase-intention demonstrated the highest Cronbach's-alpha score ($\alpha = 0.921$), demonstrating an excellent internal-consistency amid the items evaluating the participants' intention to buy the sustainable-fashion goods. This study's two mediators, the (EC) environmental-concern ($\alpha = 0.793$) and the (EG) environmental-guilt ($\alpha = 0.860$), also established an sufficient to very good-reliability. The internal-consistency of environmental-concern level proposes that the participants maintained a steady awareness and the cognitive perceptive of the environmental matters, while the high alpha-value for the (EG) environmental-guilt highlights a articulated emotional reaction connected with the personal liability for the environmental-degradation.

Correlation Matrix:

Taken as a whole, the outcomes specify that the majority of the variables are significantly and positively correlated, implying that they shift together in predictable theoretical path. The independent-variables prove sturdy inter correlations (falling between 0.65 to 0.94 with $p < 0.01$), entailing that the persons who reflect on the moral dependability (eco-shame), the social pressure (subjective-norms) plus the affirmative attitudes headed for the sustainability as well perceive themselves competent of performing sustainably. Eco-shame (ES), subjective- norms (SN) plus the sustainable-consumption-attitude (SCA) are all optimistically interrelated to the environmental-concern (EC) ($r = 0.10$ to 0.16, $p < 0.05$) hence highlighting that the moral sentiments, social assumptions and the encouraging attitudes boost the cognitive-awareness about the environmental problems. Environmental-concern (EC), in turn, is robustly co-related with the environmental-guilt (EG) ($r = 0.829$, $p < 0.01$), demonstrating that as the persons become further aware of the environmental issues, they practice intense guilt when their activities do not conform to their ecological-values. The environmental-guilt presents a diffident but significant and positive association with the behavioral-purchase-intention ($r = 0.176$, $p < 0.01$), verifying that the moral-emotions serve an imperative role in stirring the sustainable-consumption. Nevertheless, the direct correlations amid the independent-variables and the behavioral-purchase-intention are in general weak (SN–BPI = 0.018, SCA–BPI = 0.011, PBC–BPI = 0.024), implying that such dynamics manipulate the behaviors chiefly through the mediating emotional and cognitive routes relatively than directly.

The outcomes highlight that the Eco-shame (ES), Subjective-Norms (SN), Sustainable-Consumption-Attitude (SCA) and the Perceived-Behavioral-Control (PBC) are all robustly inter-correlated ($r = 0.702–0.942$, $p < 0.01$), imitating that the moral-emotion, the social-pressure, the attitudes and the perceived-capability are strongly associated in determining the sustainable-consumer-cognition. Eco-shame (ES) exhibits a significant and positive relationship with the Environmental-Concern ($r = 0.159$, $p < 0.01$), alluding that persons who undergo moral uneasiness regarding their environmental contact are further likely to articulate the cognitive-awareness and the concern regarding the ecological problems. This conforms the principle that the (ES) eco-shame operates as moral-trigger, triggering the environmental-consciousness (Antonetti &Maklan, 2014). The affiliation between the Environmental-Concern and the Environmental-Guilt is also significant, positive and intense ($r = 0.829$, $p < 0.01$) signifying that the elevated environmental-concern stir up the guilt when an individual's actions contradict the sustainability morals. The guilt afterward exhibits a significant and positive affiliation with the Behavioral- Purchase-Intentions ($r = 0.176$, $p < 0.01$) authenticating that the emotional responsibility encourages counteractive procedures like opting for the sustainable-fashion goods (Riedlsperger, 2024; Muralidharan & Sheeshan, 2018).

The Subjective Norms (SN) are prominently co-related with the Environmental-Concern (EC) ($r = 0.532$, $p < 0.01$) representing that the social-influence elevates an individual's awareness regarding the sustainability. On the other hand, their direct affiliation with the Behavioral-Purchase-Intention is fragile ($r = 0.018$, $p > 0.05$) pointing out that the societal expectations alone do not assure the behavioral-change. Rather, they function indirectly by being embedded through the emotional and the cognitive mediators (Balabanis et al., 2024; Zahid et al., 2023). The Sustainable-Consumption-Attitude (SCA) highlights a strong, positive and significant co-relation with the Environmental-Concern (EC) ($r = 0.101$, $p < 0.05$) reliable with the conception that the complimentary sustainability-attitudes promote the cognitive commitment with the environmental problems. Nevertheless, its association with the Behavioral-Purchase-Intention (BPI) ($r = 0.011$, $p > 0.05$) is bit weak, illuminating an attitude-behavioral-gap time and again noted in the sustainability-research (Concari, 2020).

The Perceived-Behavioral-Control is significantly and robustly co-related with the Environmental-Concern (EC) ($r = 0.103$, $p < 0.05$) showcasing that the persons who perceive an elevated ability to operate sustainably, are likely to display the environmental consciousness. Though it's explicit association with Behavioral-Purchase- Intention (BPI) ($r = 0.024$, $p > 0.05$) is insignificant, the non-direct associations emphasize that the mind-set of control, function through the concern and the guilt to manipulate the pro-environmental-behavior.

Table I: Correlations, Mean, and Standard Deviations for the Study Variables

	1	2	3	4	5	6	7	α
1. Eco-shame (ES)	5.75 (0.93)							0.777
2. Subjective Norms (SN)	.713**	5.06 (1.09)						0.645
3. Sustainable Consumption Attitude (SCA)	.800**	.702**	5.89 (1.11)					0.825
4. Perceived Behavioral Control (PBC)	.766**	.653**	.942**	5.93 (1.00)				0.822
5. Environmental Concern (EC)	.159**	.532**	.101*	.103*	4.20 (0.89)			0.793
6. Environmental Guilt (EG)	.128**	.408**	−.006	−.013	.829*	3.95 (1.09)		0.860
7. Behavioral Purchase Intention (BPI)	.355**	.018	.011	.024	.091	.176**	5.29 (1.05)	0.921

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*
Eco-Shame-ES, Subjective Norms-SN, Sustainable consumption attitude – SCA, Perceived behavioral control- PBC, Environmental concern – EC, Environmental guilt – EG and Behavioral purchase intention – BPI.

Hypothesis Testing:

Table II: Sequential Mediation Model 1

Outcome Variable: Environmental Concern						
	Coeff	se	t	p	LLCI	ULCI
Eco-shame	0.153	0.047	3.245	0.001	0.060	0.246
Constant	3.319	0.275	12.049	0.000	2.778	3.861
Outcome Variable: Environmental Guilt						
	Coeff	se	t	p	LLCI	ULCI
Eco-shame	-0.005	0.033	-0.138	0.890	-0.070	0.060
Envir-concern	1.012	0.034	29.444	0.000	0.945	1.080
Outcome Variable: Behavioral Purchase Intention						
	Coeff	se	t	p	LLCI	ULCI
Eco-shame	0.395	0.052	7.572	0.000	0.292	0.498
Envi-Concern	-0.276	0.096	-2.867	0.004	-0.466	-0.087
Envi-Guilt	0.314	0.079	3.991	0.000	0.159	0.468

Bootstrap Results for Indirect Effect

	Effect	BootSE	BootLLCI	BootULCI
ES → EC → BPI	-0.042	0.020	-0.090	-0.011
ES → EG → BPI	-0.001	0.010	-0.022	0.019
ES → EC → EG → BPI	0.049	0.023	0.013	0.104

Note: Sample size (n) = 406 Bootstrap = 5000 β = Un-standardised Regression Coefficient SE = Standard Error LLCI= lowe level confidence interval ULCI = uppe level confidence interval with 95% confidence interval

The connection amid the eco-shame and the environmental-concern is statistically significant and positive with: (β = 0.153, p = .001, 95% CI [0.060, 0.246]), proposing that the people who feel embarrassed regarding their environmental behavior, are more inclined to practice a greater concern and cognitive awareness for the ecological squalor. The pathway from the environmental-concern towards the environmental-guilt is highly significant and strong with: (β = 1.012, p < .001, 95% CI [0.945, 1.080]), demonstrating that as the EC strengthens; moral discomfort is experienced by the individual when their actions do not sync with their conservation values. This effect supports current work signifying that the environmental-concern is a cognitive precursor to the moral change, altering awareness in the emotional responsibility (Ha & Kwon, 2016). The association amid the environmental-guilt and the behavioral-purchase-intention is also significant and positive with: (β = 0.314, p < .001, 95% CI [0.159, 0.468]). This exhibits guilt as the behavioral-motivator, insisting the individuals to employ in the compensatory dealings like purchasing the sustainable goods to lessen the moral strain.

Further the indirect-effects offers deeper imminent into emotional-cognitive apparatus underlying the sustainable utilization. The former indirect pathway (ES → EC → BPI) is significant although being negative with: (β = – 0.042, Boot 95% CI [–0.090, –0.011]), proposing that the augmented environmental-concern, when not being escorted by the emotional directive, may lead to the cognitive surplus or the eco-anxiety, which then can restrain the behavioral actions (Innocenti et al., 2023). The next indirect pathway which is: (ES → EG → BPI) is not significant with: (β = –0.001, Boot 95% CI [–0.022, 0.019]), entailing that the guilt itself does not autonomously mediate the relationship between the eco-shame and the behavioral-purchase-intention (Rees et al., 2015). Nonetheless, the sequential-mediation pathway which is the main pathway (ES → EC → EG → BPI) is effectively significant plus positive with: (β = 0.049, Boot SE = 0.023, 95% CI [0.013, 0.104]), authenticating that the eco-shame manipulates the behavioral-intentions during a dual stage procedure that initiates with the cognitive detection (concern) and then concludes in the emotional inspiration (guilt). This sequential sequence displays that the sustainable-

consumption begins through a moral surge: the shame intensifies the environmental-concern, the concern then induce the guilt following with guilt triggering the behavioral-intention. The consequence strongly maintains the Hypothesis-1 (H1) plus lines up with the latest empirical indication that the moral-self-awareness and the emotional parameter jointly forecast the sustainable-behavior (Rees et al., 2015; Kautish et al., 2022; Luan, 2016).

Table III: Sequential Mediation Model 2

Outcome Variable: Environmental Concern						
	Coeff	se	t	p	LLCI	ULCI
Sustainable C. Attitude	0.081	0.040	2.044	0.042	0.003	0.159
Constant	3.724	0.238	15.642	0.000	3.256	4.192
Outcome Variable: Environmental Guilt						
	Coeff	se	t	p	LLCI	ULCI
Sustainable C. Attitude	-0.089	0.027	-3.306	0.001	-0.142	-0.036
Envir-concern	1.023	0.034	30.383	0.000	0.957	1.089
Outcome Variable: Behavioral Purchase Intention						
	Coeff	se	t	p	LLCI	ULCI
Sustainable C. Attitude	0.030	0.047	0.635	0.526	-0.062	0.122
Envi-Concern	-0.219	0.104	-2.100	0.036	-0.424	-0.014
Envi-Guilt	0.318	0.085	3.741	0.000	0.151	0.486

Bootstrap Results for Indirect Effect

	Effect	**BootSE**	**BootLLCI**	**BootULCI**
SCA → EC → BPI	-0.018	0.011	-0.044	-0.001
SCA → EG → BPI	-0.028	0.013	-0.059	-0.008
SCA → EC → EG → BPI	0.026	0.015	0.002	0.062

Note: Sample size (n) = 747 Bootstrap = 5000 β = Unstandardised Regression Coefficient SE = Standard Error LLCI= lower level confidence interval ULCI = upper level confidence interval with 95% confidence interval

The initial path from (SCA → EC) is statistically significant and positive with: (β = 0.081, p = 0.042, 95% CI [0.003, 0.159]). This discovery specifies that the persons with more complimentary attitudes towards the sustainable-consumption, they display superior environmental-concern. The next pathway (EC → EG) is highly significant, strong and positive with: (β = 1.023, p < .001, 95% CI [0.957, 1.089]). The third pathway that is (EG→ BPI) is as well significant and positive with: (β = 0.318, p < .001, 95% CI [0.151, 0.486]), highlighting that the guilt is an influential motivator of the behavioral changes. The individuals who experience guilty for the unsustainable practices are further apt to make ameliorative choices like purchasing the eco-friendly-fashion to reinstate the moral balance. Nonetheless, the sequential-mediation pathway (SCA → EC → EG → BPI) is effectively significant and positive with: (β = 0.026, Boot SE = 0.015, 95% CI [0.002, 0.062]), authenticating that the amalgamation of both the emotional guilt and the cognitive concern jointly bridge the crack between the sustainable-consumption-attitudes and the behavioral-intentions. In the perspective of the young customers and the e-commerce fashion-networks, these outcomes point out that the sustainable-consumption-attitudes ought to shift through both the awareness-(concern) and the guilt-(moral motivation) to engender the purchase-intention. This imitates the psychological pragmatism of the attitude behavior-gap repeatedly observed in the sustainability researches, associated just when the emotional commitment complements the cognitive support (Culiberg et al., 2023; Jin et al., 2024). Consequently, the significant-sequential-mediation with: (β = 0.026, 95% CI [0.002, 0.062]) authenticates the theoretical foundation that (SCA → EC → EG → BPI) forms an articulate moral/emotional string, altering the internal-attitudes into the actionable sustainable-behavior.

Table IV: Sequential Mediation Model 3

Outcome Variable: Environmental Concern						
	Coeff	se	t	p	LLCI	ULCI
Subjective Norms	0.437	0.035	12.633	0.000	0.369	0.505
Constant	1.990	0.179	11.115	0.000	1.638	2.342
Outcome Variable: Environmental Guilt						
	Coeff	se	t	p	LLCI	ULCI
Subjective Norms	-0.047	0.033	-1.429	0.154	-0.111	0.018
Envir-concern	1.042	0.040	26.056	0.000	0.963	1.121
Outcome Variable: Behavioral Purchase Intention						
	Coeff	se	t	p	LLCI	ULCI
Subjective Norms	-0.026	0.056	-0.474	0.635	-0.136	0.083
Envi-Concern	-0.187	0.111	-1.684	0.093	-0.404	0.031
Envi-Guilt	0.307	0.084	3.643	0.000	0.141	0.472

Bootstrap Results for Indirect Effect

	Effect	**BootSE**	**BootLLCI**	**BootULCI**
SN→ EC → BPI	-0.081	0.039	-0.159	-0.005
SN → EG → BPI	-0.014	0.011	-0.039	0.002
SN → EC → EG → BPI	0.140	0.046	0.057	0.237

Note: Sample size (n) = 747 Bootstrap = 5000 β = Unstandardised Regression Coefficient SE = Standard Error LLCI= lower level confidence interval ULCI = upper level confidence interval with 95% confidence interval

The relationship amid the subjective-norms and the environmental-concern is highly significant and positive with: ($\beta = 0.437$, $p < .001$, 95% CI [0.369, 0.505]). This verifies the H3, proposing that the perceived-social prospects strongly forms the person's cognitive responsiveness of the environmental problems. The influence of environmental-concern on the environmental-guilt is significant, strong and positive with: ($\beta = 1.042$, $p < .001$, 95% CI [0.963, 1.121]) until now substantiating the H3 more meticulously. The environmental-guilt wields a positive and significant impact on the behavioral-purchase-intention with: ($\beta = 0.307$, $p < .001$, 95% CI [0.141, 0.472]). This designates that the guilt operates as the motivational sentiment that drives the reparative or the corrective behaviors, like preferring the sustainable-fashion-products.

Thus this sequential pathway is strong and effectively significant with: ($\beta = 0.140$, Boot SE = 0.046, 95% CI [0.057, 0.237]) reinforcing the H3. This link demonstrates that the social-influence initially raises the cognitive- concern that then stimulates the self-driven guilt eventually motivating the pro-environmental-behavior. These findings reveals the social/moral assimilation procedure proposed by the Schwartz (1977) which later was polished by Onwezen et al. (2013) that the individuals convert the external societal expectations to the internal ethical obligations that the leads to the sustainable-intentions. Thus this findings cooperatively point out that the subjective- norms wield their pressure on the behavioral-purchase -intention only obliquely through the emotional and the cognitive mediators as the environmental-concern and the environmental-guilt.

Table V: Sequential Mediation Model 4

Outcome Variable: Environmental Concern						
	Coeff	se	t	p	LLCI	ULCI
Perceived behavioral Control	0.092	0.044	2.090	0.037	0.005	0.179
Constant	3.654	0.266	13.757	0.000	3.132	4.177
Outcome Variable: Environmental Guilt						
	Coeff	se	t	p	LLCI	ULCI
Perceived behavioral Control	-0.108	0.030	-3.611	0.000	-0.167	-0.049
Envir-concern	1.024	0.034	30.491	0.000	0.958	1.090
Outcome Variable: Behavioral Purchase Intention						
	Coeff	Se	t	p	LLCI	ULCI
Perceived behavioral Control	0.051	0.052	0.976	0.330	-0.052	0.153
Envi-Concern	-0.227	0.105	-2.174	0.030	-0.433	-0.022
Envi-Guilt	0.324	0.085	3.804	0.000	0.157	0.492

Note: Sample size (n) = 747 Bootstrap = 5000 β = Unstandardised Regression Coefficient SE = Standard Error

Bootstrap Results for Indirect Effect

	Effect	**BootSE**	**BootLLCI**	**BootULCI**
PBC→ EC → BPI	-0.021	0.013	-0.050	-0.001
PBC → EG → BPI	-0.035	0.016	-0.071	-0.010
PBC → EC → EG → BPI	0.031	0.017	0.004	0.069

LLCI= lower level confidence interval ULCI = upper level confidence interval with 95% confidence interval

The association between the perceived-behavioral-control and the environmental-concern is effectively significant and positive with: ($\beta = 0.092$, $p < .001$, 95% CI [0.005, 0.179]) thus supporting the H4. The environmental - concern extensively predicts the environmental-guilt with: ($\beta = 1.024$, $p < .001$, 95% CI [0.958, 1.090]) signifying a sturdy support for the H4. This pathway reveals a cognitive-emotional series: where the individuals those are aware of the environmental problems face the guilt when distinguishing the contradictions between their behavior and concern (De Canio et al., 2021). The association between the environmental-guilt and the behavioral- purchase-intention is significant and positive with: ($\beta = 0.324$, $p < .001$, 95% CI [0.157, 0.492]). This entails that the guilt functions as the emotional stimulator that pushes the consumers to implement the sustainable consumption practices to reimburse for the perceived-environmental damage. Thus sequential-mediation pathway is very effectively significant with: ($\beta = 0.031$, Boot SE = 0.017, 95% CI [0.004, 0.069]) reinforcing the H4 of this research. This path highlights that the PBC augments the EC that consequently amplifies the guilt thus eventually leading to the more solid behavioral-intentions. This result authenticates the modern researches emphasizing that the affective and the cognitive moral systems function in the string not in the isolation (Kautish, Paul & Sharma, 2019). Those customers who experience sanctioned to operate sustainably initially develop the environmental –concern next they develop the moral-guilt and lastly they alter that ethical cognition into the sustainable-intentions .Overall, the findings exhibits that the perceived-behavioral-control's collision on the behavioral-purchase-intention is completely arbitrated through the mediators the concern and the guilt, validating that the balanced control should be convoyed by the emotional-activation and the moral-awareness thus to capitulate the behavioral effects. The major sequential-mediation with: ($\beta = 0.031$, 95% CI [0.004, 0.069]) exemplifies the revolution from the perceived competence → to the cognitive-concern → then to the emotional responsibility → lastly to the behavioral-intentions. The modern sustainability study like from Lee et al., 2025 sustains this elucidation that the behavioral-control triggers the pro-environmental-emotion that when it is ethically activated it entails the enduring behavioral obligation.

Discussion

The breakdown discovered that the ES-eco-shame positively and strongly predicts the environmental-concern with: ($\beta = 0.153$, $p < .001$) demonstrating that ES functions as the moral consciousness trigger. While the customers feel socially judged and embarrassed for the environmentally-harmful-practices, they intellectually re- assess their behaviors, extending the heightened EC (Rees et al., 2015). The other following pathway, from EC to EG is strong plus significant with: ($\beta = 1.012$, $p < .001$) that highlights a -cognitive-to-emotional-transformation, where the intensified concern for the environmental-issues progresses in the moral-accountability. The individuals that recognize the environmental-harm as being the personally-relevant, these individuals start to feel the guilt when-their actions cancel out their principles (De Canio, Martinelli & Endrighi, 2021; Rizkalla & Erhan, 2020). This practice sync with the moral sentiment theory that speculates that EG emerges when the persons perceive that-their actions has desecrated the assimilated moral or the ecological-norms- (Bissing-Olson M. J., 2016). Throughout this pathway, the EC embody the intellectual identification of the environmental-risk, whilst the EG embodies the expressive responses that are essential to stimulate the behavioral-change. The environmental-guilt has a positive and significant impact-on the behavioral-purchase-intentions with: ($\beta = 0.314$, $p < .001$). These scores support the earlier indication that the guilt serves-as the curative moral-emotion, promoting the reparative actions such-as paying for or spending on the sustainable-clothing or else avoiding the spontaneous fast-fashion- consumption (Truelove et al., 2021; Yan & Cortese, 2023).

The outcomes gotten from the data analysis for the H2 reveals that the sustainable-consumption-attitude (SCA) drastically impacts the behavioral-purchase-intentions (BPI)-indirectly through the environmental-concern (EC) and environmental guilt (EG) as the sequential-mediators. The initial path of this framework which is: SCA → EC ($\beta = 0.081$, $p < .001$) highlights that the constructive attitudes towards the sustainability extensively augment the environmental-concern. This outcome aligns with the cognitive-consistency supposition (Festinger, 1962), which conjectures that the individuals endeavor for the harmony among their actions and the beliefs. When the consumers take on the pro-sustainability-attitude, they are inclined to assimilate the environmental-responsibility and also become extra cognitively conscious of the ecological effects (Joshi & Rahman, 2017; Paul, Modi, & Patel, 2016). The following path in the mediating string which is: EC → EG with: ($\beta = 1.023$, $p < .001$) exemplifies a vigorous-cognitive to the emotional-alteration, authenticating that the EC for the environmental problems naturally develops into the EG when the consumers-recognize the dissonance among their behavior and the values. This maintains the effectiveness the latest research displaying that-the EC creates the moral-emotions as the persons feel a-sense of-responsibility for the unsustainable-outcomes (De Canio, Martinelli & Endrighi, 2022; Onwezen et al., 2021). The final association between the EG → BPI with: ($\beta = 0.318$, $p < .001$) expresses that the EG functions as the behavioral-motivator, altering the cognitive-evaluations into the moral-actions. This outcome strengthens the findings by the Culiberg et al. (2023) and the Jin et al. (2024) that EG operates as moral- regulator, convincing the individuals to employ in the reparative-actions as like purchasing-sustainable-fashion. The EG thus functions as the sentimental engine of the sustainable-behaviors, further, insisting the consumers to re-align their practices with their internalized-moral-standards (Chang, Zhang, & Xie, 2015). Conspicuously, this too replicates the change from the coherent decision-making to the emotion-driven-behavioral-intentions, an apparatus now fundamental in the modern sustainability-psychology.

The pathway of the sequential mediation H3, is subjective-norms → environmental-concern with: ($\beta = 0.437$, $p < .001$, 95% CI [0.369, 0.505]) signifies that the perceived-societal expectations robustly shape the individuals' cognitive-engagement with the environmental-issues. After the initial path-way the other following pathway which is: Environmental-Concern → Environmental-Guilt with: ($\beta = 1.042$, $p < .001$, 95% CI [0.963, 1.121]) incarcerates the evolution from the cognitive-awareness to the emotional responsibility.

The person who assimilate the environmental-concern they experience the environmental-guilt when-their actions clash with the sustainability models. Thus this-cognitive to emotional relationship sustains the Moral-Activation-Model (Schwartz, 1977) with the later pragmatic refinements through the Onwezen et al. (2013) that intended that the EC for the environmental-issues stimulates the self-conscious-emotions like the EG when the moral duty is- perceived. The next pathway from the environmental-guilt → behavioral-purchase-intention with: ($\beta = 0.307$, $p < .001$, 95% CI [0.141, 0.472]) verifies that the environmental-guilt operates as the expressive driver that boosts the sustainable-purchasing-behavior. This maintains the findings by the Demirović et al., (2025) that the environmental-guilt intercedes between the peripheral normative-pressure and the internal-behavioral-motivation, altering the social-expectations into the personal-moral-imperatives. The guilt acts as-a self-regulatory- mechanism, diminishing the psychological pain through motivating the reparative-actions like purchasing the sustainable-clothing or even forgoing the unethical-brands.

All the indirect-effects strengthen the sequential temperament of this study's mediation. The initial mediation path-way with (PBC → EC → BPI, 95% CI [–0.050, –0.001]) is significant but weak, highlighting that the control convictions persuade the cognitive-engagement but do-not separately constrain the behavioral alteration that is a-phenomenon frequently attributed-to the cognitive-dissonance in the sustainability-contexts- (Lavuri et al., 2023) The following mediation path-way with: (PBC → EG → BPI, 95% CI [–0.071, –0.010]) additionally demonstrates that although the individuals with the high-control might experience a lesser amount of EG unswervingly possibly since they-already employ in the sustainable-behaviors the EG still have an essential-role in changing the perceived potential into the moral-motivation- (Bissing-Olson, 2016). The noteworthy sequential- mediation pathway which is the main pathway on which our fourth and the last hypothesis is based on with: ($\beta = 0.031$, Boot SE = 0.017, 95% CI [0.004, 0.069]) effectively verifies that the PBC augments the EC, which later elevates the EG, cooperatively driving the sustainable behavioral-purchase-intentions.

Theoretical contributions

The following study/research advances the-theory by addressing one of the most enduring arguments in environmental and consumer psychology: how emotional and cognitive-processes jointly regulate pro- environmental behavior. Grounded in theory of planned behavior (TPB) (Hasan, 2025) this thesis presents moral sentiments of eco-shame, environmental guilt and environmental concern as the sequential mediators, presenting a novel context or the framework for understanding the sustainable fashion consumption in e-commerce. The first chief contribution falls in encompassing the TPB to comprise moral emotions as the sequential mediators. This study empirically sanctions Ajzen & Schmidt (2020) argument that the forthcoming applications of theory of planned behavior (TPB) should integrate the emotional drivers in order to upsurge the explanatory power. Following with second substantial contribution is the observed differentiation of environmental guilt and eco- shame. Preceding research has often distorted the boundaries between these moral sentiments, taking them as compatible (Lickel et al., 2014). Nevertheless, this study reveals that they are distinct hitherto sequentially allied**:** eco-shame is chiefly a socially activated emotion or the sentiment that elevates awareness of environmental harm, while the guilt signifies a co-opted moral retort that motivates curative behavior. Then the third contribution falls with highlighting the attitude behavior gap one of the greatest obstinate challenges in the sustainability research (Carrington, Neville & Whitwell, 2010; Vermeir & Verbeke, 2006). In this protracted model, attitude only predicts behavioral purchase intentions when the impact is mediated by environmental concern and environmental guilt. This supports Bagozzi, Baumgartner & Pieters (1998)theory that the goal-directed behaviors necessitate emotional self-regulation and encompasses it to the domain of e-comm consumption. Thus, current contribution is predominantly significant because it remounts attitude not as an adequate antecedent to the purchase intention but as a foundational contribution that necessitate emotional initiation to yield the outcomes.

Practical Implications

The outcomes of this thesis carry more than a few practical insinuations for the e-commerce retailers, policymakers, marketers, sustainability advocates, and the consumers. For the e-commerce marketers and the retailers, the findings of this research highlight the-standing of the designing campaigns, that are very important than simply presenting the green certifications and the eco-labels. Although such coherent signals might shape the attitudes, they are deficient to interpret the attitudes into the purchase intentions (Vermeir & Verbeke, 2006). For the policymakers and the regulators, findings of this study accentuate the need to counterpart the rational policy apparatuses such as the eco-labeling and the information revelation with the emotional and the moral enclosing. The public communication campaigns can extant sustainability not merely as an environmental choice or the economic but as a moral obligation. Enclosing consumption in the terms of accountability to the upcoming generations, or to the local community might intensify eco-shame as a preliminary awareness apparatus, while appeals that pin points the consumer's dimensions to make the alteration can induce guilt in a manner that stimulates corrective achievement. Policymakers likewise can collaborate with the e-commerce podiums to entrench sustainability nudges into digital/ online shopping expedition such as the reminders at the checkout around the ecological track of the fashion items or the badges that highlights the guilt reducing substitutions. Such intercessions reverberate with the behavioral economics standpoints, which displays that the moral framing frequently outdoes the virtuously informational policies in fluctuating the consumer habits (Thaler, 2003). The sustainability promoters and the non-governmental establishments can also, draw on these verdicts. The campaigns that highlight concern without the expressive engagement are improbable to transfer consumers from the awareness to the action. To be real the advocacy efforts should intentionally induce the guilt in the ways that are solution oriented and forward looking. Through the storytelling that links the consumer choices to factual world significances such as water scarcity, textile waste or the woe of vestment workers can make the intellectual issues particular and expressively salient. Lastly, the findings of this research also have insinuations for the consumers and for the society more generally. The outcomes propose that the positive attitude towards sustainability while being very valued is deficient without the emotional self-regulation. The consumers must identify that the sustainable choices are eventually determined by the ability to transmute the concern into accountability and the guilt into the action. In the collectivist civilizing settings like Pakistan, this revolution is additionally strengthened by the social expectations which mean that sustainable consumption grows into both the social norm and the personal moral imperative

Limitations of the study

Like any other empirical study, this investigation is not without its limitations, which must be accredited to provide a composed interpretation of the verdicts. These limitations do not challenge the value of this research but slightly highlights the margins within which the outcomes must be understood and intersect the way for the future inquiry. The primary curb concerns around the geographic and demographic scope of the study. The data was collected chiefly from the young consumers in Pakistan with an emphasis on those consumers engaged in the e- commerce fashion. Although this emphasis provides valued insights into an emergent and digitally dynamic consumer sector., it also compels the generalizability of this research's findings. The cultural aspects such as the religiosity, collectivism and the social conformity play a significant role in determining the eco-shame and the guilt in Pakistan (Ullah et al., 2024). A second limitation relates to-the self-stated nature of data. The constructs of eco-shame, environmental concern and the environmental guilt are fundamentally self-conscious emotions and are subjective, which makes them prone to social prestige bias. The respondents may have exaggerated their guilt and concern in order to render themselves as the socially responsible consumers. Third base, this research engaged a cross-sectional design which restricts the aptitude to found inter connection. Even

though the sequential mediation examination delivers a very effective and profound statistical evidence for the theorized pathways but the data cannot fully demonstrate the sequential association between the eco-shame, environmental concern, environmental-guilt and the behavioral purchase intention.

Future Discussion

The verdicts of this study, not only deliver insights into the apparatuses driving the sustainable purchase intentions in e-com but also initiates avenues for a deeper academic& practical debate. The future discussions effectively consider the methodological, cultural, emotional and the technological dimensions that this thesis has emphasized. A prime point for the future discussion alarms the cultural specificity of the eco-shame, environmental guilt and the environmental guilt. This exploration was directed in Pakistan, where the collectivist morals and the sharp social sensitivity make the consumers predominantly responsive to communally prompted emotions. The future ponderings should discover whether sequential mediation of guilt and concern is a socially general mechanism or a one that differs across cultures with dissimilar value positioning. Such proportional discussion can improve cross-cultural customer/consumer mindset and can provide more distinction to the sustainability philosophies in the global marketplaces. Additional area of debate is methodological precision in studying the emotions. The dependence on the self-reported surveys in this research raises queries regarding how precisely the emotions such as the shame and the guilt can be apprehended. The future discussions may ponder the methodological diversity wanted to authenticate these constructs such as the longitudinal designs, experimental manipulations or the usage of physiological procedures that can apprehend emotions in the real time. The function of the positive versus the negative emotions also permits future searches. This research concerted on the adverse moral emotions yet emotions like the hope, pride and the anticipated satisfaction might also show evocative roles in determining the sustainable behavior. Furthermore, the sectored possibility of the sustainability researches should be debated further. While this study concentrated effectively on e-com fashion imminent studies should inquire whether the similar apparatuses function in sectors such as the food, electronics or the tourism where the concerns related to sustainability occur differently. Discussions like these can inflate the theoretical agendas and can provide additional insights specifically related to industry into how the eco-emotions impact the consumer decisions.

Conclusion

The following study scrutinized the attitude-behavior gap in the sustainable-fashion consumption in Pakistan's e- commerce context through integrating the moral emotions into the (TPB) Theory of Planned-Behavior. While the consumers articulate positive sustainability-attitudes, these merely were deficient to influence the behavioral purchase intentions directly. The findings instead, reveals that the eco-shame, sustainable consumption attitude, subjective-norms and the perceived behavioral control influences behavioral purchase intentions indirectly and more significantly throughout the sequential development involving the environmental-concern and the environmental-guilt. The outcomes confirm that the traditional TPB interpreters exert their influence through the moral-emotions apart from the undeviating cognitive-pathways. Through extending the TPB to include ES, EG and the EC this research emphasizes the critical part played by emotions in altering the pro-sustainability-attitudes into the behavioral intentions. This study adds theoretically through advancing the sustainability-research and also virtually through guiding the policymakers, advocacy groups and retailers to propose emotionally appealing strategies that uphold sustainable-fashion consumption. On the whole, this study's findings highlight that promoting sustainable-behavior in the digital-marketplaces requires not just the rational information but also the activation of consumers' moral responsibility.

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