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The Impact of Green Supply Chain Management and Green Brand Innovation on Green Brand Image: Case of Pakistani Apparel Brand

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ABSTRACT

Purpose: This study uses the natural resource-based view theory to examine whether excessive green brand packaging (EGBP) and environmental awareness (EA) affect green brand image (GBI) by integrating the mediation role of green brand innovation (GI) and the moderating role of green concern (GC).
Design/Methodology/Approach: A quantitative questionnaire-based survey was done utilizing purposive sampling with 446 customers who bought apparel brands at 06 malls in five major Pakistani cities.
Findings: Data was analyzed using PLS-SEM. Our data demonstrate that EGBP adversely affects GI. The data also demonstrate that EA favorably affects GI and GBI. EA-GBI and EGBP-GBI are strongly mediated by GI. Additionally, GC substantially moderates the GI-GBI interaction.
Implications/Originality/Value: We are the first to use PLS-SEM to advance the (NRBV) using EGBP, EA, and GI as mediators and GC as a moderator. Our results also help us understand how GI mediates and GC moderates the GI-GBI connection in Pakistani apparel brands.

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1. Introduction

Internet connectivity has made developing nation customers more aware of firm environmental performance (Flavian et al., 2009). Pakistanis prefer green businesses, according the World Air Quality Index (IQAir, 2021). Consumer lifestyle changes and fashion product demand have stressed supply chains. Zara and H&M now prioritize fast response to trends and client demand. Modern fashion buyers want ongoing change, requiring fresh items. Clothing stores cut expenses and lead times to save costs,

resulting in inadequate supply chain labor standards (Masson 2007).

Apparel firms have created supply chains in developing nations that emit high greenhouse gasses (GHGs) and landfill garbage to suit the rising demand for low-cost apparel brand. After a series of exposés and debates around apparel brand effect in the early 2010s, brand leaders implemented sustainability programs and claimed to be more “eco-friendly”. Upon closer inspection, these activities are too little to address the climate effect of apparel brands. Even with current GSCM policies, the apparel brand may cause irrevocable environmental harm by 2030.

To make the apparel sector more ecologically friendly, brands must lower their supply networks' environmental effect. This requires excellent green supply chain management (GSCM) procedures that eliminate excessive green brand packaging (EGBP) across supply chain activities. GSCMP may be comprehensive for brands by lowering indirect EGBP from upstream and downstream operations and increasing environmental awareness to improve sustainability practices. If accepted by the industry, these changes would reduce clothes brand environmental impact and raise consumer awareness. Reduce greenhouse gas (GHG) emissions via recycling. Pakistan creates 49.6 million tons of solid waste yearly, rising over 2.4% (trade 2024). Municipal solid garbage is 10% plastics and packaging. Reusing and recycling 50% of this reduces carbon dioxide equivalent emissions annually, ranging from 80% in major cities to 0% in most rural regions (Mihai and Grozavu 2019). This illustrates that recycling reduces GHG emissions. However, packaging recycling remained an issue. Packaging trash will end up in landfills, where it generates methane and pollutes the soil, or in the seas, endangering marine life. Thus, excessive packaging litter is becoming a major environmental issue (Chen & Chang 2013).

Overpackaging increases container space throughout supply chain, wasting natural resources. Environmental issues have also grown in prominence (Chen & Chang 2013). Excessive brand packaging causes garbage that cannot be recycled, and the package recycling rate is poor. Apparel brands prioritize packaging cost and appeal when selecting brand packaging approach. Consumers feel terrible for discarding plastic packaging; therefore, they worry more about excessive packaging and green brand image. The branded litter issue that businesses are currently dealing with is brought on by the aforementioned conflicts.

Most studies have explored GSCMP and green packaging's benefits and trends (Nderitu 2021), but few have analyzed branded litter's influence on green innovation and brand image. It answers Uddin (2021)'s request for research "on other countries in comparison with this study." This information gap is addressed by our study. Many studies have explored GSCM in developed countries and enterprises. Europe, America, China, Vietnam, and Uganda dominate GSCM research, while South Asia underperforms. We use natural resource-based views and environmental trends to construct a study model of GSCMP's impact on green innovation, green brand image, and the moderated effect between GI and GBI to help businesses improve their GSCMP and promote green marketing research

Investigations increase knowledge in numerous ways. First, this study looks at how GSCMP—EGBP and environmental awareness—affects GI and GBI in Pakistani apparel brand. Second, we investigate how GI mediates the link between GSCMP and GBI. Our data confirms that GI plays a mediating function, even if the existing research has seen GI operating via an antecedent. Third, we also look at how GC influences the link between GI and GBI. Last but not least, in contrast to research done in wealthy nations, our study examines GC in a developing nation—Pakistan in this case—whose environment is deteriorating due to a lack of solid laws and helps to achieve an NRBV.

Our research makes several contributions. First, this research investigates the influence of GSCMP (i.e., EGBP and environmental awareness) on GI and GBI in the Pakistani apparel. Second, we examine how GI mediates the GSCMP-GBI connection. GI has been observed operating via an antecedent, but not as a mediator; our study verifies this function. We also examine how GC moderates the GI-GBI interaction. Finally, unlike research in advanced countries, our study examines GC in Pakistan, whose environment is degrading due to poor regulations and leads to NRBV.

1.1 Natural resource-based view theory

Hart (1995), in contrast to Barney et al. (2011), adopted the position that the challenges of external linkages may make a "internally oriented" strategy to the competition insufficient. However, the author recognizes the challenges presented by social and natural environments and believes that a company's competitiveness and strategy are likely based on its ability to encourage ecologically responsible behavior. Hart proposed three strategies in the natural RBV theory: pollution prevention, a prudently nebulous strategy that can make a company's fundamental cost minimization its competitive edge; product stewardship, which lowers social and economic costs of services and goods; and a mission statement for sustainable development by lowering CO_2 emissions and illustrative Natural RBV hypothesis: resources and talents promote business competitiveness. This supports the RBV theory that avoiding environmental issues may help businesses compete sustainably. RBV theory is faulty, says Hart (1995). For example, it disrupts the relationship between a business and its natural environment. Business success is enhanced by natural resources, knowledge, and reduced pollution. They especially underlined that the company's competencies, environmental resources, and pollution management techniques all have an impact on the effective long-term development and attainment of FRPR (Barney 2000).

1.2 Excessive Green Brand Packaging (EGBP)

The packaging for apparel brands is an integral aspect of the product and its brand (Ampuero 2006), showcasing the brand's attributes (Orth 2008). The packaging for a product should generally be visually appealing, safe, and simple to open. Green brand packaging is significant. Durif (2010) describes a green brand as one that employs recycled materials to lessen environmental impact. A renewable resource or sustainable product (Chen & Chai 2012). Packaging for green products is recyclable, reuseable, or biodegradable (Zhang 2012). At the moment, there isn't a single, accepted definition of excessive packing. Excessive packaging, however, may be defined as packaging that offers too much size, is too heavy, too huge, too expensive, has too elaborate decor, uses too flattering rhetoric, and so on, according to the requirements of package regulations and restrictions by many counties.

1.3 Environmental Awareness

Understanding how living things interact with their surroundings is environmental awareness. Sustainability initiatives and all human behaviors that influence the environment are examined in this connection. Protecting the environment from humans is its main goal. Environmental awareness covers system, action, and effectiveness data. Wardhana (2022). Before acting, a person must understand the ecosystem's condition and processes (system knowledge), how to tackle environmental problems (action knowledge), and the success of environmentally acceptable actions. Eco-conscious people purchase green things to express their care.

Garbage, floods, river pollution, global warming, air pollution, marine habitat loss, lack of clean water, deforestation, abrasion, and soil contamination are Pakistan's environmental issues The research links environmental awareness to purchase choices by defining it as consumers' views on

environmental concerns and their causes. This research assessed consumer environmental awareness by examining environmental preservation, global warming, air pollution, and plastic trash degradation (if possible) (Malihah 2022).

1.4 Green Innovation (GI)

GI tests fall into two kinds. GI may be a company's capabilities or environmental practices (Chen 2008; Chiou et al., 2011). GI is green hardware or software, according Chen (2006). GI improves an organization's competitiveness and environmental performance by using new administrative processes or technology (Rennings 2000). Some academics call GI eco-friendly, sustainable, innovative, or improved processes, systems, and products (Oltra 2009). GI is environmental sustainability-promoting technology, management, and organization, says this study. Consumer concerns are driving corporations to include environmental management in strategy development (Chiou et al., 2011). GI boosts brand image and R&D, unlike other creative methods. Environmental policies "win-win" by reducing pollution and increasing profitability (Porter 1995; Kammerer 2009).

1.5 Green brand image (GBI)

Brand image influences customers' perceptions and relationships with the brand (Aaker 1991). Hsieh (2008) says a strong brand image communicates better than competitors. A product with a better brand image is connected with greater quality and value, which enhances spirituality (Richardson 1994; Ng 2014). Customers may express their self-identities by supporting the brand owing to its symbolic significance (Bearden 1982; Escalas 2005), which affects brand attitude, frequency of purchases, and brand loyalty (Arslan 2010; Wu 2011 Green brands are seen as eco-friendly and sustainable by customers (Chen 2010). Promoting green products helps a company seem greener and better (Ng 2014).

1.6 Green Concern

Environmental awareness and compassion may be shown by this crucial trait. Apathy to urgent environmental care is the new environmental paradigm, according to Milfont & Duckitt (2004). Environmental issues strongly impact consumer choices (Jain & Kaur, 2004). Follows & Jobber (2000) and Nath et al. (2013) found that environmentally conscious buyers analyze their purchases. Schultz (2000) classified environmental issues as bio-spherical, altruistic, and egoistic. Thompson and Barton (1994) say ecological value orientation—an individual's perception of the environment—drives environmental concerns. Stern and Dietz (1994) list these three traits. Eco-friendly purchases promote environmental consciousness (Kalafatis et al., 1999; Laroche, 2001; Manakotla & Jauhari, 2007).

1.7 Development of Hypotheses

As shown in Fig. 1, a conceptual model was developed to aid in testing the relationship variables. There are five variables in the model.

Figure 1:

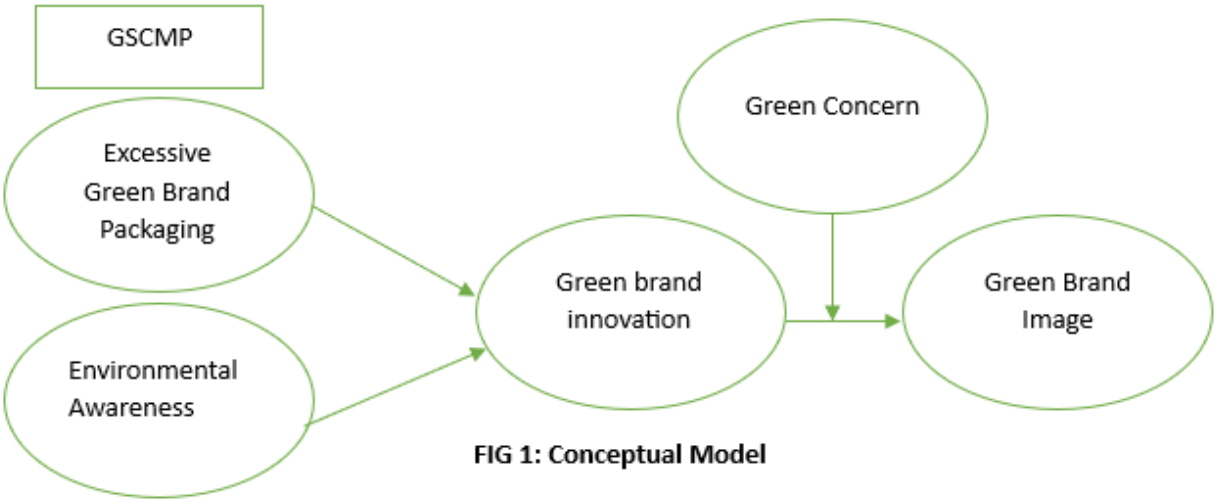


FIG 1: Conceptual Model

1.8 Excessive Green Brand Packaging and Green Innovation

Customers that care about the environment grow more environmentally conscious and support firms that are ecologically responsible (Fuller 1999; Swenson 1997). Customers know that packaging waste harms the environment (Khan & Seth 2015), and that apparel firms' packaging hinders green innovation. Customers will stop buying from immoral companies and governments (Michas & Smith 1993). In Thøgersen's 1999 survey, 75% of participants felt obliged to buy eco-friendly things. Additional packaging increases customer costs and wastes, damaging the green brand's image with brand litter. His study (Rehman & Siddiqui 2023; Rehman et al., 2024) found that clothes customers identify green companies with their packaging. Gupta et al. (2013) found green businesses more cost-effective, eco-friendly, and distinctive. This study hypothesizes that shoppers would see excessive clothes brand packaging as environmentally unfriendly, resulting in negative green innovation:
H1: EGBP has negative effect on GI.

1.9 Environmental Awareness and green innovation

Environmental awareness is understanding how humans impact the environment (Kollmuss and Agyeman 2002). Environmental awareness is linked to good environmental behavior in adults and children in several research. McGuire's (1985) input/output matrix model of communication's persuasive power states that social marketers must enhance message awareness to influence behavior. Therefore, a person's understanding of environmental issues may serve as a springboard for a variety of environmentally conscious behaviors, such as making green purchases. Green customers are distinguished from nongreen consumers by a high level of environmental awareness, according to research by A. J. Roberts (1996). The study's hypothesis, which is based on the literature evaluation, is that teenage consumers' behavioral commitment to green shopping should be influenced by their understanding of local environmental issues.
H2: EA has positive effect on GI.

1.10 Green innovation and green brand image

Enhancements to a company's software or hardware in connection with environmentally friendly goods or procedures are known as "green innovation." New technologies for energy conservation, pollution prevention, waste recycling, green product design, raising awareness, reducing excessive product packaging, and creating corporate environmental management strategies that support sustainability are examples of this type of innovation (Chen et al., 2006). Green innovation is the process of coming up with novel green goods or methods that may improve GBI or meet environmental protection standards (Chen et al., 2006). In order to improve green innovation, previous

research has concentrated on developing green core competencies, greening the suppliers, and attaining environmental sustainability (Chen, 2008). The study's findings demonstrate that GI significantly and favorably affects GBI, suggesting that a company that uses GI would in fact see improved GBI. Environmental awareness includes an understanding of human effect (Kollmuss and Agyeman 2002). Several studies demonstrate that environmental awareness is associated with beneficial environmental behavior in both adults and children. In order to influence behavior, social marketers must increase message awareness, as per McGuire's (1985) input/output matrix model of the persuasive power of communication.

H3: GI has positive effect on GBI.

1.11 Mediation role of green innovation between GSCMP and GBI

Green innovations, in our opinion, may positively mediate the relationship between GSCMP and GBI. According to Hart (1997), a GI may be influenced by environmental consciousness toward pollution avoidance, product stewardship, and clean technology. All of this common knowledge aids a company in tackling its environmental sustainability issues. Green innovations may improve product development and provide the internal adjustments needed to reduce emissions. As a result, when a company implements a green innovation, its management work to integrate organizational resources and coordinate customers to lessen the company's environmental effect, which enhances the green image of the clothing brand. Eiadat et al. (2008) believe that green innovations help environmentally stressed businesses develop a framework for environmental innovation. Businesses must innovate products and processes to achieve environmental innovation. Managers must convince customers that their company is prepared to make significant investments in green innovation. Last but not least, corporate identity may both affect workers' behavior and provide them a framework for comprehending the problems associated with green innovation (Chang and Chen, 2013).

H4: GI has positively mediated the relationship between EGBP-GBI.

H5: GI has positively mediated the relationship between EA-GBI.

1.12 The Moderating Role of Green Concern

Environmental concern and environmental awareness are other names for the green concern. According to Dunlap and Jones (2002), the term "green concern" refers to a person's conscious awareness of environmental issues and their desire to help find solutions. Many writers established a connection between eco-friendly conduct and green concerns. Green concern may be defined as the feeling, the degree of understanding, and the desire to change the perception of green brands. Kim and Choi (2005) found that environmentally conscious consumers want green products (Akehurst & Goncalves, 2012). Green concern has been shown in several research to either directly or indirectly influence pro-environmental behavior (Zhang & Huang, 2019), but its moderating effects are seldom discussed. Customers' perceptions of brands in relation to green goods reflect their degree of care about the environment (Chan and Lau, 2000). Green concern has been shown to have a positive effect on consumers' green purchasing attitude and intention (Biswas and Roy, 2015). In addition, "Consumers with high green concern tend to have a strong sense of environmental responsibility and actively engage in environmentally friendly activities." Consumers that are environmentally conscious may help boost a company's reputation and solve real problems when they purchase (Riva et al., 2022).

H6: GC positively moderates the relationship between GI-GBI.

2. Methodology

2.1 Data collection and sample

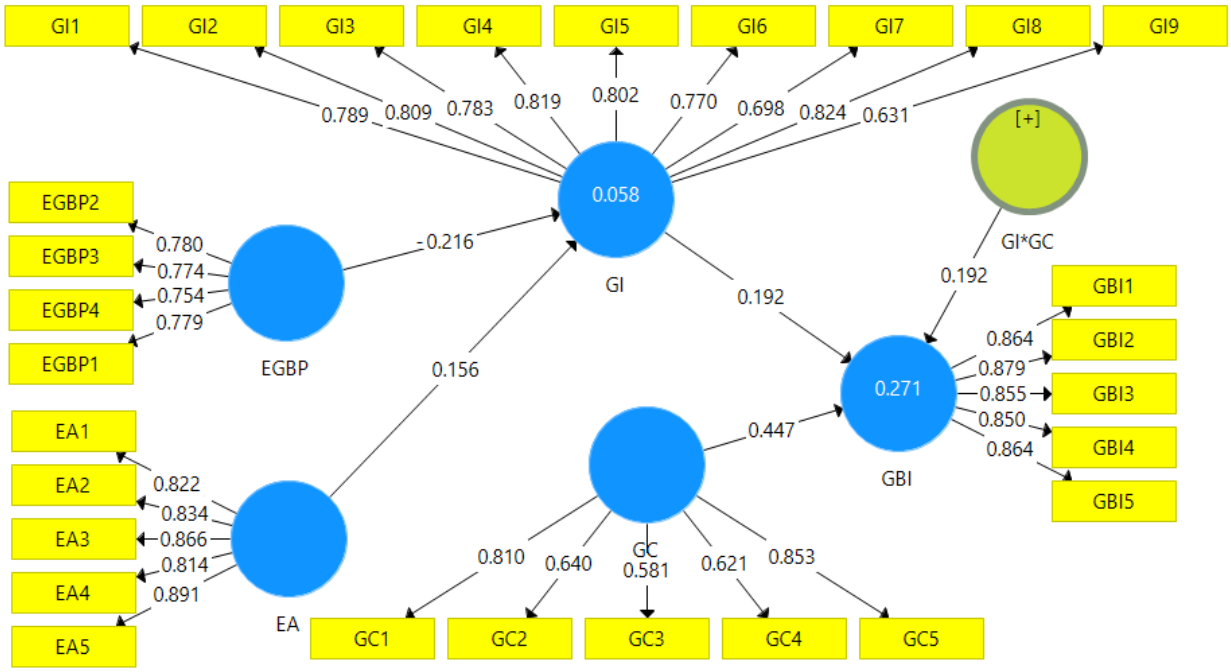
This study used a cross-sessional survey of green apparel brand customers in Pakistan's five biggest and busiest cities. Green apparel brand consumers have purchased clothing from the mall.

Green clients that actively seek eco-friendly products are more likely to acquire them to suit their environmental needs (Lanfranchi 2017). Our research also examines Pakistani and global apparel brands. Clients feel comfortable participating in this survey because they recognize brands. The survey was sent to matric, bachelor's, master's, and doctoral students using purposive sampling. A small, representative sample of respondents (n = 10) takes a questionnaire pretest before data collection (Ha 2022). For the questionnaire's construct validity (Shadish 2002), it must be determined whether any statements are too difficult to grasp owing to unusual language, syntax, or wording (Colton 2015). Pretest findings show that respondents are confused about the distinction between GC and EGBP and suggest clarifying the query. Our questionnaire provides an explanation and various GC and EGBP examples. Data was collected from February to May 2025 using purposive sampling. With 670 questionnaires submitted and 465 returned, 19 were removed due to missing data. Specific instructions provide 446 valid responses, a 66.5% response rate. High response rate reduces bias (Malhotra 2020). All respondents are 18–60. The responders are 67.7% female and 32.3% male. "At least ten times the largest number of structural paths directed at a particular latent construct in the model" is the minimum PLS-SEM sample size. Fig. 1 shows four routes (EGBP, EA, GI, and GBI), requiring a sample size greater than 90. Our study's 446 responses meet the PLS-SEM minimum size criteria. Demographic characteristics in the sample included gender, age, education, occupation, income, duration of usage of green clothing brands, and manner of learning about them.

2.2 Measurement of Variables

Scales were used from earlier research to assess factors. After compilation, the questions were placed on a 5-point Likert scale, with 1 denoting strongly disagree and 5 denoting strongly agree. Content validity has been shown using modified measurements from previous studies (Trochim 2016). Five items modified from Rokka and Uusitalo (2008) are used to test the EGBP, five items modified from the EA (Keller & Lane, 1993) and Yoo & Donthu, 2001) scales are used to measure GI, nine items modified from Chiou et al. (2011) are used to measure GBI, five items adopted from Chen (2008) and Yadav et al. (2016) are used to measure GC, and five items adopted from Kilbourne, W. (2008); Paul, J. 2016) are used to measure GC.

Figure 2:



3. Results

We tested the idea using SMART-PLS. With PLS-SEM, researchers estimate complex models with many constructs, indicator variables, and structural routings without assuming data distributions. PLS-SEM uses casual-predictive SEM. Statistical model estimation involves prediction (Hair et al., 2021). This study uses two-stage PLS-SEM. Hair et al. (2019) created the measurement and structural assessment model.

3.1 Assessment of measuring models

The measuring model was assessed in different ways. Hair et al. (2019) suggest Cronbach's alpha, discriminant validity, convergent validity, and AVE for internal consistency. All variables have Cronbach's alpha > 0.70, indicating internal consistency. CR/AVE assesses convergence. Valid CR scores are 0.70 or above (0–1) (Graciola et al., 2021). All builds have acceptable CR values between 0.83 and 0.93. According to Hair et al. (2021), AVE should exceed 0.5. The AVE ranged from 0.50 to 0.71. CR/AVE verified metrics convergence. AVE values beat MSV and ASV discriminant validity (Kautish and Khare, 2022; Henseler et al., 2016). Table 1 shows Cronbach alpha, CR, and AVE measurement model assessments.

Table 1: Measurement model assessment

Construct	Code	Loading	a	CR	AVE
Excessive green brand packaging (EGBP)	EGBP1	0.779	0.810	0.855	0.596
	EGBP2	0.780			
	EGBP3	0.774			
	EGBP4	0.754			
Environmental Awareness (EA)	EA1	0.822	0.908	0.926	0.716
	EA2	0.834			
	EA3	0.866			
	EA4	0.814			
	EA5	0.891			
Green innovation (GI)	GI1	0.789	0.915	0.929	0.596
	GI2	0.809			
	GI3	0.783			
	GI4	0.819			
	GI5	0.802			
	GI6	0.770			
	GI7	0.698			
	GI8	0.824			
	GI9	0.631			
Green Brand Image (GBI)	GBI1	0.864	0.914	0.936	0.744
	GBI2	0.879			
	GBI3	0.855			
	GBI4	0.850			
	GBI5	0.864			
Green Concern (GC)	GC1	0.810	0.795	0.832	0.504
	GC2	0.640			
	GC3	0.581			
	GC4	0.621			
	GC5	0.853			

Note: Excessive green brand packaging (EGBP), Environmental Awareness (EA), Green innovation (GI), Green brand image (GBI), Green Concern (GC), Cronbach's Alpha (a), Composite Reliability (CR, Average Variance Extracted (AVE).

The capacity to reliably differentiate a structural model construct is its discriminant validity (Hair et al., 2019). Compare each construct's AVE to its squared inter-construct correlation with all others in the reflectively appraised structural model (Fornell and Larcker, 1981). Component correlations and square-rooted AVEs are in Table 2. All square-rooted AVEs had non-diagonal correlation values, proving discriminant validity.

Hair et al. (2019) recommended the HTMT correlation ratio for discriminant validity. Bootstrapping confidence intervals requires 5000 samples. HTMT enhances discriminating validity (Hair et al., 2021). 0.90 is adequate for conceptually related concepts and 0.85 for unique ones (Henseler et al., 2016). Henseler et al. (2015) accept sub-1.00. Whatever the scenario, HTMT measurements are restricted. Table 2 demonstrating sufficient discriminant validity. The results of the discriminant validity test based on HTMT ratios.

Table 2: Heterotrait-Monotrait Ratio (HTMT)

	EA	**EGBP**	**GBI**	**GC**	**GI**	**GI*GC**
EA						
EGBP	0.546					
GBI	0.521	0.540				
GC	0.385	0.501	0.487			
GI	0.098	0.176	0.193	0.472		
GI*GC	0.063	0.132	0.189	0.021	0.438	

Formative indicator collinearity is commonly assessed using the variance inflation factor. VIF scores of 5 or above suggest serious concerns regarding formatively evaluated concept marker collinearity (Kautish and Sharma, 2019; Kautish and Khare, 2022). According to Becker et al. (2015), collinearity may develop at VIF values of 3. Thus, three or lower VIF values are ideal. All observed VIFs were less than 5, indicating no collinearity. Thus, Table 3 calculated VIF.

Table 3: Collinearity Statistics (VIF)

	VIF
EA1	2.580
EA2	3.045
EA3	2.412
EA4	2.449
EA5	2.334
EGBP1	1.122
EGBP2	2.867
EGBP3	2.719
EGBP4	2.482
GBI1	2.433
GBI2	2.953
GBI3	2.471
GBI4	2.616

GBI5	2.720
GC1	1.721
GC2	1.484
GC3	1.654
GC4	1.662
GC5	1.387
GI * GC	1.000
GI1	2.992
GI2	2.831
GI3	2.379
GI4	2.652
GI5	3.112
GI6	2.326
GI7	1.938
GI8	3.213
GI9	1.913

PLS-SEM works well with structural model formative components. Hair et al. (2019) evaluate formative measurement models for statistical significance, indicator collinearity, and weight relevance. Considering f2 effect sizes, p-values, and alpha levels (Graciola et al., 2020). F^2 values over 0.02 are OK, but above 0.35 are critical, explain Hair et al. (2019). The f^2 ratings for each potential relationship are in Table 4.

Table 4: F Square

	EA	EGBP	GBI	GC	GI	GI*GC
EA					0.025	
EGBP					0.048	
GBI						
GC			0.274			
GI			0.250			
GI*GC			0.051			

In hypothesis testing, H1 predicted EGBP might harm GI. Results validate H1 by showing EGBP significantly impacts GI (β = -0.216, t = 5.109, p < 0.001). Chen et al. (2017) found that excessive product packaging hurts customers' perceptions and attachments to green brands. H2 evidence supported the positive impact of EA on GI (β = 0.156, t = 2.85, p <0.001). H3 indicated GI boosts GBI. Additionally, this idea was confirmed (β = 0.00.192, t = 5.17, p < 0.000). Table 5 displays route analysis findings.

Table 5: Path analysis

Hypothesis	Path	Path coefficient	t value	P- Value	Hypothesis Results
H1	EGBP -> GI	-0.216	5.106	0.000	Supported
H2	EA -> GI	0.156	2.855	0.000	Supported
H3	GI -> GBI	0.192	5.175	0.000	Supported
H4	EGBP -> GI -> GBI	0.042	3.544	0.000	Partial Mediation
H5	EA -> GI -> GBI	0.030	2.357	0.000	Partial Mediation
H6	GI*GC	0.192	4.835	0.000	Positive Moderation

Figure 1: presents the outcomes of path analysis in pictorial form

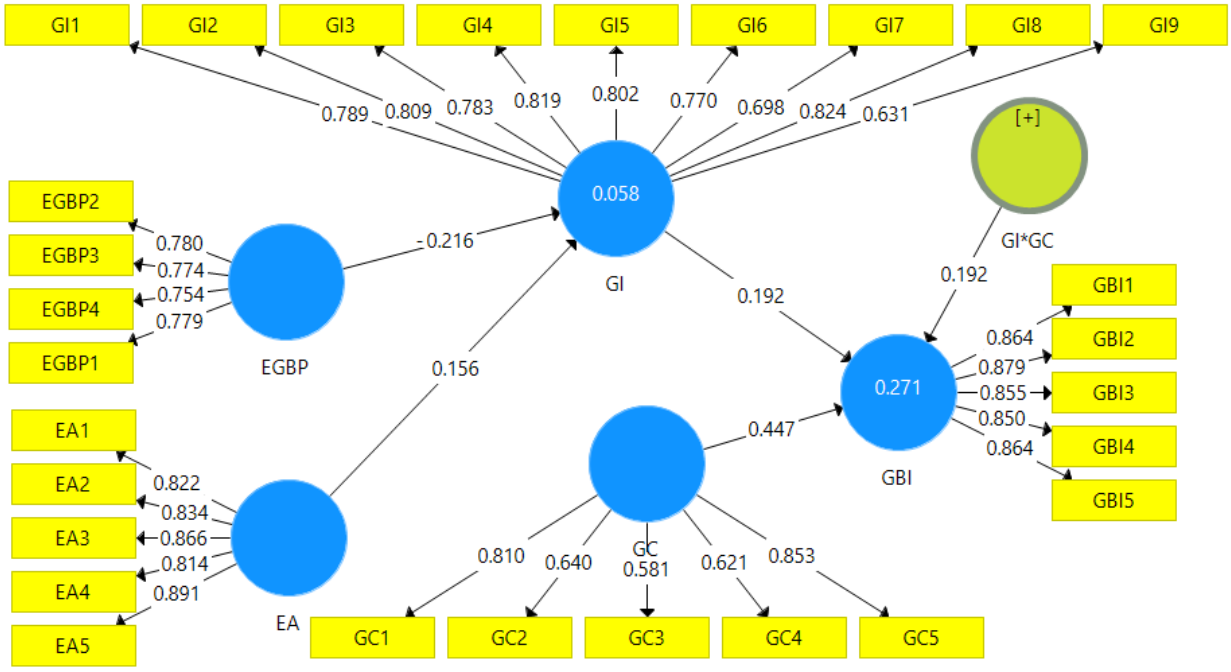


Table 6 Fig 1 shows that EGBP (β = -0.216, p < 0.01) badly affects GI, whereas EA (β = 0.156, p < 0.01) greatly improves it. GI significantly improves GBI (β = 0.192, p < 0.01), corroborating our research's H1, H2, and H3 relationships. EGBP may hurt GI, but garment companies may actively market their green innovation projects to customers and the public, affecting consumer purchase. To evaluate their mediator function, we analyzed GI constructs' indirect influence on GSCMP and GBI. In Table 6, indirect effects are computed. Table 6 reveals that indirect GI effects mediate GSCMP-GBI. Our hypothesis was that GC moderate's GI-GBI interaction (H6). We discovered that GC significantly improved GBI (β =.447, ρ =.000). The considerable interaction between GC and GI on GBI (β = 0.192, ρ =.000) suggests that GC is necessary for GI to impact GBI. GI and GBI correspond more with higher GCs than lower ones. High GC correlates higher with GI and GBI. This proves GC moderates. GI-GBI is moderated by GC. GBI may benefit with increased GC. Clients with higher GC levels have a stronger GI-GBI link.

4. Discussion

By examining how excessive brand packaging impacts a green innovation and its brand image, this study addresses brand damage. The empirical results show that excessive brand packaging harms green innovations and green brand image. Thus, excessive apparel brand packaging harms innovation, which affects customers' opinions of green brands and leads to brand avoidance, which hurts the brand. This confirms our premise that environmental awareness increases recycling and trash reduction. This view claims that people purchase green products for their functional advantages and "prevention behaviors".

This study includes five theoretical contributions. This research first merges supply chain and environmental awareness to create a green brand image from excessive packaging, environmental awareness, and green brand image. Second, no study relates green brand innovation to unnecessary packaging. By filling research gaps, over-branding undermines green businesses. Third, green brand innovation somewhat mediates excessive brand packaging and green brand image. Fourth, minimizing unnecessary brand packaging may boost green image and innovation. Fifth, our study is the first to evaluate how GC moderates the GI-GBI link in Pakistan, where poor laws and economic expansion are

worsening the situation. Similar eco-friendly GC research has been done. Our findings advise educating potential consumers about green concerns that affect GBI. This research examines sustainable development and green supply networks.

Study results provide three important contributions. This study first shows that minimizing unnecessary brand packaging may boost green brand innovation and image. Clothing businesses could reduce packaging to promote their green image. Second, training experienced merchants to serve as a trusted information conduit between buyers and producers to decrease unnecessary product packaging may indirectly boost green companies' image in more sophisticated marketing settings. Third, firms must innovate and strengthen their green brand. Since this study demonstrated mediation effects between green brand innovation and image, green enterprises may strengthen it to improve image. Our research can help businesses realize that environmentally friendly product packaging not only reduces environmental issues but also lowers transportation and storage costs, meets the needs of environmentally conscious customers by using environmentally friendly materials, and attracts them. Customers who enjoy a brand are more inclined to like it, and vice versa. Thus, firms should avoid connecting their trademarks with negative experiences or content, such as bulky packaging (Russell 1998). Even when green packaging benefits the environment or promotes green branding, clothing businesses should not overdo it.

Because environmental challenges are pressing, buyers care more about green firms and products. While promoting green companies' practical benefits, the clothing brand must not disregard brand value or damage from green product packaging. Since most firms struggle to reconcile environmental preservation and revenue, resolving the conflict between eco-friendly packaging and product promotion is vital. This study suggests apparel businesses should emphasize brand positioning above packaging to attract consumers. Green products provide natural products with the same practical benefits as ordinary products while considering environmental issues. Thus, the green supply chain should start with brand values and green consumers' core values. The study was largely provided to younger clients; thus it may not fully represent their situation. Customers may also define excessive packaging differently for different products. Thus, future studies should examine excessive packaging for other items. We suggest using experimental design in future study on excessive product packaging.

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