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Trust-enabled drivers of Gen Z consumers' willingness to pay for sustainable packaging: an extended TRUST-PACT model

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Introduction: Sustainable packaging has become a key element of corporate sustainability strategies amid growing concerns about plastic waste, resource depletion, and environmental transparency. Generation Z consumers play a crucial role in this transition due to their strong environmental awareness and influence on market demand. However, despite positive pro-environmental attitudes, Gen Z consumers often hesitate to pay a price premium for sustainable packaging, revealing an attitude-behavior gap. Existing consumer behavior models inadequately explain this gap, particularly in contexts of information asymmetry and greenwashing. This study addresses this limitation by integrating trust-based mechanisms into a unified behavioral framework.

Methods: A quantitative research design was employed using survey data collected from 120 Generation Z consumers in India. Constructs were measured using validated Likert-scale items. The proposed TRUST-PACT (Trust-Enabled Perceived Authenticity and Communicative Transparency) framework was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine direct, mediating, and moderating relationships among environmental awareness, perceived benefits, green values, brand trust, eco-label credibility, communication transparency, greenwashing risk, social influence, and price sensitivity.

Results: The findings indicate that environmental awareness, perceived benefits, and green values significantly influence willingness to pay for sustainable packaging primarily through brand trust, which emerges as a strong partial mediator. Eco-label credibility and communication transparency strengthen the trust-willingness-to-pay relationship, while perceived greenwashing risk weakens it. Social influence enhances the translation of environmental awareness into trust, whereas price sensitivity constrains premium acceptance despite favorable evaluations.

Discussion: The study demonstrates that willingness to pay for sustainable packaging among Generation Z is not driven by attitudes alone but by trust formed under credible and transparent communication conditions. The TRUST-PACT framework offers a parsimonious, trust-centered explanation of sustainable purchasing behavior in digitally mediated markets. The findings provide practical implications for marketers and policymakers by highlighting the need for verifiable eco-labels, transparent digital disclosures, and strategies to reduce greenwashing perceptions.

KEYWORDS

brand trust, communication transparency, eco-label credibility, Gen Z, greenwashing risk, PLS-SEM, sustainable packaging, TRUST-PACT model

Introduction

Sustainable packaging has become a central focus of global environmental strategies as consumers, governments, and industries increasingly prioritize ecological responsibility. Rising concerns over plastic pollution, resource depletion, and long-term environmental risks have intensified attention on packaging as a critical sustainability lever. Post-pandemic behavioral shifts have further amplified public awareness of waste generation and environmental accountability, positioning packaging at the forefront of sustainable consumption debates.

Within this evolving sustainability landscape, Generation Z has emerged as a particularly influential consumer cohort (Abraham and Ota, 2025). As digitally native consumers, Gen Z is highly exposed to sustainability narratives through social media, online platforms, and digital brand communication. Prior research suggests that sustainability constitutes an important part of their values and self-presentation; however, its role as a consistent driver of purchasing behavior remains contested. While Gen Z actively seeks brands that demonstrate environmental commitment and transparent communication, their evaluations are increasingly shaped by digital verification tools such as QR codes, eco-labels, and online disclosures. Concurrently, regulatory pressures and sustainability reporting requirements have encouraged firms to adopt environmentally responsible packaging and provide verifiable information to support their claims.

Despite strong environmental awareness and favorable attitudes toward sustainability, Generation Z consumers frequently hesitate to financially support sustainable packaging, particularly when it involves paying a price premium. Many consumers express support for eco-friendly practices, yet this intention does not consistently translate into actual purchasing behavior. This discrepancy is exacerbated by growing skepticism toward sustainability claims, driven by the prevalence of vague messaging and greenwashing practices that undermine confidence in brand communication.

A substantial body of sustainable consumption research documents this attitude-behavior gap, particularly in contexts involving ethical trade-offs and higher prices. However, existing models often examine sustainability attitudes, trust, eco-labels, transparency, social influence, or greenwashing risk in isolation. As a result, there is limited understanding of how these factors jointly shape willingness to pay for sustainable packaging, especially among Generation Z consumers operating in digitally mediated markets characterized by information asymmetry. Prior studies demonstrate that environmental awareness, perceived benefits, and green consumer values contribute to favorable sustainability attitudes. At the same time, trust repeatedly emerges as a decisive factor in determining whether consumers are willing to pay a premium for sustainable products. Empirical evidence further shows that credible eco-labels, transparent digital communication, and verifiable sustainability disclosures enhance trust, whereas perceived greenwashing significantly weakens it. Social influence—through peers, influencers, and online communities—also conditions how sustainability information is interpreted and validated, particularly among younger consumers.

Sustainability claims represent credence attributes that consumers cannot independently verify at the point of purchase. Under such

conditions, trust functions as the central evaluative mechanism through which sustainability-related beliefs are translated into behavioral intentions. However, trust formation is shaped by competing signals: credibility-enhancing cues such as eco-labels and transparent communication coexist with credibility-eroding cues such as perceived greenwashing risk. Examining these signals jointly is therefore essential to capture how trust is built, reinforced, or undermined in real-world decision contexts, rather than treating sustainability evaluation as a linear process.

Generation Z is uniquely suited for examining trust-based sustainability decision-making. Compared to earlier generations, Gen Z is more digitally engaged, more exposed to sustainability claims, and more skeptical of unverifiable information. Their purchasing decisions are strongly influenced by peer validation and online discourse, while their transitional economic position makes willingness to pay particularly sensitive to trust and perceived credibility. In emerging markets such as India, these dynamics are further shaped by rapid growth in Gen Z purchasing power alongside heightened expectations for transparent and credible sustainability communication, reinforced by evolving regulatory frameworks.

Against this backdrop, the present study adopts a deliberately focused explanatory approach. Rather than independently testing multiple behavioral theories or sustainability dimensions, it concentrates on understanding how sustainability-related attitudes among Generation Z consumers are converted into willingness to pay for sustainable packaging through a central trust-based mechanism. Accordingly, the primary objective of this study is to explain how environmental awareness, perceived benefits, and green consumer values influence Generation Z consumers' willingness to pay for sustainable packaging through the mediating role of brand trust, under specific credibility, social, and economic conditions. To achieve this, the study advances and empirically tests the TRUST-PACT (Trust-Enabled Perceived Authenticity and Communicative Transparency) framework, integrating trust, digital transparency, eco-label credibility, social influence, and greenwashing risk within a single, parsimonious analytical model.

Literature review

Broader context: sustainable packaging and contemporary consumption

Sustainability has become a central concern in contemporary consumption as societies confront escalating environmental challenges, including plastic pollution, climate change, and the depletion of natural resources. Among various sustainability dimensions, packaging has emerged as a particularly critical issue due to its short life cycle, high visibility, and disproportionate contribution to solid waste streams. In response, governments and regulatory bodies worldwide have introduced extended producer responsibility (EPR) policies, eco-design requirements, and disclosure mandates, compelling firms to adopt environmentally responsible packaging practices.

These developments gained further momentum in the post-COVID-19 period, during which consumers became more

conscious of waste generation and environmental vulnerability. As a result, sustainability considerations have become more salient in everyday purchasing decisions, especially in product categories where environmental impacts are immediately observable. Packaging, unlike upstream attributes such as sourcing or production processes, is directly encountered at the point of purchase and frequently serves as the primary carrier of sustainability information.

Within this broader sustainability discourse, Generation Z has emerged as a particularly influential and theoretically relevant consumer cohort. As digitally native consumers, members of Gen Z are continuously exposed to sustainability narratives through social media, online communities, and digital brand communication. Prior research suggests that this generation demonstrates relatively high environmental awareness and moral concern, while simultaneously demanding transparency and verifiable evidence to support environmental claims. Consequently, digital tools such as QR codes, traceability systems, and online sustainability disclosures have become central to how Gen Z evaluates packaging-related sustainability information.

Packaging represents a distinct and theoretically important sustainability attribute because it functions as a “silent salesperson,” conveying environmental commitment through material choices, certifications, and digital transparency mechanisms. From a behavioral perspective, packaging mediates the relationship between sustainability intentions and purchasing behavior by enabling rapid credibility assessments and reducing information asymmetry. At the same time, packaging is also the primary medium through which both credibility-enhancing signals and credibility-eroding cues, such as greenwashing, are communicated. These characteristics make sustainable packaging a particularly appropriate context for examining trust-based decision-making and willingness to pay.

Main challenge: the attitude–behavior gap in sustainable packaging

Despite increasing environmental awareness and favorable sustainability attitudes, a persistent attitude–behavior gap remains a defining challenge in sustainable consumption research (Carrington et al., 2010). A substantial body of literature demonstrates that consumers frequently express strong pro-environmental beliefs yet fail to translate these intentions into actual purchasing behavior, particularly when sustainable options involve paying a price premium.

Early research in ethical consumption highlights the role of situational constraints such as price sensitivity, convenience, and availability in undermining ethical intentions. Subsequent studies further confirm that credibility concerns, perceived risk, and competing consumption motives significantly weaken the conversion of environmental values into behavior (Barbarossa and De Pelsmacker, 2016; Nicholls and Lee, 2006; Pinto et al., 2020). This mismatch is especially pronounced in packaging decisions, where sustainability claims are often symbolic, difficult to verify, and evaluated alongside functional and aesthetic considerations.

For Generation Z, the attitude–behavior gap is particularly salient. Although this cohort exhibits high environmental concern, it is also increasingly skeptical of vague sustainability claims and greenwashing practices. As a result, hesitation to pay a premium for sustainable packaging often reflects doubts about credibility rather than indifference toward sustainability itself. These dynamics underscore the need to examine the mechanisms through which sustainability-related attitudes are translated into economic commitment under conditions of uncertainty.

State of the art: explaining sustainable packaging decisions—sustainability attitudes, values, and willingness to pay

Prior research on sustainable consumption has extensively examined the role of environmental awareness, perceived benefits, and green consumer values in shaping pro-environmental intentions (Kumar and Jain, 2024). Studies grounded in established behavioral frameworks, including the Theory of Planned Behavior (TPB) and Green Consumer Values (GCV), consistently show that favorable sustainability-related beliefs are associated with positive evaluations of environmentally responsible products and higher stated support for sustainable initiatives (Atta-Delgado et al., 2024).

In the context of sustainable packaging, empirical studies indicate that consumers who are environmentally aware and who perceive functional and ecological benefits tend to express stronger intentions to choose sustainable packaging alternatives (Nirubarani et al., 2024). However, these attitudinal drivers alone do not consistently explain willingness to pay, particularly when sustainable options involve higher prices or uncertainty regarding environmental claims (De Canio et al., 2023).

The present study does not seek to test, refine, or extend TPB or GCV, nor does it aim to provide a comprehensive account of value formation or generational differences in environmental values (Herrmann et al., 2022). Instead, these perspectives are referenced solely to justify the inclusion of sustainability-related beliefs as antecedent conditions within the model (Bhattacharyya, 2025). Consistent with prior empirical work, attitudes and values are treated as background factors shaping initial evaluations rather than as focal explanatory mechanisms (Patreau et al., 2023).

Brand trust as a central behavioral mechanism

In sustainability-related consumption contexts, consumers are often required to evaluate product attributes that cannot be directly verified at the point of purchase. Environmental performance, ethical practices, and long-term ecological impact are typically credence attributes, making independent assessment difficult. Under such conditions, brand trust plays a critical role in reducing uncertainty and facilitating decision-making (Tanzares et al., 2024).

Extant research across marketing and sustainability literature demonstrates that trust positively influences consumers’ willingness

to engage with products involving higher perceived risk, including those associated with environmental claims. When consumers perceive a brand as honest, competent, and reliable in its sustainability communication, they are more likely to accept trade-offs such as higher prices and to support sustainability initiatives financially (Walker et al., 2021).

In the present study, brand trust is conceptualized as a focused evaluative mechanism linking sustainability-related beliefs to willingness to pay for sustainable packaging. Rather than treating trust as a broad relational construct or an outcome in itself, the study positions trust as the key mechanism through which favorable attitudes are converted into behavioral intention under conditions of information asymmetry.

Credibility signals: eco-labels and digital transparency

When direct verification of sustainability claims is not possible, consumers rely on external cues to assess credibility. Drawing on signaling perspectives, prior research suggests that eco-labels and transparent communication function as observable indicators of underlying environmental performance (Billerud, 2024).

Eco-labels supported by recognized standards or third-party certification enhance credibility by signaling independent verification. Similarly, digital transparency mechanisms—such as QR codes, traceability systems, and online disclosures—provide consumers with structured access to additional sustainability information related to packaging materials, recyclability, or life-cycle impacts (Deloitte, 2022). These cues help reduce information asymmetry and support trust formation, although they do not eliminate uncertainty entirely (First Insight, 2016).

In this study, eco-label credibility and communication transparency are not examined as independent drivers of behavior. Instead, they are conceptualized as contextual signals that condition how trust translates into willingness to pay, strengthening the trust-behavior relationship when perceived as credible.

Greenwashing and trust erosion

Alongside credibility-enhancing signals, the sustainability literature highlights credibility-eroding cues in the form of perceived greenwashing. Greenwashing refers to environmental claims that are exaggerated, ambiguous, or misleading, making it difficult for consumers to distinguish genuine sustainability efforts from symbolic marketing (Francis and Hoefel, 2018).

Empirical evidence consistently shows that perceptions of greenwashing increase skepticism and reduce confidence in environmental claims, thereby weakening trust. In packaging contexts, where claims are often brief and symbolic, greenwashing concerns are particularly salient and can significantly undermine the behavioral impact of favorable sustainability attitudes. Accordingly, greenwashing risk is positioned in this study as a contextual factor that weakens the

influence of trust on willingness to pay, rather than as a direct predictor of behavioral intention.

Social influence in Generation Z consumption

Social influence has long been recognized as an important contextual factor in consumer decision-making. For Generation Z, whose consumption practices are closely embedded in digital and social media environments, peer opinions, influencer endorsements, and online community discourse play a substantial role in shaping how sustainability information is interpreted (Borah et al., 2016).

Prior research indicates that social cues can reinforce or challenge individual assessments of sustainability claims, particularly under conditions of uncertainty. In such contexts, social validation may strengthen confidence in sustainability evaluations and support trust formation. In the present study, social influence is incorporated as a contextual factor shaping trust formation among Generation Z consumers, consistent with the study's trust-centered explanatory focus.

Analysis and criticism of existing literature

Although existing research provides valuable insights into sustainability attitudes, trust, and credibility cues, several limitations emerge when these studies are considered collectively (Kadence, 2025). First, many empirical investigations focus on individual explanatory factors in isolation, offering limited insight into how attitudes, trust, and contextual signals operate simultaneously within a single decision-making process. Second, brand trust is conceptualized inconsistently across studies, sometimes as an antecedent and sometimes as an outcome, making theoretical integration difficult. Third, credibility-enhancing and credibility-eroding cues are rarely examined together, despite their coexistence in real-world sustainability evaluations. These limitations suggest the need for a more integrated approach that examines how established factors jointly shape purchasing decisions under conditions of uncertainty, rather than introducing additional theoretical constructs.

Research gap and motivation for the present study

The preceding review indicates that while sustainability-related attitudes, trust perceptions, credibility cues, and social influence have each been shown to matter, their joint operation within a single explanatory framework remains underexplored—particularly in the context of sustainable packaging. Existing models offer limited insight into how favorable sustainability beliefs are translated into willingness to pay through a central evaluative mechanism.

This limitation is especially relevant for Generation Z consumers, who encounter sustainability information through multiple digital channels and are simultaneously exposed to credibility-enhancing signals and credibility-eroding cues. Motivated by this gap, the present study adopts a deliberately

focused, trust-centered approach. Rather than extending established behavioral theories, it integrates well-established variables within the TRUST-PACT framework to examine how sustainability-related attitudes are converted into willingness to pay for sustainable packaging through brand trust, under specific credibility, social, and economic conditions. This limitation is especially relevant for Generation Z consumers, who encounter sustainability information through multiple digital channels and are simultaneously exposed to credibility-enhancing signals and credibility-eroding cues. Motivated by this gap, the present study adopts a deliberately focused, trust-centered approach. Rather than extending established behavioral theories, it integrates well-established variables within the TRUST-PACT framework to examine how sustainability-related attitudes are converted into willingness to pay for sustainable packaging through brand trust, under specific credibility, social, and economic conditions.

Conceptual framework and logic of the TRUST-PACT model

The TRUST-PACT framework is an author-developed, trust-centered explanatory model designed to clarify how sustainability-related beliefs are translated into willingness to pay for sustainable packaging. Rather than functioning as a comprehensive psychological or attitudinal theory, the framework integrates established constructs from trust theory, signaling theory, and sustainable consumption research into a single, focused analytical structure.

The framework is grounded in the premise that sustainability-related cognitions—namely environmental awareness and perceived packaging-related benefits—together with green consumer values, shape behavioral intentions indirectly, through the formation of brand trust. This assumption reflects contemporary sustainability markets in which environmental impact and ethical practices constitute credence attributes that consumers cannot independently verify at the point of purchase. Under such conditions, consumers—particularly Generation Z—rely on credibility assessments rather than attitudes alone when making purchasing decisions.

Within the TRUST-PACT framework, environmental awareness, perceived benefits, and green values are conceptualized as antecedent belief structures that inform consumers' initial evaluations of sustainable packaging. These beliefs are frequently shaped by digital information exposure, social discourse, and increased engagement with sustainability narratives. However, favorable evaluations alone are insufficient to explain premium acceptance. Accordingly, brand trust is positioned as the central mediating mechanism that converts sustainability-related beliefs into willingness to pay by reducing uncertainty and enabling economic commitment to sustainability claims. The framework further recognizes that the influence of brand trust on willingness to pay is context-dependent. To reflect real-world decision environments, several moderating conditions are incorporated. Eco-label credibility and communication transparency are conceptualized as trust-enhancing signals that strengthen the

impact of trust on willingness to pay by providing verifiable and structured sustainability information. In contrast, perceived greenwashing risk represents a credibility-eroding condition that weakens this relationship by introducing doubt regarding the authenticity of environmental claims.

In addition, the TRUST-PACT framework accounts for the socially embedded and economically constrained nature of Generation Z consumption. Social influence captures the role of peer opinions, influencers, and online communities in validating sustainability claims and reinforcing trust-based evaluations. Price sensitivity reflects economic constraints that may limit premium acceptance even when trust and perceived benefits are high. Importantly, these factors are not treated as independent behavioral drivers, but as conditions that moderate the strength of the relationship between brand trust and willingness to pay. Overall, the TRUST-PACT framework is deliberately parsimonious, focusing on a single explanatory pathway in which sustainability-related beliefs influence willingness to pay through brand trust, under specific credibility, social, and economic conditions. Rather than proposing new theories or modeling emotional states, the framework provides an integrated explanation of when and under what conditions favorable sustainability evaluations are translated into economic action. In doing so, it offers a coherent account of sustainable packaging decisions among Generation Z consumers in digital contexts where authenticity, verification, and credibility are central to sustainability communication.

Although eco-label credibility, communication transparency, and perceived greenwashing risk are conceptually related in the broader sustainability literature, the present framework does not model direct causal relationships among these variables. This modeling choice is deliberate. The TRUST-PACT framework is designed to capture how consumers evaluate sustainability claims at the point of purchase, rather than to explain how greenwashing perceptions develop over time. Accordingly, eco-label credibility and communication transparency are treated as parallel credibility-enhancing cues, while perceived greenwashing risk represents a parallel credibility-eroding condition. These cues may coexist and be evaluated simultaneously by consumers—particularly in digital retail environments—without operating through a sequential causal process. By modeling them as parallel moderators of the trust-willingness-to-pay relationship, the framework maintains analytical parsimony while capturing the net effect of competing credibility signals on trust-based decision-making (Figure 1).

The TRUST-PACT framework positions brand trust as the central mediating mechanism linking sustainability-related beliefs (environmental awareness, perceived benefits, and green consumer values) to willingness to pay for sustainable packaging. The relationship between brand trust and willingness to pay is moderated by contextual factors. Eco-label credibility and communication transparency function as trust-enhancing signals, while perceived greenwashing risk represents a trust-eroding condition. Social influence and price sensitivity capture the socially embedded and economically constrained nature of Generation Z consumption. Moderating effects are represented as influences on the trust-willingness-to-pay relationship, rather than on brand trust itself (Table 1).

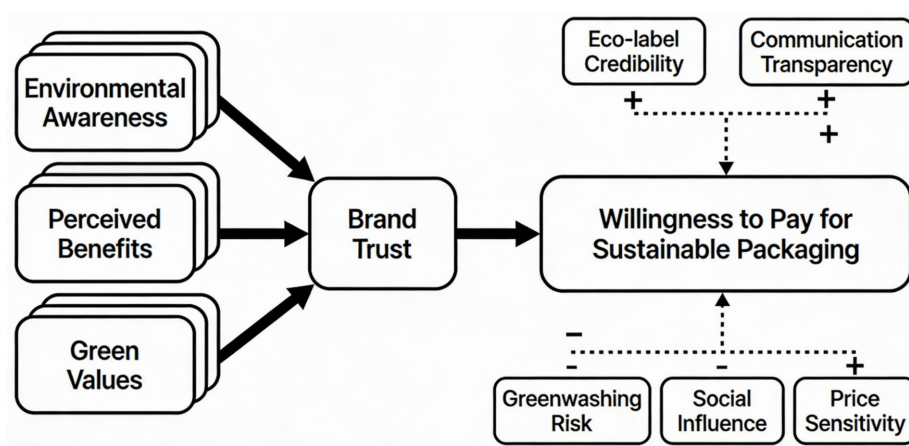


FIGURE 1 Conceptual framework of the TRUST-PACT model.

TABLE 1 Constructs and theoretical roles in the TRUST-PACT model.

Construct	Theoretical basis	Role in model
Environmental Awareness	TPB	Cognitive antecedent
Perceived Benefits	TPB/Value–Utility	Cognitive evaluation
Green Values	GCV	Moral/value driver
Brand Trust	Trust Theory	Central mediator
Eco-label Credibility	Signaling Theory	Positive moderator
Communication Transparency	Signaling Theory	Positive moderator
Greenwashing Risk	Risk/Credibility	Negative moderator
Social Influence	TPB/Social Norms	Contextual moderator
Price Sensitivity	Behavioral Economics	Constraint moderator

- Strong green values align sustainable packaging choices with personal identity and moral responsibility, making Gen Z more willing to financially support brands that reflect their environmental commitments.

Accordingly, the following hypotheses are proposed:

- H1:* Environmental awareness positively influences Gen Z’s willingness to pay for sustainable packaging.
- H2:* Perceived benefits positively influence Gen Z’s willingness to pay for sustainable packaging.
- H3:* Green values positively influence Gen Z’s willingness to pay for sustainable packaging.

Trust Theory emphasizes that consumers often require confidence in a brand’s sincerity, competence, and integrity before engaging in sustainability-related behaviors.

- When Gen Z trusts a brand’s environmental claims, uncertainty is reduced, and consumers become more willing to reward the brand through higher WTP for sustainable packaging.

- H4:* Brand trust positively influences Gen Z’s willingness to pay for sustainable packaging.

Hypothesis development

Direct effects: belief structures and trust

Drawing on the Theory of Planned Behavior (TPB) and Green Consumer Values, environmental awareness, perceived benefits, and green values are treated as foundational cognitive and moral antecedents that shape Gen Z’s evaluative stance toward sustainable packaging.

- When Gen Z consumers recognize the environmental consequences of packaging waste and the urgency of ecological problems, they are more likely to view sustainable packaging positively and to accept a price premium for environmentally responsible options.
- Perceived benefits, such as reduced waste, better environmental performance, or improved product safety, strengthen motivations to choose sustainable packaging and increase openness to higher prices.

Mediating role of brand trust

Favorable attitudes and values do not automatically lead to economic action, especially in credence-based sustainability contexts where claims are hard to verify.

- Environmental awareness, perceived benefits, and green values must first be translated into confidence that a specific brand genuinely embodies these environmental ideals.

- Brand trust operates as the psychological mechanism that converts sustainability-related beliefs into WTP by lowering perceived risk and legitimizing premium payments for sustainable packaging.

Therefore, brand trust is hypothesized to mediate the effect of each belief construct on WTP:

H5a: Brand trust mediates the relationship between environmental awareness and willingness to pay.

H5b: Brand trust mediates the relationship between perceived benefits and willingness to pay.

H5c: Brand trust mediates the relationship between green values and willingness to pay.

Moderating effects: credibility and risk signals

Signaling Theory and credibility research highlight that external cues help consumers interpret sustainability claims, particularly in digital retail environments where direct verification is limited.

- Perceived greenwashing risk introduces doubt about the authenticity of brands' environmental messages and weakens the tendency to convert trust into WTP.
- In contrast, credible eco-labels and transparent sustainability communication act as positive signals, reinforcing the reliability of claims and strengthening the trust–WTP link.

Thus, the following moderation hypotheses are advanced:

H6: Perceived greenwashing risk negatively moderates the relationship between brand trust and willingness to pay.

H7: Eco-label credibility positively moderates the relationship between brand trust and willingness to pay.

H8: Communication transparency positively moderates the relationship between brand trust and willingness to pay.

Moderating effects: social and economic context

The TRUST-PACT model also recognizes that Gen Z's sustainability decisions are embedded in social networks and constrained by economic realities.

- Social influence from peers, influencers, and online communities can validate environmental information and amplify the conversion of environmental awareness into brand trust.
- Price sensitivity can limit premium acceptance, even when perceived benefits are high, by making cost considerations more salient in purchase decisions.

Consequently, two contextual moderation hypotheses are proposed:

H9: Social influence positively moderates the relationship between environmental awareness and brand trust.

H10: Price sensitivity negatively moderates the relationship between perceived benefits and willingness to pay.

Together, these hypotheses operationalize the TRUST-PACT framework by specifying a belief–trust–behavior pathway conditioned by credibility, social, and economic factors in Gen Z's sustainable packaging decisions.

Figure 2 lays out all the hypotheses tested in the study. It includes the direct paths between key constructs, the mediating role of brand trust, and the moderating influences expected to affect how these relationships operate within the framework.

Methodology

This study examines how Generation Z consumers decide whether to pay a premium for sustainable packaging, focusing on a

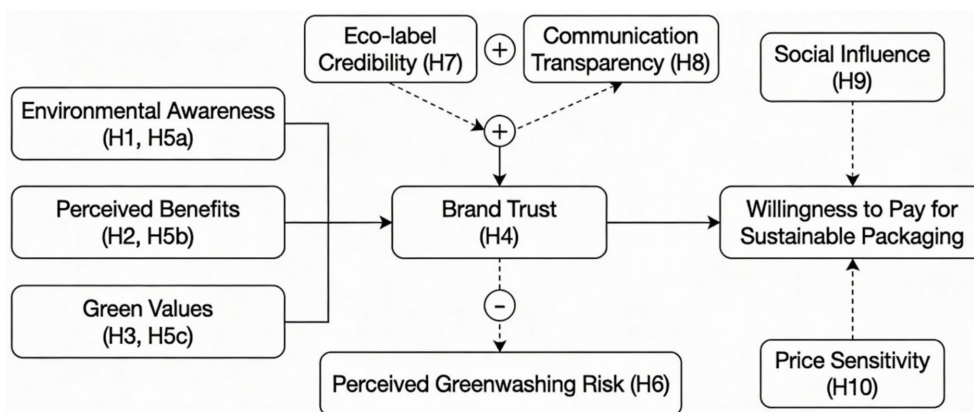


FIGURE 2 Hypothesized relationships in the TRUST-PACT model.

digitally engaged and environmentally aware cohort in India. This group is particularly relevant due to its high exposure to sustainability communication and social influence, making it central to understanding contemporary eco-friendly consumption. The TRUST-PACT framework is employed to integrate key psychological antecedents, trust-based mechanisms, and transparency-related cues into a single explanatory model. Through empirical testing, the study clarifies how sustainability-related attitudes are translated into behavioral intention and identifies the conditions under which trust becomes sufficient to support financial commitment. Consistent with the study’s focused objective, the model includes only those constructs required to test the proposed trust-mediated relationships (Figure 3).

A purposive sampling approach was used to reach Gen Z consumers (aged 18–27) across different regions of India. This sampling technique was appropriate because the study specifically targeted a generation known for its digital engagement and heightened environmental sensitivity. The final sample consisted of 120 respondents, which is a suitable size for PLS-SEM analysis. This sample allows for reliable estimation of structural paths, including moderation and mediation effects, while remaining feasible for a study that involves complex behavioral constructs. The sample size also aligns with recommended guidelines for models with medium complexity and multiple latent variables.

Data were collected through an online survey using a structured questionnaire designed to measure all constructs in the TRUST-PACT model. A survey method was selected because it allows

efficient collection of attitudinal and perceptual data from digitally active Gen Z consumers. All items were measured using 5-point Likert scales, adapted from validated instruments in sustainability, trust, and consumer behavior literature. The questionnaire was divided into sections covering environmental awareness, perceived benefits, green values, trust, eco-label credibility, communication transparency, greenwashing risk, social influence, price sensitivity, and willingness to pay. Online distribution ensured accessibility and encouraged participation from a geographically diverse sample. This method was the most suitable for capturing self-reported perceptions and behavioral intentions linked to sustainability.

Because data for all constructs were collected using a single self-report questionnaire at one point in time, potential common method variance (CMV) warrants consideration. Several procedural remedies were implemented to reduce CMV ex ante, including assuring respondents of anonymity, emphasizing that there were no right or wrong answers, and separating the measurement of predictor and criterion constructs into different sections of the questionnaire with varied scale anchors. In addition, CMV was assessed ex post using [e.g., a full collinearity assessment / marker-variable test] and the results did not indicate a pervasive CMV problem. Nonetheless, as with most cross-sectional survey studies, CMV cannot be fully ruled out.

Table 2 shows the main constructs used in the study along with the item codes and the statements asked in the questionnaire. The items come from earlier studies and were adjusted slightly to suit the context of this research.

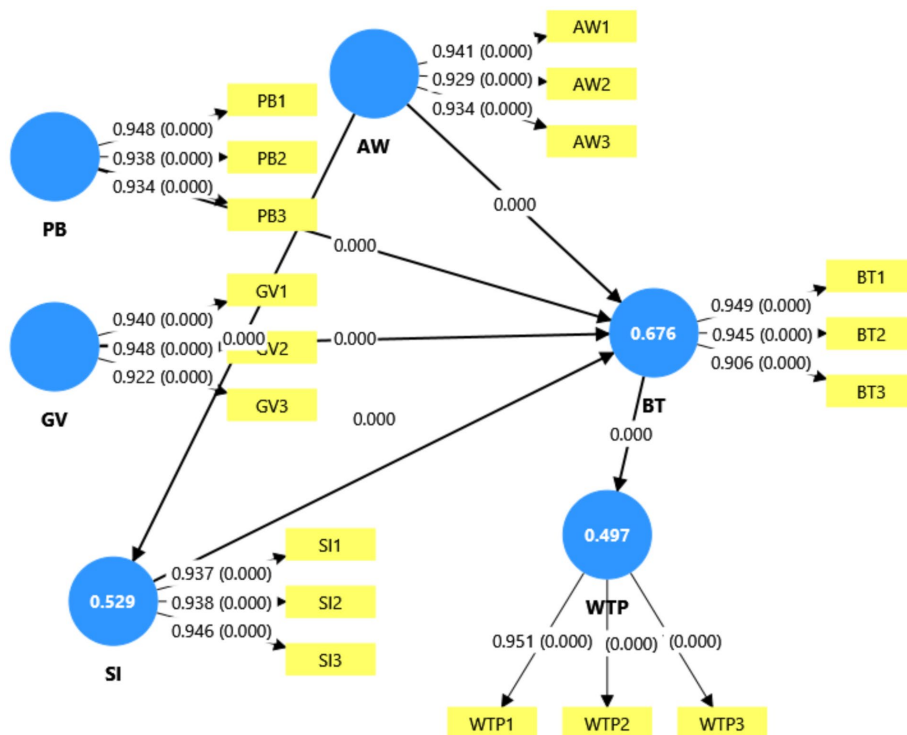


FIGURE 3 PLS-SEM structural model for the TRUST-PACT framework. Figure 4 presents the main analytical outcomes from the PLS-SEM procedure. It displays the path coefficients, explained variance (R²), and interaction effects, offering a visual summary of how the model performed with the Gen Z sample.

TABLE 2 Measurement items for each construct.

Construct	Code	Measurement items
Environmental Awareness (EA)	AW1	I am aware of the environmental problems caused by excessive packaging waste.
	AW2	I understand how packaging materials affect the environment.
	AW3	I am concerned about the environmental consequences of unsustainable packaging.
	AW4	I actively think about environmental issues when I notice product packaging.
Perceived Benefits of Sustainable Packaging (PB)	PB1	Sustainable packaging helps reduce environmental pollution.
	PB2	Products with sustainable packaging are better for long-term environmental protection.
	PB3	Sustainable packaging minimizes waste and resource consumption.
Green Values (GV)	GV1	Protecting the environment is an important part of who I am.
	GV2	I feel a moral responsibility to support environmentally responsible products.
	GV3	I prefer brands that reflect my environmental values.
Brand Trust (BT)	BT1	I trust brands that claim to use sustainable packaging.
	BT2	I believe such brands are honest about their environmental practices.
	BT3	I feel confident that these brands deliver what they promise regarding sustainability.
Willingness to Pay (WTP)	WTP1	I am willing to pay a higher price for products with sustainable packaging.
	WTP2	I would choose sustainably packaged products even if they cost more.
	WTP3	Paying extra for sustainable packaging is acceptable to me.
Perceived Greenwashing Risk (PGR)	GR1	Many brands exaggerate their sustainability claims related to packaging.
	GR2	I am skeptical about claims of “eco-friendly” packaging.
	GR3	It is difficult to know whether sustainability claims are genuine.
Eco-Label Credibility (ELC)	ELC1	Eco-labels on packaging are generally trustworthy.
	ELC2	Certified eco-labels increase my confidence in sustainability claims.
	ELC3	I believe eco-labels are backed by reliable verification processes.
Communication Transparency (CT)	CT1	Brands clearly explain how their packaging is environmentally friendly.
	CT2	Sustainability information provided by brands is easy to understand.
	CT3	Brands provide sufficient details to verify sustainability claims.
Social Influence (SI)	SI1	People important to me support buying products with sustainable packaging.
	SI2	My peers influence my views on sustainable packaging.
	SI3	Social media influences my trust in sustainability claims.
Price Sensitivity (PS)	PS1	Price is a major factor in my purchasing decisions.
	PS2	I am very sensitive to price differences between products.
	PS3	I usually choose the lowest-priced option available.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to analyze the data because it is well-suited for predictive models, complex relationships, and research involving latent constructs. The method also performs reliably with medium-sized samples and non-normal data, which is typical of Likert-based responses. The analysis followed a two-stage approach: first, validating the measurement model (factor loadings, reliability, convergent validity, discriminant validity), and then testing the structural model (path coefficients, mediation, moderation, effect sizes, predictive relevance). Latent interactions such as $BT \times GR$, $BT \times CT$, and $AW \times SI$ were tested using product indicator techniques. Bootstrapping with 5,000 resamples was used to assess the statistical significance of all direct, indirect, and conditional indirect effects. This analytic strategy ensured that the results were both robust and consistent with the study's aims.

Mathematical model formulation

To examine the behavioral dynamics proposed in this study, an extended mathematical framework—referred to as TRUST-PACT (Perceived Authenticity and Communicative Transparency)—was developed. This framework builds upon the Theory of Planned Behavior (TPB) and the Green Consumer Values (GCV) model, integrating additional communicative and contextual constructs that are now central to sustainability decision-making. The objective of this formulation is to represent both the direct effects of psychological antecedents and the conditional effects introduced by moderators that influence Generation Z consumers' willingness to pay (WTP) for sustainable packaging.

Latent constructs and measurement specification

The model consists of the following latent variables:

- AW – Environmental Awareness
- PB – Perceived Benefits
- GV – Green Values
- BT – Brand Trust
- WTP – Willingness to Pay
- GR – Perceived Greenwashing Risk
- CT – Communication Transparency
- ELC – Eco-Label Credibility
- SI – Social Influence
- PS – Price Sensitivity

Each latent variable η_j is measured reflectively using a set of observed indicators x_{ji} , represented by the standard reflective measurement equation:

$$x_{ji} = \lambda_{ji}\eta_j + \varepsilon_{ji}$$

where:

- λ_{ji} = loading of indicator i on latent construct j
- ε_{ji} = measurement error

This specification allows the statistical model to capture measurement reliability and the strength of each indicator's contribution to its construct.

Brand trust sub-model

Brand trust (BT) is conceptualized as a central mediator in the TRUST-PACT framework. It is shaped by cognitive and value-driven antecedents—environmental awareness, perceived benefits, and green values—and is also influenced by the social environment. Since Generation Z actively engages with social media and peer communities, Social Influence (SI) is included as a moderator affecting how awareness translates into trust.

The structural equation for brand trust is:

$$BT = \alpha_0 + \alpha_1 AW + \alpha_{1s}(AW \times SI) + \alpha_2 PB + \alpha_3 GV + \alpha_4 SI + \zeta_1$$

where ζ_1 represents a random disturbance.

Expected signs for the coefficients are positive, meaning all factors should increase trust. This equation reflects the idea that environmental understanding leads to trust more strongly when reinforced by social cues and peer validation—both highly relevant to Gen Z behavior.

Willingness-to-pay sub-model

Willingness to Pay (WTP) is modeled as an outcome influenced by trust and the three attitudinal antecedents. However, several contextual factors condition these relationships.

- Greenwashing Risk (GR) is expected to *dampen* the effect of brand trust.

- Communication Transparency (CT) and Eco-Label Credibility (ELC) are expected to *strengthen* the trust-to-WTP pathway.
- Price Sensitivity (PS) weakens the effect of perceived benefits when consumers are unwilling to absorb a premium.

The WTP equation is:

$$WTP = \beta_0 + \beta_1 BT + \beta_{1g}(BT \times GR) + \beta_{1c}(BT \times CT) + \beta_{1e}(BT \times ELC) + \beta_2 AW + \beta_3 PB + \beta_{3p}(PB \times PS) + \beta_4 GV + \beta_5 PS + \zeta_2$$

The expected coefficient signs are:

- $\beta_1 > 0$: higher trust increases WTP
- $\beta_{1g} < 0$: greenwashing risk erodes trust's impact
- $\beta_{1c} > 0$, $\beta_{1e} > 0$: transparency and credible labels strengthen trust-based decisions
- $\beta_{3p} < 0$: price sensitivity reduces perceived benefit effects

Together, these relationships capture both psychological intention formation and real-world constraints affecting Gen Z consumers.

Model estimation

The structural system was estimated using PLS-SEM, which is appropriate for models with:

- multiple latent constructs
- interaction terms (latent \times latent moderation)
- non-normal data
- moderate sample sizes

Bootstrapping with 5,000 subsamples was used to evaluate significance levels for all direct, mediated, and moderated pathways. Model quality was assessed using:

Results and data analysis

Measurement model assessment

Indicator reliability (outer loadings)

Indicator reliability was assessed by examining the outer loadings of all measurement items on their respective latent constructs. As reported in Table 3, all indicators load strongly on their intended constructs, with most loadings exceeding the recommended threshold of 0.70 and all being statistically significant ($p < 0.001$).

Environmental Awareness (AW), Brand Trust (BT), Green Values (GV), Perceived Benefits (PB), Social Influence (SI), and Willingness to Pay (WTP) exhibit particularly high loadings, ranging from 0.906 to 0.960, indicating that the indicators explain a substantial proportion of variance in their underlying constructs. Although a small number of indicators show comparatively lower loadings (e.g., ELC1 = 0.716; GR2 = 0.656), these values remain acceptable and theoretically meaningful. Given their statistical significance and conceptual relevance, all indicators were retained. Overall, the results confirm adequate indicator reliability across constructs.

TABLE 3 Indicator loadings and significance levels for the measurement model.

Indicator	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	p values
AW1 ← AW	0.941	0.941	0.009	100.382	0.000
AW2 ← AW	0.929	0.928	0.013	72.566	0.000
AW3 ← AW	0.934	0.933	0.012	80.952	0.000
BT1 ← BT	0.949	0.949	0.010	98.861	0.000
BT2 ← BT	0.945	0.944	0.010	93.651	0.000
BT3 ← BT	0.906	0.905	0.018	49.137	0.000
CT1 ← CT	0.981	0.920	0.164	5.994	0.000
CT2 ← CT	0.916	0.885	0.176	5.201	0.000
ELC1 ← ELC	0.716	0.725	0.270	2.647	0.008
ELC2 ← ELC	0.996	0.836	0.279	3.566	0.000
GR1 ← GR	0.979	0.878	0.206	4.749	0.000
GR2 ← GR	0.656	0.858	0.211	3.116	0.002
GV1 ← GV	0.940	0.939	0.024	38.443	0.000
GV2 ← GV	0.948	0.947	0.020	47.219	0.000
GV3 ← GV	0.922	0.917	0.030	30.239	0.000
PB1 ← PB	0.948	0.947	0.022	42.854	0.000
PB2 ← PB	0.938	0.936	0.018	50.702	0.000
PB3 ← PB	0.934	0.931	0.027	34.795	0.000
PS1 ← PS	0.914	0.899	0.158	5.799	0.000
PS2 ← PS	0.979	0.911	0.165	5.952	0.000
SI1 ← SI	0.937	0.936	0.013	71.553	0.000
SI2 ← SI	0.938	0.937	0.013	73.895	0.000
SI3 ← SI	0.946	0.946	0.009	105.725	0.000
WTP1 ← WTP	0.950	0.949	0.013	72.109	0.000
WTP2 ← WTP	0.960	0.960	0.011	89.190	0.000
WTP3 ← WTP	0.937	0.937	0.015	63.770	0.000

Internal consistency reliability

Internal consistency reliability was evaluated using Cronbach's alpha, Composite Reliability (ρ_a), and Composite Reliability (ρ_c). As shown in Table 4, all constructs exceed the recommended minimum value of 0.70, with Cronbach's alpha values ranging from 0.927 to 0.945 and composite reliability values between 0.953 and 0.965.

These results indicate a high degree of internal consistency among the measurement items and confirm that the constructs are measured reliably. The consistently high reliability scores further support the robustness of the measurement model.

Convergent validity

Convergent validity was assessed using the Average Variance Extracted (AVE) criterion. All AVE values exceed the recommended threshold of 0.50, ranging from 0.871 to 0.901, and are statistically significant ($p < 0.001$). This indicates that each construct explains more than half of the variance of its indicators, thereby establishing strong convergent validity for the measurement model (Table 5)

Discriminant validity: Fornell–Larcker criterion

Discriminant validity was first assessed using the Fornell–Larcker criterion. As shown in Table 6, the square root of the AVE for each construct is greater than its correlations with all other constructs. This indicates that each construct shares more variance with its own indicators than with other constructs, supporting discriminant validity.

HTMT ratio

To further confirm discriminant validity, the Heterotrait–Monotrait (HTMT) ratio was examined. All HTMT values are below the conservative threshold of 0.85, with the highest value being 0.781. These findings provide additional evidence that the constructs are empirically distinct and that discriminant validity is well established (Table 7).

Structural model results

Total indirect effects

The analysis of total indirect effects reveals that sustainability-related beliefs exert significant indirect influences on willingness to pay. Environmental awareness shows a strong indirect effect on brand trust

TABLE 4 Internal consistency reliability and convergent validity results.

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AW	0.927	0.928	0.954	0.873
BT	0.926	0.929	0.953	0.871
GV	0.931	0.964	0.955	0.877
PB	0.934	0.947	0.958	0.883
SI	0.934	0.938	0.958	0.884
WTP	0.945	0.946	0.965	0.901

TABLE 5 Convergent validity assessment using Average Variance Extracted (AVE).

Construct	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	p values
AW	0.873	0.873	0.016	52.956	0.000
BT	0.871	0.871	0.020	44.542	0.000
GV	0.877	0.874	0.026	34.254	0.000
PB	0.883	0.881	0.026	33.343	0.000
SI	0.884	0.883	0.016	53.885	0.000
WTP	0.901	0.900	0.020	45.240	0.000

TABLE 6 Discriminant validity assessment using the Fornell–Larcker criterion.

Construct	AW	BT	GV	PB	SI	WTP
AW	0.934					
BT	0.626	0.933				
GV	-0.061	0.272	0.936			
PB	-0.022	0.285	-0.163	0.940		
SI	0.727	0.586	-0.101	-0.060	0.940	
WTP	0.502	0.705	0.256	0.227	0.391	0.949

TABLE 7 Discriminant validity assessment using the Heterotrait–Monotrait (HTMT) ratio.

Construct	AW	BT	GV	PB	SI	WTP
AW						
BT	0.676					
GV	0.068	0.283				
PB	0.059	0.302	0.186			
SI	0.781	0.629	0.117	0.065		
WTP	0.535	0.751	0.270	0.240	0.412	

($\beta = 0.262, p < 0.001$) and willingness to pay ($\beta = 0.464, p < 0.001$). Similarly, green values ($\beta = 0.278, p < 0.001$), perceived benefits ($\beta = 0.268, p < 0.001$), and social influence ($\beta = 0.254, p < 0.001$) significantly influence willingness to pay through intervening mechanisms. These findings indicate that sustainability attitudes and social cues affect willingness to pay primarily through mediated pathways, reinforcing the central logic of the TRUST-PACT framework (Table 8).

Mediation analysis: role of brand trust

Consistent with Trust Theory, the mediation analysis confirms that brand trust functions as a key psychological mechanism translating sustainability-related beliefs into willingness to pay. Environmental awareness significantly influences willingness to pay through brand trust (AW → BT → WTP: $\beta = 0.279, p < 0.001$), supporting H5a.

Similarly, green values (GV → BT → WTP: $\beta = 0.278, p < 0.001$) and perceived benefits (PB → BT → WTP: $\beta = 0.268, p < 0.001$) demonstrate significant indirect effects via brand trust, supporting H5b and H5c. These results suggest that favorable sustainability beliefs alone are insufficient; instead, trust enables consumers to convert positive attitudes into economic commitment. Furthermore, the sequential mediation involving social influence (AW → SI → BT → WTP: $\beta = 0.185, p < 0.001$) highlights the socially embedded nature of Generation Z's sustainability evaluations, where peer validation strengthens awareness-driven trust formation (Table 9).

Overall model interpretation

Taken together, the results demonstrate a robust and theoretically coherent model. The measurement model exhibits strong reliability and validity, while the structural model provides consistent empirical support for the TRUST-PACT framework. The findings confirm that brand trust is not merely an outcome of sustainability attitudes but a central mechanism through which environmental awareness, perceived benefits, and green values are converted into willingness to pay, under varying credibility and contextual conditions. By empirically validating this trust-centered pathway, the study addresses the persistent attitude–behavior gap in sustainable packaging consumption and highlights the importance of transparency, credibility, and social reinforcement in shaping Gen Z consumers' premium-paying intentions.

Figure 4 illustrates how brand trust carries the effects of environmental beliefs and values toward willingness to pay. It also shows how different situational factors can intensify or diminish these indirect effects, reflecting the conditional nature of the TRUST-PACT model.

Brand trust plays a mediating role in translating attitudes into willingness to pay. The basic indirect effect of environmental awareness on WTP is:

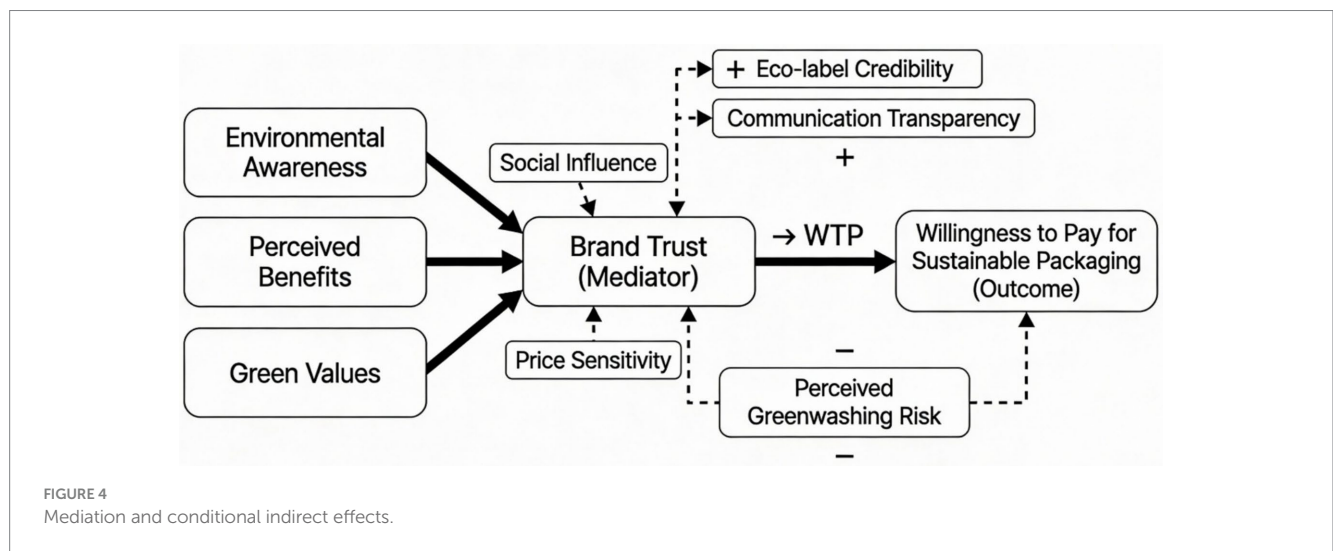
$$\text{Indirect}_{AW \rightarrow WTP} = \alpha_1 \times \beta_1.$$

TABLE 8 Total indirect effects on willingness to pay.

Paths	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	p values
AW → BT	0.262	0.260	0.061	4.304	0.000
AW → WTP	0.464	0.458	0.055	8.489	0.000
GV → WTP	0.278	0.275	0.043	6.455	0.000
PB → WTP	0.268	0.265	0.036	7.418	0.000
SI → WTP	0.254	0.248	0.060	4.212	0.000

TABLE 9 Mediation and sequential mediation effects involving brand trust and social influence.

Paths	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	p values
AW → BT → WTP	0.279	0.277	0.057	4.883	0.000
AW → SI → BT	0.262	0.260	0.061	4.304	0.000
GV → BT → WTP	0.278	0.275	0.043	6.455	0.000
PB → BT → WTP	0.268	0.265	0.036	7.418	0.000
AW → SI → BT → WTP	0.185	0.181	0.046	3.995	0.000
SI → BT → WTP	0.254	0.248	0.060	4.212	0.000



However, because the model incorporates moderators, the indirect effect becomes conditional on the levels of social influence (s), greenwashing risk (g), communication transparency (c), and eco-label credibility (e):

$$CIE_{AW \rightarrow WTP}(s, g, c, e) = (\alpha_1 + \alpha_1 s) (\beta_1 + \beta_1 g + \beta_1 c + \beta_1 e)$$

Similarly, for perceived benefits:

$$CIE_{PB \rightarrow WTP}(g, c, e, p) = \alpha_2 (\beta_1 + \beta_1 g + \beta_1 c + \beta_1 e)$$

These expressions illustrate how positive contextual conditions (high transparency, strong eco-label credibility, strong social influence) amplify the pathway from attitudes → trust → behavior,

while negative conditions (high greenwashing risk, strong price sensitivity) weaken it.

Index of moderated mediation

Following Hayes' approach, the extent to which the mediation depends on a moderator is quantified as:

$$Index_{GR} = (\alpha_1 + \alpha_1 s) \beta_1 g$$

A non-zero bootstrap confidence interval for this index confirms moderated mediation.

Variance accounted for (VAF)

The magnitude of mediation is assessed with:

$$VAF = \frac{\alpha_1 \beta_1}{\alpha_1 \beta_1 + c'} \times 100$$

where c' is the direct (unmediated) effect of AW on WTP.

Values between 20 and 80% indicate partial mediation—meaning the mediator explains part, but not all, of the relationship.

Ethical considerations were prioritized throughout the study. Participation was voluntary, and all respondents were informed about the purpose of the study before completing the questionnaire. No personally identifiable information was collected, ensuring full anonymity and privacy. Respondents were assured that their answers would be used solely for academic research and not shared outside the study. Because the research relied on self-reported data through an online platform, there was no physical or psychological risk to participants. The study avoided any form of deception and adhered to general ethical guidelines for social science research.

A few adjustments were made during the research process. Initially, the study planned to test a larger number of moderators, but these were narrowed down to the five most relevant ones—greenwashing risk, eco-label credibility, communication transparency, social influence, and price sensitivity—to maintain model clarity and statistical strength. Another important reflection was the choice of PLS-SEM instead of CB-SEM. Given the complexity of the framework and the sample size, PLS-SEM emerged as the more robust and appropriate technique. The online survey method also proved effective, as Gen Z respondents were more responsive to digital questionnaires than traditional methods. Overall, these refinements helped enhance the quality and feasibility of the study while staying aligned with its objectives.

Discussion

This study examined how sustainability-related beliefs among Generation Z are translated into willingness to pay (WTP) for sustainable packaging by positioning brand trust as a central mediating mechanism and by accounting for credibility, social, and economic conditions. Rather than extending or critiquing established behavioral theories, environmental awareness, perceived benefits, and green consumer values were treated as antecedent conditions, while the primary analytical focus remained on explaining how these beliefs convert into economic commitment through trust.

The findings show that environmental awareness, perceived benefits, and green values positively influence WTP primarily through brand trust. This indicates that favorable sustainability beliefs alone are insufficient to motivate premium acceptance; consumers must first trust that a brand's sustainability claims are genuine and reliable. Brand trust therefore functions as the key mechanism bridging the well-documented attitude-behavior gap in sustainable consumption, particularly in credence-based contexts such as packaging, where direct verification is difficult.

The results further demonstrate that the trust-WTP relationship is conditional. Credible eco-labels and transparent sustainability communication strengthen the effect of trust on WTP, whereas perceived greenwashing risk weakens it. These findings align with prior research showing that credibility-enhancing signals reduce uncertainty while skepticism toward sustainability claims undermines behavioral commitment. Social influence also reinforces trust formation by validating environmental information through peers and online networks, a pattern that is especially relevant for digitally

embedded Generation Z consumers. At the same time, price sensitivity constrains willingness to pay, indicating that economic considerations remain salient even among environmentally concerned respondents. This nuance tempers claims that Generation Z is uniformly willing to pay more for sustainable options.

Theoretically, the study contributes by offering a parsimonious, trust-centered explanation of sustainable packaging decisions without engaging in theory development or critique. The findings suggest that traditional attitude-based perspectives are most informative when complemented by a trust mechanism that accounts for credibility assessment and perceived risk. By focusing on when sustainability beliefs translate into behavior rather than whether they do so, the TRUST-PACT framework provides a more context-sensitive understanding of sustainable consumption in digitally mediated markets.

From a practical perspective, the results imply that appealing to environmental concern or values is unlikely to generate willingness to pay unless supported by credible and transparent communication. Brands targeting Generation Z should prioritize verifiable eco-labels, clear disclosures, and digital transparency tools that strengthen trust and reduce greenwashing perceptions. Leveraging peer and social influence can further enhance credibility, while pricing strategies should acknowledge the continued importance of cost sensitivity. Policymakers can support these efforts by strengthening certification standards and disclosure requirements to create trust-supportive market environments.

This study has several strengths, including its integrated analytical framework and the use of PLS-SEM to test mediated and moderated relationships within a single model. However, the findings should be interpreted in light of certain limitations. The cross-sectional design limits causal inference, and self-reported willingness to pay may not fully reflect actual purchasing behavior. Future research using longitudinal or experimental designs and behavioral measures would help strengthen causal claims and extend the generalizability of the results. In terms of external validity, this study relies on a purposive online sample of Generation Z consumers located in India. Although this cohort is theoretically relevant for examining trust-based responses to sustainable packaging, the findings cannot be assumed to generalize to older generations, other emerging economies, or developed markets. Cultural norms regarding environmental responsibility, national income levels, and country-specific regulatory frameworks may all influence how trust is formed, how eco-labels and digital transparency mechanisms are interpreted, and how price sensitivity constrains willingness to pay. Future research should replicate and extend the TRUST-PACT framework across different cultural and regulatory settings and across generational cohorts to assess the robustness and boundary conditions of the observed relationships. Second, the use of a single-source, cross-sectional self-report survey means that common method variance (CMV) may still be present despite the procedural and statistical remedies employed. Although diagnostic tests did not indicate a serious CMV issue, future research could strengthen the evidence base by using multi-source data, experimental manipulations, or longitudinal designs to further disentangle method effects from substantive relationships.

Despite these limitations, the study provides a clear and focused explanation of how sustainability beliefs are translated into willingness to pay through trust under specific credibility and economic conditions.

Conclusion

This study highlights that Generation Z's willingness to pay for sustainable packaging is not driven by environmental awareness, perceived benefits, or green consumer values in isolation, but is primarily enabled through brand trust. Sustainability-related beliefs translate into economic commitment only when consumers perceive sustainability claims as credible and authentic, indicating that trust functions as the key mechanism bridging the attitude–behavior gap. These findings suggest that firms cannot rely solely on pro-environmental messaging to justify price premiums; instead, credible eco-labels, transparent sustainability communication, and reduced perceptions of greenwashing are essential to strengthening trust and encouraging willingness to pay. Social influence further reinforces trust formation, while price sensitivity remains a practical constraint, highlighting that sustainable purchasing decisions among Gen Z are highly contextual rather than purely value-driven. Future efforts should therefore prioritize stronger verification systems, clearer disclosure standards, and supportive policy frameworks that reduce information asymmetry, while future research would benefit from longitudinal or experimental designs and cross-cultural extensions to further validate and refine the TRUST-PACT framework.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants provided written informed consent to participate in this study.

Author contributions

ADY: Writing – original draft, Writing – review & editing. SM: Writing – original draft, Writing – review & editing.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frsus.2026.1762826/full#supplementary-material>

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