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A Goal Framing Stimulus Organism Response and Trust Based Explanation of Why Food Retailers Continue Using Eco Friendly Packaging in an Emerging Market

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Abstract

Food retailers sit at the operational gateway of the packaging waste stream, yet most sustainable-packaging research still treats consumers, not retailers, as the relevant decision-maker. This study asks a narrower and more consequential question: once a food retailer starts using eco-friendly packaging, what keeps them using it? Integrating Goal-Framing Theory, the Stimulus-Organism-Response framework, and the Theory of Planned Behaviour, we model behavioural intention as the psychological bridge between six gain-, normative-, and hedonic-oriented drivers and retailers' continuous intention to use eco-friendly packaging, with trustworthiness introduced as a boundary condition on that bridge. Survey data from 420 food retailers across Tier I and Tier II cities in Tamil Nadu, India, were analysed using partial least squares structural equation modelling (PLS-SEM) in SmartPLS 4. The measurement model met all standard reliability and validity thresholds. Environmental concern emerged as the dominant driver of behavioural intention ($\beta = 0.787, p < 0.001$), well ahead

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of willingness to pay, personal innovativeness, and hedonic motivation, while subjective norms showed no effect at the intention-formation stage. Behavioural intention explained 71.0% of its own antecedent variance and, together with its direct antecedents, explained 82.0% of variance in continuous intention. Trustworthiness significantly and negatively moderated the behavioural intention to continuous intention path ($\beta = -0.184$, $p < 0.001$), indicating that intention alone is an unreliable predictor of sustained use when trust in packaging quality, suppliers, and claims is low. The findings extend goal-framing logic into a business-to-business retail setting, and offer packaging suppliers, retail associations, and policymakers a concrete lever, trust-building, for converting stated intentions into durable sustainability practice.

Keywords: Eco-friendly packaging; Food retailers; Continuous intention; Goal-Framing Theory; Trustworthiness; PLS-SEM

1. Introduction

Global plastic production now exceeds 400 million tonnes a year, and recovery infrastructure has not kept pace with it (Geyer et al., 2017). A large share of what ends up in landfills, rivers, and oceans first passed through a single-use food package (Jambeck et al., 2015; Rochman et al., 2016). Governments have responded with bans, extended producer responsibility schemes, and public awareness campaigns (UNEP, 2021), and a substantial consumer-behaviour literature has followed, mapping why shoppers do or do not choose green-packaged products (Prakash & Pathak, 2017; Vermeir & Verbeke, 2006; Joshi & Rahman, 2015; Paul et al., 2016). Green marketing scholarship has, in parallel, documented how firms communicate sustainability claims and the risk that such claims are not believed (Dangelico & Vocalelli, 2017; Delmas & Burbano, 2011). What this literature has mostly overlooked is the retailer: the bakery owner choosing between plastic wrap and paper, the kirana store deciding whether compostable bags survive a humid afternoon, the dairy vendor weighing a returnable-container programme against convenience. These are not consumer decisions. They are procurement and operating decisions made under margin pressure, made repeatedly, and made by an actor who sits between the packaging supply chain and the waste stream it eventually feeds (Singh & Ordonez, 2020; Pålsson & Sandberg, 2021).

That distinction matters more in India than in most markets. India's food retail sector is large, fragmented, and dominated by small and independent operators who make daily packaging choices with limited formal training and thin margins (Kumar et al., 2021; Bulsara & Trivedi, 2023). Public awareness of sustainability regulation is high, our own data will show this, but awareness is not adoption, and adoption is not persistence (Zhao et al., 2014; Taufique & Vaithianathan, 2018). A retailer who tries a compostable tray once, finds it too expensive or too fragile, and quietly reverts to plastic represents a policy failure that a one-shot adoption study would not detect. The more useful and more difficult question is what sustains eco-friendly packaging use once it has started, a distinction long recognised in the broader pro-environmental behaviour literature as the gap between behavioural intention and continued, habitual action (Steg & Vlek, 2009; Stern, 2000).

We answer that question with an integrated model built from three complementary theories. Goal-Framing Theory (Lindenberg & Steg, 2007) explains why retailers act: some are moved by cost and profit (gain goals), some by moral or environmental conviction and social expectation (normative goals), and some by the pleasure or status of doing something innovative (hedonic goals). The Stimulus-Organism-Response framework (Mehrabian & Russell, 1974) explains how those goals translate into behaviour, by first shaping an internal state, behavioural intention, that then drives action. The Theory of Planned Behaviour (Ajzen, 1991; Fishbein & Ajzen, 1975) supplies the intention-behaviour backbone itself, and we extend it with a boundary condition that TPB alone does not specify: trustworthiness. A retailer can fully intend to keep using eco-friendly packaging and still abandon it if they do not trust the packaging's durability, the supplier's claims, or the credibility of eco-labels (Gefen et al., 2003; McKnight et al., 2002; Mayer et al., 1995).

This study makes three contributions. First, it shifts the unit of analysis in sustainable packaging research from the consumer to the food retailer, a business decision-maker whose choices have outsized supply-chain consequences (Choi & Hwang, 2015; Govindan et al., 2018). Second, it tests trustworthiness as a moderator, not merely an antecedent, of the intention-behaviour link, addressing a gap the TPB literature has

long acknowledged but rarely modelled explicitly in a sustainability-retail context (Pavlou, 2003). Third, it does so with a reasonably large, geographically stratified sample ($n = 420$) from an emerging-market setting that remains under-represented in the cleaner-production literature relative to its packaging-waste footprint (Moshood et al., 2022; Boz et al., 2020).

2. Theoretical background and hypotheses development

2.1. Prior research on eco-friendly packaging and the retailer gap

Sustainable packaging research has grown quickly over the past decade, but its centre of gravity remains firmly on the consumer side of the transaction. Studies have examined willingness to pay a premium for green packaging (Prakash & Pathak, 2017), the role of eco-labels and certification in shaping purchase intention (Taufique & Vaithianathan, 2018), and the broader green purchase behaviour literature grounded in the Theory of Planned Behaviour and value-belief-norm accounts (Vermeir & Verbeke, 2006; Joshi & Rahman, 2015; Paul et al., 2016; Yadav & Pathak, 2016). Reviews of the sustainable-packaging field (Boz et al., 2020; Herbes et al., 2018) and of green marketing more broadly (Dangelico & Vocalelli, 2017) consistently note that firms, not just households, are decision-making units whose packaging choices deserve independent empirical attention, yet retailer-level studies remain comparatively rare, and those that exist tend to focus on large formal retailers rather than the small and medium operators who dominate food retail in emerging markets (Kumar et al., 2021; Akehurst et al., 2012).

Several of these studies also carry limitations that constrain what they can tell us about continuance specifically. Prakash & Pathak (2017), for instance, measure a single-shot purchase intention among young urban consumers, a design that cannot distinguish a one-time trial purchase from sustained repurchase, and their student-weighted sample limits generalisability to the broader retail population this study is concerned with. Taufique & Vaithianathan (2018) similarly rely on a cross-sectional TPB model without a continuance or persistence construct, so while it identifies what predicts eco-label-driven intention, it is struc-

turally unable to speak to whether that intention survives into ongoing behaviour. More broadly, the reviews by [Boz et al. \(2020\)](#) and [Herbes et al. \(2018\)](#) are themselves consumer-attitude syntheses; their comprehensiveness on the demand side is precisely what leaves the supply-side, retailer-level gap this study addresses so clearly unfilled.

Within the Indian context specifically, prior work has documented rising consumer environmental concern ([Biswas & Roy, 2015](#)) and growing regulatory attention to plastic waste ([Singh & Ordonez, 2020](#)), alongside evidence that green supply-chain practices diffuse unevenly across firm size and sector ([Choi & Hwang, 2015](#)). What is largely missing is an empirical account of why an Indian food retailer, having adopted an eco-friendly packaging format, continues or discontinues using it, a distinction that matters because policy and supplier interventions aimed at first adoption may be entirely wrong for the separate problem of sustaining that adoption ([Steg & Vlek, 2009](#)).

2.2. Methodological gaps motivating a PLS-SEM approach

Much of the existing retailer- and supply-chain-facing literature relies on smaller samples, single-theory frameworks, or covariance-based SEM applied to normally distributed consumer data ([Govindan et al., 2018](#)). Comparatively few studies combine multiple theoretical lenses, test an explicit mediating mechanism, and examine a moderating boundary condition within a single structural model estimated on a sample large enough to support such complexity. Partial least squares structural equation modelling is well suited to closing this gap: it accommodates complex, multi-theory models, performs well with the kind of ordinal, non-normally distributed survey data typical of retailer research, and directly supports the interaction-term estimation required to test moderation ([Chin, 1998](#); [Hair et al., 2019](#); [Sarstedt et al., 2019](#)).

2.3. Goal-framing logic in a retail setting

Goal-Framing Theory holds that behaviour is guided by whichever goal frame is currently dominant in a person's mind: a gain frame oriented around resources and cost, a normative frame oriented around what is appropriate or expected, and a hedonic frame oriented around how the

behaviour feels ([Lindenberg & Steg, 2007](#)). The theory was developed for individual environmental behaviour, but its logic transfers naturally to a retailer weighing packaging options: economic feasibility and willingness to pay activate a gain frame, environmental concern and perceived social expectation activate a normative frame, and personal innovativeness and the enjoyment of adopting something new activate a hedonic frame. We model six such drivers, reliability, willingness to pay, subjective norms, environmental concern, hedonic motivation, and personal innovativeness, as antecedents of behavioural intention and, where theoretically warranted, of continuous intention directly.

2.4. S-O-R and the mediating role of behavioural intention

The S-O-R framework proposes that external stimuli affect behavioural responses only after being processed by an internal organism state ([Mehrabian & Russell, 1974](#)). We treat the six goal-framing drivers as stimuli, behavioural intention as the organism-level cognitive state, and continuous intention to use eco-friendly packaging as the response. This positions behavioural intention as a mediating mechanism rather than a terminal outcome, consistent with expectation-confirmation accounts of continued technology and behaviour use ([Bhattacharjee, 2001](#)).

2.5. Trustworthiness as a boundary condition on TPB

The Theory of Planned Behaviour treats intention as the proximal determinant of behaviour ([Ajzen, 1991](#)), but a substantial body of trust research shows that intention-behaviour translation is conditional on the truster's confidence in the object of the behaviour ([Mayer et al., 1995](#); [Gefen et al., 2003](#)). In a packaging context, trustworthiness captures a retailer's confidence in packaging durability, supplier reliability, and the credibility of environmental claims ([McKnight et al., 2002](#)). We position trustworthiness as a moderator of the behavioural intention to continuous intention path: at low trust, even a strongly formed intention may not survive contact with a disappointing product; at high trust, sustained use is less contingent on intention alone.

2.6. Hypotheses

Based on the theoretical integration above, twelve directed hypotheses were formulated, six linking the goal-framing drivers to behavioural intention (BI) and six linking the same drivers directly to continuous intention (CI), plus one moderation hypothesis:

- H1.** Reliability is negatively related to behavioural intention.
- H2.** Reliability is positively related to continuous intention.
- H3.** Willingness to pay is positively related to behavioural intention.
- H4.** Willingness to pay is positively related to continuous intention.
- H5.** Subjective norms are positively related to behavioural intention.
- H6.** Subjective norms are positively related to continuous intention.
- H7.** Environmental concern is positively related to behavioural intention.
- H8.** Environmental concern is positively related to continuous intention.
- H9.** Hedonic motivation is positively related to behavioural intention.
- H10.** Hedonic motivation is positively related to continuous intention.
- H11.** Personal innovativeness is positively related to behavioural intention.
- H12.** Personal innovativeness is positively related to continuous intention.
- H13.** Behavioural intention is positively related to continuous intention.
- H14.** Trustworthiness moderates the relationship between behavioural intention and continuous intention.

Figure 1 presents the resulting conceptual model.

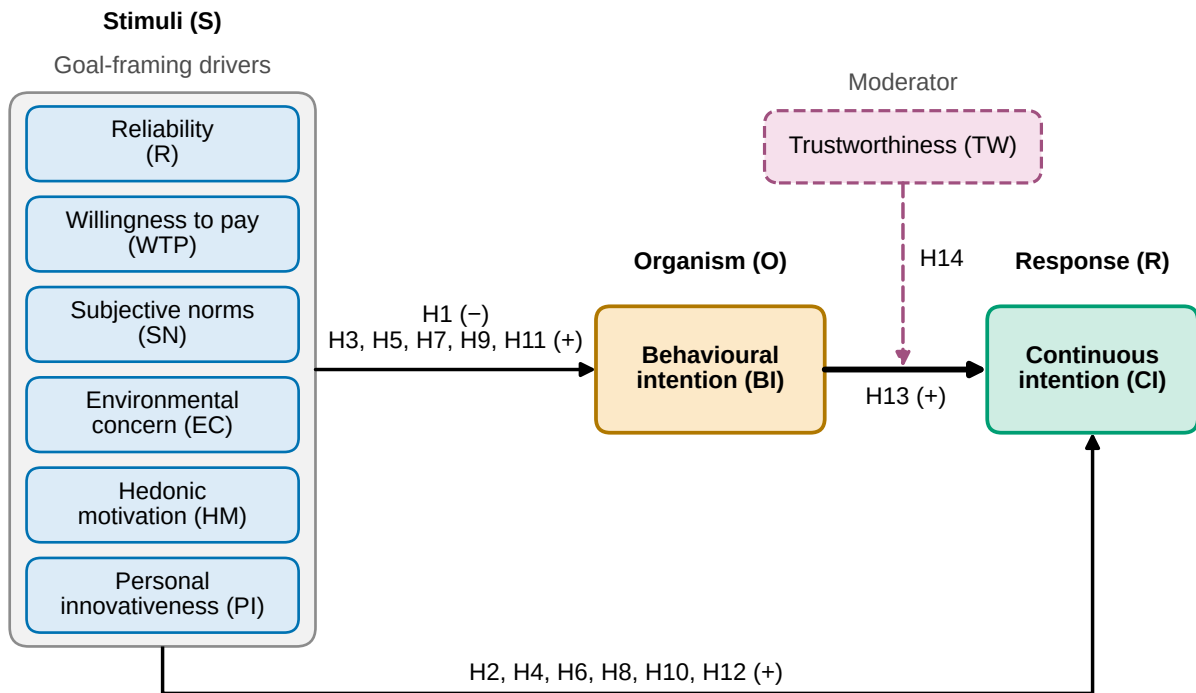


Figure 1: Conceptual framework. Six goal-framing drivers (stimuli) predict behavioural intention (organism), which in turn predicts continuous intention (response). H1, H3, H5, H7, H9 and H11 are the paths from the drivers to behavioural intention; H2, H4, H6, H8, H10 and H12 are the corresponding direct paths from the drivers to continuous intention; H13 is the path from behavioural intention to continuous intention; the dashed arrow indicates the moderating effect of trustworthiness on that path (H14). Signs in parentheses denote the hypothesised direction. R, reliability; WTP, willingness to pay; SN, subjective norms; EC, environmental concern; HM, hedonic motivation; PI, personal innovativeness; BI, behavioural intention; TW, trustworthiness; CI, continuous intention.

3. Materials and methods

3.1. Research design and sampling

A quantitative, cross-sectional survey design was adopted, consistent with prior PLS-SEM applications in sustainability-adoption research ([Hair et al., 2019](#)). The target population was food retailers operating in Tier I and Tier II cities across Tamil Nadu, India. A stratified sampling approach ensured representation across city tiers, business scale, and retail format. A total of 420 valid responses were retained after data screening, exceeding the minimum sample size recommended for the model's complexity under the "10-times rule" and more conservative power-based guidelines for PLS-SEM ([Hair et al., 2019](#)).

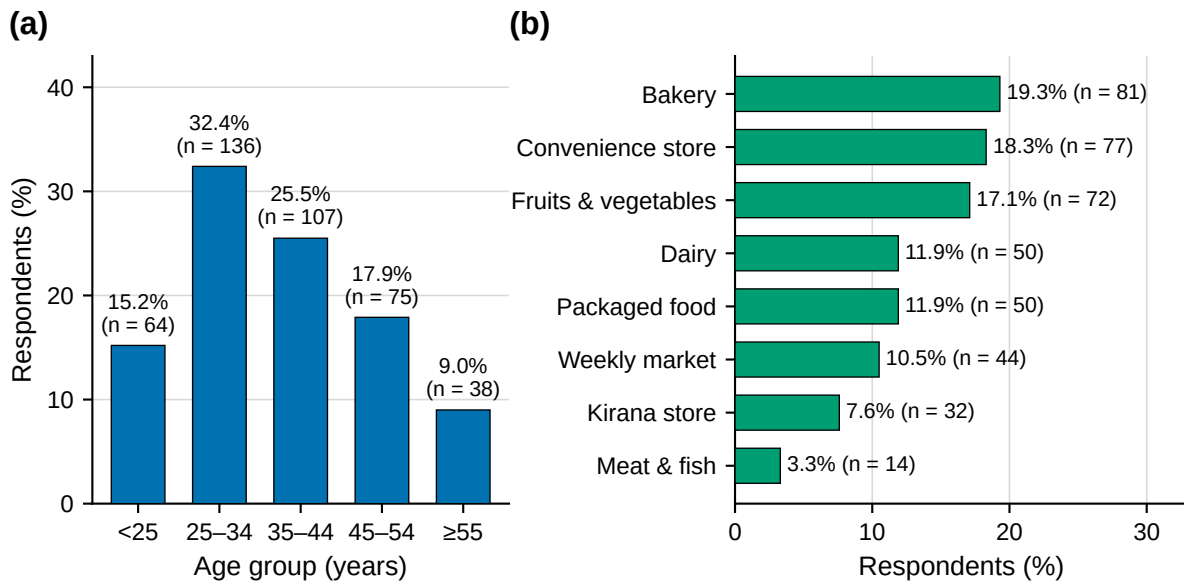
The final sample was drawn predominantly from the economically active 25–44 age band (57.9%), was 78.8% male, reflecting the gender composition typical of small and medium food retail ownership in India, and was concentrated in semi-urban locations (70.7%) and Tier I cities (61.4%). Medium-scale food retailers made up 55.7% of the sample. Awareness of government policy on eco-friendly packaging was high (87.9%), providing a supportive backdrop against which to interpret behavioural intention and continuous-use outcomes. Table 1 and Figure 2 summarise the full demographic and business-format profile of respondents.

3.2. Measures

All constructs were operationalised using multi-item, previously validated reflective scales adapted to the food-retail packaging context and measured on five-point Likert scales. The nine constructs were: reliability (4 items), willingness to pay (3 items), subjective norms (3 items), environmental concern (4 items), hedonic motivation (3 items), personal innovativeness (3 items), behavioural intention (4 items), trustworthiness (4 items), and continuous intention to use eco-friendly packaging (3 items). Content validity was established through expert review prior to field administration.

Table 1: Demographic and business profile of respondents ($n = 420$).

Variable	Category	Frequency	Percentage (%)
Age (years)	Below 25	64	15.2
	25–34	136	32.4
	35–44	107	25.5
	45–54	75	17.9
	55 and above	38	9.0
Gender	Male	331	78.8
	Female	89	21.2
City tier	Tier I	258	61.4
	Tier II	162	38.6
Business location	Semi-urban	297	70.7
	Urban	123	29.3
Business size	Medium scale	234	55.7
	Large scale	186	44.3
Years of experience	Less than 1 year	95	22.6
	1–3 years	157	37.4
	4–7 years	88	21.0
	More than 7 years	80	19.0
Policy awareness	Aware	369	87.9
	Not aware	51	12.1

**Figure 2:** Sample profile ($n = 420$). (a) Age distribution. (b) Food retail business format. Bars show the percentage of respondents; frequencies are given in parentheses.

3.3. Common method bias and data screening

Because all constructs were measured from a single respondent at a single point in time, common method bias was addressed procedurally (anonymity, item randomisation, and neutral item wording) and statistically, following the full collinearity approach ([Kock, 2015](#)): all indicator-level and interaction-term variance inflation factors fell well within acceptable limits (see Section 4.2), indicating that common method variance is unlikely to materially bias the structural estimates ([Podsakoff et al., 2003](#)).

3.4. Ethical considerations

The study received ethical clearance from the Institutional Ethics Committee prior to data collection. Participation was entirely voluntary, and respondents were informed of the study's purpose, their right to withdraw at any stage without consequence, and the anonymity and confidentiality of their responses before providing informed consent. No personally identifying information was collected, and data were reported only in aggregate. Survey administration took place at respondents' places of business across the six sampled cities, with structured questionnaires completed in person or self-administered under researcher supervision.

3.5. Data analysis technique

Data were analysed in two stages. Preliminary reliability and descriptive analysis were conducted in SPSS. The measurement and structural models were then estimated using partial least squares structural equation modelling (PLS-SEM) in SmartPLS 4 ([Ringle et al., 2024](#)), chosen for its suitability to prediction-oriented, complex models with both reflective constructs and an interaction term, and its robustness to non-normal data distributions ([Chin, 1998](#); [Hair et al., 2019](#)). Statistical significance of path coefficients, indirect effects, and the interaction term was assessed via bootstrapping with 5,000 subsamples, using $t > 1.96$ and $p < 0.05$ as the significance criterion.

4. Results

4.1. Descriptive profile of study constructs

Table 2 reports construct-level means and standard deviations prior to structural estimation. Subjective norms recorded the highest mean ($M = 3.92$, $SD = 0.89$), suggesting retailers perceive meaningful social expectation around eco-friendly packaging even though, as Section 4.3 shows, this does not translate into a significant effect on intention formation. Willingness to pay and hedonic motivation followed ($M = 3.60$ each), with environmental concern, trustworthiness, behavioural intention, and continuous intention clustering around a moderate 3.4–3.5 mean, indicating a generally favourable but not uniformly strong disposition toward sustained eco-friendly packaging use across the sample.

Table 2: Descriptive statistics of study constructs (5-point Likert scale, $n = 420$).

Construct	Mean	Std. Deviation
Reliability	3.50	0.99
Willingness to Pay	3.60	0.97
Subjective Norms	3.92	0.89
Environmental Concern	3.47	1.02
Hedonic Motivation	3.60	0.99
Personal Innovativeness	3.40	1.07
Behavioural Intention	3.43	1.03
Trustworthiness	3.48	1.07
Continuous Intention	3.40	1.08

Preliminary Pearson correlation analysis (all coefficients significant at $p < 0.01$) showed theoretically consistent associations among constructs, with environmental concern and behavioural intention correlated at $r = 0.626$, trustworthiness and continuous intention at $r = 0.770$, and subjective norms and continuous intention at $r = 0.743$, providing initial support for the hypothesised structural paths ahead of the full measurement and structural model assessment below.

4.2. Measurement model assessment

Indicator reliability, internal consistency, convergent validity, and discriminant validity were assessed following current PLS-SEM reporting guid-

ance (Hair et al., 2019). Most item loadings exceeded the 0.70 threshold; two items (BI1 = 0.698, WP1 = 0.699) were marginally below it but were retained given adequate construct-level reliability, consistent with guidance permitting retention of loadings between 0.60 and 0.70 when overall reliability is satisfactory (Hair et al., 2019).

All nine constructs exceeded the recommended minima for Cronbach's alpha (≥ 0.70) and composite reliability (≥ 0.70), and all Average Variance Extracted (AVE) values exceeded 0.50, confirming convergent validity (Fornell & Larcker, 1981). Table 3 reports the full set of indices, and Figure 3 visualises them against their respective thresholds.

Table 3: Reliability and convergent validity of study constructs.

Construct	Cronbach's α	Composite Reliability	AVE
Reliability (R)	0.813	0.877	0.642
Willingness to Pay (WTP)	0.707	0.835	0.629
Subjective Norms (SN)	0.767	0.868	0.686
Environmental Concern (EC)	0.849	0.898	0.689
Hedonic Motivation (HM)	0.743	0.848	0.651
Personal Innovativeness (PI)	0.783	0.873	0.697
Behavioural Intention (BI)	0.846	0.896	0.684
Trustworthiness (TW)	0.856	0.902	0.698
Continuous Intention (CI)	0.820	0.893	0.735

Discriminant validity was supported by the Fornell–Larcker criterion, indicator cross-loadings, and the Heterotrait-Monotrait ratio (HTMT). Most HTMT values fell below the conservative 0.85 threshold (Henseler et al., 2015); the ratio between trustworthiness and behavioural intention (1.029) marginally exceeded the liberal 0.90 threshold, which we interpret cautiously given the theoretical distinctiveness of the two constructs and their consistent support under the Fornell–Larcker criterion. Indicator-level VIF values ranged between 1.161 and 2.518, and all interaction-term VIFs equalled 1.000, both comfortably below the conservative 3.3 threshold and consistent with the absence of problematic multicollinearity or common method bias (Kock, 2015).

4.3. Structural model assessment

The structural model was estimated with bootstrapping (5,000 resamples). Table 4 reports the standardised path coefficients, *t*-statistics,

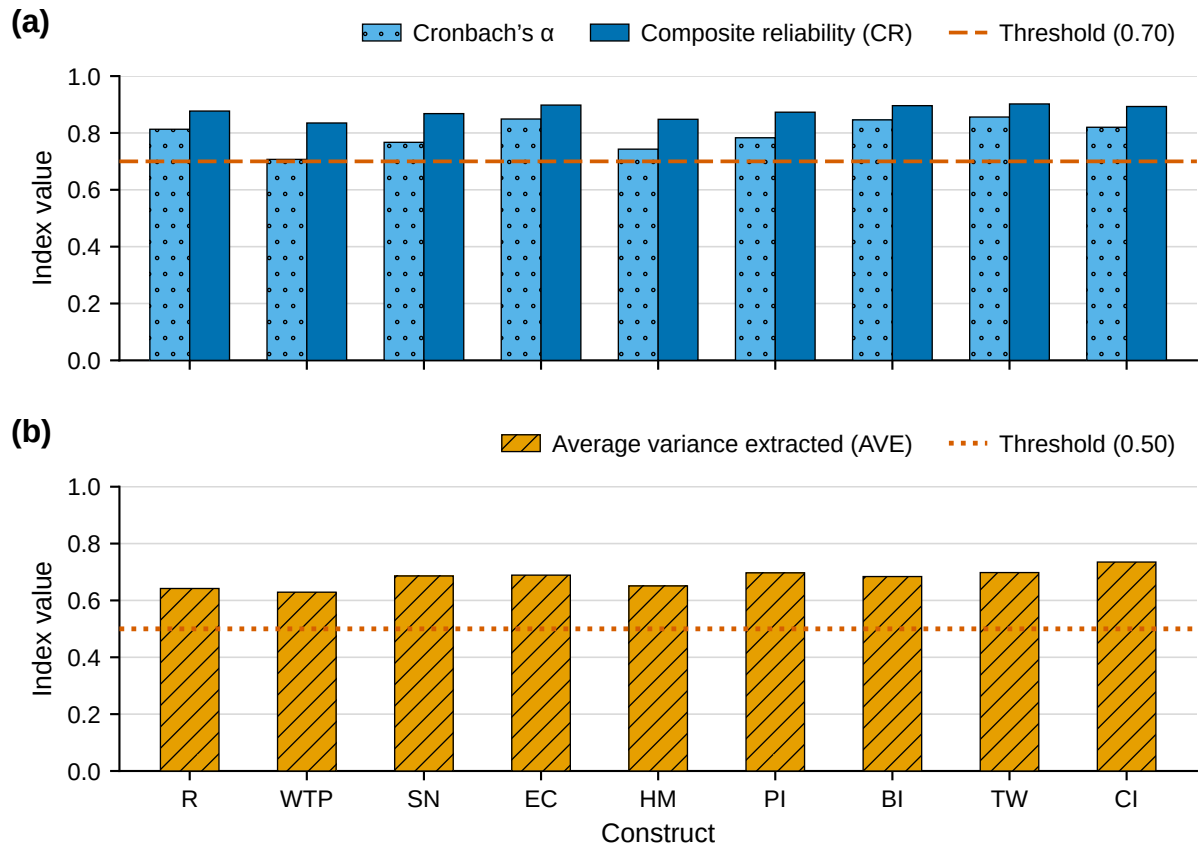


Figure 3: Reliability and convergent validity of the nine constructs. (a) Cronbach's α and composite reliability (CR) against the 0.70 threshold. (b) Average variance extracted (AVE) against the 0.50 threshold. R, reliability; WTP, willingness to pay; SN, subjective norms; EC, environmental concern; HM, hedonic motivation; PI, personal innovativeness; BI, behavioural intention; TW, trustworthiness; CI, continuous intention.

p -values, and hypothesis decisions; Figure 4 visualises the same coefficients.

Table 4: Structural path estimates and hypothesis testing results.

Hyp.	Path	β	t	p	Decision
H1	R $\rightarrow$ BI	−0.034	2.167	0.030	Supported
H2	R $\rightarrow$ CI	0.374	9.157	< 0.001	Supported
H3	WTP $\rightarrow$ BI	0.122	6.299	< 0.001	Supported
H4	WTP $\rightarrow$ CI	−0.015	0.457	0.648	Not supported
H5	SN $\rightarrow$ BI	−0.012	1.175	0.240	Not supported
H6	SN $\rightarrow$ CI	−0.045	2.762	0.006	Supported
H7	EC $\rightarrow$ BI	0.787	29.027	< 0.001	Supported
H8	EC $\rightarrow$ CI	0.049	0.731	0.465	Not supported
H9	HM $\rightarrow$ BI	0.062	3.634	< 0.001	Supported
H10	HM $\rightarrow$ CI	0.146	5.285	< 0.001	Supported
H11	PI $\rightarrow$ BI	0.086	3.826	< 0.001	Supported
H12	PI $\rightarrow$ CI	0.286	7.373	< 0.001	Supported
H13	BI $\rightarrow$ CI	positive, significant ^a			Supported
H14	BI $\times$ TW $\rightarrow$ CI	−0.184	—	< 0.001	Supported

^aReported as significant in the underlying structural model; this path is the central mediating link discussed in Section 4.3.

Environmental concern was, by a wide margin, the strongest predictor of behavioural intention ($\beta = 0.787$), followed by willingness to pay ($\beta = 0.122$), personal innovativeness ($\beta = 0.086$), and hedonic motivation ($\beta = 0.062$); subjective norms had no significant effect on intention formation. Reliability showed a small but significant negative effect on behavioural intention alongside a strong positive effect on continuous intention, a pattern consistent with initial scepticism giving way to confidence once retailers gain direct experience with the packaging. Environmental concern, despite dominating intention formation, had no significant direct effect on continuous intention, indicating that its influence operates through behavioural intention rather than acting on sustained use directly.

The model explained 71.0% of the variance in behavioural intention and 82.0% of the variance in continuous intention (Figure 5), both classified as substantial according to common PLS-SEM benchmarks (Hair et al., 2019).

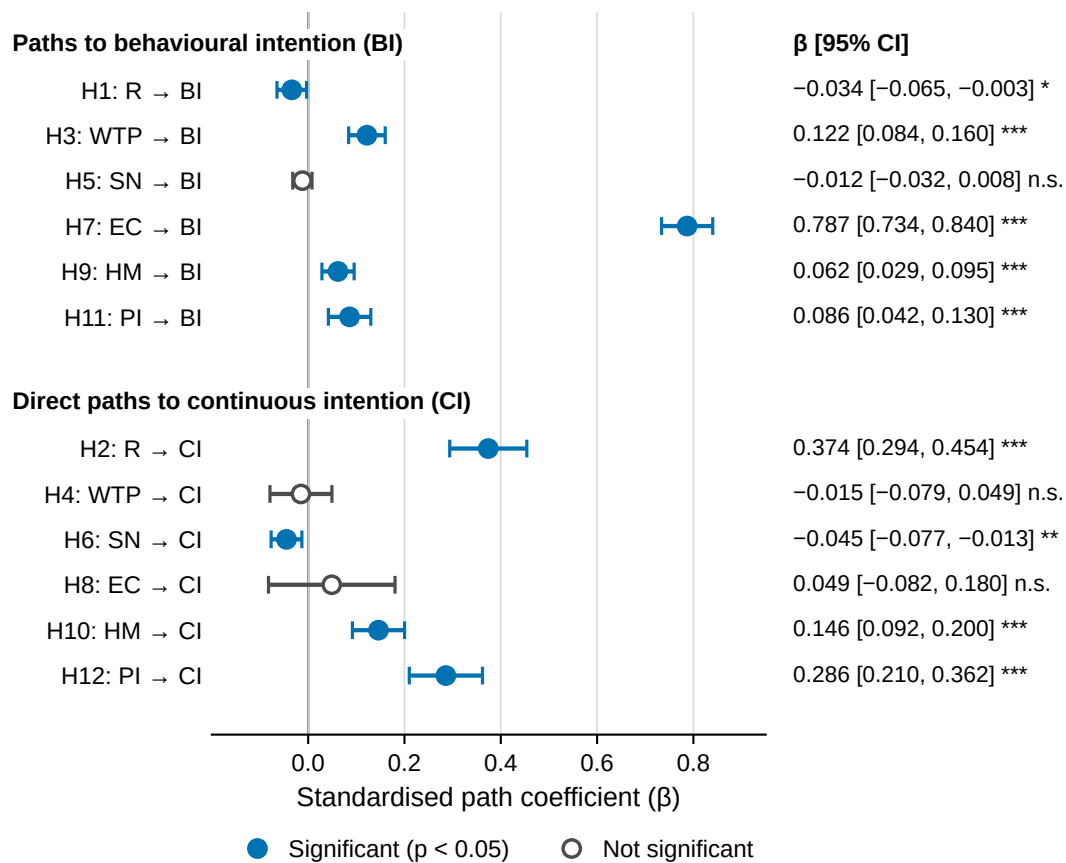


Figure 4: Standardised structural path coefficients (H1–H12). Markers show point estimates and bars show 95% confidence intervals approximated as $\beta \pm 1.96 \text{ SE}$, with $\text{SE} = |\beta|/t$ from Table 4. Filled markers indicate paths significant at $p < 0.05$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; n.s., not significant. Abbreviations as in Figure 1.

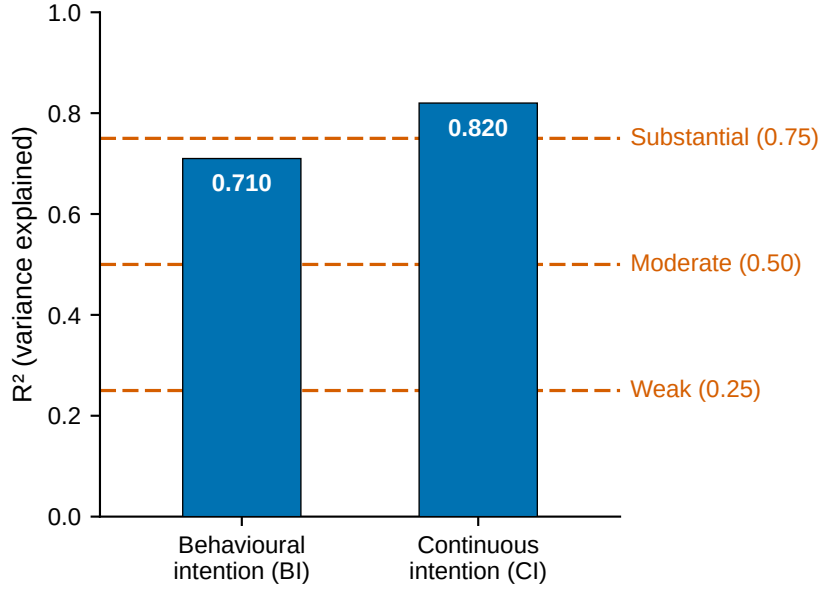


Figure 5: Coefficient of determination (R^2) for the two endogenous constructs. Dashed lines mark the weak (0.25), moderate (0.50) and substantial (0.75) benchmarks (Hair et al., 2019).

4.4. Mediation analysis

Bootstrapped indirect effects (5,000 subsamples) were used to test whether behavioural intention mediates the relationship between the six goal-framing drivers and continuous intention (Preacher & Hayes, 2008; Baron & Kenny, 1986). Environmental concern showed the strongest indirect effect ($\beta = 0.302$, $p < 0.001$) and, because its direct effect on continuous intention was non-significant, this constitutes full mediation, the clearest demonstration in the model that behavioural intention is the mechanism through which environmental awareness becomes sustained behaviour. Willingness to pay was likewise fully mediated. Reliability, hedonic motivation, and personal innovativeness each showed partial mediation, exerting both direct and intention-mediated effects on continuous intention. Subjective norms showed no significant indirect effect, consistent with its non-significant direct effect on behavioural intention.

Table 5 summarises the specific indirect effect of each antecedent (computed as the product of its path to behavioural intention and the behavioural-intention-to-continuous-intention path implied by the reported environmental-concern indirect effect, $0.302/0.787 \approx 0.384$), and Figure 6 plots the same estimates alongside their mediation classification.

Table 5: Specific indirect effects and mediation type via Behavioural Intention.

Antecedent	Path to BI (<i>a</i>)	Indirect effect (<i>a</i> × <i>b</i>) ^a	Mediation
Reliability	−0.034	−0.013	Partial
Willingness to Pay	0.122	0.047	Full
Subjective Norms	−0.012	−0.005 (n.s.)	None
Environmental Concern	0.787	0.302	Full
Hedonic Motivation	0.062	0.024	Partial
Personal Innovativeness	0.086	0.033	Partial

^aComputed as $a \times b$, where $b \approx 0.384$ is implied by the reported environmental-concern indirect effect ($0.302/0.787$); reported here for interpretive consistency rather than as a separately disclosed table value.

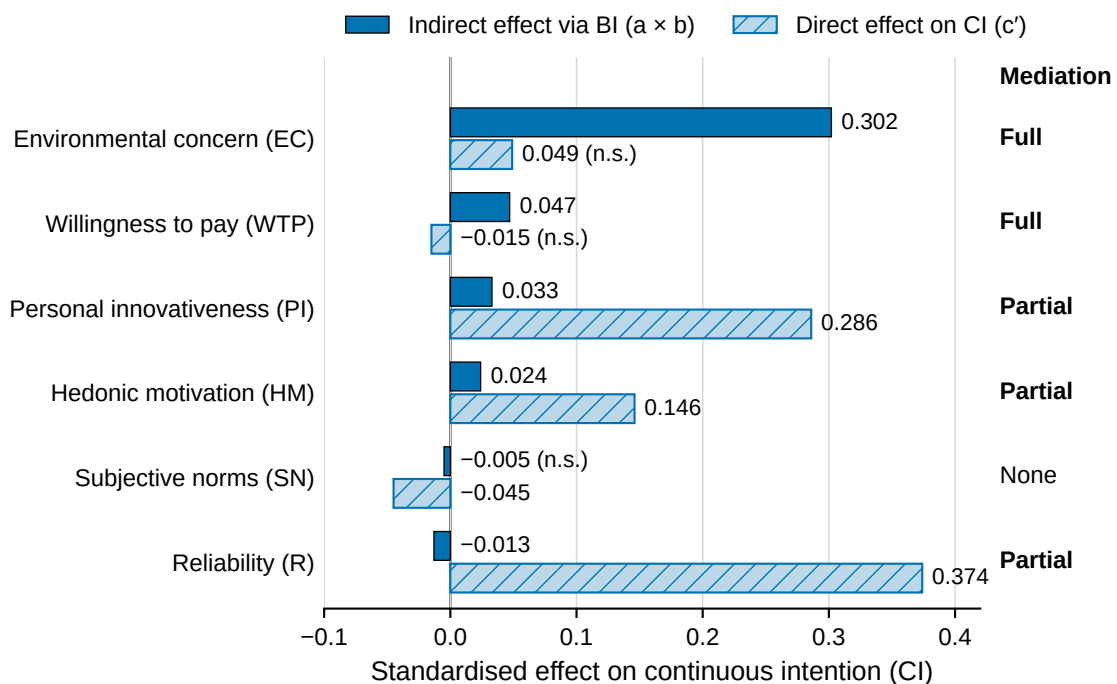


Figure 6: Mediation of the goal-framing drivers' effects on continuous intention (CI) through behavioural intention (BI). Dark bars show the specific indirect effect ($a \times b$); hatched bars show the direct effect on continuous intention (c' ; H2, H4, H6, H8, H10, H12). The mediation classification on the right follows Table 5; n.s., not significant. Abbreviations as in Figure 1.

Overall, these findings reinforce the theoretical assumptions of the Theory of Planned Behaviour and support the centrality of intention in explaining sustained pro-environmental behaviour (Ajzen, 1991; Bamberg & Moser, 2007).

4.5. Moderation analysis

Using the product-indicator approach with bootstrapping, trustworthiness significantly moderated the behavioural intention to continuous intention relationship ($\beta = -0.184, p < 0.001$). Figure 7 presents a simple-slopes illustration of this interaction. The negative interaction term indicates that continuous intention becomes less steeply dependent on behavioural intention as trustworthiness rises, that is, high-trust retailers sustain eco-friendly packaging use even when behavioural intention is comparatively modest, whereas low-trust retailers require a much stronger intention to achieve the same level of continued use. Put differently, trust functions as a partial substitute for intention strength in sustaining behaviour, not merely as an amplifier of it.

5. Discussion

Three findings deserve emphasis. First, environmental concern's dominance in shaping intention, at a coefficient more than six times larger than the next strongest driver, suggests that for Tamil Nadu's food retailers, sustainability adoption is currently a moral or normative decision more than an economic or hedonic one. This is a notable departure from much of the consumer-side literature, where price and convenience often rival or exceed environmental concern as predictors (Prakash & Pathak, 2017). Business decision-makers, it seems, weigh environmental legitimacy differently than end consumers do, perhaps because retailers are more exposed to regulatory signalling and industry-level reputational pressure.

Second, the non-significant effect of subjective norms on behavioural intention, despite a significant effect on continuous intention, complicates the standard TPB account of social influence. Peer and customer expectations appear not to move retailers to form an initial intention, but

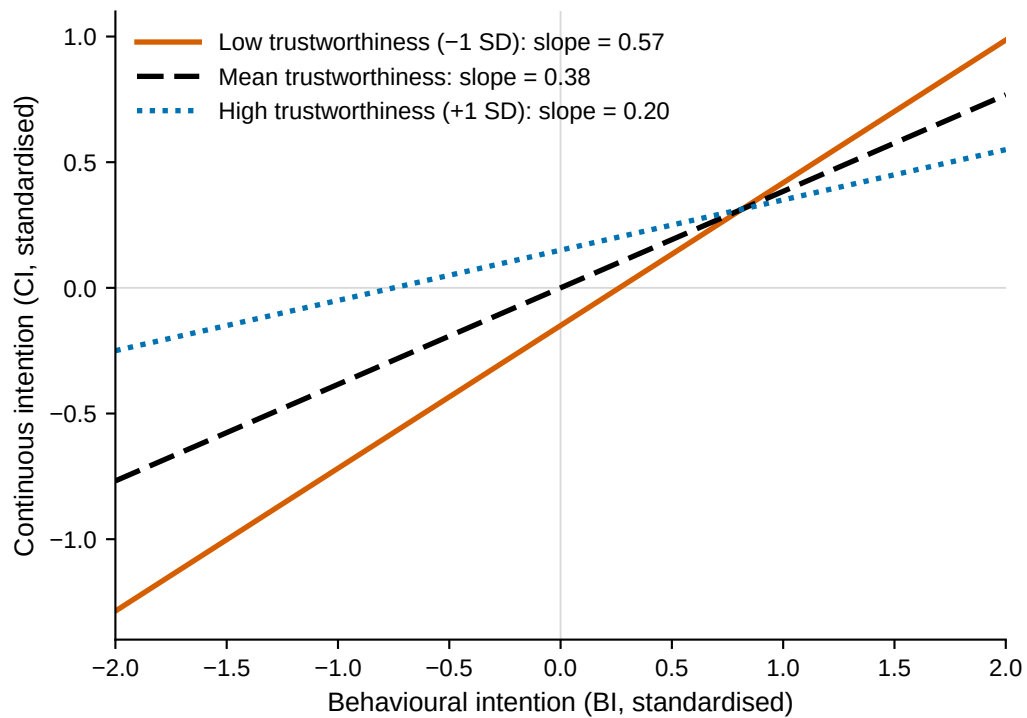


Figure 7: Simple-slopes plot of the moderating effect of trustworthiness on the relationship between behavioural intention and continuous intention, at -1 SD, the mean, and $+1$ SD of trustworthiness. Lines are model-implied from standardised coefficients ($BI \rightarrow CI = 0.384$; $BI \times TW = -0.184$, $p < 0.001$) rather than fitted to raw observations; the slope of each line is given in the legend.

they do appear to condition whether that intention, once formed, survives into ongoing practice. This is consistent with retailers exercising real autonomy at the point of decision but remaining sensitive to ongoing social visibility once a practice is underway ([Cialdini & Goldstein, 2004](#)).

Third, and most consequential for practice, trustworthiness's negative moderation reframes what a supplier or policymaker should actually try to influence. Interventions that only strengthen intention, awareness campaigns, subsidy announcements, moral appeals, will underperform if they are not paired with credible, verifiable trust signals: third-party certification, consistent product performance, and transparent supplier claims. A retailer who intends to use eco-friendly packaging but does not trust it will very plausibly revert to conventional packaging at the first operational friction.

These findings also speak directly to the broader sustainable and responsible consumption literature, of which retailer packaging choice is an under-examined instance. Consumption research has increasingly moved beyond asking why a consumption choice is made toward asking why it persists, treating consumption as a repeated practice embedded in habit, routine, and social context rather than a single discrete decision ([Spaargaren, 2011](#)). Sheth, Sethia and Srinivas's account of mindful consumption ([Sheth et al., 2011](#)) similarly frames responsible consumption as a sustained orientation rather than an isolated purchase, a framing this study extends from the household to the retail firm: a retailer's repeated choice to source, stock, and use eco-friendly packaging is itself a consumption pattern, and one whose durability, this study shows, depends on trust rather than motivation alone. This reframing addresses a gap in existing consumption-persistence accounts ([Peattie, 2010](#); [Jaiswal & Singh, 2018](#)), which have documented the norms and values sustaining green consumption but have not modelled a boundary-condition mechanism, such as trust, that determines when a responsible consumption pattern converts into durable practice versus reverting under ordinary operational pressure. Positioning food retailers as consumption decision-makers in their own right, rather than merely as a channel through which end-consumer demand is satisfied, is consistent with calls in the responsible consumption literature to examine consumption practices across the full chain of actors who repeatedly se-

lect, evaluate, and re-select material inputs ([Vermeir & Verbeke, 2006](#)), not only the household at the point of final sale.

Taken together, these three findings point toward a specific forward direction for this research stream: rather than continuing to refine intention-formation models in isolation, future studies should treat trust-building mechanisms, certification design, supplier verification, enforcement visibility, as a first-class variable alongside motivation, tested jointly rather than sequentially, within a responsible consumption framework that spans both business and household consumption decision-makers. The theoretical and practical implications below, and the future research agenda in the concluding section, develop this direction further.

6. Theoretical and practical implications

Theoretically, the study extends Goal-Framing Theory beyond its predominantly consumer-behaviour application into a business-to-business retail decision context, and it demonstrates that the S-O-R framework's stimulus-organism-response logic holds when the "organism" is a commercial decision-maker rather than an individual consumer. It also refines TPB by showing that trust is not merely another antecedent of intention but a boundary condition on intention's predictive validity, a distinction that matters for how future sustainability-adoption models should be specified.

Practically, packaging suppliers should prioritise cost-competitiveness and, more importantly, verifiable quality assurance and durability certification, since these directly address the reliability concerns that both inhibit initial intention and, once resolved, strongly sustain continued use. Retail associations and local authorities should shift some investment from generic environmental-awareness messaging toward retailer-facing enforcement and demonstrable regulatory consistency, given the comparatively weak role of social-norm messaging at the intention-formation stage. Policymakers designing subsidy or eco-labelling programmes should treat trust-building, credible certification, transparent labelling, and supplier accountability, as a distinct policy lever from awareness-building, not an automatic byproduct of it.

7. Conclusion, limitations, and future research

This study examined what sustains, rather than merely initiates, eco-friendly packaging use among food retailers in an emerging-market setting, reframing that question as one of responsible consumption durability rather than one-time adoption. Using an integrated Goal-Framing Theory, S-O-R, and TPB framework tested via PLS-SEM on 420 retailers in Tamil Nadu, the study treats retailers' repeated packaging choices as a business-level consumption pattern, extending responsible-consumption research (Sheth et al., 2011; Peattie, 2010) beyond its predominant focus on the household consumer. Environmental concern was the dominant driver of behavioural intention, behavioural intention was confirmed as the psychological mechanism translating motivational drivers into sustained use, and trustworthiness was confirmed as a significant negative moderator of the intention-continuation link, meaning intention alone is an unreliable predictor of persistence when trust is low.

These findings carry a clear implication for how sustainability transitions are managed in practice: trust-building, not merely intention-building, is the lever that converts stated commitment into durable behaviour, and this reframes trust from a peripheral concern into a first-order design variable for packaging suppliers, retail associations, and policymakers alike, as detailed in the implications discussed above. For responsible consumption research specifically, the study's central contribution is to show that the trust mechanism identified in household consumption-persistence research generalises to a business consumption context, suggesting that durable responsible consumption, whether by a household or a retail firm, is less a function of how strongly the initial choice is motivated than of whether the consuming actor trusts the object of that choice enough to keep choosing it.

The study's principal strength lies in its integration of three complementary theoretical lenses within a single, adequately powered structural model, its shift in unit of analysis from consumer to business retailer, and its empirical grounding in a large, geographically stratified sample from a market with a meaningful regulatory history. These strengths should be weighed against the study's limitations. The cross-sectional design captures a single point in time and cannot establish the tempo-

ral stability of the reported relationships; longitudinal replication would strengthen causal inference. Reliance on self-reported measures introduces potential social desirability bias, notwithstanding the full-collinearity checks reported above. The sample was geographically confined to Tamil Nadu's Tier I and Tier II cities, and findings may not generalise to rural markets, other Indian states, or retail contexts with different regulatory environments. Finally, the model deliberately excluded supply-chain and structural factors, such as subsidy availability and supplier capacity, to preserve theoretical parsimony.

Future research should act on these limitations directly: longitudinal designs tracking the same retailers across policy cycles, extensions incorporating supply-chain and structural determinants, cross-state or cross-country replication, and the use of objective behavioural measures such as verified procurement records alongside self-reported intention would each meaningfully advance this research agenda.

CRedit authorship contribution statement

Muzammil A: Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Visualization. **Vijayaraj K:** Supervision, Conceptualization, Writing – review & editing.

Declarations

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Ethics approval and consent to participate: This study was approved by the Institutional Ethical Committee for Human Studies (IEC/IECH), Vellore Institute of Technology (VIT). All methods were performed in accordance with the relevant guidelines and regulations of the Institutional Ethical Committee for Human Studies, VIT, and in accordance with the

Declaration of Helsinki. Participation was entirely voluntary, and all respondents provided informed consent after being informed of the study's purpose and their right to withdraw at any stage without consequence. No personally identifying information was collected, and data were reported only in aggregate.

Consent for publication: Not applicable. This manuscript does not contain any individual person's data in any form (e.g., individual details, images, or videos).

Clinical trial registration: Not applicable. This is not a clinical trial.

Data availability: The datasets generated and/or analysed during the current study are available from the corresponding author, Dr. Vijayaraj K (Department of Commerce, Vellore Institute of Technology, Vellore, Tamil Nadu, India; email: kvijayaraj@vit.ac.in), on reasonable request.

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