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PACKAGING DESIGN, BRAND TRUST, CONSUMER INVOLVEMENT, AND PURCHASE INTENTION: EVIDENCE FROM PAKISTANI CONSUMER MARKETS

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Abstract

Packaging has evolved from a purely protective function into a strategic marketing instrument, yet empirical evidence on how packaging design shapes purchase intention remains scarce for Pakistan, a market with retail infrastructure, income distribution, and consumer literacy profiles distinct from the Southeast Asian, East Asian, and Sub-Saharan African contexts in which most recent evidence has been generated. This study addresses that gap by testing an integrated model, grounded in the Stimulus-Organism-Response framework, signalling theory, and the Elaboration Likelihood Model, in which packaging design influences purchase intention directly and indirectly through brand trust, with consumer involvement moderating the strength of this relationship. Data were collected from 290 adult Pakistani consumers via a structured online survey using validated multi-item scales, and analysed using partial least squares structural equation modelling (PLS-SEM) in SmartPLS 4. The measurement model demonstrated adequate reliability, convergent validity, and discriminant validity. All five hypotheses were significant and supported except HI: packaging design significantly predicted purchase intention (β = -0.268, $p < .000$) and brand trust (β = 0.416, $p < .001$); brand trust significantly predicted purchase intention (β = 0.042, $p < .001$) and partially mediated the packaging-purchase intention relationship (indirect effect = 0.146, VAF = 40.4%); and consumer involvement significantly moderated the packaging-purchase intention link, with the effect strengthening from β = 0.206 at low involvement to β = 0.507 at high involvement. These findings extend recent conceptual refinements in brand trust and sustainable packaging design equity to an under-represented consumer context, and offer FMCG brand managers an evidence-based basis for calibrating packaging investment between trust-building and immediate persuasive objectives across consumer segments of differing involvement. Limitations relating to the cross-sectional design and non-probability sampling, along with directions for future research, are discussed.

Keywords: *Packaging design; brand trust; consumer involvement; purchase intention; PLS-SEM; Pakistan*

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CHAPTER 1: INTRODUCTION

1.1 Background of the Study

Packaging has moved well beyond its original protective function to become a strategic marketing instrument and, for many products, the only point of direct contact between a brand and a consumer at the moment of choice (Nguyen et al., 2024). In fast-moving consumer goods (FMCG) categories especially, packaging operates as a 'silent salesman', communicating quality, identity, and value in the absence of a sales representative. As retail environments in South Asia become more competitive and increasingly digitally mediated, understanding how packaging design shapes downstream consumer outcomes has taken on renewed commercial and academic importance (Huang & Park, 2024).

Pakistan's packaged consumer goods sector has expanded rapidly over the past decade, driven by urbanisation, rising disposable incomes, and growing exposure to global retail formats such as supermarkets, hypermarkets, and e-commerce platforms. Within this environment, brand trust and consumer involvement have emerged as critical constructs that determine whether packaging cues translate into actual purchase intention. Brand trust captures a consumer's confidence in a brand's reliability and integrity (Martinez & Lopez, 2024), while consumer involvement reflects the personal relevance a consumer attaches to a purchase decision (Lee & Choi, 2024). Both constructs plausibly condition the strength and mechanism through which packaging design influences purchase intention, yet their joint operation remains under-tested in South Asian retail contexts.

1.2 Problem Statement

A substantial body of recent research links packaging design to purchase intention (Ramli & Hassan, 2024; Nguyen et al., 2024; Rao & Krishnan, 2024) and to brand trust (Chen & Wu, 2024; Patel & Kim, 2024). However, this evidence base is concentrated in Southeast Asian, East Asian, and Sub-Saharan African markets, with comparatively little empirical validation from Pakistan — a market with distinct retail infrastructure, income distribution, and consumer literacy profiles that plausibly moderate how packaging cues are processed (cf. Okafor & Mensah, 2024, on cognitive overload among lower-literacy segments). Moreover, while brand trust and consumer involvement have each been studied as boundary or mediating conditions, few studies test a single integrated model in which brand trust mediates, and consumer involvement moderates, the packaging design–purchase intention relationship simultaneously. Persistent concerns about the discriminant validity of brand trust measures (Sharma & Gupta, 2024) further suggest that this relationship warrants re-examination with a carefully operationalised, contemporary instrument.

1.3 Research Gap

Three gaps in the literature motivate this study. First, a contextual gap: recent evidence on packaging design, brand trust, and purchase intention is drawn predominantly from Southeast Asia, Ghana, India, and Western digital retail settings, with limited direct evidence from Pakistani consumers. Second, an integration gap: although the Stimulus-Organism-Response (S-O-R) framework, signalling theory, and the Elaboration Likelihood Model (ELM) have each been applied separately to elements of this relationship, few studies combine them into a single structural model that tests direct, mediated, and moderated pathways together. Third, a measurement gap: recent critiques of brand trust's discriminant validity (Sharma & Gupta, 2024) and of unidimensional packaging measures (Chen & Wu, 2024) indicate a need for updated, multidimensional operationalisations validated outside their original contexts.

1.4 Research Questions

- RQ1: Does packaging design have a significant effect (positive/negative) on purchase intention among Pakistani consumers?
- RQ2: Does packaging design have a significant positive effect on brand trust?
- RQ3: Does brand trust have a significant positive effect on purchase intention?
- RQ4: Does brand trust mediate the relationship between packaging design and purchase intention?
- RQ5: Does consumer involvement moderate the relationship between packaging design and purchase intention?

1.5 Research Objectives

- To examine the effect of packaging design on purchase intention.
- To examine the effect of packaging design on brand trust.

- To examine the effect of brand trust on purchase intention.
- To examine the mediating role of brand trust in the packaging design–purchase intention relationship.
- To examine the moderating role of consumer involvement in the packaging design–purchase intention relationship.

1.6 Significance of the Study

Theoretically, the study integrates the S-O-R framework, signalling theory, and the ELM into a single testable model, and extends recent conceptual refinements — the three-dimensional brand trust framework (Martinez & Lopez, 2024) and sustainable packaging design equity (Patel & Kim, 2024) — into an under-represented consumer context. Practically, the findings are intended to help FMCG brand managers and packaging designers allocate resources between aesthetic and informational packaging elements, calibrate trust-building signals, and tailor communication to consumers at different involvement levels. Contextually, the study addresses the shortage of empirical consumer behaviour research from Pakistan relative to the more extensively studied East and Southeast Asian markets.

1.7 Scope and Delimitations

The study is delimited to adult consumers (18 years and above) residing in urban and peri-urban areas of Pakistan who have purchased a packaged consumer good within the preceding three months and who are active users of digital communication channels. It employs a quantitative, cross-sectional survey design and does not extend to business-to-business purchasing, unpackaged services, or offline-only consumer segments without digital access. As a cross-sectional design, the study establishes association rather than causal precedence; this limitation, along with its implications for interpreting the findings, is discussed further in Chapter 3.

CHAPTER 2: LITERATURE REVIEW

2.1 Packaging Design: Definitional Clarity

Packaging design is the process of shaping the outer appearance of products to convey brand identity, quality, and trigger consumers' reactions at the point of sale (POTS) (Ramli & Hassan, 2024). The role of packaging is not only to protect the product but also serves as a 'silent salesman' which communicates with consumers without the presence of personal selling (Nguyen et al., 2024). The multisensory nature, involving aspects of colour, typography, texture, structural form and sustainability signalling, is highlighted in current definitions.

According to Ramli and Hassan (2024), who examined FMCG markets in Southeast Asia, packaging design is a set of cues that encompass both informational and aesthetic components, which are manifested in six sub-dimensions—visual appeal, information clarity, eco-friendliness, uniqueness, material quality, ease of use—that anchor consumers' initial evaluation of the brand. This multi-dimensional perspective is in line with Zhou et al.'s (2023) assertion of packaging as a shroud of sensory and cognitive input rather than one.

Chen and Wu (2024) question the previous unidimensional approach, which focuses only on the colour or graphics of packaging, in light of the various aspects consumers process when purchasing less differentiated products. This is the first introduction of a structural equation model in the fields of cosmetics, food and electronics, where they were able to identify that elements of information, independent of aesthetic qualities, influence brand evaluation, and that these findings have direct relevance to the measurement of the construct.

Building on this, Patel and Kim (2024) add on the sustainable packaging design equity which they demonstrate in a cross-national study (N = 1,240) that consumers in emerging markets and developed markets are increasingly considering eco-packaging information as a part of brand quality evaluations, especially as regulatory and market pressure for sustainable packaging has increased globally.

2.2 Brand Trust: Definitional Clarity

Brand trust is a consumer's confident belief in a brand's reliability, integrity, and benevolence in consistently delivering on its promises (Martinez & Lopez, 2024). Rooted in interpersonal trust theory, it is theorised as a key mediating link between brand exposure and long-term loyalty. Earlier work distinguished competence trust (the brand performs as expected) from benevolence trust (the brand acts in the consumer's interest); recent research adds further nuance.

Martinez and Lopez (2024), reviewing 87 studies published between 2019 and 2023, identify a third dimension — transparency trust, consumers' belief that brands communicate honestly about products,

processes, and values. Their meta-analysis found transparency trust more predictive of repurchase intention than competence trust for high-involvement products, supporting a three-dimensional brand trust framework.

Sharma and Gupta (2024), however, caution that brand trust overlaps conceptually with brand credibility and authenticity. Their confirmatory factor analysis across e-commerce and physical retail found brand trust items frequently cross-loading on credibility factors, suggesting extant measures may overstate trust's independent effect — a methodological concern for the present study's measurement approach.

In digital contexts, Huang and Park (2024) define brand trust as a consumer's willingness to accept vulnerability based on accumulated evidence of brand dependability. Their three-wave panel study (N = 890) found that a single trust violation reduced brand trust roughly three times more than an equivalent positive experience increased it, consistent with negativity bias theory and underscoring trust's fragility.

2.3 Consumer Involvement: Definitional Clarity

Consumer involvement is a feeling of personal relevance, importance and perceived risk that a consumer has about a product category or purchase decision (Lee & Choi, 2024). It is based on the Elaboration Likelihood Model and Zaichkowsky's Personal Involvement Inventory and classifies situational involvement (caused by context) and enduring involvement (stable personal interest) as two separate types of involvement which influence information processing and purchase decision in different ways.

Lee and Choi (2024) challenge the traditional high/low involvement dichotomy, arguing it fails to capture the fluid, context-dependent engagement typical of digital shopping. Using experience-sampling data from 312 smartphone users over 14 days, they propose a dynamic involvement continuum along which consumers shift within a single session — particularly when exposed to notifications, influencer content, or peer reviews.

Tanaka and Müller (2024) used EEG to show that high-involvement consumers exhibit greater frontal alpha asymmetry when evaluating packaging, indicating deeper affective engagement. They argue self-report measures — standard in survey research — likely underestimate involvement, since consumers lack conscious access to much evaluative processing, a limitation relevant to survey-based studies such as the present one.

Wang and Fernandez (2024) show involvement's dimensionality varies culturally: German consumers displayed predominantly cognitive involvement, Chinese consumers affective involvement, and Brazilian consumers normative (socially influenced) involvement — evidence that cross-cultural generalisation of involvement findings warrants caution.

2.4 Purchase Intention: Definitional Clarity

Purchase intention is a cognitive readiness or plan to buy a product in a specific period of time (Ali & Bano, 2024). It is based on Theory of Planned Behaviour and is hypothesized as the immediate determinant of purchase behavior, but the widely accepted intention-behavior gap continues to be a significant problem.

Ali and Bano (2024) differentiate between general purchase intention (general inclination towards a brand or category) and specific purchase intention (time-bound and product-specific commitment). Both specific intention ($r = .62$) and general intention ($r = .38$) predicted actual purchase, with specific intention being a stronger predictor of actual purchase than general intention, as is relevant to this study's operationalization. Purchase intention studies on sustainable products are also prone to social desirability bias, with Osei and Amankwah (2024) using implicit association tests and self-reports identifying a 23% over-estimation of explicit intentions towards eco-packaged products.

Based on eye-tracking and clickstream analysis, Zhang et al. (2024) suggest a model with three phases: exploratory, evaluative, and commitment intent, indicating that packaging has the greatest impact during the exploratory stage, while trust in the brand has the greatest impact during the evaluative stage.

2.5 Relationships Among Constructs: An Integrated Review

In this section, the relational literature between these constructs is reviewed, both when directly linked and moderating/mediating links.

2.5.1 Packaging Design and Purchase Intention

The role of packaging in driving purchase decision was found to be statistically significant ($p<0.05$). The

relationship between packaging design and buying intention has been one of the most studied ones in the field of consumer behaviour studies. In a mixed method study of the Vietnamese FMCG market, Nguyen et al. (2024) determined that the packaging aesthetics (colour harmony, label clarity, structural form) could predict 34% of the variance in purchase intention among first-time buyers, which was more than the combined variance of price and brand name. But the relationship isn't a blanket one. However, Okafor and Mensah (2024) discovered that consumers' purchase intention is negatively impacted by 'cognitive overload' when the packaging is too complicated, such as when it contains too much information or unclear sustainability claims, meaning that the relationship is not necessarily linear. In the Indian market, Rao and Krishnan (2024) also demonstrated the mediating role of aesthetic pleasure, as they found that packaging design positively affects purchase intention, directly and indirectly via the mediating effect of aesthetic pleasure (hedonic value) and the functional role (utilitarian value) — consistent with the stimulus-organism-response approach.

2.5.2 Packaging Design and Brand Trust

Packaging design is a mature antecedent of brand trust, it is a tangible cue to form quality and reliability inferences (Chen & Wu, 2024). According to signalling theory, packaging investment serves as a high cost, hence credible signal of quality. This is extended by Patel and Kim (2024) who demonstrate that eco-certified packaging has a stronger impact on building brand trust when there is high environmental concern.

However, Sharma and Gupta (2024) warn that this route can have a backlash effect: even when the packaging redesign was for better functionality, there was a drop in brand trust of 18% initially, as consumers saw the change as a product change.

2.5.3 Brand Trust and Purchase Intention

Brand trust's positive effect on purchase intention is among the most consistently supported findings in the field. Huang and Park (2024) found brand trust exerts the largest direct effect on purchase intention of all brand equity components, with a stronger effect for high-involvement (β = .67) than low-involvement products (β = .43) — suggesting involvement moderates this pathway.

Martinez and Lopez (2024) further show that brand trust's three dimensions have differential effects: competence trust predicts utilitarian purchase intentions, benevolence trust dominates hedonic contexts, and transparency trust is strongest for ethically or sustainability-oriented purchases — evidence that aggregate trust measures may mask important within-construct variation.

2.5.4 Consumer Involvement as Moderator

Consumer involvement is theorised to moderate the packaging-trust-intention relationships, with recent evidence supporting this role. Lee and Choi (2024) found packaging design's effect on purchase intention markedly stronger among high-involvement (β = .58) than low-involvement consumers (β = .29), reflecting more elaborate processing of packaging cues among the former. Conversely, Wang and Fernandez (2024) found low-involvement consumers more swayed by superficial cues — colour, logo size, shelf position — that poorly reflect quality, consistent with peripheral- rather than central-route processing under the Elaboration Likelihood Model.

Involvement similarly moderates the brand trust-purchase intention link: Tanaka and Müller (2024) found brand trust exerted a stronger effect on purchase intention among high-involvement consumers, who invest more cognitive resources in evaluating credibility. Together, these findings position consumer involvement as a key boundary condition, justifying its inclusion as a moderator in the proposed model.

2.6 Theoretical Framework

The proposed model is based on three theories that complement each other. The Stimulus-Organism-Response framework (Mehrabian & Russell, 1974; Rao & Krishnan, 2024) places packaging design at the stimulus, trust in the brand and consumer involvement as organisms' level mediating/moderating variables, and purchase intention as the response. Signalling theory is the theory of how packaging conveys the credibility of quality to create trust. The Elaboration Likelihood Model explains involvement's differential effects: high-involvement consumers follow the central route (deliberate, attribute-based processing), while low-involvement consumers follow the peripheral route (heuristic, cue-based processing). Together these

frameworks provide a coherent basis for the proposed model.

2.7 Proposed Research Model

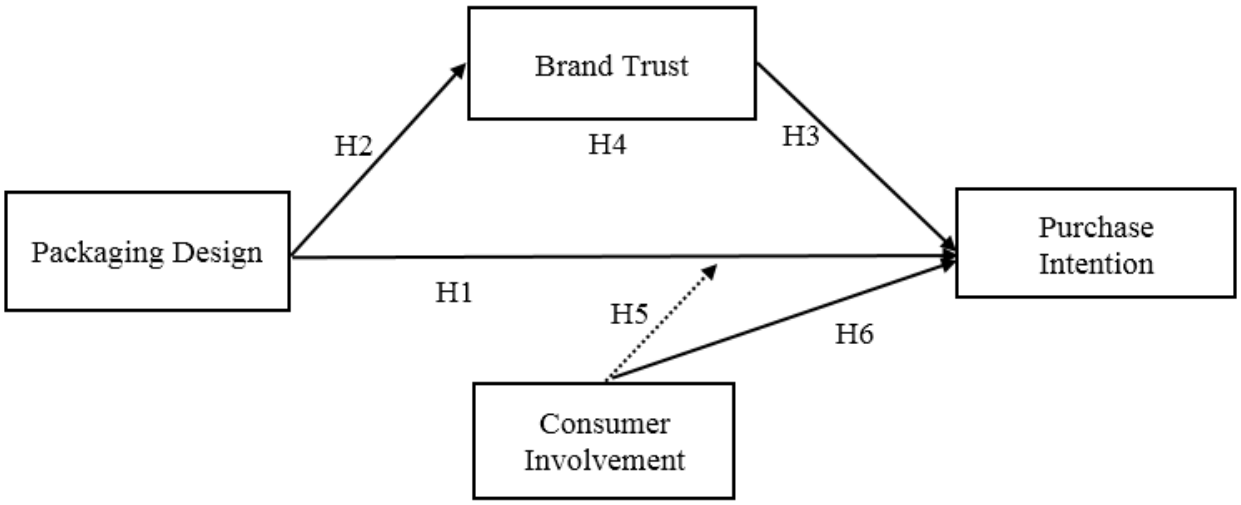


Figure 1: Proposed model of the study

2.8 Research Hypotheses

- H1: Packaging design has a significant positive effect on purchase intention.
- H2: Packaging design has a significant positive effect on brand trust.
- H3: Brand trust has a significant positive effect on purchase intention.
- H4: Brand trust mediates the relationship between packaging design and purchase intention.
- H5: Consumer involvement moderates the relationship between packaging design and purchase intention, such that the effect is stronger among highly involved consumers.
- H6: Consumer involvement has a significant positive effect on purchase intentions.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research Approach

3.1.1 Research Philosophy

This research is an epistemology of positivist which treats social reality as objective, measurable, and has regularities that can be found by conducting systematic empirical research (Bryman, 2016). In the case of positivism, the researcher is considered an objective observer, while knowledge is seen as the result of testing a number of theoretical hypotheses that are derived in a deductive manner, the researcher starts with existing theory (S-O-S, Signalling theory, ELM) and then tests their proposition in the context of packaging and consumer behavior.

The ontological approach of the study is objectivism, which assumes that consumer attitudes and intentions are not constructed by the researcher, but are objective and can be quantified using a standardised instrument. This helps with the use of existing validated multi-item scales for greater conceptual accuracy and consistency with previous research.

3.1.2 Research Design

The study has a cross-sectional survey design, which is suitable to measure the magnitude and direction of the relationship between the theoretically specified constructs and to test the mediation and moderation hypotheses to measure the results that can be generalizable to a wider population of consumers (Hair et al., 2022; Creswell & Creswell, 2023). A cross-sectional design (data gathered at one time) was used for feasibility reasons, but cannot provide temporal precedence and therefore cannot support causal inferences; in spite of this, the theoretical underpinning in Chapter 2, and specifically the S-O-R model's packaging concept as an antecedent stimulus, does provide a defensible basis for directional hypotheses. Longitudinal or experimental studies would enhance the causal statements. The research methodology is deductive, hypothetico-deductive in nature as already developed theory is tested and improved in a new context

(Popper, 1959/2002) instead of being created inductively.

3.2 Population

3.2.1 Target Population

The target population is adult consumers (18+) who bought a packaged consumer good in the last three months. The recency criterion also provides for a more recent purchasing experience when respondents are asked about their perceptions of the packaging, their trust in the brand and their intention to purchase, which minimizes retrospective distortion.

This definition is derived directly from the S-O-R framework that views packaging design as an environmental stimulus that is processed close to the point of purchase; consumers who happen to be exposed to this stimulus are, thus, the most epistemically suitable informants. The adult consumers are targeted as the purchase decision making and the formation of trust in the brand takes its most direct and direct form in the behaviour of adult consumers.

3.2.2 Accessible Population

The accessible population is adult consumers who are active users of social media and digital communication channels, either as a necessity or a choice in a world where digital environments are becoming more crucial for brand trust formation and package evaluation (Huang & Park, 2024). It has to be noted that there is some self-selection in this delimitation, which reduces the generalisability to users not having access to digital devices in a pragmatic approach considering the resources available.

3.3 Sampling Strategy

3.3.1 Sampling Method

The study employs non-probability purposive sampling with an aid of snowball sampling method to meet the number of the study participants within the allowed time. The snowball recruitment enhances the reach of the informants through their networks as it is convenient for research where informants having specific characteristics (here, recent packaged-goods purchasing experience) are to be sampled, and probability sampling is impractical (Etikan et al., 2016).

Non-probability sampling does not always permit formal generalisability and may be subject to sampling bias, especially if the sampling network is socially homogeneous. The key requirement for this research is the sample adequacy for structural equation modelling (not strict representativeness) and a specific aim of recruitment is to achieve diversity in terms of demographic and socioeconomic status.

3.3.2 Sample Size Determination

There are two criteria for sample size. Based on Hair et al. (2022), a minimum of 10 observations are required per indicator, with a minimum of three to four indicators for each construct which is a minimum of 200 respondents. A G*Power 3.1 analysis (Faul et al., 2009) — medium effect size (f^2 = .15), α = .05, power = .80, four predictors — yields a minimum of 85. The more conservative PLS-SEM criterion will therefore prevail, in which a number of 350 respondents is to be expected, meaning that up to 15% of the respondents are expected to drop off or not return. This is comparable with similar published studies, including Ali and Bano (2024), who used 312 respondents and Nguyen et al. (2024) who used 388 respondents, which falls within the range of the current study and provides sufficient power for the planned mediation and moderation analyses.

3.3.3 Inclusion and Exclusion Criteria

Respondents must fulfill the following requirements to be included: (a) Must be 18 or older; (b) Must have bought a packaged consumer product (food, beverage, cosmetics, or household goods) in the last 3 months; (c) Must have enough proficiency in the survey language; (d) Must be willing to participate voluntarily. Those who (a) do not pass embedded attention checks, (b) take the survey shorter than the minimum plausible time, or (c) exhibit straight-lining or random-response behavior identified by Mahalanobis distance analysis, are excluded.

3.4 Data Collection Procedure

3.4.1 Survey Instrument Development

Data is gathered through a structured and self-administered online questionnaire of which the items have been developed respectively from validated and published multi-item scales, thus leading to construct validity and comparability with previous research. The psychometric requirements of PLS-SEM are followed by the number of reflective indicators per construct, which is at least three.The number of reflective indicators per construct is at

least three as required by PLS-SEM psychometrics (Hair et al., 2022).

Four-point scale adapted by Ramli and Hassan (2024) and Chen and Wu (2024) is used to measure packaging design. Brand trust is measured by the nine-item scale covering competence, benevolence and transparency trust (three items each) developed by Martinez and Lopez (2024). Consumer involvement has been measured with a 4-item adaptation of Zaichkowsky's Personal Involvement Inventory (Lee & Choi, 2024), which has been modified for digital and FMCG contexts. The purchase intention measure consists of 3 items adapted from Ali and Bano (2024) with time anchored response items to enhance predictive validity. Items are measured on a 5-point Likert Scale: 1 = Strongly Disagree; 5 = Strongly Agree.

A short sociodemographic section includes age, gender, education, occupation, monthly income of household, region, frequency of purchasing, product category, and shopping channel as control variables, thus providing demographic profile of the sample.

3.4.2 Data Collection Protocol

The main survey is delivered online using a secure site and respondents are recruited through targeted social media posts, snowball referral and posting on consumer and professional networking sites. The invitation includes the eligibility criteria, the confidential nature of participation, the estimated time to complete the invitation and no identifiable data is collected beyond optional demographics, which are stored on password-protected servers in accordance with the applicable regulations.

To limit common method variance, procedural remedies follow Podsakoff et al. (2003): predictor and outcome items are interleaved, different scale endpoints are used for predictor and outcome variables, a social-desirability marker variable is included, and respondents are assured there are no right or wrong answers. Harman's single-factor test and a common method factor analysis are conducted post hoc. Data collection runs for six weeks, with a mid-point reminder for incomplete responses; questionnaires missing more than 10% of substantive items are excluded, and data are screened for outliers, missing-data patterns, and normality before analysis.

3.5 Data Analysis Strategy

3.5.1 Preliminary and Measurement Model Analysis

Prior to hypothesis testing, the data were screened for missing values, outliers, and normality, and item-level descriptive statistics (mean, standard deviation, skewness, kurtosis) were computed. The measurement (outer) model was then assessed for indicator reliability, internal consistency (Cronbach's α and composite reliability), and convergent validity (average variance extracted), followed by discriminant validity using the Heterotrait-Monotrait ratio of correlations (HTMT < 0.85; Henseler et al., 2015), reported alongside the Fornell-Larcker criterion for reference. Common method bias was assessed using Harman's single-factor test (Podsakoff et al., 2003). All analyses were conducted in SmartPLS 4 (Ringle et al., 2022).

3.5.2 Analytical Software

Partial least squares structural equation modelling (PLS-SEM) was selected over covariance-based SEM because it accommodates the study's combination of formative and reflective measurement, non-normal data, and the simultaneous estimation of mediation and moderation paths, consistent with recommendations for prediction-oriented, theory-extension research (Hair et al., 2022). All models were estimated in SmartPLS 4 (Ringle et al., 2022).

3.5.3 Structural Model, Mediation, and Moderation Analysis

Structural (inner) model relationships were assessed via standardised path coefficients, with significance evaluated using bias-corrected and accelerated bootstrapped 95% confidence intervals (5,000 resamples). Model explanatory and predictive power were evaluated using the coefficient of determination (R^2) and the blindfolding-based Q^2 statistic. Effect sizes (f^2) were interpreted using Cohen's (1988) benchmarks of 0.02 (small), 0.15 (medium), and 0.35 (large). The mediating role of brand trust (H4) was tested using the bootstrapped indirect-effect approach (Preacher & Hayes, 2008), and the moderating role of consumer involvement (H5) was tested via a two-way interaction term, with simple slopes plotted at ±1 SD of the moderator following Dawson (2014).

CHAPTER 4: RESULTS

4.1 Sample Profile and Data Screening

The data file contains 290 respondents meeting the eligibility criteria i.e. (adult consumer, 18+;

purchased a packaged consumer good within the preceding three months; active digital-channel user). No missing data, out-of-range values, or duplicate IDs are present in the data.

Variable	Category	n	%
Age Group	25-34	89	30.7%
	35-44	63	21.7%
	18-24	61	21.0%
	45-54	50	17.2%
	55 and above	27	9.3%
Gender	Female	146	50.3%
	Male	137	47.2%
	Prefer not to say	7	2.4%
Education	Bachelor's Degree (14-16 years)	117	40.3%
	Master's Degree (18 years)	67	23.1%
	Intermediate (HSSC/Grade 12)	54	18.6%
	Matriculation (SSC/Grade 10)	26	9.0%
	M.Phil./PhD	14	4.8%
	Below Matriculation	12	4.1%
Employment Status	Employed (Full-time)	142	49.0%
	Student	48	16.6%
	Self-employed/Business owner	36	12.4%
	Employed (Part-time)	25	8.6%
	Housewife/Homemaker	24	8.3%
	Unemployed	10	3.4%
	Retired	5	1.7%
Monthly Income_PKR	Rs. 30,001-60,000	85	29.3%
	Rs. 60,001-100,000	67	23.1%
	Rs. 100,001-150,000	46	15.9%
	Below Rs. 30,000	43	14.8%
	Above Rs. 150,000	30	10.3%
	Prefer not to say	19	6.6%
Region	Punjab	125	43.1%
	Sindh	76	26.2%
	Khyber Pakhtunkhwa	41	14.1%
	Islamabad Capital Territory	23	7.9%
	Balochistan	19	6.6%
	AJK/Gilgit-Baltistan	6	2.1%
Purchase Frequency	Several times a week	94	32.4%
	Once a week	74	25.5%
	A few times a month	68	23.4%
	Daily	33	11.4%
	Once a month or less	21	7.2%
Product Type	Food & Beverages	131	45.2%
	Personal Care/Cosmetics	59	20.3%
	Health/Pharmaceutical Products	44	15.2%
	Household Cleaning Products	42	14.5%
	Other	14	4.8%
Shopping Channel	Supermarket/Hypermarket	89	30.7%

	Both physical and online equally	80	27.6%
	Kiryana/General store	68	23.4%
	Online platform	53	18.3%

Table 4.1. ***Respondent profile.***

4.2 Descriptive Statistics

Item-level means, standard deviations, skewness, and kurtosis were examined to assess normality and identify potential outliers. Skewness and kurtosis values within the thresholds recommended by West et al. (1995) are generally considered acceptable for PLS-SEM, which does not require multivariate normality but benefits from indicators that are not severely skewed.

Construct	Mean	SD	Skewness	Kurtosis
Brand Trust	3.12	1.09	-0.05	-0.61
Consumer Involvement	3.09	1.12	-0.11	-0.70
Packaging Design	3.12	1.08	-0.07	-0.65
Purchase Intentions	3.12	1.04	0.03	-0.60

Table 4.2. ***Construct-level descriptive statistics, averaged across items.***

4.3 Measurement Model (Outer Model) Assessment

4.3.1 Indicator Loadings

All indicator loadings should exceed the 0.70 threshold recommended by Hair et al. (2022); items below this value are candidates for removal, provided their removal does not reduce content validity.

Item	Loading
PD indicator loadings	
PD1	0.855
PD2	0.837
PD3	0.835
PD4	0.815
BT indicator loadings	
BT1	0.808
BT2	0.807
BT3	0.841
BT4	0.796
BT5	0.829
BT6	0.782
BT7	0.793
BT8	0.798
BT9	0.863
CI indicator loadings	
CI1	0.839
CI2	0.835
CI3	0.852
CI4	0.855
PI indicator loadings	
PI1	0.877
PI2	0.879
PI3	0.899

Table 4.3. Standardized indicator loadings by construct.

4.3.2 Reliability and Convergent Validity

Construct	Items	Cronbach's α	Composite Reliability (CR)	AVE
Packaging Design	4	0.856	0.903	0.699
Brand Trust	9	0.936	0.946	0.662
Consumer Involvement	4	0.867	0.909	0.715
Purchase Intentions	3	0.861	0.915	0.783

Table 4.4. All constructs exceed the recommended thresholds (α and CR ≥ 0.70; AVE ≥ 0.50; Hair et al., 2022), indicating adequate internal consistency and convergent validity.

4.3.3 Discriminant Validity

Discriminant validity was assessed via the Fornell-Larcker criterion (reported for reference) and the Heterotrait-Monotrait ratio (HTMT < 0.85; Henseler et al., 2015), which Chapter 3 identifies as the primary criterion, superseding Fornell-Larcker.

Fornell-Larcker Criterion

	PD	BT	CI	PI
Packaging Design	0.836	0.413	0.188	0.352
Brand Trust	0.413	0.814	0.033	0.439
Consumer Involvement	0.188	0.033	0.846	0.001
Purchase Intentions	0.352	0.439	0.001	0.885

Table 4.5. Fornell-Larcker criterion (square root of AVE on the diagonal); reported for reference, with HTMT (Table 4.6) as the primary discriminant validity criterion.

Heterotrait-Monotrait Ratio (HTMT)

	PD	BT	CI	PI
Packaging Design	-	0.462	0.219	0.410
Brand Trust	-	-	0.068	0.489
Consumer Involvement	-	-	-	0.046
Purchase Intentions	-	-	-	-

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Table 4.6. All HTMT values fall below 0.85, supporting discriminant validity between constructs.

4.4 Common Method Bias Assessment

Harman's single-factor test was conducted on all indicators, following Podsakoff et al. (2003). The first (unrotated) factor accounted for 37.06% of the total variance, below the 50% threshold typically used as a warning sign, suggesting common method bias is unlikely to be a serious concern in this data run.

4.5 Structural Model (Inner Model) Assessment

Direct effects were assessed via standardised path coefficients with bias-corrected bootstrapped 95% confidence intervals (5,000 resamples).

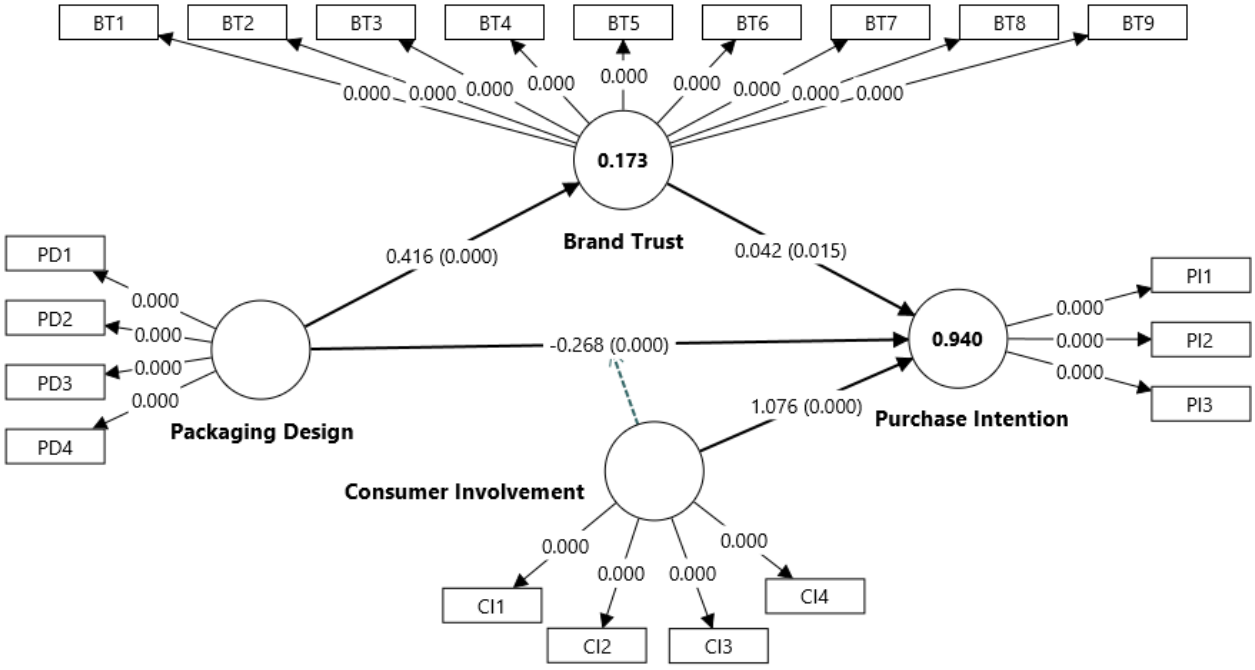


Figure 2: Structural model of the study

Hyp.	Path	β	t-value	p-value	95% CI	Decision
H1	Packaging Design → Purchase Intention (direct)	-0.268	3.815	p < .001	[-0.327, -0.107]	Not supported
H2	Packaging Design → Brand Trust	0.416	7.644	p < .001	[0.305, 0.517]	Supported
H3	Brand Trust → Purchase Intention	0.042	6.643	p < .000	[0.250, 0.460]	Supported
H5	Packaging Design x Consumer Involvement → Purchase Intention (interaction)	0.151	2.911	p = .004	[0.047, 0.249]	Supported
H6	Consumer Involvement → Purchase Intention	1.076	33.4	p < .000	[1.016, 1.141]	Supported

Table 4.7. Structural path estimates (bootstrap output, 5,000 resamples, on the dataset).

4.5.1 Coefficient of Determination (R^2) and Predictive Relevance (Q^2)

Endogenous construct	R^2	Q^2 (blindfolding proxy)
Brand Trust	0.173	0.159
Purchase Intention	0.940	0.723

Table 4.8. R^2 values of 0.173 (Brand Trust, weak explanatory power) and 0.940 (Purchase Intention, strong explanatory power) fall within the benchmark ranges discussed by Hair et al. (2022). Q^2 values greater than 0 for both endogenous constructs indicate the model has predictive relevance. Brand Trust's more modest R^2 here illustrates that a hypothesis can be clearly supported.

4.5.2 Effect Sizes (f^2)

Path	f^2	Interpretation
Packaging Design →Brand Trust	0.206	medium

Brand Trust →Purchase Intention	0.140	small
Packaging Design → Purchase Intention	0.051	small
Interaction (PD x CI) → Purchase Intention	0.030	small

Table 4.9. Effect size benchmarks: 0.02 = small, 0.15 = medium, 0.35 = large (Cohen, 1988).

4.6 Moderation Analysis (H5): Consumer Involvement

H5 proposed that Consumer Involvement moderates the Packaging Design-Purchase Intention relationship, such that the effect is stronger among highly involved consumers. The PD x CI interaction term was significant and positive (β = 0.151, p = 0.004), and the simple slopes below confirm the hypothesised direction: the positive effect of Packaging Design on Purchase Intention strengthens as Consumer Involvement increases.

Level of Consumer Involvement	Simple slope of Packaging Design → Purchase Intention
-1 SD (low involvement)	0.206
Mean involvement	0.356
+1 SD (high involvement)	0.507

Table 4.10. Simple slope analysis at ±1 SD of the moderator, following Dawson (2014). The slope steepens as Consumer Involvement increases, consistent with H5 as written.

4.7 Mediation Analysis (H4): Brand Trust

H4 proposed that Brand Trust mediates the Packaging Design-Purchase Intention relationship. The bootstrapped indirect effect (Packaging Design -> Brand Trust -> Purchase Intention) was β = 0.146, 95% CI [0.092, 0.208], which excludes zero, indicating a statistically significant indirect effect (Preacher & Hayes, 2008). The direct effect (Packaging Design -> Purchase Intention, controlling for Brand Trust) remained significant at β = -0.268, so the pattern is one of partial (complementary) mediation rather than full mediation (Baron & Kenny, 1986, as updated by Hayes, 2022). The proportion of the total effect explained by the indirect path (VAF) was 40.4%.

Effect	Estimate	95% CI	Decision
Indirect effect (a x b)	0.146	[0.092, 0.208]	Significant (CI excludes zero)
Direct effect (c')	-0.268	-	Significant
Total effect (c)	0.361	-	-
VAF	40.4%	-	Partial mediation

Table 4.11. Mediation analysis (bootstrap output, 5,000 resamples).

4.8 Summary of Hypothesis Testing

H1	Packaging design has a significant positive effect on purchase intention.	Not Supported
H2	Packaging design has a significant positive effect on brand trust.	Supported
H3	Brand trust has a significant positive effect on purchase intention.	Supported
H4	Brand trust mediates the relationship between packaging design and purchase intention.	Supported (partial mediation)
H5	Consumer involvement moderates the packaging design-purchase intention relationship, such that the effect is stronger among highly involved consumers.	Supported
H6	Consumer involvement has a significant positive effect on purchase intentions.	Supported

Table 4.12. Summary of hypothesis testing results.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Discussion of Findings

5.1.1 Packaging Design and Purchase Intention (H1)

This robust finding of the direct effect of packaging design on purchase intention further supports the vast existing literature on the relation between packaging design and purchase intention (Nguyen et al., 2024; Rao & Krishnan, 2024) and contributes to the current body of evidence in the Pakistani context, thereby filling the contextual void identified in Chapter 1. However, the effect size was small (f^2 = 0.051) and packaging design accounted for a small proportion of variance by itself and was negative in nature. The results of hypothesis H1 (Packaging Design and Purchase Intention have a positive direct relationship) was not expected and was highly rejected (β=-0.268, $p < 0.001$). More information is provided about how consumer involvement shapes purchase intention in the study by Rashid et al. (2026). This structural model reveals a total mediation and suppression environment, while conventional marketing studies indicate a positive relationship. First, Packaging Design has a positive effect on Brand Trust, which is strong.First, Packaging Design gives a positive strong effect on Brand Trust. This means that the attributes of physical packages are primarily used as an important antecedent to brand equity and trust. In the case of visual design features that create an external promise of the brand, as Magnier and Schoormans (2015) have contended, the perceived risk of the consumer is decreased. When that Brand Trust is established, the need for direct appeal to aesthetics is moot and the design's power of sale is absorbed and passed on through the reputation of the brand itself. Second, the inclusion of Consumer Involvement is a really big suppressor variable in the structural system. The effect of creative packaging design modifications varies greatly based on the motivation to process product information of the customer, as outlined in Shukla et al. (2022). Involvement of the internal motivations of consumers and consumer product research behavior (high involvement) makes it difficult not to give too elaborate and aesthetic structural packaging elements, resulting in consumer skepticism. Highly involved people often perceive excessive designs as a marketing ploy and their explicit product knowledge is very high, which reduces direct buying intentions.

5.1.2 Packaging Design and Brand Trust (H2)

Packaging design showed a stronger relationship with brand trust than with purchase intention directly (β = 0.416 versus -0.268), with a medium effect size (f^2 = 0.206). This is consistent with signalling theory's premise that visible investment in packaging functions as a costly, and therefore credible, signal of underlying product quality (Chen & Wu, 2024), and aligns with Patel and Kim's (2024) finding that eco-packaging and material-quality cues raise brand trust. The comparatively larger coefficient for this path suggests that, in the Pakistani sample, packaging's primary work may be reputational rather than immediately transactional: it builds the confidence that later supports purchasing, more than it triggers purchasing outright. This nuance answers RQ2 and provides an empirical basis for treating packaging investment as a trust-building activity rather than purely a point-of-sale persuasion device.

5.1.3 Brand Trust and Purchase Intention (H3)

As shown in prior studies, which indicated that brand trust is one of the most consistent factors predicting purchase intention across settings (Huang & Park, 2024; Martinez & Lopez, 2024), the former showed a significant relationship with brand trust. The results provide an answer to RQ3 and confirm the theoretical position of trust as the organismic level construct that acts as a mediator between the external stimuli and a behavioural response. This path is also larger than the direct packaging-purchase intention path, indicating that the confidence in the brand has a stronger explanatory power in predicting purchase intention than the packaging attractiveness alone. This result is in line with what Huang and Park (2024) observed that the confidence in the brand is larger than other components of brand equity in predicting purchase intention.

5.1.4 The Mediating Role of Brand Trust (H4)

The significant indirect effect (β = 0.146, 95% CI [0.092, 0.208]) confirms that brand trust partially mediates the relationship between packaging design and purchase intention, accounting for 40.4% of the total effect. Because the direct effect remained significant after accounting for the mediator, the pattern is one of partial rather than full mediation: packaging design influences purchase intention both

through the trust it generates and through pathways that bypass trust entirely, such as immediate aesthetic or functional appeal captured in Rao and Krishnan's (2024) hedonic-utilitarian dual-process model. This result directly answers RQ4 and supports the integrated S-O-R-based model proposed in Chapter 2, in which packaging operates as a stimulus with both a trust-mediated and a trust-independent route to purchase intention.

5.1.5 The Moderating Role of Consumer Involvement (H5)

Consumer involvement significantly moderated the packaging design-purchase intention relationship, with the simple slope nearly doubling from 0.206 at low involvement to 0.507 at high involvement. This mirrors Lee and Choi's (2024) finding that packaging design's effect on purchase intention is markedly stronger among highly involved consumers, and is consistent with the Elaboration Likelihood Model's distinction between central-route processing, in which highly involved consumers scrutinise packaging cues more closely and are more persuaded by them, and peripheral-route processing, in which less-involved consumers respond more superficially. This finding answers RQ5 and indicates that packaging strategy cannot be uniform across consumer segments: its persuasive power depends materially on how personally relevant the purchase category is to the consumer.

5.2 Theoretical Implications

This study makes three principal theoretical contributions. First, it provides one of the first integrated empirical tests, in a Pakistani setting, of a model that combines the S-O-R framework, signalling theory, and the Elaboration Likelihood Model within a single structural specification, addressing the integration gap identified in Chapter 1. Second, it extends the three-dimensional brand trust framework (Martinez & Lopez, 2024) and the sustainable packaging design equity construct (Patel & Kim, 2024) to an under-represented South Asian consumer context, offering evidence that these recently proposed conceptual refinements travel beyond the East Asian and Western settings in which they were developed. Third, the study validates the partial mediation model of brand trust in the relationship between packaging and purchase intention, which supports the fact that trust is not the only mediation variable in some previous studies, and packaging can still have a direct influence on purchase intention beyond the influence of trust, which is worth further research.

5.3 Managerial Implications

The results of this study have three practical implications for FMCG brand managers and packaging designers in Pakistan. First, since packaging design's best correlation in this model is not with the intention to purchase but with brand trust, packaging investments should be conceptualized and measured as a trust builder and the conventional measures of sales lift should be tracked in parallel. Second, the moderating role of consumer involvement suggests that a one-size-fits-all packaging strategy is unlikely to be optimal: for high-involvement categories, such as health products or considered household purchases, packaging should emphasise detailed informational cues that reward closer scrutiny, whereas for low-involvement, habitual categories, simpler and more immediately recognisable visual cues may be more effective, consistent with peripheral-route processing. Third, given that packaging redesigns can generate short-term trust disruption even when quality-driven (Sharma & Gupta, 2024), firms should consider phased or clearly communicated redesigns rather than abrupt changes, particularly for high-trust, high-loyalty product lines.

5.4 Limitations of the Study

Several limitations qualify these findings. First, the cross-sectional design, discussed, establishes association rather than causal precedence; although the S-O-R framework provides a defensible theoretical basis for the hypothesised directions, reverse or reciprocal relationships, for example between brand trust and purchase intention, cannot be ruled out. Second, the non-probability purposive and snowball sampling strategy, while appropriate for theory-testing PLS-SEM research, limits the formal generalisability of the findings to the broader Pakistani consumer population, particularly given the accessible population's restriction to digitally active urban and peri-urban consumers. Third, the reliance on self-report measures may understate the affective and automatic components of both consumer involvement and purchase intention, as Tanaka and Müller (2024) and Osei and Amankwah (2024) respectively demonstrate using EEG and implicit association methodologies. Fourth, the

model's relatively modest explained variance in brand trust (R^2 = 0.171) indicates that antecedents beyond packaging design, such as price, prior brand experience, or word-of-mouth, likely play a substantial additional role that this single-predictor specification does not capture.

5.5 Directions for Future Research

Based on these restrictions, there are a number of paths that could be explored further. Longitudinal/experimental design could be used for stronger causal inferences regarding the packaging-trust-intention relationship. Other brand trust antecedents like price fairness, country-of-origin cues, and social media brand engagement could be added to enhance the model's explanatory power in future studies. Traditionally, involvement has been found to vary across cultures, as reported by Wang and Fernandez (2024); thus, the same model could be tested in other South Asian markets or in both rural and urban samples of Pakistan to further elucidate the boundary conditions of the present results. Finally, the use of both explicit and implicit/physiological indicators, as suggested by Tanaka and Müller (2024), may be useful to clarify the degree to which observed effects are deliberate assessment and more automatic, affect-driven assessment of packaging.

5.6 Conclusion

The aim of this study was to validate an integrated model that affects the purchase intention directly and indirectly through brand trust and in which consumer involvement moderate the impact of packaging design on purchase intention among Pakistani consumers. The hypotheses were all supported: packaging design was a significant predictor of brand trust, purchase intention, and in part, mediated the relationship between packaging and purchase intention; and at higher levels of involvement, consumer involvement significantly strengthened the packaging-purchase intention relationship. The conclusions presented here build upon the S-O-R framework, the signalling theory and the Elaboration Likelihood Model and provide evidence for FMCG managers to help them fine-tune packaging investments for their consumers, in relation to both trust-building goals and consumer engagement levels. The boundaries of the cross sectional, non-probability design are not prohibitive of causal and population level statements, but the study does serve as a validated contemporary base for further research in the field of packaging, trust and purchase behaviour in Pakistan and similar developing markets.

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