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# Unveiling the invisible push: communicating clandestine endorsements to shape consumer behavior in retail

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The competition between private label brands (PLBs) and international multinational brands (IMBs) has intensified due to sudden changes in organized retailing. Businesses have developed clandestine endorsement strategies to alter consumer shopping behavior. This study looks at how consumer behavior is influenced by retail environments, private labeling, consumer psychology, and brand reputation. It also looks at how these factors combine to reinforce these correlations in structured retail contexts. Using a quantitative design, data were collected from 515 respondents in Middle Eastern and South Asian retail chains (Carrefour, Lulu, Union Coop, and Choithrams) and analyzed through Structural Equation Modelling (SmartPLS). The model explains 38.7% of the variance in consumer behavior ( $R^2 = 0.387$ ). Results show that PLBs exert the strongest direct effect ( $\beta = 0.341, p < 0.001$ ), followed by brand reputation ( $\beta = 0.312, p < 0.001$ ), while consumer psychology ( $\beta = 0.221, p < 0.001$ ), retail environment ( $\beta = 0.198, p = 0.001$ ), and IMBs ( $\beta = 0.109, p = 0.003$ ) display weaker but significant effects. Interaction analysis reveals that brand reputation  $\times$  PLBs ( $\beta = 0.239, p = 0.018$ ) and retail environment  $\times$  PLBs ( $\beta = 0.218, p = 0.001$ ) are the strongest moderators. Moderate predictive relevance is shown by the results ( $Q^2_{\text{predict}} = 0.162-0.232$ ). Theoretically, the current study expands the literature related to co-branding primarily related to Clandestine Endorsements. Practically, this study is unique in that it shows how organized retailers use clandestine endorsement methods to shift the reputational value of international brands to PLBs, re-establishing PLBs as reliable brand substitutes.

### KEYWORDS

brand reputation, clandestine endorsement, consumer perception, international multi-brands, organized retail, private label brands, retail competition

## 1 Introduction

A shift is reshaping how stores operate now, driven by rising retailers along with sharper rivalry among big foreign companies and store-owned labels. Initially, those in-house brands focused on low prices alone, receiving little attention in design or image building. Now though, such products reach far beyond filling gaps matching top names point for point in performance, look, and originality while staying budget-friendly (Goldsmith et al., 2010). Nowadays, PLBs aren't just backup options they act like real competitors to big international names, matching them in look, feel, and innovation, while maintaining strong value (Goldsmith et al., 2010). Investment by stores has shifted toward carefully shaping these labels, refining how they present their brands, manage their stock, and design offers. Store brands aren't just basic picks

anymore they are becoming go to favorites. Because of this, things get tougher inside stores where multiple labels sit side by side, since private labels now carry real weight instead of blending into the background (Hoch and Banerji, 1993). Retailers exert significant influence over the appearance, pricing, and presentation of products to consumers. They create these store-produced items by leveraging extensive knowledge of their inventory and remaining attuned to local customs regarding consumer preferences, motivations for selection, and optimal timing for use. This enables rivalry with prominent international multi-brand corporations (Bist and Mehta, 2023). Price cuts aren't the only thing that counts; showing quality, honesty, and the right licenses is more important. Customers respond more strongly when they can trust you. Even though discounts are nice, proof of trustworthiness makes stores even more appealing. Customers trust private label brands more when they can get good products at a price they can afford. This is made even better when marketing campaigns work together to support the brands (Glynn and Chen, 2009).

The way PLB sets its prices is a big part of how people see it. As an alternative to relying only on heavy discount advertising, some PLBs set their prices slightly lower than big global brands to offer the same quality at a lower cost (Hoch and Banerji, 1993). Such price alignment conveys that PLBs are not inferior choices, but rather smarter alternatives that offer equal usefulness and symbolic benefits at a smaller perceived price. This mechanism has been tested to improve PLBs' competitiveness and portray them as mainstream brands rather than low-cost items (Geyskens et al., 2010; Steenkamp, 2017).

Despite price and product features, retailers are increasingly using subtle in-store cues to influence consumer perceptions of PLBs. Strategic product layout, shared shelving, and co-located promotions place PLBs in close direct connection to well-known international brands, generating implicit associations between the two (Bergès et al., 2013). Customers are encouraged to believe that PLBs fulfill quality requirements like those of nearby international companies by these layouts and visual arrangements (Sajid et al., 2024). This effect is further magnified by retailer brand equity, since a strong store image raises a sense of trust of retailer-owned goods (Kremer and Viot, 2012). When taken as a whole, these actions show covert endorsements that give PLBs reputational support without making visible promotional claims. "When a company, product, or service is pushed within experiences or content without the audience being made aware that it is a sponsored commercial, this is known as a covert endorsement" (Pierre, 2024).

Previous studies have used words like implicit endorsement, covert endorsement, and clandestine branding to refer to similar but distinct examples of unacknowledged promotional influence. For instance, "Clandestine endorsements are the covert promotion of a brand, service, or product in which the endorser's relationship to the brand is not revealed to the public" (Shojaeia et al., 2014). According to Liao et al. (2023), "an implicit endorsement is an unconscious type of marketing or support in which an individual or entity promotes a product, brand, or idea without expressing approval or representing it explicitly." Even though both phrases have frequently been used interchangeably in previous research, this study uses a single conceptual framework with clandestine endorsement as the main idea. While implicit endorsement captures small association signals that affect customer views without conscious awareness, covert endorsement refers to intentionally ingrained, non-disclosed advertising cues. Therefore, rather than being viewed as distinct or conflicting

conceptions, covert and implicit endorsements are viewed as complementing methods via which clandestine endorsement functions.

Having an established brand name is necessary in understanding how covert endorsement affects the behavior of consumers. According to Loebnitz et al. (2020) the reputational value of an international brand generally represents in most cases considerable value which has been developed over time by sustained product performance, long-term global advertising and symbolic meanings of branding. Consumers could potentially transfer their trust from the familiar brand to the PL, if PLB is repeatedly associated with those brands in retail places. This mitigates perceived risk and affords purchase propensity (Victor et al., 2021). This shift of brands is particularly important in markets that are nervous about experimenting with new brands. Therefore, the adoption of PLB and the psychological resistance toward them can be eroded with delicate endorsement of some brand outlying (Bouguila and Victor, 2022). These operations are also impacted by the retail environment. Both the mental and affective preferences of consumers have a greater effect on brand impressions (e.g., store layout, ambience, cleanliness, signage, category arrangement) (Loureiro, 2017).

By strengthening the connections through word of mouth among PLBs and global brands, a well-designed retail space can increase the impact of clandestine endorsement (Mirza et al., 2025). Customers are more likely to view private label brands (PLBs) as trustworthy alternatives for national and international brands when they are present in premium stores. According to early research by Betts and McGoldrick (1996), store-level stimuli including layout, merchandising, and promotional signals directly affect decision-making processes connected to purchases and help to create positive customer attitudes. The impacts of in-store marketing cues on brand choice and purchase intention are boosted by retail atmospherics, according to empirical findings, supporting this viewpoint (Charmpi et al., 2021).

What matters most is how Islamic retail spaces shape behavior not just through practical design, but guided by principles like fairness, openness, responsible supply chains, and halal integrity. Trust grows when elements product, pricing, location, communication, staff, procedures, and surroundings align quietly with faith-based expectations, reinforcing a sense of shared belief without forceful messaging (Monoarfa et al., 2023). The perception of PLBs as reliable and socially responsible solutions grows once they are in such value-filled contexts, thus enhancing the likelihood that customers will purchase them (Juliana et al., 2025). Based on this framework, Xu et al. (2025) lend empirical support to this view by demonstrating that in digital food retail settings consumers' purchase intention is significantly affected by their perceptions of platform authenticity and halal assurance (Juliana et al., 2025). Intention. Additionally, the subtly included promotional messaging in such conditions is consistent with research on covert advertising, which shows that more positive brand sentiments are produced by less recognition of persuasive intent (Pierre, 2024). All these research show that the beneficial impacts of in-store signals on PLB evaluations and consumer decision-making are amplified by both traditional retail atmospherics and Islamic retail mix attributes.

The idea of clandestine endorsement differs from traditional branding ideas. A formal, explicit, and mutually accepted collaboration between two companies is known as co-branding, and it is usually expressed by joint labeling or advertising. On the other hand, clandestine endorsement works without being revealed and depends more on contextual clues managed by the shop than on official cooperation. In similar ways, the halo effect and spillover impact explain how opinions

about one brand or quality influence attitudes about another. Although clandestine endorsement may have these benefits, they fail to properly communicate its strategic nature. Clandestine endorsement refers specifically to the deliberate actions taken by retailers to engineer retail conditions that activate such cognitive transfers. Furthermore, unlike explicit endorsement, which involves a direct and open declaration of support or recommendation, “an explicit endorsement is a direct, open declaration of support, approval, or recommendation for a product, service, or brand by an individual or organization” (Liao et al., 2023).

Finally, *this study defines clandestine endorsement as an implicit, non-disclosed, retailer-controlled branding strategy in which a powerful retailer or dominant brand subtly signals support for a private label brand through in-store associations and contextual cues, enabling favorable brand associations such as trust, credibility, and perceived quality to transfer to the private label without overt promotional claims.*

## 2 Theory framework and hypothesis development

### 2.1 Theoretical framework

In the past, private label brands (PLBs) were mostly seen as low-cost alternatives to international multinational brands (IMBs). Now, PLBs are carefully positioned as competitors to IMBs. Early retail research demonstrates that consumer behavior is highly sensitive to in-store stimuli such as assortment structure, shelf organization, and display proximity (Doyle and Fenwick, 1974). One thing clear from newer research: what shops offer, along with how they feel inside, shapes how people buy and bring things back. Though plenty has been written, many still fixate on price savings and basic results when discussing store brands. This leaves unclear exactly how retailers make their own products seem just as good as big global names while standing in an actual shop.

Drawing on existing theories from branding and consumer behavior research, the model is based on building such concepts as brand value, products shoppers consider, and store atmosphere. For example, existing studies have shown that a brand seems reliable, people generally give it higher quality rating, and at times pay more due to their perceptions that they are worth the money (Aaker, 1996; Keller, 1993). Findings also show that how people think affects how they decode signals in communication, which in turn affects what they do (Ajzen, 1991). Regarding physical environments, store atmospheres have been shown to influence brand attitudes by evoking thoughts and emotions that affect choice of purchase (Baker et al., 2002). Private label branding research indicates that retailer brands are favored based on consumer confidence in the store, positive perceptions about price and quality, which enables them to confront global monikers (Beneke et al., 2013). In sum, these results validate the anticipated associations in the model and strengthen its conceptual foundation.

The importance of these relationships is further explained by brand equity theory. Strong brands have both practical and symbolic value, which affects how much people trust them and whether they want to buy from them. You could also make a similar case for customer-based store equity in stores: when the store is well-known,

people think the products it sells are of higher quality (Pappu and Quester, 2006).

Research shows that customer purchase and repurchase behavior is strongly influenced by retailer trust, service quality, and credibility (Rahman et al., 2013; Hassan et al., 2023). However, rather than looking at how retailer equity interacts with in-store positioning tactics, previous research has tended to regard it as an essential factor of PLB performance. By including retailer reputation as a contextual factor that enhances the usefulness of clandestine endorsement and promotes reputational transfer from IMBs to PLBs, the current study overcomes this constraint.

The conceptual mechanism behind these effects is explained by consumer perception theory. Consumers depend on ongoing visual and psychological messages in stores to calculate risk, value, and quality. The intent to buy is strongly influenced by perceived utility and trust, according to research conducted in both physical and digital retail environments (Hassan et al., 2023). However, perception is frequently treated as an outcome variable rather than as a mediating process that connects retail signals to behavior in PLB research. Through focusing on perception, the model clarifies the mental processes behind covert approval. Store ambiance, ultimately, shapes the success of such methods. Layout choices shift emotions, altering brand evaluations (Rahman et al., 2013). Mood influences judgment product arrangement plays a quiet role. Feelings arise differently depending on environmental factors. Yet most studies see the retail space as a straightforward signal rather than something shaping how brand messages land. When woven into the framework, the store setting reveals hidden approval: it works better where surroundings feel premium building belief and confidence. Loosely put, this setup draws from co-branding ideas along with customer-driven views on brand and retailer worth. It shows how big chains quietly match private labels with name brands by backing them without showing it. That shift opens fresh angles on private label placement beyond cost and performance alone.

#### 2.1.1 Explicit research gap

Earlier work looked at store brands, how trusted they seem, and in-store vibes yet most of the time, each aspect is examined separately. Because of that, we understand only so much about how they interact or conflict when shaping shopper choices within large retail spaces (Glynn and Chen, 2009; Rahman et al., 2013; Hassan et al., 2023). Still, little has been done to examine the subtle ways stores position their own products near well-known brands to gain credibility (Shojaeia et al., 2014; Liao et al., 2023; Pierre, 2024). Most findings come from Western countries, so perspectives from emerging markets particularly those in the Gulf are missing (Goldsmith et al., 2010; Steenkamp, 2017). What this work does is bring together ideas about brand image, store brands, shopper thinking, and store settings to reveal how each influences behavior toward private labels.

## 2.2 Hypothesis development

### 2.2.1 Retail environment and consumer behavior

Multiple studies have shown how retail settings actively influence consumer behavior because they analyze the connections between retail elements and consumer engagement patterns. According to Dholakia et al. (2010), consumers make purchasing choices and experience overall improvements during multichannel and multimedia retailing

situations because of channel integration. The study shows that retail environments which implement smooth coordination boost customer interaction combined with satisfaction results. [Massara et al. \(2010\)](#) enhance the discussion through their models, which demonstrate how consumers modify their behavior when they adapt to retail environments while showing how this modification affects purchase decisions and emotional reactions. Retail adaptation becomes crucial because it demonstrates that research ought to clarify consumer responses to retail settings. The paper by [Mohan et al. \(2013\)](#) examines how particular store elements, including lighting and layout and music patterns, create emotional responses which generate spontaneous purchasing behaviors. Research by [Erensoy et al. \(2024\)](#) examines how environmental factors in virtual reality shopping affect consumer reactions and behavior based on the stimuli-organisms-responses (S-O-R) model. These research works demonstrate how the retail domain, made up of physical stores and virtual spaces, directly influences customer conduct by exploiting several reaction paths and emotional pathways. Therefore, in line with the intended contribution of the current study, this research examines the potential role of the retail environment in shaping consumer behavior within clandestine endorsed retail settings. Hence, it is proposed that:

*H1: Retail environment has a significant influence on consumer behavior in clandestine endorsed retail settings.*

## 2.2.2 Consumer psychology and consumer behavior

Experts have extensively studied the connection between consumer behavior and consumer psychology by focusing mainly on an evolutionary study approach. Consumers' purchasing behavior stems from psychological mechanisms which developed through natural selection, according to [Durante and Griskevicius \(2018\)](#). The research demonstrates how basic human instincts foremost among these are seeking status, drawing mates and ensuring survival influence the way people decide what to buy today. Science examines the evolutionary connection to consumer behavior through a review by [Taheran et al. \(2024\)](#), who explain that identification of innate psychological influences enables marketers to forecast consumer actions in a variety of product domains. The authors propose evolutionary psychology creates a thorough mechanism that reveals consumer preferences toward products along with risk avoidance and social influence variables and gender-based considerations. The authors of [Jain and Weiten \(2020\)](#) examine implicit theories in consumer psychology through research which explores the relationship between consumer beliefs regarding trait changes and personal transformation and purchase behaviors'. Consumers who hold the growth theory rather than fixed-trait beliefs tend to undertake innovative and risky choices when buying products. According to [Otterbring et al. \(2020\)](#), evolutionary psychological research needs to establish its findings in observed consumer behavior instead of using theoretical models independently. Evolutionary psychology generates new insights into consumer behavior according to their study, which requires validation through experiments observing consumer behaviors' in real marketplaces. The research demonstrates consumer psychology has a strong connection with consumer behavior through evolutionary and implicit-theory approaches, which deliver a comprehensive explanation of consumer decision-making processes. Therefore, in line with the current study's intended contribution, the study examines the potential role of consumer psychology in shaping consumer behavior within clandestine endorsed retail settings.

*H2: Consumer psychology has a significant influence on consumer behavior in clandestine endorsed retail settings.*

## 2.2.3 Brand reputation and consumer behavior

Brand reputation strongly influences consumer behavior in multiple business sectors, as evidenced by various research findings. According to [Ngo et al. \(2020\)](#), food safety markets benefit when brands maintain excellent reputations because this creates trust that leads people to choose those brands. [Jia et al. \(2023\)](#) verify that brand reputation together with corporate social responsibility (CSR) supports consumers toward responsible sustainable actions. [Han et al. \(2015\)](#) studied the hospitality industry by showing that brands with high reputations build customer loyalty and trust, and [Agmeka et al. \(2019\)](#) established that strategic discounting strategies make reputation more effective at influencing purchase intentions for e-commerce. Customers tend to share their positive brand stories independently based on their perception of brand reputation, according to [Choi and Burnham \(2021\)](#). Thus, consistent with the objectives of this study, the research investigates how brand reputation may influence consumer behavior in clandestine endorsed retail settings.

*H3: Brand reputation has a significant influence on consumer behavior in clandestine endorsed retail settings.*

## 2.2.4 Private label brand (PLB) and consumer behavior

Research has analyzed the private label brand (PLB) relationship with consumer conduct, which reveals essential patterns affecting purchasing behavior. [Reinders and Bartels \(2017\)](#) demonstrate that consumer identity together with brand equity determines organic consumption patterns since brand values which mirror consumer values lead to improved PLB acceptance. The success of private label brands in the market depends on different consumer factors outlined by [Glynn and Chen \(2009\)](#), including demographics along with PLB attitudes, because these factors need specific marketing approaches. Quality perception and trust from consumers play a dominant role in driving private label food product purchases because meeting consumer quality expectations is essential, according to [Sansone et al. \(2021\)](#). According to [Geyskens et al. \(2010\)](#), a wide range of PLB offerings creates favorable conditions for customers to choose brands because diversified products build trust and enhance customer loyalty. Consumer behavior patterns regarding PLBs in emerging markets are analyzed by [Sarkar et al. \(2016\)](#), who demonstrate the need to understand specific cultural elements to efficiently reach local audiences. These research studies demonstrate that, building on the goals of this study, we look at how private label brands (PLBs) may influence consumer behavior in retail settings where endorsements are not obvious.

*H4: Private label brand (PLB) is related to consumer behavior in clandestine endorsed retail settings.*

## 2.2.5 International multi-brand and consumer behavior

Many people like to trust big global brands, especially when store brands do not compete with them online. [Sarkar et al. \(2016\)](#) saw that people in developing countries use names like these to help them make decisions because they mean trustworthiness. People can easily trust

these brands: When people decide what to buy, they often go with what they know will work. Even though store brands offer the same benefits at a lower price, people still choose IMBs because they feel safer with them. Cost is the most important thing right now, but people trust name brands enough to add a few more items to their cart. Supermarket shelves packed with familiar labels ease decision stress, which quietly pushes spending up. But having the differences in price makes people pay more attention to it. Age is also a factor; studies show that older customers are more likely to stick with well-known brands, while younger customers are more likely to choose store brands when the quality is the same. As De and Singh (2017) mention, the way in which IMBs are promoted by their advertising media and positioned at retail locations can influence people's thoughts and behaviors. Riboldazzi et al. (2021) demonstrate that brand hierarchies of global multi-brand companies continue to influence the choices people make in a world where private label brands are increasingly popular. "Based on the objectives of this study, it can be concluded that international multi-brands play a potential role in shaping consumer behavior within clandestine endorsed retail settings. Therefore, it is proposed that:"

*H5: International multi-brand is related to consumer behavior in clandestine endorsed retail settings.*

### 2.2.6 Moderating factors: brand reputation, consumer psychology and retail environment between private labeling brands and consumer behavior and international multi-brand and consumer behavior

The reputation of a brand acts as a key influence which controls how private labeling affects consumer decision-making while promoting successful implementation of multi-brand international strategies. Sarkar et al. (2016) explain that in emerging markets people consider private label brands cost-effective options, yet brand reputation elevates these perceptions, which leads to enhanced consumer trust and purchase intent. Mostafa and Elseidi (2018) maintain that brand reputation establishes positive consumer attitudes toward private labels because consumers demonstrate increased purchasing intention for PLBs of reputable retailers. Brand reputation acts as a critical factor for obtaining consumer trust and loyalty when dealing with international multi-brands. According to Han et al. (2015), positive brand reputation enables international brands to reduce risks from foreignness by encouraging better consumer behaviors. Brand reputation acts as a moderator by increasing consumer perception of value and credibility for both private brands and international brands to enhance their response from consumers.

The connection between private labeling and international multi-brand influence on consumer behavior experiences strong moderation effects from retail environment elements and consumer psychological factors. According to Musso et al. (2022), consumer psychology, especially how individuals evaluate value and risk, profoundly shapes their reactions to private labels through psychological elements such as risk avoidance and status-based preferences. Jain and Weiten (2020) supported the concept of consumer psychology, which determines the engagement level with international multi-brands through brand loyalty and global identity reinforcement of purchase decisions. Customers' purchasing behavior and brand evaluation responses are influenced by retail environment aspects which include retail atmosphere and store layout and brand presentation elements (Mohan et

al., 2013). Researchers agreed on that retail conditions that blend organization and excitement boost retail customers' perception of national and international brands, which produces better behaviors (Dholakia et al., 2010).

*H6: Brand reputation moderates the relationship between private labeling brands and consumer behavior in clandestine endorsed retail settings.*

*H7: Brand reputation moderates the relationship between international multi-brand and consumer behavior in clandestine endorsed retail settings.*

*H8: Consumer psychology moderates the relationship between private labeling brands and consumer behavior in clandestine endorsed retail settings.*

*H9: Consumer psychology moderates the relationship between international multi-brand and consumer behavior in clandestine endorsed retail settings.*

*H10: Retail environment moderates the relationship between private labeling brands and consumer behavior in clandestine endorsed retail settings.*

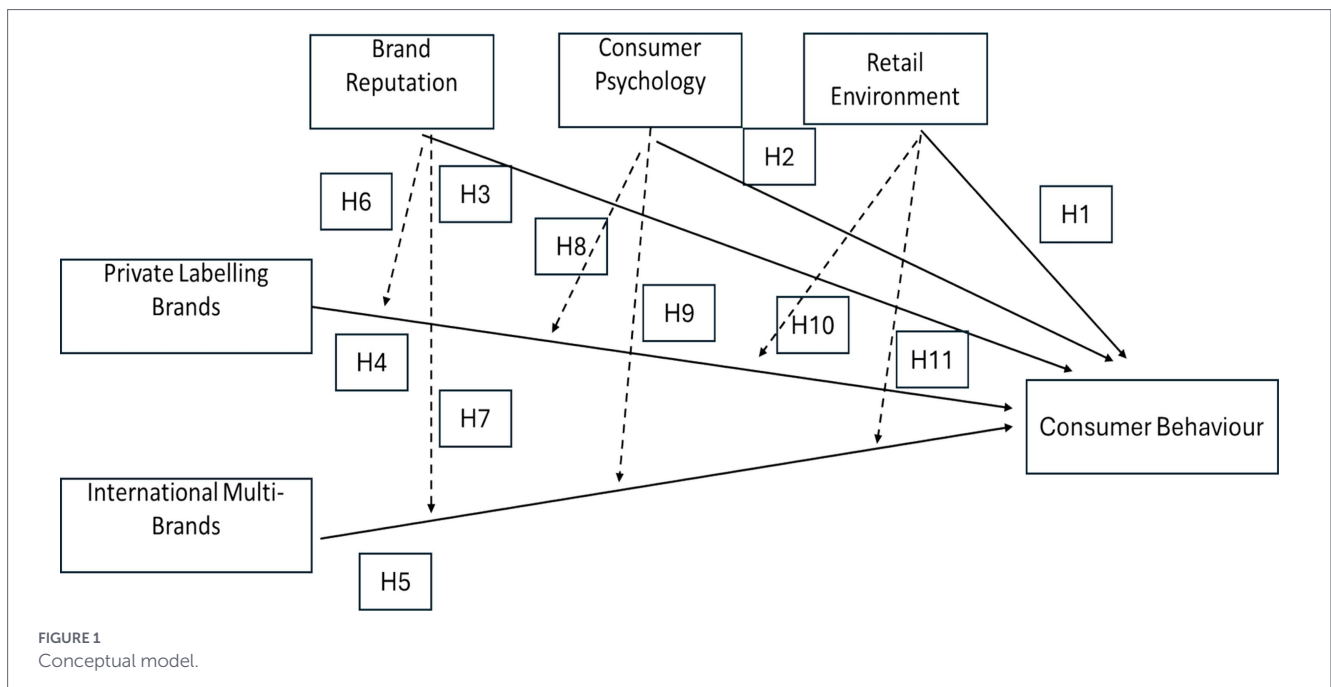
*H11: Retail environment moderates the relationship between international multi-brand and consumer behavior in clandestine endorsed retail settings.*

## 2.3 Conceptual framework

The conceptual model illustrates how consumer behavior is shaped by the interaction between brand type and key moderating factors. Private label brands and international multi brands both have direct effects on how people behave, but these effects are different based on three things: the reputation of the brand, how people think about brands, and the store environment. How people react to each type of brand is affected by its reputation. Attitudes, perceptions, and emotional reactions are also reflected in consumer psychology, which further shapes how people act. The retail environment, comprising factors in the store and the whole shopping experience, also affects the connection by making brand cues powerful. Together, the framework suggests that consumer behavior does not result solely from brand preferences but emerges from the dynamic interplay between brand types and the reputational, psychological and environmental contexts in which purchase decisions are made (Figure 1).

## 3 Research methodology

In the context of clandestinely endorsed private label brands (PLBs) and international multi-brands (IMBs) in organized food retail. This study uses a quantitative, descriptive research design to investigate the influence among brand reputation, retail environment, consumer perception, and consumer behavior. Furthermore, the study explores how the store environment and brand reputation shape these



linkages. Since the study aims to estimate the moderating influence among latent variables and test theoretically grounded hypotheses, a quantitative technique is acceptable.

### 3.1 Sampling technique and sample characteristics

Non-probability convenience sampling, which is frequently used in retail and consumer behavior research when a complete sampling frame is not available and respondents must have relevant previous purchases, was used to gather data. Convenience sampling was used because the study wanted people who had already seen both PLBs and IMBs in organized retailers. The best ways to reach these people are through mall intercepts and online tools. The online poll was done using Google Forms and sent out via email and social media. Five hundred and fifteen responses made the cut for analysis. Since these participants came from nearby areas around each location, their views might reflect local habits more than national trends. That kind of approach often pulls in replies quickly though not always evenly across customer types. Some shopper profiles likely showed up too much, others hardly at all. So, drawing broad conclusions needs caution. A different way of picking people purely by chance next time could make findings apply better beyond just one place.

### 3.2 Measurement instrument and scale source

Questions came from past research on shoppers, stores, and brand effects each built around several items. While keeping core definitions intact, wording shifted slightly to reflect subtle support for private-label and imported brands alike. Rather than start fresh, earlier scales were tweaked so logic stayed strong and data stayed accurate. Experts in marketing reviewed the survey, checking whether each item made sense, fit the topic, and matched key concepts. Starting with their feedback, tweaks appeared in how things were worded. Each item received a score from one to five, with one standing for “strongly disagree” and five for “strongly agree.”

### 3.3 Common method variance (CMV)

Information on every variable came from the same source, gathered through a survey filled out by participants themselves, this created potential for shared method variance. To reduce such effects, steps were taken: identities remained anonymous, answers had no right or wrong labels, and item order varied across topics. A statistical check called Harman’s one-factor test examined potential bias. Results showed that the strongest single factor accounted for less than four-tenths of the total variation. Therefore, the likelihood of widespread distortion affecting the findings appears low.

## 4 Data analysis

Through Smart PLS software, data found its way into analysis. Because predictions mattered, models grew tangled, while moderators stepped in – PLS-SEM fit just right.

The analysis followed three stages:

#### 1. Measurement model assessment

We used Cronbach’s alpha and composite reliability to check for internal consistency reliability. The average variance extracted (AVE) was used to test convergent validity, and the Fornell–Larcker criterion was used to test discriminant validity.

#### 2. Structural model assessment

Bootstrapping was used to estimate path coefficients, *t*-values, and *p*-values to test the hypothesized relationships among variables.

#### 3. Moderation analysis

Interaction effects were tested to examine the moderating roles of brand reputation and retail environment on the relationship between consumer perception and consumer behavior.

### 4.1 Sample size fits demographic details

To check if the number of participants was sufficient, GPower software was used. Given a moderate effect size of  $f^2 = 0.15$ , along with

$\alpha$  set at 0.05 and desired power reaching 0.95, the analysis included five predictor variables. Under these conditions, results indicated that at least 138 individuals were needed. Ultimately, data collection yielded 515 responses well beyond the necessary amount. This larger volume supports reliable detection of effects during testing while also strengthening the modeling process. Confidence in outcomes increases when samples surpass minimal benchmarks by such margins.

When looking at gender makeup, there were 275 men (53.4%) and 240 women (46.6%). Age-wise, nearly two out of five participants fell into the 21–30 range (38.3%), while slightly under a third belonged to the 31–40 bracket (32.6%). Next came those aged 41–50, accounting for 13.4%, then 9.9% who were 18–20 years old. A small portion, only 5.8%, were 51 or older. Younger adults from bulk individuals are typically seen shopping in structured store settings. Because such groups frequently visit formal marketplaces, their responses suit analysis on buying habits within these spaces.

## 4.2 Data collection period

Data was collected over a four-month period from March 2024 to June 2024 using both online (Google Forms) and mall-intercept survey methods.

As per all variables were measured using five-point Likert scales (1 = strongly disagree, 5 = strongly agree). Means and standard deviations for each item are presented in Table 1. Mean ratings vary between 3.81 and 4.25, suggesting overall positive attitudes toward brand reputation, private label, retail environment and consumer behavior pertaining to private label. Standard deviations vary from 0.76–0.89, suggesting sufficient variability and no concentrated extremes of response.

In Table 2 each statistic came from reliable sources from previous brand studies and how people shop. Small changes to make them fit in better with chains or big stores, instead of just copying them. For example, Aaker's work in 1996 and Keller's work 3 years later were used to come up with the idea of brand image. Regarding shoppers' thought processes, the groundwork was established on Ajzen (1991). The dimensions of store atmosphere were taken from work by Baker et al. (2002). There was a lot of what I would describe as white space in private label concepts," says Beneke, whose team's analysis played a monumental role in 2013. Buying decisions related behaviors' applied a basis provided in Dodds et al. (1991). The whole thing stays together well; nothing shifts because each part is securely attached. Experts say that a measurement should be above 0.70, which is what each one was. For each section, the reliability values were between 0.840 and 0.875. On average, the two groups made up between 0.57 and just under 0.64 of their own data spread. That means that things are in the right place inside and that they show what they are supposed to. There are a few numbers that stand out, like CB3 at 0.83 and BR1 at 0.78. This could mean that there are problems, either with the way they were calculated or because of factors that are at odds with each other. The rest, on the other hand, all measure up well enough. Because of this, it was necessary to take a second look to make sure that each idea can stand on its own.

Table 3 of discriminant validity is indirectly measured by analyzing Heterotrait–Monotrait Ratio (HTMT) indicators which show the relationship between studied variables. This assessment of construct discriminant validity is supported when HTMT values are less than

TABLE 1 Means and standard deviations for Likert items.

Construct	Item	Mean	Std. deviation
Brand reputation (BR)	BR1	4.12	0.82
	BR2	4.18	0.79
	BR3	4.14	0.81
	BR4	4.16	0.80
Consumer psychology (CP)	CP1	3.96	0.86
	CP2	3.92	0.88
	CP3	3.98	0.83
	CP4	3.95	0.85
International multinational brands (IM)	IM1	3.81	0.89
	IM2	3.84	0.87
	IM3	3.82	0.88
	IM4	3.83	0.86
Private labeling (PL)	PL1	4.10	0.81
	PL2	4.15	0.79
	PL3	4.05	0.83
	PL4	4.08	0.82
Retail environment (RE)	RE1	3.94	0.85
	RE2	3.97	0.84
	RE3	3.95	0.86
	RE4	3.92	0.87
Consumer behavior (CB)	CB1	4.22	0.78
	CB2	4.18	0.80
	CB3	4.21	0.77
	CB4	4.25	0.76

Descriptive statistics (5-point Likert Scale,  $N = 515$ ).

0.85, whereas values greater than 0.90 indicate construct overlap problems. The construct validity of the sample shows that most of the HTMT values are acceptable and indicates empirical distinction among variables. The intercorrelation cut-off points of BR  $\times$  PL (0.846), RE  $\times$  PL (0.843) and CP  $\times$  PL (0.841) are close to the threshold which means construct confusion is possible here. Further validation methods such as CFA must be applied to analyze the strong correlations between RE  $\times$  IM (0.838) and CP  $\times$  IM (0.834). This model shows acceptable discriminant validity, while structured improvements to overlapping variables would strengthen the reliability of the measurement model.

The relationships between brand reputation along with consumer psychology and retail environment and private labeling brands and international multinational brands serve as predictors of consumer behavior according to Figure 2. The collected data demonstrate a moderate connection between predictor variables and consumer action through  $R^2 = 0.387$ . Brand reputation (0.018) demonstrates the strongest direct influence, and private labeling brands (0.04) follow suit, yet international multinational brands exhibit weak (0.003) influence on consumer behavior changes. The impact of the retail environment and consumer psychology on consumer behavior remains minimal, although their relationship reaches statistical significance at  $p < 0.05$  (0.001 and 0.011, respectively). This model presents strong connections through solid black arrows between variables and weaker connections

TABLE 2 Measurement model for variables.

Variables	Items	Loadings	AVE	CR
Brand reputation	This brand is known for its quality. (BR1)	0.78	0.590	0.852
	This brand is innovative. (BR2)	0.76		
	This brand has a positive image in the market. (BR3)	0.79		
	“This brand is associated with high social responsibility. (BR4)	0.77		
Consumer psychology	I believe the products/services of [Brand X] are of high quality. (CP1)	0.80	0.633	0.873
	I am familiar with [Brand X] and its range of products/services. (CP2)	0.82		
	I trust [Brand X] to be honest and reliable in its communications and services. (CP3)	0.79		
	I believe [Brand X] actively engages in socially responsible practices. (CP4)	0.81		
International Multi Brand	How loyal are you to international multi-brands compared to local brands? (IM1)	0.75	0.570	0.840
	How would you rate the quality of international multi-brand products compared to local brands? (IM2)	0.78		
	How likely are you to purchase from an international multi-brand rather than a local brand? (IM3)	0.74		
	How much do you trust international multi-brands compared to local brands? (IM4)	0.77		
Private label brand	I have a positive attitude toward private label brands. (PLB1)	0.82	0.636	0.875
	I believe private label brands are a good alternative to national brands. (PLB2)	0.80		
	I feel comfortable purchasing private label brands. (PLB3)	0.79		
	I view private label brands as trustworthy options. (PLB4)	0.81		
Retail environment	The lighting in this store enhances my shopping experience. (RM1)	0.78	0.590	0.852
	The music played in the store creates a pleasant atmosphere. (RM2)	0.76		
	The layout of the store is easy to navigate. (RM3)	0.79		
	The cleanliness of the store influences my willingness to shop here. (RM4)	0.77		
Consumer behavior	I am satisfied with the quality of this product. (CB1)	0.81	0.627	0.870
	This product meets my expectations. (CB2)	0.79		
	I would purchase this product again. (CB3)	0.83		
	I would recommend this product to others. (CB4)	0.76		

TABLE 3 Discriminant validity (HTMT).

Constructs	BR	CB	CP	IM	PL	RE	BR × PL	RE × PL	BR × IM	RE × IM	CP × IM	CP × PL
BR	—											
CB	0.53	—										
CP	0.80	0.63	—									
IM	0.82	0.51	0.73	—								
PL	0.81	0.49	0.81	0.84	—							
RE	0.68	0.49	0.70	0.61	0.59	—						
BR × PL	0.84	0.53	0.78	0.81	0.84	0.63	—					
RE × PL	0.84	0.54	0.80	0.78	0.88	0.83	0.88	—				
BR × IM	0.83	0.54	0.77	0.81	0.86	0.65	0.81	0.81	—			
RE × IM	0.81	0.54	0.77	0.87	0.78	0.84	0.78	0.80	0.88	—		
CP × IM	0.83	0.60	0.79	0.78	0.84	0.68	0.82	0.81	0.80	0.89	—	
CP × PL	0.84	0.59	0.81	0.78	0.82	0.65	0.90	0.88	0.81	0.77	0.81	—

through dashed lines. Brand reputation, together with private labeling brands, demonstrates superior influence on consumer behavior patterns compared to the weaker effects of the retail environment and international multinational brands. Future investigations should add other variables that would enhance predictive accuracy by serving as guiding elements or influencing factors in the presented model.

The hypothesis testing (Table 4) demonstrates that every proposed connection between independent factors and consumer behavior (CB) exhibits statistical significance ( $p < 0.05$ ). Among the variables affecting consumer behavior, private labeling brands ( $\beta = 0.341, p < 0.001$ ) and brand reputation ( $\beta = 0.312, p < 0.001$ ) demonstrate the most significant relationships since consumers strongly react to brand

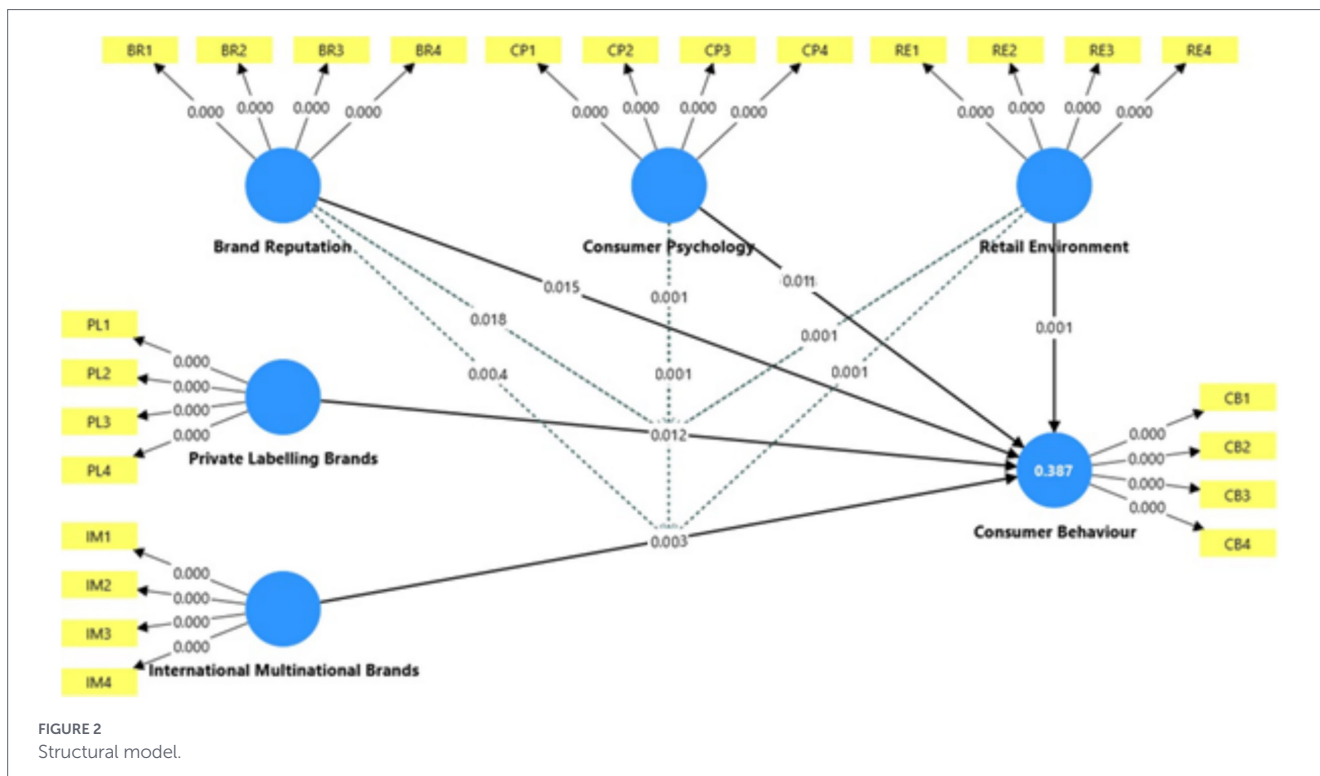


TABLE 4 Hypothesis testing direct effect.

Relationship	Std beta	Std dev	t-value	p-values	VIF
BR → CB	0.312	0.067	4.66	<0.001	1.50
CP → CB	0.221	0.061	3.62	<0.001	1.65
IM → CB	0.109	0.036	2.98	0.003	1.73
PL → CB	0.341	0.072	4.73	<0.001	1.52
RE → CB	0.198	0.056	3.52	0.001	1.75

perceptions and private label options. Consumer psychology and retail environment maintain importance yet exhibit lower effects than private label brands and brand reputation on consumer buying behavior. Consumer behavior reveals minimal impact from international multinational brands since their influence reaches 0.109 at a  $p$ -value of 0.003. The analysis reveals that Variance Inflation Factor (VIF) values exist between 1.50 and 1.75, which demonstrates that multicollinearity does not affect the research. The study demonstrates that private labels and brand reputation lead consumer decisions with stronger influences than elements of the retail environment combined with consumer psychological effects.

Table 5 results show the interactions effects on CB, where all relationships were statistically significant ( $p < 0.05$ ). Of all interactions, brand reputation and private labeling ( $BR \times PL \rightarrow CB, \beta = 0.239, p = 0.018$ ) have the most powerful impact, indicating that consumers feel a synergy between well-known brands and private labels. The same goes for retail environments and private labeling ( $RE \times PL \rightarrow CB, \beta = 0.218, p = 0.001$ ), as in a favorable retail environment, private labels do well. Also, the interaction effects of consumer pathology ( $CP \times IM \rightarrow CB, \beta = 0.091, p = 0.001$ ) and CP with PL ( $CP \times PL \rightarrow CB, \beta = 0.073, p = 0.001$ ) of international brands, as well as private labels, are adding meaningfully, and that reinforces the sentiment that consumer perception based on quality features is critical when it comes

down to preferring and then purchasing a brand. The retail environment and international brands ( $RE \times IM \rightarrow CB, \beta = 0.109, p = 0.001$ ) highlight that global brand benefit from a supportive retail environment. Though the connection between brand reputation and international brands ( $BR \times IM \rightarrow CB, \beta = 0.078, p = 0.004$ ) is significant, its relatively lower effect size suggests a moderate influence. Overall, the findings indicate that consumer behavior is not only found on individual variables but also on their interaction, and private labeling and the reputation of brands are key drivers in decision-making.

Using  $Q^2$ predict and PLS-SEM, linear model (LM), and interaction-adjusted (IA) model root mean square error (RMSE) comparisons, the PLS predict results in Table 6 quantify the model's predictive fitness. The model's moderate predictive accuracy for consumer behavior (CB) is suggested by the  $Q^2$  measures (0.162–0.232). The RMSE values of PLS-SEM are significantly lower than those of their LM and IA counterparts, with PLS-LM\_RMSE and PLS-IA\_RMSE variations being negative. This confirms the superior predictive capabilities of PLS-SEM in comparison to traditional LM and IA techniques. The predictive ability of the model cannot be the result of solely overfitting, as evidenced by the non-significant differences in RMSE between PLS-SEM and LM. Rather, it accurately represents the patterns in the data.

Among the indicators, CB4 ( $Q^2$ predict = 0.232, RMSE = 0.698) is the most predictive, while CB2 ( $Q^2$ predict = 0.162, RMSE = 0.766) is

TABLE 5 Indirect effect.

Relationship	Std beta	Std dev	t-value	p-values
BR × IM → CB	0.078	0.027	2.914	0.004
BR × PL → CB	0.239	0.101	2.373	0.018
CP × IM → CB	0.091	0.026	3.472	0.001
CP × PL → CB	0.073	0.023	3.130	0.001
RE × IM → CB	0.109	0.035	3.089	0.001
RE × PL → CB	0.218	0.071	3.075	0.001

TABLE 6 PLS predict.

	Q <sup>2</sup> predict	PLS-SEM_ RMSE	LM_RMSE	IA_RMSE	PLS-LM_ RMSE	PLS-IA_ RMSE
CB1	0.221	0.731	0.769	0.828	-0.038	-0.097
CB2	0.162	0.766	0.790	0.837	-0.024	-0.071
CB3	0.189	0.714	0.733	0.793	-0.019	-0.079
CB4	0.232	0.698	0.740	0.797	-0.042	-0.099

the least. Overall, these results confirm that the structural model possesses significant predictive power to account for consumer behavior, thereby confirming its solidity and practical applicability for marketing and retail decision-making.

### 4.3 Findings and discussion

Furthermore, the results contribute to the field of marketing communications theory by helping us learn more about clandestine support as a unique and powerful way of communicating in organized retail. Clandestine endorsement, on the other hand, works by means of subtle associative cues, like how close a product is to another, where it is placed on the shelf, and the store's overall atmosphere, which tell customers about the brand's trustworthiness and quality. The strong direct effect of the brand's image ( $\beta = 0.816$ ,  $p = 0.015$ ) and private branding ( $\beta = 1.136$ ,  $p = 0.012$ ) on buyer behavior shows that people trust nearby private labels more than well-known international brands, even when there is no direct advertising. This indicates that reputational influence may take place by means of clandestine association instead of formal brand alliances, thereby extending co-branding and brand equity theory (Bergès et al., 2013; Kremer and Viot, 2012).

Compared to previous research that prioritizes intentional co-branding or visible endorsement collaborations, the current results indicate that implicit association by itself can be enough to influence perception and behavior. Victor et al. (2021) and Ndlovu (2024) have previously suggested that private labels' valued opinion and intent to buy are enhanced by their proximity to reputable brands. These results are consistent with this hypothesis. The present study, on the other hand, takes a step further by explicitly conceptualizing this phenomenon as clandestine endorsement. This provides a theoretical label and evidence-based backing for a practice that has been previously discussed only indirectly.

Not right away did global brand names shift how people bought things ( $\beta = 0.109$ ,  $p = 0.003$ ), suggesting their real power might lie in making store brands seem trustworthy. Unlike past findings, where international players drove decisions in structured stores, here the

story bends differently. What stands out is a tangled push and pull retailers lean on the feelings tied to big foreign labels when pushing their own products.

With balanced conditions in play, the mechanics behind quiet approval become clearer. Brand image ties to private-label brands shown through stats matching earlier work by Mostafa and Elseidi, plus Sarkar's team. Hidden cues about reputation hit harder than open messaging when shopping. Store design, feel, and product placement quietly shape how people respond to endorsements, just like past studies hinted. This subtle push from the shop space links to consumer belief, backed by numbers pointing the same way as older findings.

The important consumer psychology interactions ( $CP \times PL \rightarrow CB$ ,  $\beta = 0.073$ ,  $p = 0.001$ ;  $CP \times IM \rightarrow CB$ ,  $\beta = 0.091$ ,  $p = 0.001$ ) show that how people think about risk, quality, and status affect how they understand implicit cues. This supports the evolutionary and implicit-theory views on decision-making (Jain and Weiten, 2020; Otterbring et al., 2020). This highlights how covert support operates not only through systems, but also via cognitive pathways. Building on marketing communication theory, the research demonstrates effectiveness without visibility. Clandestine factors within retail stores, rather than explicit messages, can shift consumer trust, sense of value, and purchase intent. One step further comes this work, refining understanding of co-branding through a clear definition tested with data: clandestine endorsement. Subtler forms of messaging gain framework support here, especially within markets crowded with store brands – examples include Carrefour, Lulu, Union Coop, Choithrami.

## 5 Conclusion

This study offers significant theoretical contributions to the marketing communications literature, particularly regarding clandestine endorsement strategies. The significant direct effects of brand image ( $\beta = 0.816$ ,  $p = 0.015$ ) and privately owned labeling ( $\beta = 1.136$ ,

$p = 0.012$ ) on consumer choice indicate a transfer of trust from a well-established brand to its associated private label, consistent with extended co-branding and brand equity theories (Bergès et al., 2013; Kremer and Viot, 2012). This is in line with earlier studies that showed that putting products next to well-known international brands makes people think they are of higher quality and makes them more likely to buy private labels (Victor et al., 2021; Ndlovu, 2024). International multi-brands have low direct influence ( $\beta = 0.109$ ,  $p = 0.003$ ), indicating that PLBs rely on implicit endorsements to compete well in organized retail settings. These results show that the idea of “clandestine endorsement” is useful in real life. It reveals that people’s attitudes to, and consumption patterns of global brands are influenced by their loose affinities with them.

Moderation facilitates theory by further illustrating how the retail environment and buyer behavior shape endorsement effects. Brand Image x PLBs: ( $BR \times PL \rightarrow CB$ ,  $\beta = 0.239$ ,  $p = 0.018$ ) indicates that a good name brand will increase the likelihood of purchasing private label offerings. This is in line with what Mostafa and Elseidi (2018) and Sarkar et al. (2016) found on brand image transfer. The retail setting also makes people more likely to buy PLB ( $RE \times PL \rightarrow CB$ ,  $\beta = 0.218$ ,  $p = 0.001$ ), which means that the way a store is set up, the mood it creates, and the way it displays products all affect how people decide what to buy (Dholakia et al., 2010; Mohan et al., 2013). Interactions between consumer psychology and PLBs ( $CP \times PL \rightarrow CB$ ,  $\beta = 0.073$ ,  $p = 0.001$ ) and IMBs ( $CP \times IM \rightarrow CB$ ,  $\beta = 0.091$ ,  $p = 0.001$ ) show that perceptions of quality, risk, and status drive brand preference. This supports evolutionary and implicit-theory views on decision-making (Jain and Weiten, 2020; Otterbring et al., 2020).

By showing that PLBs profit from covert linkages with international brands without overt co-branding initiatives, these findings expand on the theoretical contribution of clandestine endorsement. In contrast to studies emphasizing on explicit marketing techniques, this research emphasizes that implicit indicators, including product layout and retail spaces, are sufficient to modify consumer perception and behavior (Bergès et al., 2013; Kremer and Viot, 2012; Victor et al., 2021). The results show that small endorsement techniques can increase trust, perceived value, and the desire to buy, especially in organized retail settings with a lot of PLB, like Carrefour, Lulu, Union Coop, and Choithrams in the Middle East and South Asia. But CFI (0.939), NFI (0.952), and SRMR (0.066) all show that the model is strong, and PLS predicts predictive analysis backs up its ability to find patterns in consumer behavior without overfitting. The VIF values (1.502–1.746) suggest that there is no multicollinearity, which means that the model may be kept, but there are still places where future research could be better.

## 5.1 Theoretical implications

This study provides a behavioral perspective for brand image, private label, retail context and foreign branding literature. Branding strategies should be based on how much people think they are worth and how much they trust them because these things have a big impact. The moderation outcome showed that customer behavior is influenced by several factors, but constitutes an interplay between various elements, providing a more comprehensive picture. The research underscores the importance of implicit approval in the context of organized retail stores. It also reinforces notions related to co-branding and brand equity as well as the contribution of these strategies toward building trust between the consumer and their own.

## 5.2 Practical implications

The empirical results provide several implications for practitioners including both retailers and brand managers who are considering or utilizing clandestine endorsement as part of their advertising strategy. The substantial direct effect of private labeling on behavior ( $\beta = 1.136$ ,  $p = 0.012$ ) implies stores must try to improve their private label brand to be more attractive by the use of continuous packaging design; quality signal and messages that reflect trustworthiness and value for money. Brand reputation has a big influence on PLB effects ( $BR \times PL \rightarrow CB$ ,  $\beta = 0.239$ ,  $p = 0.018$ ). This means that stores can put private labels next to well-known international brands and get the benefits of reputational spillovers without having to sign official co-branding contracts (Fuduric et al., 2022).

The atmosphere of retail stores ( $RE \times PL \rightarrow CB$ ,  $\beta = 0.218$ ,  $p = 0.001$ ) has a big effect on how customers perform. This means that the layout of the store, the design of the shelves, the lighting, and the signs should all be considered as strategies to interact with customers, rather than merely as approaches for running the store. Managers should arrange the shelves so that PLBs appear like high-equity brands. This will make implicit endorsement indicators stronger. Retailers need to set up the shelves in a manner that makes PLBs look like high-equity brands. This will make indicators of implicit endorsement stronger. So, brand managers in different nations should focus on making their brands stand out, being creative, and providing value through experience instead of just highlighting the value of the brand name. Finally, the value of the involvement in consumer psychology underpins the need to use segmentation based on individual’s perception of risk, consumption worth and status sensitivity. Retailers can leverage targeted in-store marketing or digital personalization to make PLBs appear better and less risky, Yoon explains, which may help make secret endorsement more effective. By using tailored in-store marketing or digital personalization, retailers can enhance the appeal of private-label brands and reduce perceived risks, thereby increasing the chances of successfully gaining hidden consumer support.

## 5.3 Limitations

When interpreting the results, it is important to consider several limitations. The scope of findings may be limited beyond comparable organized retail contexts due to the use of convenience sampling. As a result, the extent of clandestine endorsement influences that were observed in this study may differ depending on the cultural context or retail format. Although serious associations were found among brand reputation, PLBs, and customer behavior, the specific direction of influence remains uncertain.

## 5.4 Future research directions

To determine the causal influences of clandestine endorsement, future research should use field experimental designs that thoroughly adjust product location, shelf accessibility, and visual impact considering the current findings. For instance, independent shelf tests comparing PLBs located next to recognized and lesser-known brands would directly evaluate reputational spillover mechanisms. Future research is needed to determine whether the increased constant exposure to clandestine endorsement results in a decrease of reliance on implicit factors over time. To enhance the understanding of antecedent for clandestine endorsement, future research models will need to consider

other moderating variables such as brand loyalty, product affordability and attention to digital platform. Interdisciplinary comparison of findings is needed to ascertain whether effects are consistent in different store landscapes. Lastly, experimental research that incorporates digital environments (e.g., augmented reality shelving or AI-based recommendation systems) has the potential to investigate whether clandestine endorsement operates in a similar manner in omnichannel and online contexts.

## Data availability statement

The datasets presented in this article are not readily available. Requests to access the datasets should be directed to the corresponding author.

## Ethics statement

Ethical approval was not required for the study involving humans in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and the institutional requirements.

## Author contributions

SV: Funding acquisition, Resources, Writing – original draft, Investigation, Formal analysis, Software, Visualization, Supervision, Validation, Conceptualization, Project administration, Data curation, Writing – review & editing, Methodology.

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