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Heuristic Cues at Play: Shaping Attitude and Purchase Intention Towards Online Private Labels

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Abstract: *This paper aims to investigate the effects of heuristic cues in forming positive consumer purchase intention towards online private labels. Also, to examine the mediating effects of consumer attitude to assess the degree of impact of the study variables. A web survey is conducted and circulated on prominent social media platforms to attain a representative sample (n-250). The Personal and Consumer Care sector has been chosen, specifically focusing on the skincare product category within this sector. The analysis was carried out using SPSS Statistics and hypothesis testing by AMOS 25. The results demonstrated that heuristic cues positively impact consumers' purchase intention for online private labels. Further, consumer attitudes significantly mediate the relationship between the key factors. The research is one of the few studies that have extensively tested the effects of the simultaneous impact of heuristic cues and provided related marketing implications. Prior literature neglects these interactions in the digital context in forming consumer favorable attitudes towards online private labels. This research addresses these gaps and offers valuable insights into private-label online strategies for private label retailers.*

Keywords: Online Private Labels, Heuristic Cues, Purchase Intention, Attitude, Cue Utilization Theory

Introduction

Over time, the emergence of private labels has elicited diverse reactions from consumers in various parts of the world. Private labels (PLs) are brands owned and exclusively sold by retailers in their own outlets (Kumar and Steenkamp., 2007). Due to their massive expansion in recent years, their sales accelerated exponentially, enabling them to become a strong competitive force against the nationally branded products or the brands exclusively developed by the manufacturers (Ailawadi and Keller, 2004). A significant reason for its success is its affordable price and higher profit margins (Sethuraman and Geilens, 2014). Literature has broadly classified PLs into three categories: generic, classic, and premium, in which the premium PLs are positioned in the same way as successful or superior to national brands. National brands are advocating for updated strategies to address the recently arising competitive challenges posed by PLs (Cuneo et al., 2019; Glover & Higgins, 2023).

Although PLs have brought about innovation, they have historically lagged behind national brands, with consumers frequently linking them to lower-quality products (Valaskova et al., 2018). Additionally, for an extended period, PLs faced skepticism regarding their performance and quality, further fostering doubt among consumers (Gangwani et al., 2020), allowing national brands to maintain their dominance and popularity among shoppers. Consequently, this has increased the market share of national brands compared to PLs.

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The major shift in consumer preference for PLs was observed during the wave of the COVID-19 pandemic when government-imposed lockdowns triggered consumers to indulge in panic buying due to the shortage of their required products. Many consumer-packaged goods (C.P.G.) brands analyzed a rapid surge in product demand, which took this as an opportunity to offer something valuable and affordable to buyers. The disappearance of known brands from the store shelves allowed buyers to look for inexpensive alternatives online to replace their preferred brands. Most of the business models of physical retail chains shifted to e-commerce due to the COVID-19 crisis (Perez, 2020).

In a highly competitive online retail environment, where consumers face many brand choices, retailers must create positive perceptions and awareness regarding their online PLs offering to appeal to targeted consumers. The unprecedented challenges of the COVID-19 pandemic forced many startup brands to introduce online PLs on online platforms (Huang et al., 2023). To keep pace with evolving consumer shopping habits and product expectations for convenient product/ service access, implementing online, PLs emerged as both the most challenging and complex decision—yet also the most rewarding—for e-private label retailers. While the perceived difference in quality has become less pronounced recently, it remains present among consumers in certain countries, resulting in an increased readiness to pay for these brands. The growing trend of online PLs is evident in Asian economies, especially the Pakistani retailing sector, which sparked 68% consumption of online PLs via e-commerce shopping, per the insights by Anthonisen and Azhar reported via Think with Google (2020) survey data.

Online retailer brands have evolved throughout time. They are no longer category killers; they now play various roles with different implications for manufacturers and retailers alike. It is clear that the swift growth of online PLs shortly after its inception demonstrates a substantial level of immediate consumer purchasing intent. Nonetheless, other signs indicate that this emerging rise phenomenon might not be sustainable, posing a practical challenge. Consumers will require high-quality online PLs as a significant condition and can quickly revert to their favored brands anytime. Believing that the online private label owner must develop effective online marketing strategies and attractive offerings to counter this consumer concern. Retailers frequently lack a distinct approach to cultivating lasting customer loyalty. To tackle this challenge, further research is needed to explore the increasing trend of online PLs, which is beneficial but rather doubtful of consumer preferences. Therefore, fostering a positive attitude towards online PLs is crucial. Consequently, this study aims to fill this empirical gap by constructing a theoretical framework centered around the research question, "How can consumers cultivate a positive attitude that ultimately drives their intention towards online PLs?"

To achieve this, the current research highlights the importance of three key factors: heuristic cues, consumer attitude, and their role in influencing positive purchase intention towards online PLs. Several real-life examples illustrate that this new retail brand is clearly gaining ground. One of the big giants in online PLs retailing is Amazon, which owns more than 158,000 online PLs that cover a wide range of categories on its platform and is still progressing. While some Amazon brands, like Echo or Kindle, are recognizable, others are less obvious. Like the PL found in physical stores, Amazon brands often develop products similar to popular name-brand items on the site, offering them at lower prices.

Regardless of the emergence and growing importance of online PLs, Most of the prior conceptual and empirical studies have concentrated on different dimensions of PL within physical settings, such as consumers' perceptions, purchase intentions, and attitudes regarding price-quality relationships, familiarity with the brand, value consciousness and perceived risk, (Zarbazoo & Imankhan, 2016) and in-store marketing techniques and the store environment (Putra & Fadillah, 2022), psychographic traits like price consciousness and store loyalty (Horvat & Ozretić Došen, 2020), connection between store image and purchase intentions, identifying price consciousness and PLs attitudes as significant factors (Ruiz-Real et al., 2018).

Although PLs strategies have been frequently covered in business media, they have only recently been comprehensively studied in both theoretical and empirical research (Ailawadi et al., 2008). The limited amount of academic research conducted on online PLs has taken two basic approaches: some studies

examined the antecedents affecting consumer attitude towards PLs (Mumin & Phang, 2021), and others were oriented towards the benefits associated with PLs chain owners (Alić & Mujkic, 2022). Concerning the first type of research, Ribboldazi et al. (2021) state that, surprisingly, little research has been conducted addressing the issue of the 'PLs attitude' in the 'online context' due to increasingly intense competitive interaction between PL and national brands.

Despite a few research concerning consumer behavior on PLs in the digital context (Pangriya and Kumar, 2018), a surprising lack of academic research highlights the key drivers and mechanisms responsible for forming a PL attitude. Until now, hardly any study has spotted an empirical gap that aims to explore the key antecedents accountable for creating favorable consumer attitudes; therefore, the current study a) uncovers different types of heuristic cues (Johnson & Hong, 2023) that would predict consumer product evaluations and their online behavior b) identified key processing variable that acts as a mediator and immediate response to this driver ultimately result in positive purchase intention. Incorporating such a behavioral influencing driver will enable the upgraded knowledge of PLs consumer research (Juaneda-Ayensa et al., 2016).

In response to the concerns raised above, the objective of this study is two-fold. First, we want to directly assess how heuristic cues will influence consumers' positive attitudes toward online PLs directly. Second, we want to investigate whether consumer attitude plays a pivotal role as a mediator in binding the relationship between heuristic cues and purchase intention.

Literature Review & Hypotheses Development

Cue Utilization Theory

Cue Utilization Theory (Olson & Jacoby, 1972) proposes that consumers rely on different intrinsic and extrinsic cues (e.g., brand name, price, product reviews) to make judgments regarding product quality and thus form brand attitudes. These cues reduce uncertainty and cognitive effort in decision-making often associated with unfamiliar brands. The theory explains that consumers form brand attitudes based on their perceived cues in consumer attitude and purchase intention. For example, positive online reviews act as extrinsic cues, which create favorable attitudes. Once a positive attitude is formed, it is more likely to increase purchase intention Research shows that the more credible the cues, the stronger will be the attitude formation and the greater the translation into purchase intention (Wang et al., 2020). Prior research demonstrated that the higher the perceived credibility of social media cues, the stronger their impact on both attitude and the likelihood of purchase (Gieter et al., 2021).

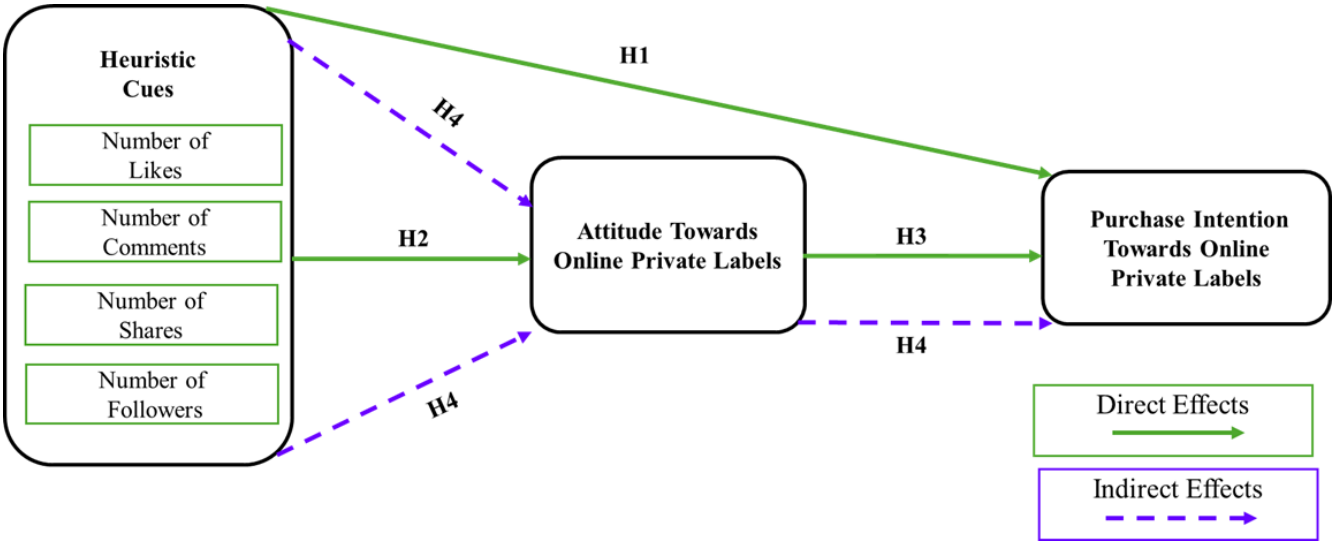
Research shows extrinsic cues, such as website interface and brand image cues, are significant predictors of online purchase intentions (Ranganathan, 2012). A retailer's reputation and product review credibility are substantial indicators of online consumer behavior (Kim & Choi, 2012). In the online shopping context, cues like product promotion, user-generated content, personalized recommendations, and consumer product reviews on social media platforms positively impact attitude and purchase intentions (Xiao et al., 2019).

In social media marketing, heuristic cues (the number of likes, comments, shares, and follower counts) act as extrinsic cues that consumers rely on. This reliance is due to the lack of intrinsic cues, generally the "actual product experience." For products like online PLs, consumers have less familiarity and experience, and consumers are more likely to consider their social media posts to see acceptability by other online consumers. The likability and acceptability of the advertised content are evident through the count of heuristic cues exposed to that post. This shapes their online brand attitude, making them more favorable toward the brand even before direct product interaction.

Based on that, under the theoretical lens of cue utilization theory, heuristic cues are treated as extrinsic cues, and how effectively these cues translate attitude in shaping online PLs into favorable purchase intention.

Figure 1

The Research Model



Direct Relationships

Heuristic Cues & Purchase Intention Towards Online PLs

Heuristic cues represent "collective endorsement and popularity of the underlying content." (Sundar., 2008). Consumer online product attitude formation is significantly influenced by the availability of commonly used heuristic cues as "rules of thumb" (Sundar et al., 2020). Online buyers use their mental shortcuts to assess easily reachable information without any hassle to smooth their shopping experience. Consumer reliance on heuristic strategies reduces cognitive strain and helps shape consumer risk perceptions. It usually involves heuristic processing, leading to an increase in system-generated cues in product choices (Braga & Jacinto, 2022).

Buying via brands' social media pages is a common practice nowadays. Brands sharing their product advertising posts are most likely exposed to heuristic cues in the form of likes, comments, shares, and followers. These factual indicators that represent quantitative counts which exhibit online consumer's extra clicking, liking, commenting, and sharing behaviors (Triantafillidou & Siomkos., 2018). Likes indicate consumers' approval without words, while comments allow direct engagement in response to brand content and represent other's responses towards the brand posts in words (Jessen & Jorgensen, 2011; Giffard-Tiney, 2015). Shares extend content visibility and influence opinions significantly (Antonopoulos et al., 2016). The number of followers represents the total number of people following a brand page (Hong, 2015).

Recent research demonstrates a strong relationship between heuristic cues and consumer purchase intention in online marketing. Heuristic cues such as review quantity, source credibility, and brand experience positively influence perceived product quality and purchase intention (Rosillo-Díaz et al., 2024). Online product reviews affect consumers' information processing styles, with ascending ratings promoting perceived review helpfulness (Lee & Lin, 2021; Zheng et al., 2024). With thousands of positive heuristic cues, consumers interpret these signals as indicators of online PLs popularity, credibility, and quality, which boosts consumers' PL purchase intention. Thus, the hypothesis formulated is as follows:
H1: Heuristic cues (i.e., (a) likes, (b) comments, (c) shares, and (d) followers are positively related to online PLs purchase intention

Heuristic Cues & Attitude Towards Online PLs

Online consumers use heuristic cues to condense complex and uncertain buying situations. Even when people try to make logical conclusions, their ability to do so is constrained by the time and information required. As a result, people are compelled to use shortcuts when selecting a buying option, prioritizing mental shortcuts in the face of cognitive limitations.

This aligns with previous research that demonstrated that Instagram consumers formed their credibility judgment of a brand's based on the number of likes a post receives (De Vries, 2019). In a similar vein, Lee and Song (2022) found that the number of likes, tweets, and user comments affect consumer brand attitude. Natarajan & Periaiya (2024) found that heuristic cues influence consumer website attitude, affecting review attitude. Siddiqi et al. (2020) revealed that conflicting star ratings and opinions about a brand's attributes positively affect attitude.

It is contended that when consumers encounter online PLs with trusted heuristic cues, they make more affirming buying decisions based on online users perceived social approval. The heuristic cues on posts will contribute to higher perceived legitimacy and boost their positive purchase intent. In line with cue utilization theory, the perceived diagnosticity of cues, i.e, heuristic cues, influences how much consumers trust the online PLs information and translate it into favorable purchase intention. Thus, the following hypothesis is formulated:

H2: There is a positive relationship between heuristic cues and attitude towards online PLs.

Attitude Towards Online PLs & Purchase Intention Towards Online PLs

Attitude is a learned predisposition through which one responds to an entity in a repetitively unfavorable and favorable way (Solomon., 2006). A consumer's favorable or unfavorable response is critical regarding product evaluations regarding brand terms, design, symbol, or any other feature that identifies one brand's product offerings as distinct from those of the other sellers. Attitude is always considered the strongest predictor of purchase intention, and the relationship between attitude and purchase intention has been well-established in previous studies (Hasan, 2016; Pantano & Corvello, 2014). Some factors like personal experience, learning, information, news, media, direct/indirect life experience, and advertisement (Paul & Bhakar, 2018)) can all impact a buyer's positive attitude formation and purchase intent towards a brand. A favorable brand attitude because of its appraisal leads to a consumer's continued preference for those brands. It positively affects consumer willingness to pay a higher value, converting into positive purchase intention (Park et al., 2020).

Considering this, attitude towards online PLs is defined as a 'consumer's favorable or unfavorable predisposition towards PL in general and is the result of the individual's experience of PL' (Burton et al., 1998). The authors discovered that attitudes towards PL are positively associated with actual purchases about other price perceptions, deal perceptions, and other marketing-related constructs. Amrouche and Yan (2012) have investigated this topic by pointing out online channels as a promising setting while studying PLs but not going further. Also, Chen et al. (2019) second that studying consumer PLs attitudes is an interesting online context.

As marketers are actively seeking to promote a positive attitude toward the brands by delivering product information by converting them into strong consumer-brand connections (De Pelsmacker & Janssens., 2007). It is contended that firms selling online PLs should capitalize on engaging content and value-added product features that promote consumer purchase intention.

Under the theoretical lens of cue utilization theory, it is contented that for online PLs buyers, the prime concern is to ensure product quality and value. To mitigate their fears about uncertainty or risks, they rely on extrinsic cues (i.e, the heuristic cues). This would foster favorable consumer perceptions; further help reduce associated risk of trial and can significantly influence their favorable attitude and purchasing intent. Without credible signals, consumers may hesitate to try unfamiliar online products due to authenticity concerns.

H3: There is a positive relationship between attitude towards online PLs and online PLs purchase intention

Mediating effects-Attitude towards Online PLs

Between Heuristic Cues & Purchase Intention Towards Online PLs

Research indicates that consumer attitudes not only influence purchase intention but also mediate the effects of various factors. For example, Lanero et al. (2020) demonstrated that green marketing's impact on purchase intention is significantly mediated by consumer attitudes. Similarly, Mukesh and Narwal's

(2023) study further supports this, showing that consumer attitudes mediate the relationship between price perception, environmental concern, and purchase intention. It has also been found that heuristic cues impact consumer cognitive responses and activate heuristic information processing mode, eventually affecting consumer psychology. The study by Seo et al. (2018) confirmed that brand social media posts featuring product information combined with stronger heuristic cues positively impact consumer brand attitudes and purchase intention.

Based on the above affirmations, it is stated that social media brand posts composed of heuristic cues (i.e, likes, comments, shares, and a large follower count) are key indicators to assess how popular the online PLs are within the online community. Heuristic cues as indicators of quality and dependability assure online consumers about the acceptability of online PLs amongst other buyers, which further refine purchasing choices. Consequently, they foster trust and encourage consumers to try online PLs.

According to cue utilization theory, consumers interpret heuristic cues as extrinsic cues—especially in online contexts to infer brand quality and credibility, shaping their attitudes toward the brand. These favorable attitudes then mediate the relationship by translating the impact of heuristic cues into the intention to purchase. Recent studies have confirmed this pathway in digital settings, showing that social media cues significantly affect consumer brand attitudes, increasing purchase intention (Munnukka et al., 2016). This highlights the role of heuristic processing in online retail shopping environments, where consumers' reliance on easily accessible informational cues can drive important downstream outcomes like 'buying behavior.'

Regardless of its theoretical relevance in understanding how today's connected consumer behavior is driven by community-driven consensus, further research on the impact of heuristic cues is necessary to understand the behavioral aspects of social commerce (Oyedele & Goenner, 2021). Taking this future direction forward, we propose that consumer attitude is a potential binding mechanism to establish a relationship between heuristic cues and consumer purchase intention towards online PLs. Hence, we suggest the following hypothesis:

H4: Consumer attitude towards online PLs positively mediates the relationship between heuristic cues and purchase intentions.

Research Methodology

Sample and Research Settings

The expected population was Pakistani online consumers with online purchase experience of online PLs. From the total population of social media users, we considered active social media buyers who are aware of the presence of online PLs. Purposive sampling was used for the sample collection. Due to the sufficient availability of time frames and resources, 400 samples were collected, and 50 of the surveys were excluded due to improper replies. Out of 350, the rest were removed being detected as outliers. As a result, the actual sample size was retained to 250 (including individuals, students, employees, professionals, etc. 40 % were male and 60% were female. The majority of the respondents fall between the age bracket of 18-30 years. Belonged to the middle social class (i.e., 68%), with a minimum of 16 years of education, and held monthly income between 51k-100k (i.e., 35%)

Primary data was collected by using a self-administered questionnaire via an online web survey. The participants' anonymity was ensured; moreover, they were informed beforehand that the questionnaire required honest responses and will be strictly used for research only. The first filter was applied to fulfill the study criteria for qualifying online PLs buyers. It's based on a screening question, i.e., Are you a frequent buyer of online PLs? Those who responded with 'No' were automatically discarded from proceeding with the web survey. The study took place from May to June 2024.

Research Design

The methodological choice is a quantitative approach; as Fink (2003) indicated, it involves gathering self-report measurements from the research sample. This design aims to uncover individuals' opinions, attitudes, and purchase behaviors in a specific buying context (i.e., for Online PLs). It was a formal study

that involved hypotheses testing to address the key research question. The web-survey methodology, which aligns with the positivist paradigm, allowed us to reach a diverse sample of participants. The online method is particularly advantageous in the digital age, where consumers interact with brands primarily through online PL platforms. Their interaction with online content heightens their chances of involvement and the precision of their responses concerning online activities" (Callegaro et al., 2020). The purpose is to describe and explain the role of heuristic cues in shaping positive consumer attitudes and purchase intention towards PLs. Data is primarily collected at one point in time. A post hoc approach was adopted with minimal researcher interference.

Measures

The total number of constructs is three, comprising 15 items to measure the study constructs. The Cronbach Alpha score for the scale of heuristic cues was (α=0.91), consumer attitude towards online PLs (α=0.90), and purchase intention (α =0.827). See Table 1 for complete details.

Table 1

Measurement of Variables

Constructs	Reference	Item	Scale	(α)
Heuristic Cues	Hong and Cameron (2018)	4 items (likes, comments, shares, and followers count)	frequency rating scale ranging from 0 'Never' to 77 'Always'	0.91
Attitude Towards Online PLs	Burton et al. (1988)	6 items (feel-good, availability, best buy, value, good deal)	Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree)	0.90
Purchase Intention Towards Online PLs	Grewal et al. (1998)	5 items (likelihood, consideration, probability, willingness, recommendation)	Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree)	0.82

Data Collection Procedure

An online web-based survey was conducted with a sample of online shoppers from Feb. 2025 to Apr. 2024. Pakistan is the country of reference for analyzing constructs related to PLs products. Numerous academic researchers have investigated Asian environments and have proposed further exploration (Sameeni et al., 2024). Respondents were recruited electronically via web link by disseminating the Google form on different social media platforms, including (Instagram and Facebook). The respondents were selected based on filtration questions qualifying them as online PLs buyers. Later questions concerning heuristic cues, consumer attitude towards the online PLs, and purchase intention were preceded. A total of fifteen logos of online PLs were listed in the questionnaire, which is quite popular in the personal care product category. The 2020 In-cosmetics report highlighted that Generation Z shoppers prioritize certain features when purchasing personal care and beauty items, including sustainability and ethical sourcing, competitive pricing, and superior quality. The questionnaire was shared online on different social media platforms to collect data from online PLs buyers.

Confirmatory Factor Analysis

CFA was conducted using AMOS 24.0, following the two-step approach suggested by Kim and Lee (2019), where the data was split into two equal samples. Each questionnaire sample item loads on its respective latent construct, and all the latent constructs correlate well with each other. No items exhibited low factor loadings, with all factor loadings exceeding the acceptable threshold of 0.50. (see Table 2). Standardized estimates in a CFA model indicate the strength and direction of relationships between observed variables and latent factors, typically ranging from -1 to 1. All items are loaded on relevant factors, with convergent validity ranging from 0.818 to 0.911. Moreover, the model fit indices are within the range of acceptability. The factor analysis provided a model fit score representing a perfect fit of data (X2 = 181.429, X2df = 2.4, CFI = 0.952, GFI = 0.901, TLI = 0.941, RMSEA = 0.76).

Table 2

Factor Loadings

Constructs	Items	F1	F2	F3
Heuristic Cues	HC 4	0.881		
	HC_1	0.870		
	HC_2	0.854		
	HC 3	0.833		
Attitude Towards PLs	ATOPLs 3		0.791	
	ATOPLs _1		0.789	
	ATOPLs _5		0.778	
	ATOPLs _2		0.776	
	ATOPLs 6		0.770	
Purchase Intention Towards Online PLs	PITOPLs 4			0.788
	PITOPLs_5			0.705
	PITOPLs _2			0.639
	PITOPLs _3			0.579
	PITOPLs 1			0.549

Notes: HC=heuristic cues; ATOPLs=attitude towards online private labels; PITOPLs=purchase intention towards online private labels; PLs=private labels

Reliability & Validity Analysis

After conducting the CFA, it is vital to check for the accuracy and consistency of the measurement scales to reduce any underlying errors related to data measurement. For that, the tests for reliability and validity estimates were conducted. All the reliability measures of the study constructs are significant, as they represent the alpha value greater than the threshold of 0.70, as per the standard (Nunnally, 1978).

Later, the validity is checked for the measuring constructs. Validity refers to the "accuracy with which a construct measures what it is intended to assess." It is typically evaluated through two types: (a) convergent validity and (b) discriminant validity. Convergent validity is assessed using the Average Variance Extracted (AVE). It is established when the composite reliability (CR) is greater than the AVE and the AVE exceeds 0.50, as recommended by Hair et al. (2019). We found that all the CR values are more significant than AVE values, and all AVE values are greater than the threshold of 0.50; hence, convergent validity is established (see Table 3). In contrast, discriminant validity is established when the square root of a construct's AVE is greater than its correlations with other constructs (Fornell & Larcker, 1981). This study's AVE values exceeded the corresponding correlations, confirming discriminant validity.

To reduce the common method error bias, the current study has utilized the procedure recommended by Podsakoff et al (2003) to evaluate whether correlations among constructs stem from common method variance. Along with CFA, we perform Exploratory Factor Analysis (EFA) to determine biases resulting from common method variance (CMV). In EFA, principal component analysis is performed; the unrotated factor solution having all scale items yielded three factors explaining 70.88% of the total variance, with the first factor accounting for 29.68%, indicating no common method bias. After that, the Harman one-factor test is performed to check if a single factor accounted for most of the variance, which would indicate common method bias. Without rotation, a single factor explained 44.92% of the variance, well below the standard threshold of 50%, indicating that common method bias was not a concern in the data.

Table 3

Convergent and Discriminant Validity

Constructs	CR	AVE	1	2	3
Heuristic Cues	0.914	0.727	0.852		
Attitude towards online PLs	0.901	0.646	.484**	0.804	
Purchase Intention Towards Online PLs	0.835	0.511	.391**	.725**	0.715

Notes: **p<0.05; CR= Composite Reliability; AVE= Average Variance Extracted; PLs = private labels

Descriptive, Multicollinearity & Correlation

Descriptive statistics is a way to describe and summarize the basic features of a dataset, providing simple summaries about the sample and the measures. Table 4 helps in understanding the overall distribution of the sample and details about study variables before moving to complex analyses. The variables are measured on a seven-point Likert scale; therefore, the minimum and maximum values lie between 1 and 7, which represent a discrete structure. -To address missing values, series mean imputation was applied, which may alter variable structure from discrete to continuous. To verify normality, skewness and kurtosis values were examined, with acceptable ranges between (−2, +2) or (−3, +3), reported in Table 5.

Table 4

Descriptive Statistics

Constructs	Min	Max	Mean	SD	Skewness	Kurtosis
Heuristic Cues	1	7	4.05	1.846	0.105	-1.293
Attitude towards online PLs	1	7	4.13	1.579	-0.053	-0.849
Purchase Intention Towards Online PLs	1	7	4.96	0.874	-0.932	0.695

Notes: Min = Minimum, Max = Maximum, SD = Standard Deviation; PLs = private labels

Next, collinearity diagnostics were conducted to assess the multicollinearity among the independent and dependent variables (Table 5). The tolerance values showed no multicollinearity issues since all values were above the threshold of 0.10. Likewise, the variance inflation factor (VIF) values demonstrated no problems with multicollinearity, as all the values were below the threshold of 4, as suggested by Hair et al. (2019). The findings indicated that none of the variables examined exhibited normality concerns."

Table 5

Multicollinearity

Constructs	VIF	Tolerance
Heuristic Cues	1.30	0.76
Attitude towards online PLs	1.24	0.67

Notes: [a]Dependent variable: purchase intention towards online private labels, PLs=private labels; VIF =variance of inflation

Furthermore, the correlations among the study variables were examined (Table 6). The results showed that all variables are positively correlated with each other at the significance level of 0.01, thereby providing initial support for the hypothesized relationships. Specifically, heuristic cues show a significant positive correlation with consumer attitude towards online PLs ($r = 0.484$, $p < 0.01$) and purchase intention ($r = 0.391$, $p < 0.01$). Moreover, consumer attitude towards online PLs strongly correlates with purchase intention ($r = 0.725$, $p < 0.01$). These findings suggest the proposed model is well-supported and likely to produce favorable results in the subsequent hypothesis testing.

Table 6

Correlation Matrix of Study Variables

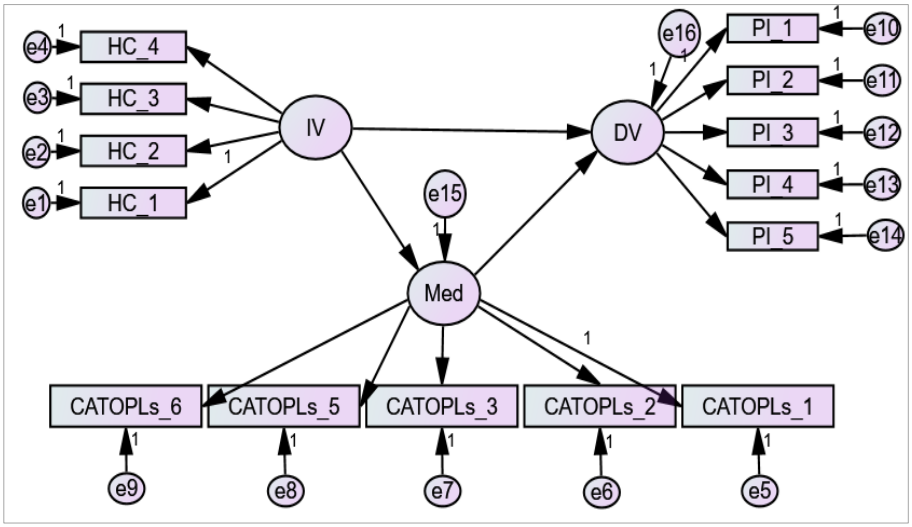
Constructs	1	2	3
Heuristic Cues	1		
Attitude towards online PLs	.484**	1	
Purchase Intention Towards Online PLs	.391**	.725**	1

Notes: **. Correlation is significant at the 0.01 level (2-tailed).

The structural model was developed by AMOS 24.0 to assess the hypothesized relationships among the latent variables. The model consists of one dependent variable, i.e., purchase intention, one mediating variable, i.e., consumer attitude towards online PLs, and one independent variable, i.e., heuristic cues. SEM is a modern, robust multivariate technique that enables simultaneous testing of all study variables. The following will provide details on the results of hypothesis testing.

Figure 2

Structural Model



Notes: HC= Heuristic Cues; PI =Purchase Intention; CATOPL = Consumer Attitude Towards Online PLs

H1 claims that heuristic cues positively influence consumer attitude towards online PLs, with a positive beta coefficient (β = 0.625, p < 0.001) demonstrating that H1 is supported. H2 and H3 argue that heuristic cues significantly influence consumer attitude towards online PLs (β = 0.528, p < 0.001), and consumer attitude towards online PLs also positively results in favorable purchase intention (β = 0.827, p < 0.001), both the hypotheses are supported.

Mediation Analysis

By observing the results from (Table 8), it is found that heuristic cues were a significant and positive predictor of consumer attitude towards online PLs. In turn, consumer attitude towards online PLs was a statistically significant predictor of purchase intention (coefficient b = 0.437, 95% CI [0.414, 0.625]). Thus, when heuristic cues become more prominent, they trigger a favorable consumer attitude formation towards advertised online PLs, where buyers get influenced by other's actions on the post, and digitally quantifiable statistics further lead to purchase intention. Thus, H4 is supported. Detailed results are shown in Table 7.

Table 7

Direct and Indirect Estimates

Relationships	Estimates	SE	95% CI	p-value	Results
HC --> PITOPLs	0.625***	0.034	.215 .132)	0.000	Supported
HC --> ATOPLs	0.528***	0.056	(.414, .625)	0.000	Supported
ATOPLs --> PITOPLs	0.827***	0.057	(.741, .919)	0.000	Supported
HC --> ATOPLs --> PITOPLs	0.437**	0.056	(.342, .549)	0.007	Supported

Notes: PLs=private labels, HC=heuristic cues,; ATOPLs =attitude towards online private labels; PITOPLs = purchase intention towards online private labels; ***p<.001 **p<.05

Discussion and Implications

The study confirms the positive relationship between heuristic cues and consumer purchase intention towards online PLs. Aligning with the research of Braga & Jacinto (2022), the authors found in experimental research that consumers often rely more on heuristic cues than in offline settings due to their convenience and resource-saving expectations. This increased reliance on heuristics significantly influences both probability judgments and product choices, ultimately enhancing purchase intention in online shopping environments. Peer purchases, as indicated by the number of heuristic cues, strongly impact consumer purchase intention (Cheung et al., 2014). Additional research demonstrated that heuristic cues in online

advertisements significantly impact consumer brand awareness and indirectly influence purchase intention. Xiao et al. (2019) added that in cross-border e-commerce, online products encompassing personalized recommendations and social reviews significantly influence purchase intention. Based on this, it is contended that online PLs advertised posts containing many heuristic cues allow consumers to have a positive purchase intent. Thus, H1 is supported.

Our second hypothesis confirms the assessment of the positive role of heuristic cues in influencing consumer attitude toward online PLs. This aligns with the prior research by Hong and Cameron (2018), which confirms that online comments and the number of likes, shares, and source credibility directly bring favorable changes in consumer attitude and induce more trust in the brand, leading to greater supportive intentions. Natarajan & Periaiya (2024) added that both online review cues (e.g., number of reviews and review ratings, play a significant role in shaping consumer review attitude. Similarly, Meinert and Krämer (2022) work posits that heuristic cues (e.g., number and valence) activate specific decision-making strategies, affecting decision latencies and impacting the purchase certainty.

Consistent with earlier results, this study's findings suggest that the direct effect of heuristic cues substantially affects consumer attitude. In addition, Petrescu et al. (2024) study also demonstrated that heuristic cues engage online buyers to undergo less reflective assessments of brands while forming brand perceptions. Thus, H2 is supported.

The third finding confirms a positive relationship between consumer attitude and purchase intention towards online PLs. The predictive power of attitude on purchase intention has been well established and confirmed in studies across various fields and product categories. Consumer attitudes often assess PLs based on perceived quality, significantly impacting their attitudes and purchase intentions. Higher perceived quality leads to more favorable attitudes toward PLs (Rendón et al., 2023; Yadav & Kar, 2024). In the Mumin and Phang (2021) study on PLs, attitude was the most important factor to purchase intention. Moreover, the relationship between consumer motives and purchase intent is uniquely shaped by attitude, while buying PLs through social networking sites is generally generated by the binding force (Younis & Elmeniawy,2025). Wang et al. (2020) indicate a greater consumption of similar products and attitudes could lead to higher purchase intention. Familiarity with the PLs also enhances perceived quality, making consumers more likely to purchase them (Surjaatmadja & Purnawan, 2018). Based on these studies, it is posited that attitude is a potent mediator among many variables of great interest to the marketer.

The fourth finding confirms that consumer attitude towards online PLs strongly mediates between heuristic cues and purchase intention. In line with the previous research by Xie and Lou (2024) demonstrated that devising engaging content which foster likability among the consumers creates a sense of belonging, further motivate consumers to make a purchasing decision in favor PLs. Chavadi et al. (2023) findings reported a substantial percentage of consumers (64.4%) who making PLs purchases based solely on social media recommendations via comments on brand posts, highlighting its persuasive power. Similarly, the number of likes is particularly more effective when the ads are exhibited effectively, leading to more favorable attitudes and evaluations (Seo et al., 2019). In addition, social media engagement indicators, i.e, heuristic cues, directly influence purchasing decisions, with a notable effect observed on platforms like Instagram (Rosli et al., 2024).

Theoretical Implications

The research highlighted several theoretical implications.

Firstly, incorporating purchase intention as an outcome of where heuristic cues influence consumer attitude formation offers a significant theoretical contribution. It bridges the gap between cognitive processing and behavioral outcomes, aligning with the aspects of Rosillo-Díaz et al. (2024) study, which found that heuristic cues like the quantity of reviews positively influence perceived product quality perceptions, which in turn significantly impacts purchase intention. Recent studies have shown that heuristic cues, such as review volume, positively shape consumer brand attitudes (Zhang et al., 2014). By empirically validating this mediating relationship, researchers can better understand how marketing stimuli translate into online consumer behavior, providing a robust framework for predicting purchase decisions in online shopping environments (Tan et al., 2021). These studies highlight the importance of

various cues in the online shopping environment and their effects on consumer perceptions, risk assessment, and purchase decisions, providing valuable insights for e-commerce sustainability and consumer behavior research. This also contributes to cue utilization theory by showing how heuristic cues act as extrinsic cues in signaling product credibility that reduces and enhances consumers' perceived product quality perceptions, leading to increased purchase intention.

Secondly, this research extends the literature on heuristic cues to assess their impact on online PL's initial consumer attitude formation. Prior studies primarily focused on the number of likes and followers on Instagram and Twitter and the numbers in a website's 'counter section' (Antonopoulos et al., 2016; Johnson & Hong, 2023). While no direct studies have examined the direct impact of heuristic cues at the consumer level, this study builds on prior research showing that consumers frequently use heuristic cues to assess social media communication, even for not-so-familiar brands. It also extends cue utilization theory by highlighting how consumers interpret signals from e-retailers to reduce their product buying concerns. This research supports existing literature by confirming that consumer-driven heuristic cues are effective signals in online shopping contexts (Connelly et al., 2011). It also emphasizes that social and interactive online signals encourage consumer engagement and social validation.

Third, it adds to the literature on PLs consumer literature by investigating the antecedent responsible for forming favorable consumer attitudes toward online PLs. Previous literature discussed a few key antecedents of consumer PL's attitude toward offline retail shopping (Muruganantham & Priyadharshini, 2017). Many scholars have emphasized the need for ongoing research into the antecedents and mechanisms that shape consumer attitudes toward PLs, especially amid changing market dynamics and technological innovations (Gielens et al., 2021). Addressing this gap, this study explores a key antecedent within the digital shopping context, i.e, the heuristic cues playing an increasingly influential role in shaping brand attitudes. This contributes theoretically by extending existing PLs literature into the digital realm, offering a contemporary lens to understand attitude formation through online-specific mechanisms. As evidenced, heuristic cues signal the audience's volume and acceptance of a brand, which fosters a positive consumer brand attitude (Yang et al., 2024). Hence, the study findings reinforce and extend cue utilization theory by demonstrating how heuristic cues serve as trustable signals in shaping online PLs attitudes and contribute to the favorable consumer attitude and purchase intention.

Practical Implications

First, using a conceptual mode of utilization (Simsek et al., 2022), PLs who are exclusively operating in a virtual marketplace have no other option but to rely heavily on visual appeal, lies, comments, shares, and followers counts to signal trust and value, creating string heuristic cues quickly. Consumers often rely on their mental shortcuts and quickly judge low-involvement purchase settings. Online PLs owners/retailers can design content that amplifies "social proof"-like user comments, reviews, etc.- to boost credibility. This innovative strategy would enhance consumer brand attitude and purchase intention with minimal cognitive effort,

Second, virtually online PLs can build consumer attitudes by offering transparent product information, value-added pricing, and consistent digital engagement. Their sole control over the branding and customer experience in e-commerce platforms fosters trust, a prerequisite to forming confidence. Online PLs should convey clear messaging, prompt responses to consumer inquiries, and reliable service to reinforce positive attitudes.

Third, online PLs can create positive purchase intention by aligning with consumer values through personalized content, authentic design, and social media engagement. This positive intent, as a result of favorable attitude formation, enhances brand perception, leading to strong buying behavior; practically, online PLs should be focusing on relatable storytelling and interactive posts, which automatically create a buzz (often via heuristic cues) in driving more and more concertation in a digital retail environment.

Limitations and Directions for Future Research

This study presents several limitations, offering valuable directions for future research. Firstly, this study employs the cue utilization theory perspective, not the "Heuristic-Systematic Model" (HSM). HSM

(Chaiken, 2014) suggests that both the processing modes (i.e, heuristic and systematic) simultaneously occur, allowing consumers to choose one based on personal motivation and ability. The current study focused on single-route processing and treated heuristic cues as a solely independent marketing concept without examining dual-route processing, making HSM—fundamentally a dual-process theory—less applicable. This study is more concerned with behavioral outcome orientation, such as purchase intention, rather than the depth of cognitive processing, which HSM primarily addresses.

Secondly, many studies overlook the "cross-platform" nature of consumer shopping, where consumer buying behaviors vary greatly between mobile apps and desktop websites (Boztuğ et al., 2015). Adopting this perspective would enable researchers to examine how perceptions of online PLs evolve across social media platforms and gain deeper insights into the sustained impact of PL's online branding strategies.

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