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Neurological Dynamics of Consumer Decision-Making: A Meta-Analytical Perspective

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ABSTRACT

Contemporary marketing thoughts seem too rigidly glued to the view that consumer purchase decision-making processes are primarily motivated by extrinsic variables and rational drivers more than anything else. However, neuroscientific evidence from archived and current sources shows that intrinsic brain processes activated by subtle sensory cues significantly influence consumer purchase decisions. Exploring that illuminating discourse, this study employs a meta-analytical approach, systematically searching databases such as Scopus and Web of Science to synthesize existing literature to bring out insights that enrich our understanding of consumer behaviour. The analysis culminates in the conceptualisation of a five-construct neurological model that embody the sequential consumer decision-making process as comprised of: the challenge, inquiry, experiment, experience, and content. Rigorous inclusion-exclusion criteria narrowed an initial pool of 457 articles to 98 relevant studies, assessing sample sizes, demographic characteristics, and effect sizes. The DerSimonian-Laird random-effects model evaluated between-study variance, supplemented by sensitivity and stratified analyses to refine insights. Key takeaways from the model highlight the importance of addressing intrinsic consumer needs during the neural challenge stage, delivering clear information during neural inquiry, and enhancing brand loyalty through experiential learning in neural experimentation. This theoretical framework enriches our understanding of the interplay between emotion and rationality, offering practical implications for marketing strategies and encouraging insights into evolving consumer psychology.

Key words: Pre-frontal cortex, Neural mood, Anterior cingulate cortex

INTRODUCTION

A key component of behavioural economics and marketing, consumer decision-making is receiving a lot of scholarly interest (Kotler & Keller, 2016). Businesses can create more successful tactics to influence consumer behaviour by having a better engagement with cognitive processes that stimulate and catalyse purchasing decisions. The necessity to investigate the interaction between emotion and cognition is highlighted by recent research that indicates a significant percentage of purchase decisions are motivated by emotional reactions rather than only rational analysis (Phelps, Lempert, & Sokol-Hessner, 2014). How exactly consumers promulgate purchase decisions, the driving mental reflex constructs behind their actions, and the state of their mind when faced with a proliferated marketplace, are all important catch-marks for any serious marketing practitioner, in contemporary times. The rigorous meta-analytical search for such intricate psychographic insights culminated in a meta-analytical paradigm based on five-point cognitive moods. These moods offer a thorough viewpoint that goes beyond conventional models and reflect stages of consumer cognition. Though assumed, to a greater extent, the neural moods may not necessarily be sequential all the time. Nevertheless, the meta-analysis bridges essential research gaps by synthesizing previous empirical insights, literature and theory to offer a comprehensive understanding of how neural moods fundamentally steer consumer decision-making processes. From that perspective, the analysis' main thrust is rooted in the objectives outlined in the next section.

Research Objectives

1. To identify and integrate gaps in consumer behaviour literature to enhance understanding of cognitive moods in decision-making frameworks.

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2. To advance fresh perspectives on theoretical and practical underpinnings of contemporary consumer buying decision-making patterns.

LITERATURE REVIEW

In view of the function of cognitive moods in consumer decision-making, it is critical to integrate foundational theories of consumer behaviour with contemporary insights from neuroscience. A pivotal framework in this exploration is Ajzen's (1991) Theory of Planned Behaviour (TPB), which interprets how attitudes, subjective norms, and perceived behavioural control shape behavioural intentions. Attitudes are primarily influenced by an individual's beliefs regarding the likely outcomes of an action (Fishbein & Ajzen, 1975; Ajzen, 1991; Shrum, 2016; Pipalia, 2016), which reflect an evaluation of the behaviour as either positive or negative. Simultaneously, subjective norms capture the perceived social pressure to engage in or abstain from specific behaviours, while perceived behavioural control encapsulates the perceived ease or difficulty of enacting those behaviours (Ajzen, 1991; Armitage & Conner, 2001; Shrum, 2016). Recent empirical studies (see, Attreva, 2018; Sharma, 2018; Mochon et al., 2020; Tully et al., 2022) continue to validate the TPB's predictive power across various contexts, shedding light on the moderating effects of perceived behavioural control on intention-behaviour relationships.

Yet, critiques of the TPB reveal a significant gap in comprehending the non-rational aspects of decision-making. Many scholars argue that the TPB overestimates rationality in consumer behaviour, particularly in critical situations where neuro-emotional drivers exert a more profound influence on purchasing decisions (Kahneman, 2011; Plassmann et al., 2015; Bagozzi et al., 2016; Jindal, 2023; Talekar, 2024; Tripathi, 2024). This paradigmatic shift emphasizes the necessity to consider emotional and cognitive influences, which have been fundamental to understanding consumer behaviour, albeit sometimes overlooked. Further expanding this discourse, consumption values are shown to significantly shape consumer behaviour, impacting dimensions such as purchase intention, brand engagement, and overall satisfaction (Mohammad et al., 2020; Du et al., 2021; Zamil et al., 2023; Jindal, 2023). These consumption values, which can be emotional, neural, social, epistemic, or conditional, each play a unique role in bearing consumer responses (Sweeney & Soutar, 2021; Mason et al., 2023; Sagar, 2024). This framework paves the way for integrating cognitive moods into our understanding of consumer behaviour, as these moods directly interact with consumption values to shape decision-making processes.

Adding depth to this analysis, Petty and Cacioppo's (1986) Elaboration Likelihood Model (ELM) posits that the pathways through which persuasion occurs, central and peripheral routes, are influenced by consumers' motivation and ability to process information. The central route necessitates careful scrutiny of message arguments, leading toward robust attitude changes. In contrast, the peripheral route relies on superficial cues, resulting in weaker attitudinal transformations (Petty & Cacioppo, 1986; Shenhav et al., 2020; De Lange et al., 2021; Sagar, 2024). The anatomy of the ELM further pronounces the importance of recognizing cognitive moods and their influence on consumers' motivation and information-processing strategies, fostering a richer understanding of the underlying mechanisms driving decision-making.

Festinger's (1957) cognitive dissonance theory complements this framework by illuminating the psychological discomfort individuals experience when confronted with inconsistencies among their attitudes, beliefs, and behaviours. Cognitive dissonance compels individuals to minimize discomfort by altering their beliefs or behaviours (Cardozzo, 1965; Harmon-Jones & Mills, 2019; Mahapatra & Mishra, 2021; Sagar, 2024). This theory becomes particularly salient in contexts where consumers encounter conflicting information, as understanding how they navigate such dissonance may reveal deeper insights into their decision-making processes (González & Hogg, 2022; Jindal, 2023; Talekar, 2024; Tripathi, 2024). That way, it provokes intriguing inquiries regarding whether intrinsic conflicts emerge solely during the transactional phase or are rooted in foundational brain self-reflection. That gap invites further analytical exploration.

Turning to the Stimulus-Organism-Response (S-O-R) model, initially proposed by Hebb (1955) and subsequently refined by Mehrabian and Russell (1974), the framework finds a valuable lens through which to explore the influence of environmental stimuli on internal cognitive and emotional states leading to behavioural outcomes (Le et al., 2022; Yaqub et al., 2023). While the S-O-R model has shown generalizability across diverse

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

contexts such as online shopping and retail environments, its primary focus on extrinsic stimuli raises critical questions. Specifically, it often overlooks intrinsic neural states and does not explain the variability in individual responses to equivalent stimuli, thereby inviting a re-evaluation of its theoretical boundaries (Foxall, 2017; Venkatraman et al., 2015; Klossner, 2017) - a gap, too wide to ignore.

Additionally, the experiential learning theory (Kolb, 1984) emphasizes the vital role experience plays in knowledge acquisition, proposing a cyclical process involving concrete experience, reflective observation, abstract conceptualization, and active experimentation (Kolb & Kolb, 2017). This model is crucial for understanding how consumers form preferences and make decisions grounded in direct product interactions and trials (Peterson et al., 2023). However, it predominantly addresses post-purchase behaviour (Loewenstein et al., 2015; Thaler, 2018), often neglecting the paramount importance of initial pre-purchase deliberations and neural initiators, which ignite consumer engagement (Gilovich et al., 2015; Mohammad et al., 2020; Du et al., 2021; Zamil et al., 2023; Jindal, 2023; Mason & Tzokas, 2023). A more wholesome approach necessitates a comprehensive perspective that transcends conventional boundaries by integrating these earlier stages into our understanding of the consumer journey.

Importantly, whereas previous meta-analyses have often concentrated on discrete elements, such as emotional influences (van der Lans et al., 2011; Thaler, 2018), the impact of the COVID-19 pandemic (Leo et al., 2023), or the significance of consumption values (Du et al., 2021; Mason et al., 2023), a substantial gap persists in the holistic integration of cognitive moods into a cohesive framework. Existing analyses frequently treat emotions in isolation, neglecting the intricate interplay among various cognitive moods that collectively shape consumer behaviour (Mohammad et al., 2020; Du et al., 2021; Zamil et al., 2023; Jindal, 2023). In essence, those studies have not sufficiently investigated how cognitive moods interact with established theoretical constructs like the ELM and Cognitive Dissonance Theory (Shiv & Fedorikhin, 1999; Achar et al., 2016). This is where the neural model asserts its relevance. This is articulated in the impending discussions.

Neural Constructs in Consumer Behaviour

The term neural refers to anything related to neurons or the nervous system, which are key components in transmitting information throughout the body via electrical and chemical signals (Bear et al., 2015). In neuroscience, neural encompasses the study of brain structures and functions that influence behaviour, cognition, and emotional responses (Kandel et al., 2013). Essentially, from this scholarly context, this understanding is critical for inviting academicians to develop, suggest, or advance a neural model of consumer behaviour, which integrates insights from neuroscience and psychology to explain how neural mechanisms affect consumer preferences and decision-making processes (Montague et al., 2004; Plassmann et al., 2015; Mhaka, 2025). Examining brain activity, researchers can uncover the biological underpinnings of consumer choices, leading to more effective marketing strategies.

Neural constructs in consumer behaviour explore the intricate connections between brain activity and the decision-making processes that drive consumer choices (Montague et al, 2004; Santos et al., 2019; Ali et al., 2024). As alluded to earlier, the model in question marries neuroscientific and psychographic variables to conceptualise how brain dynamics stimulate preferences, motivations, and purchasing decisions (Du et al., 2021; Mason et al., 2023). The novel model leverages findings on how brain responses to various stimuli, such as marketing cues or product characteristics, affect consumer actions (Montague et al., 2004). Through examining factors that include reward prediction errors and emotional reactions, this envisaged model provides a deeper comprehension of the cognitive and emotional underpinnings of consumer behaviour (Kahneman & Tversky, 1979). It effectively illuminates the complex symbiosis between neural activity and consumer decisions, offering valuable insights for marketers and researchers alike. The model is discussed in the next sub-sections;

Neural Model of Consumer Purchase Behaviour

This section presents a detailed exploration of the suggested neural model of consumer purchase behaviour, emphasizing the integration of cognitive moods across distinct neural stages. This model articulates how consumers progress from the recognition of intrinsic needs to post-purchase evaluations, drawing upon insights

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

from psychology, neuroscience, and sociology to provide a richer understanding. Incorporating various perspectives, this model enhances traditional consumer behaviour theories.

Neural Challenge Mood

Conceptualised in this analysis as the genesis of psychographic disequilibrium, is the neural challenge mood, where consumers endure fundamental stress that creates motivational tension for particular needs (Hull, 1943; Berridge, 2004; Ali et al., 2024). These needs, whether physiological (hunger, thirst) or emotional (longing for connection, nostalgia), trigger cognitive and affective processes. For instance, when confronted with hunger, consumers often actively search for comfort food, while feelings of loneliness may prompt them to seek comforting products (Kotler, 2016; Kim & Park, 2023). This needs-based conflict generates cognitive dissonance, a discomfort emanating from conflicting internal desires and external cues (Festinger, 1957; Harmon-Jones & Mills, 2019; González & Hogg, 2022). This stage manifests in behaviours such as increased browsing for the relevant material items or social activities (Kotler, 2016; Mhaka, 2025). Consumer engagement can be assessed through metrics like search queries or time spent on emotionally resonant advertisements (Mhaka, 2025). This construct can be measured using a novel scale termed the Motivational Tension Scale (MTS) (Gilovich, 2000; Gonzalez & Hogg, 2022); adapted from existing instruments such as Gilovich (2000)'s Cognitive Dissonance Scale, which technically serve as vital benchmarks for validating consumer demeanour around this stage (see, Table 3.1);

Table 3.1: Motivational Tension Scale

Likert Question	Scale: (1 – 5)
1. To what extent do you feel your current desires are unmet?	
2. I often find myself struggling with conflicting desires.	
3. I feel a sense of urgency to satisfy my current needs.	
4. I frequently experience discomfort due to unmet needs.	
5. My emotions impact my purchasing decisions significantly.	

The architecture of the MTS captures the essence of cognitive dissonance and unmet needs, allowing marketers to gauge the intensity of these consumer experiences effectively. The marketing implications from this construct are multi-faceted. Technically, conducting a thorough needs assessment through market research is crucial for identifying and prioritizing consumer needs (Kotler & Keller, 2016). Crafting targeted messaging that directly addresses these needs with emotional narratives helps resonate with consumers (Leone et al., 2012). Additionally, stimulating desire by evoking emotional responses related to unmet needs in advertisements creates a compelling connection (Aaker, 2011). Educating consumers on how products can resolve their challenges enhances satisfaction and loyalty (Homburg et al., 2016). Utilizing social proof, such as testimonials, builds trust by showcasing successful resolutions of similar needs (Cialdini, 2009). Finally, implementing segmentation strategies based on recognized consumer needs allows for personalized marketing efforts (Smith, 2019), significantly improving relevance and effectiveness.

Neural Inquiry Mood

Transitioning from the challenge state, the neural inquiry mood involves active information-seeking and curiosity to address recognized needs (Ajzen, 1991; Duhigg, 2017). Consumers gather relevant information and evaluate alternatives, driven by emotional responses and cognitive assessments (Damasio, 1994; Hsee et al., 2021). The prefrontal cortex (PFC), (a brain region involved in complex cognitive behaviour, decision-making, and moderating social behaviour), plays a critical role in this deliberation (Luria, 1966; de Merwe, 2020; Tripathi, 2024). This restless mood is observed in behaviours like conducting extensive online research, examining product reviews, and engaging in discussions. Metrics such as time spent on product pages and search volume

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

can effectively assess this stage (Hsee et al., 2021; Sagar, 2024). This construct is technically measured through the inquiry engagement scale (IES) (see Table 3.2), whose construction is imported from the ELM scale initially advocated by Petty & Cacioppo (1986). The IES effectively captures the cognitive and emotional aspects of how consumers seek information.

Table 3.2: The Inquiry Engagement Scale

Likert Question	**Scale 1 -5**
1. I often seek additional information before making a purchase.	
2. I prefer to research products thoroughly before buying.	
3. I find it essential to read reviews of products I am considering.	
4. My purchasing decisions are heavily influenced by the information I find online.	
5. I regularly compare products across multiple platforms before making a choice.	

From a marketing perspective, developing informative content that educates consumers about products plays a vital role in content marketing (Pulizzi, 2014). Personalization, achieved through data analytics, allows for tailored recommendations that enhance the consumer experience (Arora et al., 2018). Highlighting user-generated reviews addresses potential inquiries and builds credibility (Dellarocas, 2003). Creating engaging experiences, such as interactive demos, resonates with consumers and fosters deeper connections (Kumar & Pansari, 2016). Transparent communication by providing clear product information builds trust and satisfies consumer curiosity (Meyer & Schwager, 2007). Actively participating in discussions on social media also enables brands to engage directly with consumers and address their inquiries promptly.

Neural Experiment Mood

From the inquiry state, the neural experiment mood emerges as consumers engage in experiential learning and preference formation through hands-on interactions with products (Kolb, 1984; Peterson et al., 2023). This process highlights the role of a special brain faculty known as ventral striatum in shaping preferences via reward processing (Berridge & Robinson, 1998; Schultz, 2002). During consumer experimentation, the ventral striatum plays a key role in assessing the expected value of different options (Schultz et al., 1997; Peterson et al., 2023) and encoding the reward prediction error, which represents the difference between predicted and actual outcomes (Montague et al., 2004; Gonzalez & Hogg, 2022). This process helps consumers learn which alternatives are most rewarding (Seymour et al., 2007) and adapt their choices accordingly. The experiment construct is explicitly pronounced when consumers participate in product trials (Kotler, 2016; Peterson et al., 2023). Metrics including conversion rates post-experiential marketing campaigns and attendee feedback can help assess this stage. A gauging instrument termed the Experimental Engagement Scale, structurally informed by the Experimental Consumption scale (Holbrook & Hirschman, 1982), can effectively quantify the experiment-driven behaviours that shape consumer preferences (See Table 3.3).

Table 3.3: Experimental Engagement Scale

Likert Question	**Scale (1 -5)**
1. I actively look for opportunities to try new products.	
2. I enjoy participating in product demonstrations and trials.	
3. Hands-on experiments significantly influence my purchasing decisions.	

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

4. I prefer buying products I have had the chance to try firsthand.	
5. I often attend events aimed at introducing new products.	

In response to this construct, marketing practitioners implementing product sampling encourages firsthand engagement with offerings, allowing consumers to try the products directly (Hassan & Moin, 2018). Hosting live demonstrations showcases product benefits through interactive events, effectively capturing consumer interest (Peterson et al., 2018). Establishing feedback mechanisms creates channels for consumer insights, fostering improvement and connection (Grajcar et al., 2020). Rewarding experimental purchases through loyalty programs enhances customer retention and satisfaction (Kumar & Shah, 2015). Promoting collaborative consumption cultivates communal experiments around products, engaging consumers in new ways (Rappaport, 2018). Investing in experience design, according to Schmitt, (2010), allows brands to create unique consumer experiences that assure customers, and cultivate emotional connections, enhancing brand loyalty.

Neural Experience Mood

Following through, the neural experience mood significantly influences consumer behaviour by deepening emotional processing, which fosters brand loyalty (Oliver, 1999). This emotional connection is heavily mediated by the amygdala, a key brain region responsible for processing emotional memories and attaching emotional significance to brands and products (LeDoux, 1996; Ford & Kensinger, 2019). The stronger the emotional memory, the more likely a consumer is to develop a preference for a particular brand. This positive neural experience mood is evident in behaviours indicative of brand advocacy, such as repeat purchases and the development of strong emotional attachments to the brand. Consumers in this state tend to possess the instinctive pride to share their long-earned experience with sceptical consumers (Knutson et al., 2007). They tend to voluntarily promote the brand by way of inspiring others to make similar purchase decisions.

Neuromarketing studies have shown that positive brand associations activate reward centres in the brain, reinforcing brand loyalty (Knutson et al., 2007; Tripathi, 2024). To measure the strength of these connections, metrics such as customer loyalty indices and Net Promoter Scores are employed, providing quantitative data on customer advocacy and the likelihood to recommend the brand (Reichheld, 2003; Ford & Kensinger, 2019). Cognitive biases, such as confirmation bias, reinforce emotional loyalty, as consumers seek information confirming their positive feelings toward a brand (Sagar, 2024). Consistent, positive emotional experiences strengthen neural pathways, creating a shortcut to brand preference and loyalty that competitors find difficult to break (Alareeni & Hamdan, 2024). In creating emotionally resonant experiences, brands can foster stronger memories with positive associations, influencing decision-making beyond pure logic. To assess this construct, the Emotional Resonance Scale (ERS) can be applied effectively (see Table 3.4). The ERS aims to capture an essential part of the consumer experience: emotional connection to brands. Its design is supported by insights from the Brand Loyalty Scale (Aaker, 1991) and its relevance reflects the interplay of emotions in brand attachment.

Table 3.4: Emotional Resonance Scale

Likert Question	**Scale (1 – 5)**
1. I feel a strong emotional connection to this brand.	
2. I would recommend this brand to close friends or family.	
3. My feelings towards this brand positively influence my purchasing decisions.	
4. I have positive memories associated with this brand.	

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

5. I feel that this brand understands my needs.	

The implications drawn from the neural experience construct are numerous. One effective strategy is emotional storytelling, which leverages narratives that resonate with consumer experiences (de Merwe, 2020). This approach enhances brand recall and creates stronger connections with consumers, as emotional storytelling evokes feelings that deepen engagement (Smith, 2019). Another key tactic is community building, where fostering brand communities encourages networking and shared experiences among consumers. These communities not only allow individuals to connect with each other but also with the brand, facilitating loyalty and advocacy (Muniz & O'Guinn, 2001; Brodie et al., 2013). Customer appreciation is essential as well. Regularly recognizing and rewarding loyal customers can strengthen their commitment to the brand.

Demonstrating appreciation leads to enhanced customer loyalty and ongoing engagement, particularly when personalized rewards resonate emotionally (Reichheld & Schefter, 2000; Chaudhuri & Holbrook, 2001). Alongside this, creating brand rituals can enhance emotional connections with the brand. Establishing rituals that consumers associate with their experiences, brands can provide a sense of continuity and belonging, solidifying loyalty (Fischer & Trans, 2023). In addition, utilizing feedback and adaptation to refine brand offerings is vital. Actively seeking consumer feedback allows brands to gauge emotional responses and adjust their products and marketing strategies accordingly (Aaker, 1996). This responsiveness aligns offerings with consumer expectations, further enhancing satisfaction and retention. Yet, event sponsorship can align brands with events that resonate emotionally with consumers. Sponsoring events that reflect brand values not only boosts visibility but also fosters community engagement and positive associations (Gwinner et al., 2005; Meenaghan, 2001). Together, these strategies create a holistic approach to building meaningful and lasting relationships with consumers.

Neural Content Mood

The sequential transition culminates in the neural content mood, a critical stage characterized by consumers reflecting on and evaluating their purchases, as indicated by Festinger (1957) and supported by recent studies by Ali et al. (2016) and Lama (2016). This phase is pivotal for fostering long-term loyalty, as it involves the reconciliation of consumer expectations with actual experiences. During this reflective process, consumers actively engage in expressing their satisfaction or dissatisfaction regarding their purchases, which subsequently shapes their future behavioural intentions (Jeanjean, 2016). Metrics such as customer satisfaction scores and product return rates provide invaluable insights into consumer sentiment and behaviour (Foxall, 2016). In light of these dynamics, marketing practitioners are expected to adopt several strategic imperatives.

Post-purchase communication emerges as a vital undertaking, wherein follow-up interactions are implemented to reinforce positive experiences and mitigate any potential dissonance, as noted by Milliman and Decker (1990) citing Swan and Oliver (1989). Beyond that, value reinforcement of product benefits should be emphasized post-purchase, ensuring that consumers fully appreciate the merits of their decisions (Foxall, 2016). The application of Net Promoter Score surveys offer a quantitative method to gauge post-purchase satisfaction and elucidate consumer loyalty trends, as established by Reichheld (2003) and Jeanjean (2016). Additionally, it is crucial for brands to focus on regret mitigation by developing strategies aimed at alleviating feelings of buyer's remorse, which can undermine the overall consumer experience (Tsiros & Mittal, 2000; Zeelenberg et al., 2016). Implementing referral programs serves to encourage satisfied customers to share their endorsements, thereby enhancing brand visibility through incentivized recommendations (Wirtz et al., 2016; Schmitt et al., 2016). Lastly, establishing robust feedback loops is essential, providing channels through which consumers can express their insights and experiences, thus enabling continuous improvement of offerings and reinforcing the brand-consumer relationship (Griffin & Hauser, 1993; Markey et al., 2016). Collectively, these strategies are integral to navigating the complexities of consumer evaluations in the neural content mood, ultimately promoting enduring loyalty and satisfaction. To measure this construct, the Post-purchase Evaluation Scale is crucial (see Table 3.5).

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

Table 3.5: Post-Purchase Evaluation Scale

Likert Question	**Scale (1 -5)**
1. I feel satisfied with my recent purchase.	
2. My purchase met my expectations.	
3. I would buy this product again in the future.	
4. I regret my decision to purchase this product. (reverse scored)	
5. I feel confident that this product will fulfil its promises.	

METHODS

This study employs a meta-analytical approach to synthesize both archived and extant literature regarding cognitive moods and consumer decision-making, utilizing advanced methodologies to elucidate the sophisticated nexus between these constructs. To ensure a comprehensive and transparent methodology, the research was conducted through systematic searches in several databases, including Scopus, Web of Science, Scope, DHE, IDEAS, RePEc, and GHET, all recognized for their extensive coverage of peer-reviewed articles in psychology and marketing. The search strategy focused on keywords associated with, or are synonymous with the five cognitive states within the consumer decision-making context, namely challenge, inquiry, experiment, experience and content, alongside broader terms related to consumer psychology. This multifaceted approach guarantees a thorough collection of both published and unpublished studies relevant to the research question.

Stringent inclusion and exclusion criteria were established. The inclusion criteria saw only peer-reviewed articles published in English (or translated into English), between 1920 and 2025 being considered, thereby reflecting contemporary scholarship and broad historical context. Additionally, studies had to directly examine the interplay between cognitive moods and consumer decision-making. On the other hand, non-English articles not translated to English, non-peer-reviewed works, and studies lacking rigorous empirical data were strictly excluded from the analysis to uphold the integrity of the synthesis process.

With that, the initial online search yielded 457 articles, which were systematically narrowed down through careful screening of titles and abstracts for relevance based on established criteria. Following this preliminary screening, 212 papers advanced to full-text review. Ultimately, a final selection of 98 studies that met all inclusion criteria was made. Each selected study underwent rigorous examination focusing on critical factors such as sample size, demographic characteristics, data collection techniques, and statistical findings, particularly correlation coefficients. This structured approach facilitated the extraction of pertinent data points essential for understanding the connections between cognitive moods and consumer behaviour. In the analysis phase, the DerSimonian-Laird random-effects model was employed to estimate between-study variance, accommodating the inherent heterogeneity observed in the findings (DerSimonian & Laird, 1986). This model enhances the generalizability of conclusions drawn from diverse studies, a fundamental aspect of effective meta-analysis (Borenstein et al., 2013).

To address potential biases, publication bias was assessed through Egger's test and funnel plots, providing a clear assessment of the distribution of effect sizes (Egger et al., 1997; Sterne & Egger, 2001). To ensure the validity and reliability of the findings, sensitivity analyses were performed to evaluate how individual studies influence overall outcomes, following procedures recommended by LaValley (1997). Beyond that, stratified analyses segmented the data into subgroups based on demographic or methodological variations, fostering nuanced interpretations of how study conditions may impact results (Higgins & Thompson, 2002). The I^2 statistic was

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

utilized to assess the degree of heterogeneity among studies, helping to distinguish between variability due to true differences and variability due to random error (Higgins et al., 2003).

It is important to acknowledge certain limitations within this methodology. The reliance on English-language publications could have limited the diversity of perspectives captured. Additionally, the exclusion of non-peer-reviewed studies, while ensuring rigour, may have led to the omission of valuable insights present in gray literature.

Throughout this process, Comprehensive Meta-Analysis (CMA) version 3.0 was employed, guaranteeing sophisticated statistical handling of data and substantiating the analytical rigor of the research (Borenstein et al., 2013). Through the merging of these techniques with a robust framework, the researcher aimed to derive significant conclusions regarding the interplay between cognitive moods and consumer decision-making while adhering to high standards of methodological transparency and scholarly integrity.

Table 3.1 summarizes the findings of the meta-analysis conducted on the relationship between various cognitive moods and consumer decision-making. It includes key aspects such as the frequency of studies, average sample sizes, predominant data techniques, overall effect sizes, heterogeneity measures, and publication bias assessments across different cognitive moods. This overview provides valuable insights into the empirical evidence surrounding the interplay between cognitive states and consumer behaviour.

Table 3.1: Meta-Analysis Summary

Key Aspect	**Neural Challenge Mood**	**Neural Inquiry Mood**	**Neural Experiment Mood**	**Neural Experience Mood**	**Neural Content Mood**
Frequency of Studies	22	17	24	21	14
Average Sample Size	198	215	273	162	206
Predominant Data Technique	Surveys	Experiments	Experiments	Surveys	Surveys
Overall Effect Size (r)	0.34	0.41	0.39	0.44	0.36
Heterogeneity (I^2)	42%	48%	51%	43%	37%
Publication Bias Assessment	Egger's Test: p = 0.09	Egger's Test: p = 0.11	Egger's Test: p = 0.08	Egger's Test: p = 0.14	Egger's Test: p = 0.12

Source: Meta-analysis data (2025)

RESULTS

Numerous noteworthy associations between the cognitive moods and many facets of consumer decision-making were established in this analysis. According to prior research, consumers who are experiencing cognitive dissonance make more in-depth assessments, suggesting that the neural challenge mood corresponds with the depth of information processing (Festinger, 1957; Anderson, 1973). This attitude improves the quality of consumers' decision-making by motivating them to look for more information and reevaluate their opinions (Olson & Dover, 1979). A consumer's desire to lower perceived risk and improve choice quality is reflected in the neural inquiry mood, which is highly correlated with active information-seeking behaviour (Moorthy et al.,

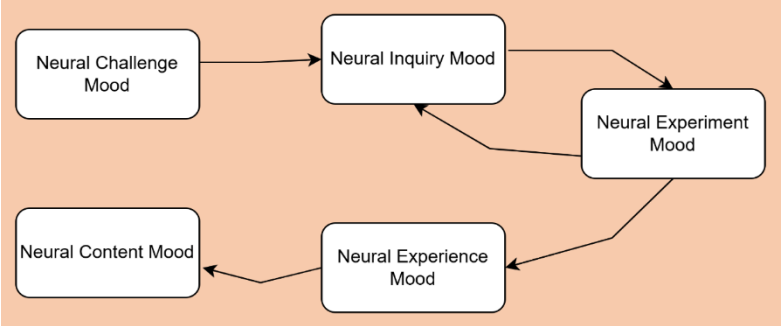
ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue XI, November 2025

1997). This state of mind indicates increased openness to pertinent information, which helps customers make wise choices.

Higher levels of customer satisfaction are associated with the neural experiment mood, indicating that experiential learning considerably raises customer satisfaction levels (Kolb, 1984). Stronger preferences are typically developed by consumers who participate in hands-on experiences, which boosts brand loyalty and promotes favourable word-of-mouth (Thomson et al., 2005). Customers who conclude that the brand has some flaws, however, frequently try the question again to look for different brands or enhancements from the same businesses. A close relationship between brand loyalty and prior experiences is shown in the neural experience mood (Oliver, 1999). Brand advocacy and repeat business are more likely to be displayed by customers who develop emotional connections with brands as a result of satisfying prior experiences.

This tone highlights how crucial emotional branding is to building enduring relationships with customers (Thomson et al., 2005). Furthermore, there is a strong association between the brain content mood and consumer loyalty and post-purchase satisfaction (Hirschman & Holbrook, 1982). When their expectations are fulfilled or surpassed, customers in this state are more likely to express satisfaction, which emphasizes the value of continuous customer care and interaction. This flow of neural moods is illustrated in Figure 5.1 below;

Figure 5.1. The Neural Consumer Decision-making Model



DISCUSSION AND CONCLUSION

Theoretical Contributions

This study adds to the body of knowledge on consumer behaviour by incorporating cognitive moods into well-known theoretical frameworks. It also provides a more thorough and critical view of consumer behaviour by outlining five different cognitive states and how they affect decision-making. The results offer a comprehensive view of the decision-making process by highlighting the interaction between emotional states and cognitive functions. It articulates a comprehensive neural model of consumer decision-making, delineating five stages: Neural Challenge, Neural Inquiry, Neural Experiment, Neural Experience, and Neural Content. Each stage carries significant implications for marketers, emphasizing the need to align strategies with the cognitive and emotional drivers of consumer behaviour. The study integrates cognitive moods into existing frameworks, thus enriching the understanding of how emotions interact with cognition in decision-making. For instance, marketers can better recognize intrinsic consumer needs during the Neural Challenge stage, providing emotional resonance to stimulate engagement. The Neural Inquiry stage reiterates the importance of delivering clear and engaging information, while the Neural Experiment phase highlights the value of hands-on interactions in enhancing brand loyalty and preference. Additionally, the Neural Experience stage reflects the necessity of creating memorable engagements, which are essential for cultivating long-term brand loyalty, and the Neural Content stage points to the need for ongoing post-purchase strategies that reinforce satisfaction and encourage positive word-of-mouth. This framework provides a fresh lens for viewing consumer behaviour and emphasizes the relevance of emotional and cognitive interplay in decision-making.

Practical Implications

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The study's conclusions have important ramifications for marketing professionals. Marketers can adjust their tactics to appeal to the distinct mental states of their target audience by knowing the cognitive moods that affect consumer decision-making. Persuasion and engagement can be improved by developing targeted messaging that fits the target audience's cognitive mood. For example, giving clear and consistent information can reduce dissonance and foster trust during a neurological challenge mood (Anderson, 1973; Olson & Dover, 1979; Mhaka, 2025). Giving customers the chance to participate in hands-on activities can encourage a neural experiment mood, which will increase customer satisfaction and brand loyalty. Furthermore, creating brand tales that arouse favourable feelings can foster a neural experience mood that promotes brand endorsement and repeat business. A neural content mood can be created by providing exceptional customer service and great post-purchase experiences, which will boost customer satisfaction and encourage positive word-of-mouth.

In the end, while this study presents a linear model of the interplay between cognitive moods and consumer decision-making, it is essential to recognize that in practice, certain stages may occur simultaneously or in reverse order. What remains critical for marketers is their ability to respond effectively to the demands of each construct and to accurately read the signals associated with these cognitive states. Grasping the complex dynamics at play, marketers can better tailor their strategies to enhance consumer engagement and satisfaction. Future research should explore cultural and demographic dynamics of cognitive moods and investigate neural biomarkers that validate this model empirically. Such inquiries will enhance understanding within the evolving field of neuroscientific marketing, bridging the gap between theoretical constructs and practical applications in capturing the complexities of consumer decision-making processes.

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