

The Dual Influence of Affect and Cognition on Online Shopping Behavior

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Abstract:

This study investigates the dual influence of cognition and affect on online shopping behavior, aiming to determine which factor plays a more significant role in consumer decision-making. Utilizing an online survey, the research examines how cognitive evaluations and emotional responses shape the purchasing process in e-commerce environments. The findings reveal that while cognition primarily guides online purchase decisions, affect significantly enhances the overall shopping experience, particularly about platform design and usability. These insights highlight the complex interplay between cognitive and emotional processes, suggesting that effective marketing strategies must engage consumers on both levels to optimize decision-making and satisfaction. The research contributes to the existing literature by providing a nuanced understanding of consumer behavior in online contexts and underscores the necessity for marketers to design experiences that align with cognitive evaluations while also fostering emotional connections. Future studies are encouraged to explore the implications of these findings across diverse consumer demographics.

Keywords: Affect; Cognition; Decision-making; Online shopping; Consumer Behavior.

Jel Classification Codes : M31; D03

ملخص:

تستقصي هذه الدراسة التأثير المزدوج للمعرفة والعاطفة على سلوك التسوق عبر الإنترنت، مع التركيز على تحديد أي من هذين العاملين يلعب دوراً أكثر أهمية في اتخاذ قرارات المستهلكين. من خلال استخدام استبيان عبر الإنترنت، تبحث الدراسة في كيفية تشكيل التقييمات الإدراكية والاستجابات العاطفية لعملية الشراء في بيئات التجارة الإلكترونية. تكشف النتائج أنه بينما توجه المعرفة قرارات الشراء عبر الإنترنت بشكل أساسي، فإن العاطفة تعزز بشكل كبير تجربة التسوق العامة، وخاصة فيما يتعلق بتصميم المنصة وسهولة استخدامها. تسلط هذه النتائج الضوء على التأثير المتداخل بين العمليات المعرفية والعاطفية، مما يشير إلى أن استراتيجيات التسويق الفعالة يجب أن تشرك المستهلكين على كلا المستويين لتحقيق تحسين في اتخاذ القرارات والرضا. تسهم هذه البحث في الدراسات الحالية من خلال توفير فهم دقيق لسلوك المستهلك في السياقات الإلكترونية ويؤكد على ضرورة تصميم التجارب التي تتماشى مع التقييمات المعرفية بينما تعزز أيضاً الروابط العاطفية. يُشجع على الدراسات المستقبلية لاستكشاف آثار هذه النتائج عبر ديموغرافيا المستهلكين المتنوعة.

الكلمات المفتاح: العاطفة؛ المعرفة؛ اتخاذ القرار؛ التسوق عبر الإنترنت؛ سلوك المستهلك.

تصنيف JEL : M31; D03

I. Introduction:

The rise of online shopping has transformed consumer behavior, prompting a need to examine the cognitive and affective factors influencing decision-making in e-commerce. While cognition has traditionally been considered the dominant factor in consumer choices (Kahneman, 2003), research suggests that affect significantly shapes the shopping experience, particularly in digital environments (Damasio, 1994). Prior studies have largely examined cognition and affect separately, focusing either on rational decision-making models (Howard & Sheth, 1969; Engel et al., 2001) or emotional influences on brand perception and consumer trust (Russell, 2003; LeDoux, 1996). While some research suggests that cognition is dominant in online purchases due to the need for price comparisons and product evaluations (Kotler & Keller, 2007), other studies highlight the role of emotions, particularly in website design, ease of use, and impulsive buying behavior (Damasio, 2005; Almada et al., 2013).

This study seeks to quantify the relative influence of cognition and affect on online purchase decisions, examine how these factors shape user experience, and provide actionable insights for e-commerce businesses. While cognition plays a crucial role in rational decision-making, affective responses significantly impact user engagement and satisfaction. Understanding these cognitive and emotional drivers has critical implications for digital marketing and platform design, as effective strategies must appeal to both rational evaluations and emotional triggers. By addressing these dynamics, this research aims to bridge the gap between theoretical models of consumer behavior and practical applications in e-commerce.

This study provides valuable insights for both academia and industry. For researchers, it contributes to the growing body of knowledge on consumer decision-making in digital environments, offering a framework that integrates cognitive and affective influences on online shopping behavior. For e-commerce businesses, digital marketers, and platform designers, the findings highlight the importance of balancing rational decision-making elements (e.g., product information, pricing, usability) with emotional engagement strategies (e.g., website aesthetics, branding, and user experience) to optimize consumer satisfaction and conversion rates.

II. Literature Review:

1. Affect:

In recent decades, researchers have employed various empirical and experimental studies to explore how individuals make decisions, confirming that people often deviate from the traditional economic model, which assumes rationality and utility maximization. Affective science, a key area within consumer psychology and behavioral economics, examines how emotions influence decision-making beyond purely rational calculations. This research field, known as Neuroeconomics, uses controlled experiments to control variables that affect decision-making, examining behaviors, autonomic reactions, and brain activity. Such studies have demonstrated the neural system's processing of concepts such as fairness, reward, loss, trust, revenge, and decision-making (Almenda et al., 2013).

Certain brain regions, including the amygdala, ventromedial prefrontal cortex, and insula, have been recognized as essential contributors to judgment, memory, emotions, and decision-making processes. These structures play a significant role in consumer responses to marketing

stimuli and online shopping environments. For example, Fiorillo (2003) discovered that dopamine neurons in the primate ventral midbrain are predictors of reward; in the context of gambling, heightened dopamine levels resulting from uncertainty enhance the sensation of reward experienced by gamblers, even in the face of repeated losses. Similar emotional reinforcement mechanisms occur in digital shopping environments, where personalized discounts, scarcity cues (e.g., “only 2 items left in stock”), and promotional notifications can stimulate anticipatory reward responses, influencing purchase decisions (Clark et al., 2014). These strategies create anticipation and heighten the emotional reward of securing a deal, much like how gamblers experience excitement when placing bets. This intermittent reinforcement keeps consumers engaged, encouraging impulse purchases and repeated visits to online stores.

In marketing, the role of affect has evolved from a secondary consideration to a central element of consumer engagement. Marketers must understand consumers' emotional and affective responses in both online and offline environments to effectively tailor their strategies. For instance, e-commerce platforms leverage emotional engagement by incorporating visually appealing interfaces, interactive elements, and personalized recommendations that evoke trust, excitement, or urgency.

A market-oriented approach necessitates identifying consumers' emotional and cognitive mechanisms and responses to various stimuli. The American Marketing Association defines consumer behavior as the interplay of affect and cognition, behavior, and the environment that shapes how individuals participate in exchanges in their lives (Peter & Olson, 2005). This means that emotions do not simply accompany rational decision-making but actively shape consumer choices at different stages of the shopping journey. Marketing must stand out to capture consumer attention and engage them both cognitively and emotionally. Once attention is secured, emotions significantly influence product evaluations, trust in brands, and ultimate purchase decisions.

Research has long recognized that affect and cognition are primary influencers of buying behavior. Researchers have distinguished between two distinct decision-making models: one that is unconscious and affective, and the other that is conscious and cognitive. A growing body of literature suggests that affective responses can override rational assessments, leading consumers to favor emotionally engaging brands or experiences over purely logical evaluations of product quality (Damasio, 1994; Kahneman, 2003; Achar et al., 2016).

In online contexts, consumers are no longer driven by physical stimuli; thus, marketers must comprehend the mechanisms of online decision-making to remain competitive. Affective responses in digital shopping environments stem from a combination of user experience, branding, and customer interaction. Visual aesthetics, ease of navigation, and interactive features significantly contribute to consumer emotions, which in turn influence purchasing decisions (Shmitt, 1999; Norman, 2004; Kim & Forsythe, 2008). Affective responses can be assessed through quantitative methods such as sentiment analysis, eye-tracking studies, and physiological response measurements, allowing marketers to understand how consumers emotionally engage with online platforms. However, traditional qualitative methods, such as interviews and surveys, may fail to capture subconscious emotional reactions, as they rely on consumers' self-reported experiences, which are subject to cognitive biases (Pieters, 1993). This highlights the need for more objective methods, such as neuroscientific and biometric tools, to measure affective responses in digital marketing. Techniques such as EEG (electroencephalography) and fMRI (functional magnetic resonance imaging) have provided insights into how different emotional states impact purchasing behavior by analyzing real-time brain activity (Tversky & Kahneman, 2011).

Emotions influence consumer decision-making across different stages of the shopping journey, from initial information search to final purchase. During the information search stage, emotions such as excitement or curiosity can increase engagement with product descriptions and reviews, leading consumers to explore a wider range of options. Conversely, negative emotions like frustration or stress may shorten search duration, causing consumers to rely on heuristic shortcuts or abandon the process altogether (Pieters, 1993). In the evaluation stage, affective responses shape perceptions of product quality and brand trustworthiness. For example, consumers in a positive emotional state are more likely to interpret ambiguous product descriptions favorably, while those experiencing anxiety may exhibit greater risk aversion, leading them to scrutinize negative reviews more critically (Shiv & Fedorikhin, 1999). Finally, during the purchase decision stage, emotional triggers such as urgency (e.g., limited-time offers) or anticipated regret (fear of missing out) can accelerate commitment, whereas uncertainty or skepticism may result in decision postponement or cart abandonment. Understanding these emotional influences allows marketers to design interventions (e.g., reassuring messaging, personalized recommendations, or simplified checkout processes), that align with consumers' affective states and facilitate smoother decision-making.

Debates continue on whether consumers' affective decision-making occurs independently of cognitive processing. Rather than viewing affect and cognition as separate entities, recent studies suggest they interact dynamically to improve decision quality. Affect in psychology refers to visible expressions of feelings through facial expressions, tone, or gestures, helping individuals interpret others' emotions. Core affect, defined by Russell (2003) as a neurophysiological state of pleasure/displeasure with varying arousal, combines hedonic and arousal values as a non-reflective feeling.

The affective circumplex model illustrates how individuals process emotions, consisting of a continuum where emotions are mapped based on valence (pleasant-unpleasant) and arousal (high-low intensity). Both dimensions are independent. Each emotion can be explained through variations in valence and arousal. For instance, happiness arises from significant activation in neural systems linked to positive valence and moderate arousal, while anxiety is associated with high arousal but negative valence (Posner et al., 2005). Understanding how consumers emotionally react to digital stimuli, such as website design or product presentation, is critical for optimizing user experience in online shopping.

The Somatic Marker Hypothesis (Damasio, 1991; 1994) suggests that emotions play a key role in guiding decision-making by attaching positive or negative markers to past experiences. In the context of online shopping, these markers influence consumer choices—previous positive experiences with a brand may create trust and preference, while negative encounters (e.g., poor customer service) can lead to avoidance. This emotional imprinting explains why consumers often rely on gut feelings when making purchase decisions rather than purely rational evaluations.

Researchers have distinguished between three types of affect: Integral Affect (directly tied to the shopping stimulus), Incidental Affect (pre-existing emotions unrelated to the purchase but still influential), and Task-related Affect (emotions arising from the shopping process itself)(Epstein, 1990; Shiv et al., 1990; Paulhus & Lim, 1994; LeDoux, 1996; Gray et al., 2001; Gorn et al., 2001).

For example, a visually appealing online store with an intuitive layout, high-quality images, and a pleasant color scheme, can elicit **integral affect**, increasing engagement and purchase likelihood, while a cluttered or outdated design may trigger negative emotions, discouraging

further browsing. **Incidental affect**, unrelated to shopping itself, also shapes decisions; for example, a consumer frustrated from work may prefer quick, familiar purchases, whereas someone in a good mood may explore new brands or engage in impulse buying. **Task-related affect** arises during shopping; smooth navigation, fast loading speeds, and an easy checkout enhance satisfaction and confidence, while slow performance, complex payments, or unexpected fees may cause frustration and cart abandonment.

Research consistently shows that incidental affect can sway judgments and decisions, with negative emotions leading to pessimistic assessments and positive emotions resulting in more optimistic evaluations, even when unrelated to the judgment. Emotional intensity influences long-term memory retention, but strong emotional responses do not always correlate with decision accuracy, as cognitive biases and retrospective distortions can alter recollections. Understanding how affect modulates cognitive evaluations in online shopping can help businesses create more engaging and effective digital marketing strategies.

Marketers can leverage affect by designing visually appealing websites, using high-quality imagery, intuitive layouts, and seamless navigation to create positive integral affect and enhance trust. Emotional storytelling in ads, personalized recommendations, and nostalgia-driven campaigns can tap into incidental affect, making shopping experiences more engaging. To optimize task-related affect, brands should streamline checkout processes, provide responsive customer support, and use urgency tactics (e.g., limited-time offers) to drive quick decisions. By integrating these strategies, businesses can influence consumer emotions, increasing engagement, conversions, and brand loyalty.

2. Cognition:

The cognitive approach to consumer decision-making positions individuals as information processors who typically follow the traditional five-step model: problem recognition, information search, alternative evaluation, choice, and outcome evaluation. This model, developed by Howard and Sheth in 1969 and known as the “Theory of Buyer Behavior,” integrates different social, psychological, and marketing factors on consumer choice into a coherent sequence of information processing. In digital shopping environments, external stimuli such as personalized recommendations, product reviews, and promotional banners influence how consumers progress through these steps.

Cognitive psychology, which examines how individuals acquire, process, and store information, has evolved into cognitive neuroscience, an interdisciplinary field that investigates the biological mechanisms behind cognitive function. Emerging in the 1960s, cognitive neuroscience uses empirical methods to examine the links between behavior, cognition, and neural systems, often through studying individuals with brain damage. Techniques from experimental psychology, neuropsychology, and brain imaging (e.g., EEG, fMRI, MEG) illuminate cognitive processes and show how cognition underlies consumer behavior by linking brain activity to decision-making. For example, studies show that visual product placement and interactive advertising activate memory-related brain regions, enhancing recall and brand recognition.

Cognition encompasses the mental activities involved in acquiring knowledge, including attention, memory, reasoning, judging, and problem-solving, all of which shape consumer behavior. The American Psychological Association defines cognition as the processes of knowing, which encompass attending, remembering, and reasoning, as well as the content of these processes. Over the past 50 years, research has shown that distinct brain modules process different types of information, with low-order processing occurring in areas like the ventromedial cortex and prefrontal cortex. Higher-order processing takes place in interconnected networks involving the frontal and parietal lobes, influenced by attention and emotion to evaluate and prioritize external

stimuli. Within consumer behavior, cognition determines how shoppers interpret product descriptions, assess quality, and recall previous brand experiences before making a decision.

Two forms of cognitive processing, bottom-up and top-down, play distinct roles in how consumers interpret marketing messages. Bottom-up interprets sensory information in real-time, processing occurs when a consumer encounters a product or advertisement for the first time, relying solely on sensory input to form an impression (e.g., noticing an ad's design, colors, and layout). In contrast, top-down processing is shaped by prior knowledge, expectations, and past experiences—for instance, a consumer loyal to a particular brand may interpret marketing messages in a way that reinforces their existing preference (Gibson, 1966; Gregory, 1970; Engel et al., 2001). This distinction explains why new brands must use attention-grabbing visuals and clear messaging to stand out, whereas established brands can rely on consumer familiarity.

Attention is a cognitive process essential for focusing on relevant stimuli and filtering out distractions, directing cognitive resources toward prioritized information. Visual attention is particularly well-researched, and executive control, associated with the prefrontal cortex, manages sensory inputs to facilitate task execution. In digital environments, marketers use visual hierarchy, contrasting colors, and movement (e.g., video ads) to direct consumer attention toward key messages (Duchowski, 2017; Pieters & Wedel, 2018; Labrecque & Milne, 2019). Research identifies two brain networks involved in selective attention: one engaged in goal-directed (top-down) attention and another that responds external stimuli (bottom-up attention), such as pop-up promotions and notifications (Gardiner & Parkin, 1990; Spence, 2009; Wimmer et al., 2015; Lindsay, 2020). Marketers must strike a balance—capturing attention without overwhelming consumers with excessive stimuli that lead to cognitive overload.

Similarly, perception—the process of receiving, organizing, and interpreting sensory information—is essential for understanding consumer decision-making. Online shoppers rely on visual and textual cues such as product images, brand logos, and concise descriptions to assess product value quickly. Sensory selection enables the brain to filter relevant stimuli from an overwhelming array of information, influenced by needs, interests, expectations, and physiological limitations (Efron, 1969; Brosch et al., 2013). For instance, a well-designed and structured e-commerce site enhances perception by structuring information intuitively, making navigation seamless and reducing friction in decision-making.

Memory also plays a critical role in online shopping behavior. It encompasses encoding, storing, and retrieving information. Consumers rely on stored brand associations and past experiences when choosing between products. Sensory memory retains brief sensory impressions, while short-term memory (working memory) temporarily holds information for reasoning and decision-making, such as comparing multiple product specifications. Long-term memory, which can last indefinitely, consists of explicit (declarative) and implicit (non-declarative) memories, each involving different brain structures, enabling consumers to recall past purchases, brand interactions, and loyalty incentives, which can influence future buying behavior (Sperling, 1960; Melton, 1963; Baddeley et al., 1990; Sternberg, 1999; Siegler & Alibali, 2005). This explains why brands invest in consistent messaging, logos, and color schemes to strengthen memory retention and brand recall.

Understanding cognitive processes provides marketers with a strategic advantage, allowing them to differentiate their approaches by appealing to consumers' cognitive functions. Cognitive marketing enables the identification of factors that influence decision-making, guiding strategies that foster brand loyalty and effectively attract potential customers. Practical applications include using visual salience to capture attention, structuring product information for quick comprehension, and designing campaigns that aid memory retention.

3. Decision-making:

Decision-making is a multifaceted process influenced by both rational and emotional factors. In the digital age, consumer choices are increasingly shaped by personalized marketing, social proof, and AI-driven recommendations. Traditional models suggest that consumer decisions are influenced by a combination of marketing actions, cultural context, personality traits, motives, perceptions, and learning (Kotler & Keller, 2006). However, modern decision-making extends beyond these factors, incorporating digital influences such as online reviews, influencer endorsements, and targeted advertisements.

Historically, the Utility Maximization model (Walras, 1977) suggested that individuals act as rational agents with full knowledge, aiming to maximize their utility. However, real-world consumer behavior does not always align with this rational perspective. The emergence of prospect theory challenged this notion, highlighting that consumers weigh losses more heavily than gains, explaining why urgency-driven sales tactics are so effective in e-commerce.

Cognitive psychology has long sought to uncover the mental processes mechanisms behind decision-making, often conceptualized as the “black box” of the mind (Camerer et al., 2004). In digital commerce, these cognitive processes are influenced by the vast amount of available choices, leading to decision fatigue (Iyengar & Lepper, 2000). When faced with too many options, consumers often resort to heuristics—mental shortcuts—to simplify the decision-making process. For example, when shopping online, buyers frequently rely on "Amazon's Choice" labels or top-rated products rather than extensively comparing all alternatives (Häubl & Trifts, 2000). Affective psychology complements this by exploring how emotions shape choices in different contexts. Recently, cognitive and affective neuroscience have enhanced this understanding by using methodologies to measure brain activity and link it to specific cognitive and behavioral functions. Together, these disciplines offer a complete view of human decision-making, incorporating insights from psychology, marketing, and decision theory.

Decision-making theories fall into four main categories: **normative**, **descriptive**, **behavioral**, and **naturalistic**. Normative decision theory, such as Expected Utility Theory (Neumann & Morgenstern, 1947), suggests that optimal decisions are those that yield the greatest expected outcomes, based on the assumption of fully rational decision-makers. However, critiques point out the unrealistic nature of complete information and consistent preferences (Fischer et al., 2015) and digital marketing strategies actively disrupt this rational process by using persuasive techniques like social proof and dynamic pricing (Ariely, 2008). In contrast, descriptive decision theories examine real-world decision-making, emphasizing what individuals do in practice rather than what they should do. Simon's Satisficing model (1955) illustrates this by suggesting that people often choose the first satisfactory option rather than the optimal one. For example, consumers tend to perceive a \$99.99 product as significantly cheaper than \$100 due to psychological pricing strategies.

Behavioral decision theory, following Simon's insights, acknowledges that decisions frequently rely on heuristics, framing effects, and contextual cues (Payne et al., 1992). For instance, e-commerce platforms strategically place "Best-Seller" and "Trending Now" labels to nudge consumers toward specific products. Lastly, naturalistic decision theory focuses on real-world decision-making, highlighting the role of expert intuition and pattern recognition. Klein's Recognition-Primed Decision model (2017) shows that experienced individuals can make effective decisions based on previous patterns without exhaustive comparisons.

The consumer decision-making process consists of five key stages, including problem recognition, information search, alternative evaluation, purchase decision, and post-purchase evaluation. This process starts when consumers recognize a need, often triggered by digital ads, social media exposure, or retargeting campaigns. For example, Instagram and TikTok influencers

frequently introduce new trends, creating a perceived need among their followers (Djafarova & Rushworth, 2017).

Next, instead of visiting physical stores, consumers turn to search engines, product reviews, influencer recommendations, and AI-driven suggestions. Platforms like Google and Amazon play a key role in shaping product discovery, with algorithm-driven search results influencing purchasing choices.

In the alternative evaluation stage consumers compare options using online filters, side-by-side comparisons, and aggregated user ratings. Too many choices can lead to analysis paralysis, making heuristics like "Top-Rated" labels essential in guiding decisions (Iyengar & Lepper, 2000). Subscription-based shopping models simplify this process by reducing the need for frequent decision-making (Schwartz, 2004).

Scarcity marketing (e.g., "Only 3 left!") and one-click checkout options increase the likelihood of immediate purchase by reducing hesitation. The presence of secure payment badges also enhances trust and influences conversion rates (Gefen et al., 2003). Moreover, cart abandonment reminders serve as a final push to encourage hesitant buyers to complete their purchase (Kukar-Kinney & Close, 2010).

After purchase, consumers assess their experience relative to their expectations. This evaluation can influence future purchasing decisions and impact brand loyalty, making it an essential aspect of the consumer journey. Positive experiences lead to repeat purchases and brand loyalty, while negative ones result in negative online reviews that impact future sales (Chevalier & Mayzlin, 2006). Companies now actively use AI-driven post-purchase engagement tactics, such as personalized emails or chatbots, to improve satisfaction and encourage repeat business (Grewal et al., 2020).

Neuroscience provides a deeper understanding of consumer behavior by uncovering the neural mechanisms that drive decision-making. Integrating cognitive and affective neuroscience reveals how attention, emotion, and memory interact throughout the decision-making process. For instance, studies using fMRI scans reveal that positive brand associations activate reward centers in the brain, reinforcing loyalty (Plassmann et al., 2008). Similarly, the use of urgency tactics in online shopping triggers stress-related neural responses, pushing consumers toward faster purchasing decisions.

Understanding how cognitive and emotional factors influence decision-making allows marketers to create targeted strategies that drive engagement and conversions. For example, brands use nostalgia marketing and storytelling to build emotional loyalty rather than relying purely on price competition (Holt, 2004).

III. Conceptual Framework:

The conceptual framework aims to illustrate the intricate interplay between cognitive and affective processes in consumer decision-making, drawing upon insights from various theoretical perspectives and empirical findings. This study integrates both cognitive and affective perspectives to provide a holistic understanding of online shopping behavior, addressing gaps in prior research that often examines these factors separately.

The introduction of **Prospect Theory** by Kahneman and Tversky (1979) serves as a foundation, emphasizing that decision-making is influenced by a multitude of factors beyond mere rationality, including emotions and cognitive biases.

At the core of this framework is the interaction between two primary components: affect and cognition. Damasio (2005) posits that cognitive processes operate under partial somatic-affective control, suggesting that emotions significantly shape cognitive evaluations. This is further supported by Almada et al. (2013), who identify distinct brain circuits responsible for

cognitive processing and emotional mediation. Specifically, the ventromedial prefrontal cortex, integral to emotional processing, influences both conscious and unconscious cognitive operations, as demonstrated in studies of patients with damage to this region (Damasio, 1994). Building on these findings, this study explores how online consumers balance emotional and rational considerations in their purchasing decisions, particularly in digital environments where platform design and interactive features further shape these processes.

In decision-making contexts, emotional processing emerges as a crucial determinant of outcomes. The Somatic Marker Hypothesis (Damasio, 1991) provides a framework for understanding how prior emotions and experiences inform the valuation of potential choices, reflecting the interconnectedness of emotional and cognitive mechanisms. This highlights the necessity for marketers to comprehend the emotional underpinnings of consumer behavior, as emotional connections have transitioned from strategic advantages to essential components in effective marketing (Clark et al., 2014).

The framework outlines three critical dimensions influencing consumer behavior: **affective responses, cognitive evaluations, and decision outcomes**:

- Affective responses – Emotional valence and arousal, which influence engagement, brand perception, and impulse buying (Russell, 2003).
- Cognitive evaluations – Structured information processing, including problem recognition, information search, and alternative assessment.
- Decision outcomes – The final purchase decision, influenced by the interaction between affective and cognitive factors.

To clarify their distinct roles in decision-making, the following hypotheses are proposed:

H1: Cognitive factors have a greater impact on online purchase decisions compared to affective factors.

This hypothesis assumes that consumers rely primarily on rational evaluations, such as product specifications, pricing, and reviews, when making online purchases. Cognitive processing plays a dominant role in high-involvement purchases, where consumers compare options systematically before making a decision (Howard & Sheth, 1969; Engel et al., 2001). Conversely, affective heuristics dominate in low-involvement purchases, such as fashion or entertainment products, where consumers prioritize brand perception and emotional appeal (Schmitt, 1999; Dhar & Wertenbroch, 2000). In online shopping, the absence of physical interaction with products increases reliance on textual and visual cues, reinforcing the importance of cognitive heuristics, such as brand reputation, detailed product descriptions, and third-party reviews (Tversky & Kahneman, 1974; Ariely, 2008).

However, research also suggests that while cognition is crucial in structured decision-making processes, affective responses may exert a stronger influence in low-involvement purchases, where consumers make impulsive or emotionally driven decisions (Shiv & Fedorikhin, 1999).

H2: Affective factors exert a stronger influence on online shopping experiences than cognitive factors.

While cognitive factors guide logical decision-making, affective responses play a more dominant role in shaping online shopping experiences. Emotional engagement, driven by website aesthetics, brand imagery, and user experience (UX) design, has been found to significantly influence purchase intent and brand loyalty (Posner et al., 2005; Gorn et al., 2001). Online

platforms that incorporate interactive features, social proof mechanisms (e.g., customer reviews, influencer endorsements), and sensory-rich media (e.g., high-resolution images, videos) create emotional connections that enhance consumer satisfaction and retention (LeDoux, 1996; Damasio, 2005).

Recent research has reinforced the critical role of affective decision-making in e-commerce, particularly in user experience (UX) design, digital branding, and emotional engagement. Studies have shown that aesthetically pleasing interfaces, interactive elements, and personalized recommendations trigger emotional responses that enhance user satisfaction and purchase intent (Cyr, Head, & Larios, 2020; Grewal et al., 2021). Recent studies indicate that sensory-rich experiences in online shopping stimulate emotional involvement, increasing brand loyalty and impulse buying tendencies (Flavián et al., 2019).

Additionally, research in neuromarketing has demonstrated that emotionally engaging content activates reward-related brain regions, reinforcing the idea that consumers are more likely to remember and engage with brands that elicit strong emotional responses (Shiv et al., 1990; Russell, 2003).

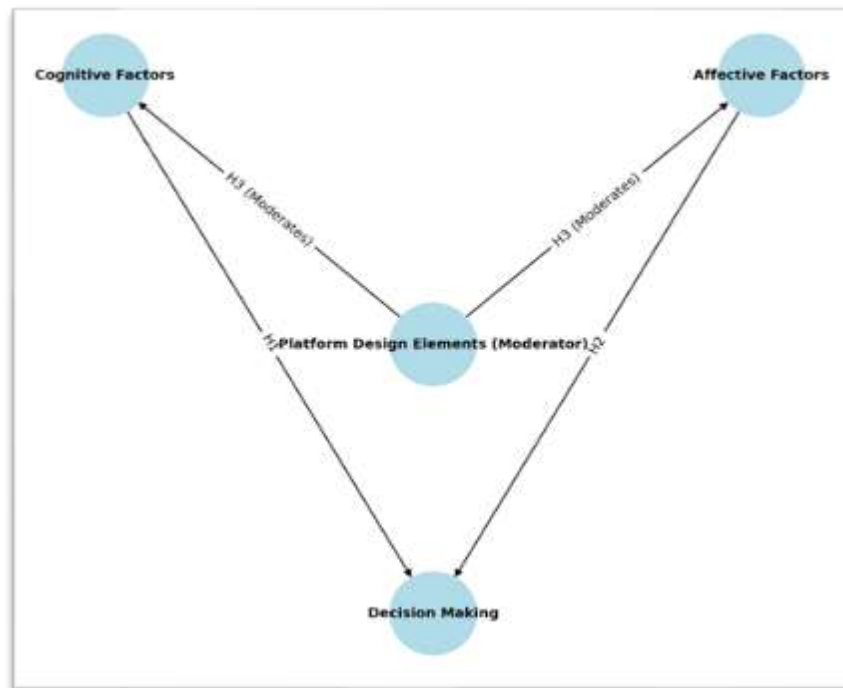
H3: Platform design, usability, and product presentation significantly influence the balance between cognitive and affective decision-making in online shopping.

This hypothesis extends the framework by emphasizing the role of digital interface design and product attributes in shaping consumer behavior. Studies indicate that online platform usability, aesthetic appeal, and ease of navigation directly affect trust, engagement, and purchase decisions (Brosch et al., 2013; Tversky & Kahneman, 1981).

- Usability – Clear navigation, fast-loading pages, and a seamless checkout process enhance cognitive ease and reduce frustration (Kotler & Keller, 2007).
- Aesthetics – Visually appealing designs, high-quality product images, and engaging layouts stimulate affective responses, increasing brand attachment and perceived value (Gorn et al., 2001).
- Product information clarity – Detailed descriptions, transparent pricing, and well-structured product pages facilitate cognitive evaluations and reduce purchase uncertainty (Ariely, 2008).
- Customer support & social proof – Live chat assistance, verified customer reviews, and user-generated content strengthen both cognitive trust and emotional reassurance in digital transactions (Wimmer et al., 2015).

Platform design moderates the impact of cognition and affect by either amplifying or mitigating their influence on purchase decisions. A seamless, well-designed platform reduces cognitive effort, making it easier for consumers to compare products rationally. Conversely, immersive, visually rich environments evoke emotional engagement, increasing affective influence (Gao & Bai, 2014; Cyr et al., 2009).

Figure 01: Graphical Representation of the Conceptual Framework



Source: Personal Efforts

IV. Methods and Materials:

This study employs a **quantitative research approach**, to systematically analyze the impact of cognitive and affective factors on online shopping behavior. A quantitative approach was selected because it enables statistical measurement of consumer decision-making patterns, facilitating comparisons and hypothesis testing (Creswell, 2014).

To collect data, an online survey was conducted using a structured questionnaire. This method was chosen for its efficiency in reaching a diverse population of online consumers across different demographic groups.

Convenience sampling was used due to its practicality and efficiency in quickly reaching a broad audience. While this approach may limit generalizability, it provides valuable insights into online shopping behaviors (Etikan et al., 2016).

A total of 310 participants were surveyed. Participants had to be 18 years or older, have made at least one online purchase in the past six months, and demonstrate familiarity with e-commerce platforms. Incomplete survey responses or data from participants who did not meet the eligibility criteria were removed from the final dataset.

The survey was designed in three languages—Arabic, French, and English—to increase accessibility and respondent engagement. It was distributed primarily through social media platforms, including Instagram and Facebook, as well as relevant e-commerce consumer groups. structured into two main sections: shopping platform-related questions (7 items), assessing purchase history, platform preference, purchase experience, and platform attributes (design, usability, pricing, product variety); and cognitive and affective factors (11 Likert-scale questions), with four items measuring emotional engagement, brand perception, and trust, and seven items assessing decision-making, product comparisons, and rational evaluations. Additional questions explored purchase intent and the moderating role of platform design.

The survey was pre-tested (n=15) for clarity and reliability, with refinements made before full distribution. Data was collected over 1 week from (May 20th, 2024) to (May 29th, 2024). Ethical considerations were upheld through informed consent and response anonymization to ensure participant confidentiality.

The collected data was then analyzed using IBM SPSS Statistics software, incorporating t-tests as well as multiple regression analysis to test the proposed hypotheses.

V. Results and discussion:

1. Results:

The study surveyed 309 participants, with a gender distribution of 32% male and 68% female. The age range spanned from 18 to 50 years, with the majority of participants falling within the 18-25 age group.

Table 01: Sample Demographics

Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	99	32%
	Female	210	68%
Age	<18	17	5,50%
	18-25	260	84%
	26-50	31	10%
	51+	1	0,30%

Source: Personal Efforts

To test the first hypothesis, a one-sample t-test was conducted to compare the mean values of cognition and affect against a test value of 4. The results are summarized in Table 2.1 below. The results indicated that the mean value for cognition (M = 5.1515) was significantly higher than that for affect (M = 4.4238), with both variables showing statistical significance ($p < 0.05$). Therefore, H1 is accepted, suggesting that cognition has a greater influence on online purchase decisions than affect.

Table 02: One sample t-test Statistics

Variable	N	Mean	Std. Deviation	Std. Error Mean
<i>Affect</i>	309	4.4238	1.38486	0.09792
<i>Cognition</i>	309	5.1515	1.19957	0.08482

Source: SPSS version 26 output.

Before testing H2 and H3, the necessary assumptions for linear regression analysis were verified to ensure the reliability of the results. The sample size of 309 respondents was deemed sufficient for regression analysis. Data screening confirmed the absence of significant outliers, and the normality of residuals was validated, indicating that the distribution met statistical requirements. The Durbin-Watson test confirmed the absence of autocorrelation, ensuring that respondents answered the questionnaire independently. Additionally, multicollinearity was ruled out, as Variance Inflation Factor (VIF) values remained below the acceptable threshold (<10), indicating no strong correlation between predictor variables. With these assumptions met, a

multiple regression analysis was conducted to examine the influence of cognitive and affective factors (H2) and platform design elements (H3) on online purchase decisions.

To test the second hypothesis, multiple linear regression analysis was conducted, treating purchase experience as the dependent variable and affect and cognition as the independent variables. The results revealed that affect ($\beta = 0.269$, $t = 3.955$, $p < 0.05$) had a positive and significant influence on purchase experience, while cognition ($\beta = 0.154$, $t = 2.259$, $p = 0.025$) also positively influenced the dependent variable but to a lesser extent. Consequently, H2 is accepted, indicating that the online purchase experience is more significantly influenced by affect than by cognition.

Table 03: H2 Regression Results Summary

<i>Predictor</i>	β (Standardized Coefficient)	t-value	p-value
<i>Affect</i>	0.269	3.955	0.000
<i>Cognition</i>	0.154	2.259	0.025

Source: SPSS version 26 output.

Multiple linear regression was again employed to test the third hypothesis, with the dependent variable as purchase experience and independent variables including design, ease of use, prices, and product variety. The overall model was significant ($F = 11.877$, $p < 0.05$), explaining 17.9% of the variance in purchase experience. Notably, the platform's design had a significant positive effect ($\beta = 0.394$, $t = 5.214$, $p < 0.05$) on purchase experience, while ease of use, prices, and variety did not show significant impacts. Thus, H3 is partially accepted, confirming that platform design influences purchase experience but providing insufficient evidence for the other variables.

Table 04: H3 Regression Results Summary

<i>Predictor</i>	β (Standardized Coefficient)	t-value	p-value
<i>Platform Design</i>	0.394	5.214	0.000
<i>Ease of Use</i>	0.079	1.111	0.268
<i>Prices</i>	-0.034	-0.522	0.602
<i>Product Variety</i>	0.015	0.213	0.832

Source: SPSS version 26 output.

2. Discussion:

The study provides insights into online decision-making, emphasizing the distinct roles of cognition and affect. It aligns with Kahneman and Tversky's (1979) Prospect Theory, confirming that both rational and emotional processes interact to shape consumer behavior.

The significant role of cognition in decision-making (**H1 confirmed**) stresses the need for clear and accessible information, supporting Kotler and Keller's (2007) view on the importance of psychological factors. This finding also aligns with Ariely (2008), who emphasized that structured decision-making in digital environments relies heavily on rational evaluation. Marketers should prioritize cognitive elements such as product descriptions, transparent pricing strategies, and customer reviews to facilitate informed decision-making. Marketers should prioritize cognitive

elements such as product descriptions, transparent pricing strategies, and customer reviews to facilitate informed decision-making.

In contrast, affect, particularly through platform design, significantly shapes online purchase experiences (**H2 confirmed**), aligning with Damasio (2005) and Almada et al. (2013) on emotional processing's importance in consumer behavior. This supports prior research by Gao and Bai (2014), which found that engaging and aesthetically appealing websites increase trust and engagement. This focus on design reflects modern marketing strategies that prioritize user experience and emotional engagement.

The positive relationship between platform design and purchase (**H3 confirmed**) experience underscores the need for visually appealing and user-friendly online environments, which are essential in a competitive marketplace. While the study partially validates the third hypothesis regarding platform design, ease of use, prices, and product variety, only platform design was significant, suggesting a need for marketers to enhance visual and functional aspects while exploring other influencing factors.

Compared to previous studies, our findings reinforce the established view that cognition is the primary driver in structured decision-making (Tversky & Kahneman, 1974). However, unlike Schmitt (1999), who emphasized affect as the dominant factor in branding and marketing, our results suggest that cognition still plays the leading role, even in digital shopping contexts. Furthermore, while prior research explored usability and aesthetics separately, this study integrates them, demonstrating their combined effect on online purchase decisions.

VI. Conclusion:

Overall, this study contributes to the understanding of online decision-making by explaining the interplay between cognitive and affective processes. The results confirm that cognition plays a dominant role in purchase decisions, while affect significantly shapes user experience. This dual influence highlights the need for marketers to craft strategies that effectively engage consumers on both cognitive and emotional levels to enhance satisfaction and drive purchasing behavior.

Given these findings, marketers should adopt strategies that balance cognitive and affective engagement in online environments. To appeal to cognitive decision-making, e-commerce platforms should prioritize clear product information, transparent pricing, and user-friendly navigation. Ensuring well-structured product pages, detailed specifications, and high-quality comparison tools can facilitate informed decision-making. At the same time, affective elements should be optimized to enhance user experience and emotional connection. This includes leveraging aesthetically appealing website design, personalized recommendations, and engaging visual storytelling through interactive content, videos, and social proof.

Moreover, platform usability should be improved by streamlining checkout processes, minimizing loading times, and offering responsive customer support, ensuring both cognitive ease and emotional reassurance. By integrating cognitive and affective triggers into marketing strategies, online businesses can enhance engagement, increase conversions, and foster long-term consumer loyalty.

However, this research is not without limitations. The application of a convenience sampling method limited the generalizability of the findings, as the majority of respondents were students. Additionally, the reliance on self-reported data may introduce biases, as consumer responses could be influenced by social desirability or recall errors. Moreover, the study primarily focused on conscious decision-making, overlooking subconscious processes that often govern consumer behavior.

To address these limitations, future research should aim for a more diverse and representative sample to improve the applicability of findings across different demographics. Moreover, incorporating neuromarketing techniques, such as EEG or fMRI, could provide deeper insights into the subconscious influences on decision-making and help identify the specific brain mechanisms activated during online shopping experiences.

Further investigations should also explore additional cognitive and affective factors, such as the impact of user experience design, pricing strategies, product variety, and customer reviews on consumer behavior. Future research could also examine how cultural differences affect cognitive and affective decision-making in global online markets.

In conclusion, the integration of cognitive and affective factors in understanding online consumer behavior provides a nuanced perspective for marketers aiming to enhance engagement and conversion rates. By leveraging both rational and emotional triggers in online environments, marketers can create personalized, user-friendly shopping experiences that enhance consumer trust, satisfaction, and long-term brand loyalty. Future studies should continue to explore how emerging technologies, artificial intelligence, and virtual reality can further refine the balance between cognition and affect in digital marketing strategies.

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