

Neuromarketing in the Perspective of Islamic Business Ethics: Between Innovation and Manipulation

Muhamad Ulul Albab Musaffa; Moh. Tamtowi; Zetty Syarifah

Universitas Islam Negeri Sunan Kalijaga

muhamad.musaffa@uin-suka.ac.id

Abstract: The development of neuromarketing as an interdisciplinary approach that integrates neuroscience, psychology, and marketing has created new opportunities for a more precise understanding of consumer behavior. However, from the perspective of Islamic business ethics, an academic problem arises regarding the boundary between legitimate innovation and manipulative practices that harm consumers. Techniques such as scarcity and dark patterns raise serious concerns because they risk undermining the principles of justice, contractual clarity, and consumer consent, which are fundamental in Islamic commercial jurisprudence. This study seeks to examine the position of neuromarketing by referring to the framework of *maqāṣid al-sharīʿah*, particularly the dimensions of *ḥifẓ al-ʿaql* (protection of intellect), *ḥifẓ al-māl* (protection of wealth), and *ḥifẓ al-nafs* (protection of self), alongside relevant fiqh principles. The research employs a library-based method with a critical analytical approach. Data were collected from contemporary neuromarketing literature, consumer ethics studies, and classical sources in Islamic jurisprudence. The analysis was carried out through a dialectical engagement between modern research findings and Islamic normative principles, resulting in an evaluative synthesis. The findings indicate that neuromarketing can be categorized as a halal by design practice when it is directed towards clarifying information, enhancing consumer literacy, and strengthening transparency. Conversely, it becomes manipulative when it exploits consumer cognitive biases. The primary contribution of this research is the formulation of the Shariah Neuromarketing Ethics Index (SNEI) as an ethical audit instrument applicable to the development of the halal marketing industry in the digital era.

Keywords: Neuromarketing; Islamic Business Ethics; *Maqāṣid al-Sharīʿah*; Islamic Commercial Jurisprudence; Halal by Design; Shariah Neuromarketing Ethics Index (SNEI)

Introduction

The advancement of contemporary marketing technologies has created new challenges in understanding consumer behavior. One of the most prominent developments is neuromarketing, an interdisciplinary approach that integrates neuroscience, psychology, and marketing to uncover the subconscious mechanisms underlying consumer decision-making. By employing instruments such as EEG, fMRI, GSR, and eye-tracking, neuromarketing offers a deeper understanding of consumer motivation, preference, and emotion (Cherubino et al. 2019; Hakim and Levy 2019). Globally, investment in neuromarketing research has grown alongside the digitalization of marketing. In Indonesia, DataReportal (2019–2022) reported that people spend an average of more than eight hours daily online, with three to four hours dedicated to social media (Kemp 2019, 2020, 2021, 2022). This indicates that the cognitive and emotional space of consumers has become a new arena of competition, one that presents both opportunities for innovation and risks of manipulation.

From an academic standpoint, neuromarketing has sparked intense debate. Venkatraman et al. demonstrate that neural signals can more accurately predict advertising effectiveness than self-reported data (Venkatraman et al. 2015). However, Lee warn against “neurohype,” or exaggerated claims not empirically substantiated (Lee, Broderick, and Chamberlain 2007). Murphy et al. highlight the ethical threat of covert manipulation through neural data, while Abou-Youssef et al. find that the unregulated use of neuromarketing can exacerbate inequality among consumers with low digital literacy (Abou-Youssef et al. 2015; Murphy, Illes, and Reiner 2008). More recently, Alsharif et al. and Ismajli et al. argue that integrating AI algorithms into neuromarketing risks excessive consumer profiling and undermines autonomy (Alsharif et al. 2022; Ismajli, Ziberi, and Metushi 2022). These gaps lead to a fundamental question: to what extent can neuromarketing be considered a legitimate innovation, and when does it slip into manipulation?

The ethical tension becomes more pronounced when viewed through the lens of Islamic marketing ethics. Islamic jurisprudence (*fiqh al-mu‘āmalah*) explicitly prohibits *gharar* (excessive uncertainty), *ghabn* (exploitation), *tadlis* (deception), and *najash* (price manipulation), all of which aim to protect consumers from harm (Ibn Rushd 2004). This raises a critical question: does the stimulation of subconscious consumer impulses in neuromarketing constitute *tadlis*, or can it be viewed as an ethical innovation if directed toward greater clarity and consumer literacy? Smidts et al. emphasize the need for a rigorous methodological framework, while Luna-Nevarez highlights interpretive bias that arises in the absence of ethical foundations. Similarly, Milne et al. underscore transparency as a key factor in maintaining

consumer rights and market fairness (Luna-Nevarez 2021; Milne, Bahl, and Rohm 2008; Smidts et al. 2014). Yet, integration between neuromarketing and the Islamic ethical framework of *maqāṣid al-sharī'ah* remains underexplored.

Addressing these gaps, the present study seeks to answer two core research questions; (1) To what extent can neuromarketing be regarded as an ethical innovation in accordance with the principles of Islamic business ethics? and (2) Under what conditions does it transform into manipulative practice that contravenes the prohibitions of *gharar*, *ghabn*, *tadlīs*, and *najash*? Methodologically, this research adopts a library-based critical analysis, engaging contemporary neuromarketing literature, consumer ethics studies, and classical *fiqh al-mu'amalah* sources. The analysis employs a dialectical framework that synthesizes neuropsychological theories of consumer behavior, the objectives of Islamic law (*maqāṣid al-sharī'ah*), and the maxims of Islamic jurisprudence (*qawā'id fiqhīyyah*). This interdisciplinary approach allows the study to move beyond descriptive analysis toward a normative and evaluative model that proposes a contextual ethical framework for neuromarketing practices.

Results and Discussion

Neuromarketing as an Ethical Innovation in Contemporary Marketing

Neuromarketing, as an innovation in contemporary marketing, enables precise mapping of consumer preferences through neurophysiological instruments such as EEG, fMRI, eye-tracking, and GSR. These tools are effective in assessing attention, emotional engagement, and memory formation resulting from consumer interactions with products or marketing messages (Levrini and Dos Santos 2021; Wang et al. 2022). From the perspective of Islamic business ethics, the application of such technologies is permissible insofar as it serves the purpose of *maṣlaḥah*, promoting clarity of information, reducing elements of *gharar* (excessive uncertainty), and strengthening mutual trust between producers and consumers. The Qur'an explicitly forbids unjust economic gain, as stated in al-Baqarah [2]:188, which normatively mandates transparency and information accessibility to prevent harm to either party in a transaction.

The concept of *al-bayān* (clarity and explanation) as the basis for contractual validity, as emphasized by Ibn Taymiyyah (Ibn Taymiyyah 1995), provides an essential ethical direction, neuromarketing should illuminate information rather than obscure it. This aligns with the legal maxim *al-'ibratu fi al-'uqūd li-al-maqāṣid wa-al-ma'ānī lā li-al-alfāz* (the validity of contracts is determined by their intent and meaning, not merely by words). Accordingly,

neuromarketing may serve as a diagnostic instrument to assess consumer comprehension of product risks, promotional benefits, or digital contract terms. The Prophet's ﷺ hadith, “*The truthful and trustworthy merchant will be with the Prophets, the truthful, and the martyrs*”, underscores that neuromarketing is ethical only when it reinforces trust and integrity, rather than exploiting cognitive vulnerabilities.

In Islamic commercial jurisprudence (*fiqh al-mu‘āmalah*), the foundational principle *al-aṣlu fī al-mu‘āmalāt al-ibāḥah ḥattā yaqūma al-dalīl ‘alā al-taḥrīm*, implies that technological innovations like neuromarketing are permissible provided they do not contravene Shari‘ah prohibitions. However, this freedom is bounded by the principle *al-darar yuzāl*, which mandates the prevention of any form of detriment. Consequently, neuromarketing protocols that pose health risks, induce addictive consumer behavior, or deliberately target vulnerable groups through manipulative techniques must be rejected. The balance between the permissibility of innovation and the obligation to eliminate harm (*mafsadah*) reaffirms the space for *ijtihad* while ensuring consumer protection.

The legal maxim *al-ḥukmu bi-al-wasilah ḥukmun bi-al-maqāṣid* (the ruling on means follows the ruling on ends) establishes that ethical judgment on a tool depends on its purpose. Neuromarketing that enhances contract readability, clarifies risk communication, or increases comprehension serves as a *wasilah* (means) toward *maṣlahah* (benefit). Conversely, practices that suppress rational reflection violate *ḥifẓ al-‘aql* (protection of intellect) and *ḥifẓ al-māl* (protection of wealth). Likewise, the maxims *al-kharāj bi-al-ḍamān* (profit entails liability) and *al-ghurm bi-al-ghunm* (gain entails risk) reinforce ethical accountability; firms that profit from neuro-based insights must bear the moral and legal responsibility for their consequences, including independent audits and remediation if harm occurs. Thus, integrating neuromarketing within Islamic business ethics requires aligning benefit, risk, and accountability.

Furthermore, the principles *al-‘ādah muḥakkamah* and *al-ma‘rūf bayna al-tujjār ka-al-masyrūṭ baynahun* (commercial norms are binding like explicit conditions) affirm the role of established industry standards as a form of binding *‘urf ṣaḥiḥ* (legitimate custom). Practices such as providing clear disclaimers, conducting usability testing, and avoiding discriminatory segmentation should thus be treated as ethical norms. Bao underscores that informational asymmetry is a key source of injustice in modern commerce (Bao 2011); neuromarketing, when oriented toward enhancing consumer understanding, can help close this ethical gap. Hence, the technology functions as a “*laboratory of informational justice*”, wherein practices that enhance transparency and comprehension are deemed *maṣlahah*, while those exploiting cognitive bias fall into *tadlīs* and *gharar*, both of which are

categorically prohibited in Islamic law.

The Dialectic of Innovation and Manipulation: Ethical Boundaries in Neuromarketing Practices

The dialectic between innovation and manipulation in neuromarketing warrants serious attention, particularly when modern marketing strategies intersect with Shari'ah principles. Contemporary literature indicates that neuromarketing techniques often exploit cognitive biases through strategies such as scarcity and artificial urgency, stimulating impulsive behavior without affording consumers adequate time for rational deliberation (Hakim and Levy 2019; Harris, Ciorciari, and Gountas 2019). Within *fiqh al-mu'amalah*, such methods parallel the concept of *tadlis*, concealing defects or presenting deceptive appearances of quality. Imām al-Nawawī, in al-Majmū', defines *tadlis* as any form of concealment of a deficiency that, if disclosed, would diminish the value or desirability of the contract. This corresponds with the prohibition of *gharar* (excessive uncertainty), as established in the Prophet's ﷺ ḥadīth: "*nahā Rasūlullāh ṣallallāhu 'alayhi wasallam 'an bay'i al-gharar.*"

In modern practice, advertisements claiming "limited stock" when supplies are abundant exemplify *najash*, a form of market deception designed to inflate demand or manipulate prices. The Prophet ﷺ stated in a ḥadīth narrated by al-Bukhārī and Muslim: "*Do not engage in price manipulation (lā tanājashū).*" Scholars of the Shāfi'ī school classify *najash* as a form of fraudulent misrepresentation (*ghibṣ*), since it entices consumers through the illusion of scarcity rather than genuine product quality (Al-Khaṭīb al-Syarbīnī 1994). Classical works on *fiqh al-buyu'* also condemn practices such as *bay' al-munābadhab* and *bay' al-mulāmasah*, where contracts are concluded without proper inspection or understanding of the goods, transactions that, as Ibn Rushd notes, undermine consent and fairness (Ibn Rushd 2004). Imam Mālik dalam al-Muwatta' transmits the Prophet's ﷺ prohibition of such contracts on the grounds that they involve elements of gambling (*maysir*), uncertainty, and coercion, all of which harm the buyer.

Juristic maxims further clarify that *al-gharar al-kathir yubṭilu al-'uqud* (excessive uncertainty invalidates contracts), whereas minor uncertainty may be tolerated. This establishes that any manipulation of consumer perception resulting in substantial ambiguity or misinformation is impermissible. Likewise, the maxim *al-darar yuzāl* requires marketing practices to avoid psychological or financial injury. Imām al-Sarakhsī, in al-Mabsūṭ, asserts that any contract containing potential for dispute due to ambiguity in the object or conditions of sale constitutes *gharar* and must be prevented to uphold justice and transparency (Al-Sarakhsī 1906).

In the context of neuromarketing, the use of dark patterns in digital shopping interfaces, such as hidden buttons or false countdown timers designed to induce urgency, reflects a modern manifestation of deceptive sales practices condemned in prophetic traditions. The Prophet ﷺ forbade sales involving the throwing of stones (*bay' al-ḥaṣāb*), where the buyer lacked full knowledge of the item's nature. The analogy is clear, whether through physical means in the past or algorithmic manipulation in the present, any mechanism that drives consumers into uncertainty or coerced decision-making remains within the realm of *gharar* and *tadlis*.

This reasoning delineates the boundary between innovation and manipulation. Neuromarketing constitutes a legitimate innovation when it aids producers in understanding consumer needs and enhances transactional clarity, in line with the principle *al-aṣlu fī al-mu'āmalāt al-ibāḥah*. However, when it constrains consumer autonomy (*ikhtiṣār*), undermines mutual consent (*tarādī*), or violates the principle of *al-'adl* (justice), it transforms into manipulation, falling within the scope of prohibited commercial practices discussed by classical fuqahā' under the *bāb al-buyu' al-manḥiyy 'anḥā*.

A Sharia-Based Evaluation Framework for Neuromarketing Practices

A Sharia-based evaluation framework for neuromarketing practices must be grounded in the normative taxonomy of *fiqh al-mu'āmalāt* and the methodological principles of *qawā'id fiqhīyyah* (juristic maxims), which were formulated to address both classical and emerging legal-ethical issues. Within this tradition, the *qawā'id* serve as a jurisprudential reasoning tool capable of generalizing legal rulings across various cases and guiding *ijtihād* in contemporary matters lacking explicit scriptural provisions. Hence, they can function as an ethical audit matrix for neuro-marketing innovation in the digital economy. This approach aligns with the established juristic understanding that *qawā'id* operate to resolve issues that have occurred and those that may arise in the future, providing a normative instrument for evaluating technological practices within modern business ethics.

The first stage involves mapping classical categories of transactional ethics to contemporary marketing behavior. *Gharar*, the prohibition of uncertainty in contracts that may cause disputes, is exemplified in sales deemed void due to ambiguity in the object, price, or delivery. The Prophet's ﷺ prohibitions on *bay' al-ḥaṣāb* (sale by throwing a stone) and *bay' al-gharar* serve as jurisprudential tests for evaluating modern advertising and digital interfaces that conceal costs, impose hidden subscriptions, or collect user data beyond reasonable expectations. Classical jurisprudence also condemns *bay' al-mulāmasah* and *bay' al-munābadha* (transactions that restrict

clarification and informed consent) which, when translated into the digital context, resemble “click traps” or single-click agreements without sufficient disclosure. Such mechanisms introduce material uncertainty that undermines informed consent (*riḍā*) and contractual clarity.

The second dimension is *ghabn*, unjust imbalance arising from informational asymmetry. Although the term may not always be explicitly stated, its moral spirit is embedded in the maxim *al-ḍarar yuzāl*, which provides a legal basis for evaluating discriminatory pricing practices based on neuro-data profiling. These may cause certain consumers to pay higher prices without a justifiable rationale. Foundational principles such as *al-umūr bi-maqāṣidihā* and *al-‘ibratu fī al-‘uqūd li-l-maqāṣid wa-l-mā‘āni lā li-l-alfāz* (the validity of contracts rests on their objectives and meanings, not merely on wording) are instrumental in determining whether market segmentation and personalization serve genuine benefit (*maṣlaḥah*) or diminish consumer autonomy. In this context, the marketer’s intention and the measurable degree of harm become decisive factors.

The third category is *tadlīs* or *ghishh* (deception), referring to concealing defects or misrepresenting quality. The Prophet ﷺ sternly warned, “*Man ghashshana fa-laysa minnā*” (Whoever deceives us is not one of us). Within neuromarketing, *tadlīs* manifests through emotional framing, overstated claims of effectiveness, or selective messaging that conceals potential risks. When neurological triggers are deliberately exploited to create cognitive illusions that exceed reasonable caution, the requirement of adequate disclosure (*bayān*) is violated, and the moral validity of the transaction becomes compromised.

The fourth category, *najash*, refers to the artificial manipulation of market demand or pricing through fabricated testimonials, fake urgency, or deceptive reviews. Classical *fiqh* literature unequivocally prohibits *najash* and records a scholarly consensus (*ijmā‘*) on its unlawfulness, with several jurists classifying it as a sinful act requiring repentance. In contemporary digital environments, anonymous “buzzers,” bot-generated reviews, and covert endorsements operate as mechanisms of demand fabrication that create an illusion of scarcity. Such practices violate the foundational principle of *ṣidq* (truthfulness) and corrupt the integrity of fair market pricing.

Mapping these four ethical categories (*gharar*, *ghabn*, *tadlīs*, and *najash*) must be grounded in the general legal principles of *mu‘āmalāt*. The maxim *al-aṣl fī al-mu‘āmalāt al-ibāḥah ḥattā yaqūma al-dalīl ‘alā al-taḥrīmihā* establishes the presumption of permissibility for innovation, including neuromarketing research, unless there exists a definitive prohibition. However, once innovation produces measurable harm or exploitation, Shariah restrictions are activated as corrective limits. The maxim *al-ḵarāj bi al-ḍamān* obligates businesses that gain surplus from personalization or neuroprofiling to

assume accountability for associated risks. Similarly, *yulẓamu murāʿat al-sharṭ bi qadri al-imkān* (conditions must be fulfilled to the extent possible) and *al-maʿrūf bayna al-tujjār kal-mashrūṭ baynahun* (common market practices are as binding as explicit conditions) emphasize that mutual consent and comprehension define the legitimacy of contractual terms thus, hidden or obscure design conditions contradict fair market ethics.

This framework is ultimately anchored in the Qurʾanic prohibition of unjust enrichment and the condition of genuine consent: *“Lā taʿkulū amwalakum baynakum bil-baṭil illā an takūna tijaratan ʿan taraḍin minkum”*. This verse serves as a theological boundary requiring informational clarity, uncoerced consent, and the absence of engineered psychological compulsion. Within the neuromarketing ecosystem, *riḍā* (willing consent) cannot be measured merely by a user’s click but must rest upon substantial comprehension and informed volition.

From this conceptual construction, the Shariah Neuromarketing Ethics Index (SNEI) can be formulated as an audit instrument comprising measurable indicators across four core dimensions: transparency (to minimize *gharar* or uncertainty), price and access fairness (to prevent *ghabn* through the principle of harm elimination), message honesty (to avoid *tadlīs* or *ghish*, i.e., deceit), and market integrity (to curb *najash*, or artificial demand manipulation). Each dimension carries a weighted value derived from relevant *fiqh* maxims—for instance, transparency is informed by *al-ʿibratu fī al-ʿuqūd li-l-maqāṣid wa-l-maʿānī*, while profit–loss accountability is anchored in *al-kharāj bi al-ḍamān*, means profit is justified only by bearing risk. Mapping modern marketing violations to classical forms of prohibited transactions documented in *fiqh* provides concrete analytical guidance for evaluating user experience design. For example, if a digital feature generates ambiguity similar to *mulāmasah* (sales concluded by mere touch) or *munābadha* (sales concluded by random throw), its transparency score decreases; likewise, if review mechanisms emulate *najash* (fake bidding or testimonials), market integrity scores decline.

In this way, *qawāʿid fiqhīyyah* evolve from abstract moral principles into evaluative variables equipped with quantifiable indicators, metrics, and ethical thresholds. The evaluative framework thus maintains a balance between the spirit of permissibility in innovation and the boundaries of prohibition against manipulation. The foundational presumption of permissibility (*al-aṣl fī al-muʿāmalāt al-ibāḥah*) remains intact, yet it is delimited by prohibitions against *gharar* (uncertainty) and deceit, the ban on engineered demand (*najash*), and the duty to eliminate harm (*al-ḍarar yuzāl*). Accordingly, neuromarketing experimentation must operate within the ethical boundaries of valid consent, transactional justice, and the protection of public wealth, ensuring that technological creativity advances in harmony

with Shariah values of fairness, transparency, and accountability.

Integration of Neuromarketing with *Maqāṣid al-Sharī'ah*: Toward a Halal-by-Design Practice

The integration of neuromarketing with *maqāṣid al-sharī'ah* requires a paradigmatic shift from merely maximizing consumer attention toward engineering user experiences that safeguard intellect (*'aql*), wealth (*māl*), and well-being (*nafs*). Within the *maqāṣid* framework, the purpose of Islamic law is to realize benefit (*maṣlaḥah*) and prevent harm (*māfsadah*), encapsulated in the juristic maxim: “to pursue benefit and remove harm.” This principle serves as a normative foundation to evaluate whether neural interventions in marketing promote literacy, transparency, and self-control or, conversely, erode them. In Islamic jurisprudence, all activities are fundamentally permissible as long as they generate benefit, but they become prohibited when they cause harm, such as injustice (*ẓulm*), uncertainty (*gharar*), gambling (*maysir*), or usury (*ribā*).

Al-Shāṭibī emphasized that *sharī'ah* aims to preserve five essential goods (religion, life, intellect, progeny and wealth) organized hierarchically into *darūriyyāt* (necessities), *ḥājīyyāt* (needs), and *taḥsīniyyāt* (refinements). These are not merely moral slogans but function as evaluative criteria for assessing contemporary practices. For instance, an interface that triggers compulsive buying behavior undermines *ḥifẓ al-'aql*; algorithms that exploit users' vulnerabilities violate *ḥifẓ al-nafs*; and cognitive profiling that enables price discrimination compromises *ḥifẓ al-māl*. Hence, *maqāṣid* operates as an ethical compass for balancing benefits and risks in neuromarketing. In parallel, al-Ghazālī asserted that valid *maṣlaḥah* must be *darūriyyah* (essential), *qaṭ'iyyah* (certain), and *kullīyyah* (universal). Whatever sustains the *maqāṣid* constitutes *maṣlaḥah*, whereas anything that undermines them is *māfsadah*, and averting *māfsadah* itself is a form of *maṣlaḥah*. This principle underscores that *ijtihād* in Islamic law aims not at pragmatic justification but at preventing greater moral and social harm. Applied to neuromarketing, this means that design must be regulated to prevent addictive or manipulative effects, while ensuring that innovation continues to operate within the ethical boundaries of *maṣlaḥah*, a framework that upholds human dignity, informed consent, and justice in the digital marketplace.

The juristic maxim *lā ḍarar wa lā ḍirār* (there shall be neither harm nor reciprocal harm) serves as a foundational principle in *mu'āmalah* (Islamic commercial law), prohibiting any act that causes or perpetuates harm. This maxim is particularly relevant in addressing manipulative “dark pattern” practices such as click traps, hidden subscriptions, and covert data collection. Classical scholars explain that *maḍarrah* (harm) in *mu'āmalah*

includes the deprivation of rights, obfuscation of essential information, and distortion of fair bargaining conditions. Accordingly, neuromarketing is deemed *sharʿi-ly* valid only when it enhances informational clarity and strengthens users' capacity for reflection. Within this framework, neuromarketing should not be viewed merely as a predictive technology but as an ethical instrument that upholds *maṣlaḥah* (benefit) and prevents *mafsadah* (harm). Innovation remains permissible so long as it reinforces transparency, preserves consumer self-control, and protects intellect (*ʿaql*), life (*nafs*), and wealth (*māl*). Conversely, any intervention that diminishes user autonomy or heightens cognitive vulnerability constitutes a form of manipulation prohibited under Islamic law. Thus, *maqāṣid al-sharīʿah* functions as both a normative boundary and a practical guideline to ensure that neuromarketing evolves in an ethical and sustainable manner.

The concept of halal by design offers a pragmatic framework for integrating *maqāṣid al-sharīʿah* into neuromarketing practice. Within this paradigm, ethical compliance is embedded at the design stage (across marketing strategies, messaging, user interfaces, A/B testing¹, and choice architectures) rather than being retrofitted as a corrective measure at the end of the process. It treats compliance not as an external obligation but as an intrinsic feature of the system's design. In this model, marketing objectives (conversion, retention, and loyalty) are aligned with the objectives of *sharīʿah* through measurable *maṣlaḥah*. This approach aligns with the general maxim permitting innovation in economic transactions so long as no explicit prohibition exists: "*al-aṣlu fī al-muʿāmalāt al-ibāḥah ḥattā yaqūma al-dalīl ʿalā al-taḥrīmihā*" (the default rule in transactions is permissibility unless proven otherwise), while being bounded by the preventive maxim "*al-ḍarar yuzāl*" (harm must be eliminated). Together, these maxims provide the conceptual boundary that renders innovation both legitimate and accountable.

This ethical foundation is rooted in naqli (textual) and ʿaqli (rational) evidence, particularly the prohibition against consuming wealth unjustly: "*wa lā taʿkulū amwālakum baynakum bil-baṭīl illā an takūna tijāratan ʿan tarāḍin*

¹ An A/B experiment in user interface (UI) design is a controlled testing method that compares two versions of a layout or feature to determine which performs better in achieving specific objectives—such as increasing click-through rates, conversions, or user satisfaction.

The principle is straightforward: users are randomly divided into two groups. Group A interacts with the original version (commonly referred to as the control), while Group B experiences a modified version (often called the variant). Interaction data are then collected, such as the number of button clicks, completion of checkout processes, or time spent on the page. Based on these data, designers and researchers can evaluate whether the design modification produces a positive, neutral, or negative effect on user behavior.

minkum” (al-Nisā’ [4]:29), which establishes voluntary consent (*riḍā*) as a normative principle requiring transparency and freedom from coercion. The Prophet’s ﷺ hadith, “*man ghashshanā fa laisa minnā*”, reinforces this moral standard and complements the Qur’anic injunction by explicitly prohibiting all forms of *tadlis* (deception) and *ghish* (fraud). Procedurally, the maxim “*al-umūru bi maqāṣidihā*”, calls for ethical evaluation of design motives (whether they enlighten or manipulate) while “*al-‘ādab muḥakkamah*” (custom is authoritative) demands that market norms be based on fairness and reasonableness, not on engineered illusions of scarcity.

In the aspect of *ḥifẓ al-‘aql* (protection of intellect), the primary measure lies in the ability to reduce cognitive noise while enhancing informational clarity. Within the halal-by-design framework, preserving the intellect means designing user experiences that safeguard rational capacity from excessive manipulation beyond reasonable limits. Ethical design must refrain from employing dark patterns (such as click traps, default hidden subscriptions, or fake countdown timers) because such strategies exploit rapid, automatic responses (system 1) while suppressing deliberate, reflective thinking (system 2). From a *shari‘ah* perspective, these practices constitute elements of *gharar* (uncertainty), as essential information regarding price, duration, or contractual terms is not adequately disclosed. Al-Ghazālī underscores the importance of *bayān* (clarity) and precision in reasoning methodology so that legal judgments are not established upon semantic ambiguity. The implication is clear, every potential source of misunderstanding must be mitigated through sufficient and measurable explanation. Since the intellect functions as *miẓān al-taklīf* (the foundation of moral responsibility), its preservation requires structured education mechanisms, transparent and simplified message delivery, and a cooling-off period at decision points susceptible to bias. This view aligns with al-Shāṭibī’s assertion that the *shari‘ah* is structured according to human capacity and seeks to prevent *ḥaraj* (undue hardship). Consequently, neuromarketing strategists are obligated to structure evidence, options, and user interaction flows in ways that prevent consumers from being driven toward harmful impulsive decisions. In practice, this entails comprehensive cost transparency, clear labeling of risks in accessible language, and moderation of visual-emotional stimuli that trigger transient impulses. This ethical safeguard is reinforced by the juristic maxim *lā ḍarar wa lā ḍirār* or no harm and no reciprocation of harm, which serves as a moral boundary to prevent the exploitation of human cognitive faculties.

In the dimension of *ḥifẓ al-māl*, *maqāṣid al-shari‘ah* requires that economic transactions be safeguarded from manipulative mechanisms that distort prices and impose losses upon vulnerable parties. Al-Shāṭibī positions the preservation of wealth within the *daruriyyāt* (essential

necessities), implying that every market mechanism must prevent distortions arising from artificial demand engineering or extreme information asymmetry. This entails an ethical obligation to structure recommendation algorithms that do not steer users toward higher-priced options without rational justification. The juristic maxim *al-kharāj bi al-ḍamān* serves as a reminder of accountability, profits gained through personalization must be balanced with the responsibility to address resulting harm, such as through clear refund policies or corrective price mechanisms in cases of substantial *ghabn* (inequitable pricing).

In the realm of *ḥifẓ al-nafs* (protection of the self), *maqāṣid* emphasizes safeguarding individuals from consumption patterns that erode human functionality, including digital addiction. Classical classifications of human needs indicate that policies limiting addictive triggers are not restrictions on freedom but protections within the levels of *daruriyyāt* and *ḥājīyyāt* (necessities and needs). The distinction between *ḍarar* (harm) and *ḍirār* (reciprocal harm) underscores that preventive measures are not only permissible but necessary when threats to life and dignity are evident and measurable, even before total harm occurs. This principle can be operationalized through features such as “cool-down” intervals, limited impulse-triggering notifications, and explicit opt-in requirements for emotionally charged marketing content.

The ethos of halal-by-design further demands coherence of intent. The maxim *al-umūru bi maqāṣidihā* (actions are judged by their purposes) requires congruence between declared objectives and actual practices. If a marketing campaign claims to be educational but its structure is dominated by emotional hooks that bypass rational cognition, its ethical purpose is compromised. The interpretive principle that actions are judged “by meaning, not merely by form” directs auditors to assess the real impact on users rather than the wording of privacy or consent policies. According to *qawā'id fiqhīyyah* (juristic maxims), the presumption of permissibility in *mu'amalah* remains valid only until indicators of harm surpass acceptable thresholds; thus, impact assessments on intellect, property, and personal safety should serve as ethical prerequisites for product release.

Scriptural sources reinforce this normative boundary. “Do not consume one another's wealth unjustly, unless it be through lawful trade conducted with mutual consent” (al-Nisā' [4]:29), establishes the requirement of genuine consent (*riḍā*), not a superficial one induced by exaggerated visuals or coercive choice architectures. The *uṣūl al-fiqh* tradition provides tools to test this consent: explanations must be sufficient (*bayān*), ambiguities must be clarified, and rulings must follow intent and meaning rather than mere linguistic form. Consequently, digital contracts that conceal hidden fees, permit excessive data access, or impose deliberately complex cancellation

procedures should be considered violations of the spirit of *riḍā*.

Al-Shāṭibī also affirms the legitimacy of invoking *maṣlaḥah mursalah* (unrestricted public interest) when it aligns with the higher objectives of the *shari'ah* and finds inductive support across the textual corpus. This forms the methodological foundation for formalizing Shariah Ethical Audit Standards for Neuromarketing, encompassing measurable indicators of informational clarity, limits of emotional exploitation, price accountability, and cognitive safety. Such standards are not innovations alien to the tradition but rather extensions of *maqāṣid*-based reasoning into new, unscripted contexts. Within this framework, A/B testing in user interface design, for instance, is deemed permissible insofar as it enhances user understanding and reduces unnecessary friction, yet becomes impermissible when it manipulates cognitive biases to increase conversion rates at the expense of rational judgment.

The juristic maxim “*al-ḍarar yuzāl*” (harm must be eliminated) imposes a binding ethical requirement for mitigation strategies: if empirical data indicate a significant rise in impulsive spending triggered by a specific display format, that format must be modified, restricted, or reformulated. The emphasis on eliminating harm is repeatedly underscored in the *qawā'id fiqhīyah* literature; any marketing policy that increases financial risk for vulnerable groups cannot be justified under the pretext of market freedom, as freedom that produces structural harm contradicts the very objectives of the *shari'ah*. Within this normative horizon, the maxim “*al-ma'rūf bayna al-tujjār ka'l-masyrūf baynahum*” (what is customary among merchants is as binding as stipulated conditions) translates into the obligation to uphold fair market standards, such as clear disclosure practices and comprehensibility testing, so that design innovations cannot be used as loopholes to obscure or normalize deceptive clauses.

Accordingly, *maqāṣid al-shari'ah* provides a directional framework for neuromarketing to evolve from aggressive persuasion toward protective education. Halal-by-design is not a mere label but a methodological paradigm, an approach to designing neural interventions that enhance decision literacy, safeguard the intellect from disproportionate psychological triggers, protect wealth from exploitative pricing schemes, and preserve the self from addictive behavioral cycles. This framework is grounded in the general principle of permissibility in *mu'amalah* yet constrained by the imperative to eliminate harm and preserve the higher objectives of the *shari'ah*. It synthesizes the *uṣūlī* discipline exemplified by al-Ghazālī's principle of balancing *maṣlaḥah* (benefit) and *mafsadah* (harm) with al-Shāṭibī's vision that every legal burden aims to enhance worldly flourishing while securing ultimate salvation. Within this synthesis, every technological innovation must be evaluated not by rhetorical claims of progress but by its

measurable impact on the intellect (*'aql*), the self (*nafs*), and wealth (*māl*).

Conclusion

This study demonstrates that neuromarketing, as an interdisciplinary approach combining neuroscience, psychology, and marketing, holds significant potential to enrich business practices through a more precise understanding of consumer behavior. From the perspective of Islamic business ethics, neuromarketing may be categorized as an ethical innovation when it is directed toward enhancing informational clarity, strengthening transparency, and improving consumer literacy. Within the framework of *maqāṣid al-sharī'ah*, particularly *ḥifẓ al-'aql* (preservation of intellect), *ḥifẓ al-māl* (protection of wealth), and *ḥifẓ al-nafs* (protection of life), neuromarketing remains legitimate insofar as it safeguards rational autonomy from manipulation, protects property from exploitative loss, and prevents addictive consumer behavior. Conversely, neuromarketing becomes manipulative when it exploits cognitive biases through techniques such as artificial scarcity, pseudo-urgency, or dark patterns, which in the jurisprudence of *fiqh al-mu'amalah* correspond to the prohibited practices of *gharar* (uncertainty), *ghabn* (inequity), *tadlīs* (deception), and *najash* (false bidding). Thus, its ethical boundary is determined by the extent to which marketing strategies uphold the principles of clarity, consent, and transactional justice.

The academic contribution of this research lies in integrating neuromarketing with the theoretical framework of *maqāṣid al-sharī'ah* and *qawā'id fiqhīyyah* (juristic maxims), resulting in the formulation of the Shariah Neuromarketing Ethics Index (SNEI) as a novel evaluative instrument. IENS provides measurable ethical indicators encompassing transparency, price fairness, message honesty, and market integrity. Theoretically, this research broadens the horizon of Islamic business ethics in addressing digital marketing innovations; practically, it offers a moral and regulatory guideline for developing marketing strategies that are both competitive and ethically accountable. Nevertheless, the study's limitation lies in its library-based methodology, which does not yet capture empirical industrial practices. Future research should focus on field studies and experimental designs to test the empirical validity of the halal-by-design concept and further refine IENS into a practical ethical audit tool for regulators and practitioners in the halal marketing ecosystem.

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