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RESEARCH ARTICLE

Engineered Consent in Malaysian E-Commerce: Consumer Protection Against AI-Driven Dark Patterns

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ABSTRACT

Digital platforms increasingly obtain consumer agreement through interfaces that do more than communicate information: they organise attention, privilege particular options, and create friction around refusal or withdrawal. This article examines whether Malaysian consumer law adequately protects substantive consent when artificial intelligence amplifies dark patterns in e-commerce. Using doctrinal legal research, it analyses the Consumer Protection Act 1999, the Consumer Protection (Electronic Trade Transaction) Regulations 2024, the Electronic Commerce Act 2006, and relevant Malaysian judicial approaches to misrepresentation, consent, inequality of bargaining power, and unconscionability. The analysis is contextualised through interdisciplinary scholarship on digital market manipulation and selected European and ASEAN developments. The findings show that Malaysian law can address dark patterns involving false statements or clear non-disclosure, but is less capable of responding when factually accurate interfaces steer consumers through defaults, visual hierarchy, repeated prompts, obstructive cancellation, or personalised persuasion. Formal electronic assent is therefore capable of masking autonomy impairment, while complaint-based enforcement and economically framed remedies leave cumulative design-based harm insufficiently recognised. The article argues for a design-sensitive interpretation of unfairness and consent that assesses choice symmetry, material prominence, ease of refusal and withdrawal, and the foreseeable effect of personalised interface architecture. This recalibration would strengthen consumer autonomy without treating all persuasive design as unlawful or requiring wholesale legislative replacement.

Contribution/Originality: This study contributes to the existing literature by reframing AI-driven dark patterns in Malaysian e-commerce as a problem of

substantive consent rather than disclosure alone. It develops a design-sensitive legal framework centred on choice symmetry, material prominence, refusal, withdrawal, personalisation and reversibility to guide interpretation, enforcement and targeted regulatory reform.

1. Introduction

Electronic commerce has altered not only the place in which consumer transactions occur but also the process through which consumer decisions are produced. In a physical marketplace, the legal analysis of consent commonly begins with words, documents, representations, and observable conduct. In digital markets, the consumer encounters an engineered sequence of screens, prompts, defaults, colours, timing cues, recommendations, and procedural steps. These design elements determine what is noticed, what appears normal, which option is easiest to select, and how difficult it is to reverse a decision. The interface is therefore not a neutral container for contractual information. It is part of the mechanism by which agreement is elicited.

Artificial intelligence makes this development more significant. Dark patterns may exist without it, but personalisation, dynamic testing, and predictive analytics allow platforms to adapt persuasive cues to users and contexts. The information displayed may be literally accurate, yet the overall architecture may predictably steer the consumer towards an outcome preferred by the trader or platform.

The established literature defines dark patterns as interface designs or choice architectures that subvert user preferences or impair autonomous decision-making (Gray et al., 2018; Mathur et al., 2019). Calo (2014) situates such practices within the broader phenomenon of digital market manipulation, while Yeung (2017) explains how data-intensive “hypernudges” can continuously reconfigure the consumer’s decision environment. More recent scholarship emphasises that the relevant legal injury is not exhausted by immediate financial loss. Dark patterns may undermine autonomy, consume time, induce unwanted disclosure, generate recurring payments, and normalise exploitative market practices even when each individual transaction appears minor (Brenncke, 2024; Santos et al., 2025).

Malaysian consumer law contains important protections against misleading conduct, false representations, unfair practices, and unconscionable conduct. The Consumer Protection (Electronic Trade Transaction) Regulations 2024 also require online traders to disclose specified information, while the Electronic Commerce Act 2006 facilitates the legal recognition of electronic communications and contracts. These instruments provide a functional foundation for e-commerce. Their underlying model, however, is principally informational and transactional. It assumes that truthful disclosure and an outward act of assent are generally sufficient to validate the consumer’s choice, subject to familiar doctrines such as misrepresentation, mistake, duress, or unconscionability.

Dark patterns expose the limits of that model. A consumer may click an acceptance button after being channelled through a visually unbalanced interface. A subscription may be easy to activate but difficult to cancel. An option favourable to the platform may be preselected, while the privacy-protective or lower-cost alternative is placed behind additional screens. A countdown may create pressure without making a provably false statement. Repeated prompts may wear down resistance. In each situation, the consumer has formally acted, but the quality of the decision-making environment is questionable. The legal issue is therefore not whether an electronic click occurred; it is whether the law should treat that click as a sufficient indicator of autonomous and meaningful consent.

This article isolates that issue from the broader regulation of dark patterns. It asks: to what extent can Malaysian consumer law recognise and remedy consent that is formally expressed but substantively engineered through AI-amplified interface design? The article argues that Malaysian law presently offers partial protection. It can respond where a dark pattern contains an objectively false representation, conceals material information, or reaches the demanding threshold of unconscionability. It is less effective where manipulation is embedded in design, sequencing, defaults, friction, and personalised persuasion. The resulting gap is conceptual rather than merely technological: the law privileges the presence of assent over the conditions that produced it.

The article makes three contributions. First, it reframes dark patterns in Malaysian e-commerce as a problem of substantive consent rather than simply deficient disclosure. Second, it explains how the interaction among deception-centred rules, formal electronic assent, and high thresholds of judicial intervention creates a zone of legally tolerated manipulation. Third, it develops a design-sensitive doctrinal approach based on choice symmetry, material prominence, refusal and withdrawal, and foreseeable behavioural effects. The proposed approach does not presume that every nudge or persuasive interface is unlawful. It seeks instead to distinguish legitimate facilitation from practices that predictably impair the consumer's ability to pursue their own preferences.

1.1. Research Objectives

The study has three objectives. The first is to identify the assumptions about consent embedded in Malaysia's principal consumer and electronic-commerce instruments, particularly the extent to which formal assent and disclosure are treated as proxies for meaningful choice. The second is to evaluate whether existing doctrines of misleading conduct, misrepresentation, inequality of bargaining power, and unconscionability can accommodate manipulation produced through interface architecture rather than explicit falsehood. The third is to formulate a principled, design-sensitive framework for interpreting unfairness and consent in AI-mediated e-commerce without retrospectively inventing a new empirical regime or advocating indiscriminate control of interface design.

2. Literature Review

2.1. Dark Patterns as Choice Architecture

Dark patterns are commonly understood as design practices that steer, pressure, or obstruct users in ways that advance the interests of the service provider at the expense of the user's preferences. Gray et al. (2018) demonstrated that the phenomenon is not confined to misleading words. It includes visual hierarchy, sequencing, defaults, repeated interruptions, hidden alternatives, and procedural obstacles. Mathur et al. (2019), in a large-scale study of shopping websites, identified the prevalence of practices that created urgency, obstructed comparison, or made disengagement difficult. These studies are important for legal analysis because they show that the operative conduct is architectural: the platform structures the environment in which the consumer chooses.

The Organisation for Economic Co-operation and Development has highlighted common online shopping patterns such as artificial urgency, hidden information, forced continuity, confirm-shaming, and obstructive cancellation (Lagorce, 2024). Although the categories differ across taxonomies, they share a functional characteristic. They alter the relative ease, salience, or emotional cost of available options. A consumer may technically retain a choice, yet the choices are not presented on equal terms. The platform-preferred option may be prominent, immediate, and framed as normal, while the alternative is visually muted, delayed, or associated with guilt and inconvenience.

This distinction matters because conventional deception analysis often searches for a false proposition. Dark patterns can manipulate without asserting anything that is objectively untrue. A large, brightly coloured “accept” button beside a faint text link for refusal may communicate the available options accurately. Nevertheless, the visual arrangement directs attention and increases the likelihood of acceptance. Similarly, a cancellation process may disclose the relevant steps but distribute them across multiple screens, introduce repeated retention offers, and require information that was unnecessary at the point of enrolment. The consumer is not misinformed in the narrow sense; the consumer’s pathway is deliberately burdened.

Calo (2014) describes digital market manipulation as the use of information and technological affordances to exploit individual vulnerabilities in commercial settings. The concept is broader than dark patterns but provides a useful legal frame. Manipulation occurs when a trader does not merely persuade through reasons relevant to the transaction but instead shapes the consumer’s decision process through asymmetries of knowledge, attention, or control. The concern is not that consumers are incapable of decision-making. It is that platforms possess the ability to design the decision environment, observe responses, and refine the interface in ways unavailable to the individual user.

2.2. From Persuasion to Engineered Consent

Consumer markets inevitably involve persuasion. Advertising, product placement, recommendations, and user-friendly design all influence behaviour. A workable legal approach cannot equate influence with illegality. The key question is when persuasion becomes manipulation sufficiently serious to undermine the legitimising function of consent.

Brenncke (2024) approaches online choice architecture through the idea of exploitation and autonomy violation. This perspective is valuable because it connects interface design to the normative role of consent. Consent ordinarily legitimises a transaction because it is taken to reflect the consumer’s own reasons and preferences. Where the trader intentionally constructs an environment that predictably diverts the consumer from those preferences, the mere existence of a click does not fully answer the legal question. The transaction may be formally voluntary while substantively shaped by asymmetrical control over the decision process.

Engineered consent can therefore be distinguished from ordinary persuasion by reference to the relationship between design and user preference. Persuasive design assists the user to understand, compare, and act. Manipulative design creates or exploits obstacles to reflection, refusal, or reversal. For example, an interface that clearly summarises a subscription and offers equally visible acceptance and rejection options supports choice. An interface that highlights a free trial, obscures automatic renewal, preselects recurring payment, and makes cancellation disproportionately difficult uses the form of consent while weakening its substance.

Santos et al. (2025) show that harms caused by dark patterns are conceptualised unevenly across consumer, data-protection, and competition law. A recurring difficulty is the tendency to demand measurable economic loss even where the primary interference concerns autonomy, privacy, or control. The legal significance of engineered consent lies precisely in this gap. A consumer may lose only a small amount of money, or no money at all, but still be induced to disclose data, remain subscribed, or spend time overcoming obstructive design. Repeated across a market, these practices can generate substantial platform benefits and structural consumer disadvantage.

2.3. Artificial Intelligence and Hypernudging

Artificial intelligence does not create the legal problem, but it changes its scale, adaptability, and opacity. Traditional interface design may be static: every user sees the same layout. AI-supported systems can segment users, predict responses, and vary recommendations, timing, sequence, or presentation. Platforms can test multiple interface versions and retain the versions that maximise conversion, retention, or disclosure. This continuous optimisation means that the relevant design may not be a single, stable screen that a regulator can easily inspect.

Yeung's (2017) concept of the hypernudge captures this dynamic. Data-driven systems can observe behaviour and modify the choice environment in real time. The consumer may experience a personalised pathway that reflects inferred susceptibility rather than a general marketing strategy. The persuasive force of a countdown, default, or reminder may be enhanced when deployed at a moment selected through behavioural data. This creates a significant asymmetry: the platform learns from the user's behaviour, while the user may not know that the interface has been adapted.

Artificial intelligence also complicates evidence. A consumer may show the final screen but not the experiments, personalisation criteria, or optimisation objective that produced it. Those records are held by the platform. The doctrinal task is nevertheless not to condemn personalisation itself, which may reduce search costs or improve comprehension, but to identify asymmetrical pathways, concealed consequences, difficult refusal, and exploitation unrelated to product merits.

2.4. Disclosure, Deception, and the Limits of Information

Traditional consumer law frequently responds to information asymmetry by mandating disclosure and prohibiting misleading statements. These tools remain necessary. False scarcity claims, misleading prices, and concealed recurring charges can be addressed through established rules. The difficulty arises when the information is formally available but functionally ineffective because of design.

Disclosure assumes that the consumer can find, understand, and use the information in the decision process. Dark patterns may satisfy the formal requirement while defeating its purpose. Material terms can be placed in low-salience locations, surrounded by distracting content, or disclosed only after the consumer has invested time and effort. The consumer may be asked to make repeated decisions under time pressure. The problem is not absence of information in an absolute sense, but the relationship between information and the interface through which it is encountered.

Xhelita and Manthos (2025) argue that dark patterns strain established categories in European consumer law because design effects do not always map neatly onto misleading acts or omissions. The broader lesson is relevant to Malaysia: information-based rules cannot alone secure autonomy where the trader controls the architecture of attention. A legal test that asks only whether a statement is accurate may ignore whether the overall presentation is likely to impair a reasonable consumer's ability to exercise a genuine choice.

2.5. Comparative and Regional Signals

European regulatory developments increasingly treat manipulative design as a distinct concern within consumer and data-protection frameworks. The significance of these developments is not that Malaysia should transplant foreign rules wholesale. Legal systems differ in institutional structure, statutory language, and enforcement capacity. Their relevance lies in demonstrating a conceptual shift from isolated false statements towards the effects of interface architecture on choice and withdrawal (Rajah & Tann Asia, 2025; Santos et al., 2025).

Regional scholarship identifies similar challenges in Southeast Asia. Adis Nur Hayati (2024) argues that Indonesia's consumer-protection framework encounters difficulty where digital platforms manipulate through design rather than conventional deception. Ngo (2025) likewise places dark patterns within the wider challenge facing ASEAN consumer protection. These accounts suggest that Malaysia's problem is not unique. Across the region, rapid platform development, cross-border services, and fragmented regulatory authority create conditions in which complaint-based and disclosure-oriented models may lag behind commercial practice.

Malaysian public reporting on hidden subscriptions and difficult cancellation also indicates that the issue has practical relevance rather than being solely theoretical (Arziana Mohmad Azaman, 2025). Such reports do not establish the prevalence or precise causes of dark patterns in Malaysia; empirical claims would require a separate study. They do, however, illustrate the types of consumer experiences that a doctrinal framework must be capable of evaluating.

2.6. The Malaysian Research Gap

The existing literature offers sophisticated accounts of dark-pattern taxonomies, behavioural effects, autonomy harm, and comparative regulation. The unresolved Malaysian question is narrower: how should the law evaluate a transaction in which electronic assent is visible but the consumer's decision environment was deliberately unbalanced? The principal gap is not the absence of legal rules governing e-commerce. It is the absence of a clear doctrinal method for examining the quality of consent produced by interface design.

This article addresses that gap by connecting three bodies of law and scholarship that are often considered separately: consumer rules on misleading and unfair practices, electronic-commerce rules that recognise digital assent, and autonomy-based accounts of manipulation. The analysis treats engineered consent as the point at which these fields converge. It asks not whether Malaysian law can regulate every dark pattern through a new statutory label, but whether existing concepts can be interpreted in a way that gives substantive effect to consumer choice.

3. Research Methods

This study uses doctrinal legal research supported by comparative and interdisciplinary analysis. The primary materials are the Consumer Protection Act 1999, the Consumer Protection (Electronic Trade Transaction) Regulations 2024, the Electronic Commerce Act 2006, and two Malaysian appellate decisions that illuminate judicial approaches to bargaining inequality and unconscionability: Saad Marwi v. Chan Hwan Hua & Anor (2001) and CIMB Bank Bhd v. Bourke (2019). The analysis is confined to the principles and institutional features supported by these materials. It does not claim to measure the prevalence of dark patterns in Malaysian platforms, consumer susceptibility, tribunal outcomes, or regulatory enforcement rates.

The doctrinal inquiry proceeds in four stages. First, the relevant legislation is read functionally to identify the legal role assigned to disclosure, representation, and electronic assent. The question is not limited to whether each instrument expressly mentions dark patterns, which it does not, but whether its concepts can accommodate manipulation embedded in design. Second, the judicial decisions are examined to assess the threshold at which inequality, exploitation, or serious unfairness affects the legal evaluation of consent. The cases are not presented as dark-pattern authorities. They are used to identify the existing doctrinal orientation that a digital dispute would encounter. Third, the Malaysian framework is evaluated against analytical concepts developed in scholarship on choice architecture, digital market manipulation, hypernudging, exploitation, and autonomy harm. This interdisciplinary material is used to clarify the operation of design practices, not to attribute empirical findings to Malaysia. Fourth, selected European and ASEAN developments are used as comparative reference points. The comparison is functional and cautious. It identifies possible evaluative criteria, particularly design effects and substantive choice, without assuming that foreign statutory solutions can be directly transplanted.

The central evaluative standard is meaningful consumer autonomy. For the purposes of this article, autonomy does not require a perfectly rational or influence-free decision. It requires a reasonable opportunity to understand material consequences, choose among genuine alternatives, refuse without disproportionate burden, and withdraw on terms not substantially more difficult than enrolment. A design practice is treated as legally concerning when it foreseeably and materially weakens those conditions for the commercial benefit of the trader or platform.

The method has two limitations. First, the study is conceptual and doctrinal; empirical testing is needed to determine which dark patterns are prevalent in Malaysia and how different consumer groups respond. Second, reported cases do not yet provide a direct Malaysian judicial treatment of dark patterns. The resulting conclusions are therefore interpretive and normative. They identify how existing doctrine is likely to operate and propose a framework for future legal analysis rather than reporting an established line of dark-pattern jurisprudence.

4. Results

4.1. Electronic Assent Is Recognised More Readily Than Its Quality Is Examined

The first finding is that Malaysia's e-commerce framework facilitates the recognition of electronic transactions but does not supply a developed test for the substantive quality of consent obtained through interface design. The Electronic Commerce Act 2006 performs an essential enabling function by recognising electronic messages and facilitating contract formation in digital environments. Its orientation is functional equivalence: electronic forms should not be denied legal effect merely because they are electronic. This approach supports commercial certainty and removes unnecessary formal barriers.

The same orientation, however, means that the Act is not designed to examine how an interface structures the consumer's decision. Once an electronic action can be attributed to the consumer and satisfies the relevant formal requirements, the existence of assent is comparatively easy to establish. A click, ticked box, or completed payment sequence becomes evidence of agreement. The Act does not itself ask whether the acceptance option was preselected, whether refusal was equally prominent, whether the consumer was repeatedly prompted, or whether cancellation was intentionally burdened.

This distinction between recognition and quality is central to engineered consent. Functional equivalence assumes that the electronic act corresponds to an offline manifestation of agreement. Yet an online interface can be configured to increase the probability of that act through visual and procedural asymmetry. The click remains attributable to the consumer, but the trader has influenced the conditions under which it occurred. Treating the act as conclusive therefore risks converting a rule that validates electronic form into a presumption that validates the underlying choice.

The appropriate response is not to deny legal effect to electronic transactions generally. It is to separate two questions. The first is evidential: did the consumer perform the electronic act? The second is normative: should the act be treated as meaningful consent when the platform controlled the choice architecture? Malaysian law answers the first question more clearly than the second.

4.2. Disclosure Rules Provide Necessary but Incomplete Protection

The Consumer Protection (Electronic Trade Transaction) Regulations 2024 strengthen online consumer protection by requiring traders to provide specified information. These obligations are indispensable in a market where consumers cannot physically inspect the trader or transaction. They can address hidden identity, unclear pricing, and absent contractual particulars. They also create a basis for challenging some subscription traps where recurring charges or cancellation terms are not properly disclosed.

The doctrinal limitation is that disclosure can be formally complete while substantively ineffective. A platform may provide the required information but place it in a location that attracts little attention. Material consequences may appear in dense text below a dominant call-to-action. A recurring payment term may be disclosed after the consumer has progressed through several screens. Refusal may be presented as a small text link, while acceptance is visually prominent. The Regulations address what must be communicated; they do not expressly regulate the salience, timing, symmetry, or behavioural effect of the presentation.

This creates a compliance paradox. The platform can point to the presence of information as evidence of transparency, while the consumer's decision remains shaped by the surrounding architecture. The legal analysis may then treat the problem as a failure to read rather than a deliberate design strategy. Such a result is difficult to reconcile with the protective purpose of disclosure. Information is useful only if it can reasonably enter the consumer's decision process.

A design-sensitive interpretation would treat disclosure as a functional obligation. Material terms should be presented at the point at which the relevant decision is made, with sufficient prominence and clarity to counteract rather than coexist with manipulative cues. This approach does not add an unlimited duty to simplify every interface. It asks whether the platform's presentation predictably defeats the practical value of information that the law requires.

4.3. Misrepresentation Rules Capture False Content but Not All Manipulative Architecture

The Consumer Protection Act 1999 provides remedies against misleading conduct and false representations. Those provisions can apply to dark patterns that rely on untrue scarcity claims, false discounts, misleading availability, or inaccurate descriptions. The existing framework is therefore not irrelevant to design manipulation. Some dark patterns are simply established forms of deception delivered through a digital interface.
The more difficult category involves truthful content arranged in a manipulative manner. Consider a platform that accurately discloses a subscription fee but preselects the recurring option, emphasises immediate benefits, and requires several steps to decline. No single statement may be false. The legal concern arises from the combined effect of default, salience, sequencing, and friction. A statement-centred test may fragment the interface into individual pieces of accurate information and overlook the overall impression produced by the design.

The same problem arises with artificial urgency. A countdown may be technically linked to a promotional cycle and therefore not demonstrably false, yet it can still pressure the consumer by narrowing the time available for reflection. Confirm-shaming may accurately offer refusal but attach emotionally loaded language to it. Obstructive cancellation may fully describe the process while intentionally making it time-consuming. These practices impair choice without necessarily satisfying a conventional requirement of factual falsity.

The doctrinal result is a zone of partial legality. The law can intervene at the edges, where the design contains a false representation or omission, but may not address the architecture as a whole. This is why engineered consent should not be analysed solely as misrepresentation. The relevant question is whether the interface materially distorted the consumer's ability to choose, not merely whether each sentence was true.

4.4. Existing Judicial Principles Set a High Threshold for Invalidating Consent

The Malaysian cases considered in this study confirm judicial concern with exploitation and serious unfairness, but they also demonstrate the demanding threshold for intervention. In Saad Marwi v. Chan Hwan Hua & Anor (2001), the Court of Appeal recognised the relevance of inequality of bargaining power while indicating that inequality alone is insufficient. The legal inquiry requires circumstances showing exploitation, oppression, or unconscionable conduct. In CIMB Bank Bhd v. Bourke (2019), the Federal Court treated unconscionability as more than ordinary disadvantage or harshness.

These principles serve important functions. Contractual stability would be undermined if every difference in bargaining strength or every regretted transaction invalidated consent. However, the threshold is difficult to apply to dark patterns. Digital manipulation is often designed to appear ordinary. It does not necessarily involve threats, personal pressure, or conduct that is immediately morally shocking. It operates through small asymmetries replicated across thousands or millions of interactions.

The normalisation of a practice can therefore conceal its exploitative character. A preselected option, repeated retention prompt, or burdensome cancellation pathway may appear too mundane to satisfy a doctrine associated with serious misconduct. Yet the platform may have tested and selected that design precisely because it increases acquiescence. The consumer's disadvantage is not accidental; it is a predictable and commercially valuable product of the architecture.

A further difficulty is individualisation. Traditional unconscionability analysis often examines the relationship between particular parties and the circumstances of a particular transaction. AI-amplified dark patterns may target categories of users or adapt to behavioural signals without any human decision-maker knowing the individual consumer. The absence of personal interaction should not imply the absence of exploitation. The relevant power is exercised through system design and data rather than face-to-face pressure.

The cases therefore provide a foundation but not a complete solution. Their concern with exploitation can support a digital application, provided that courts are willing to recognise design-based and system-level conduct as capable of producing serious unfairness. Without such a contextual interpretation, the high threshold may exclude precisely the practices engineered to remain below the appearance of overt oppression.

4.5. Formal Consent Can Mask Autonomy Harm

The combined effect of the statutory and judicial framework is a tendency to treat outward assent as the endpoint of analysis. This tendency is understandable in ordinary transactions. Law requires objective indicators of agreement. It cannot routinely investigate every consumer's internal state. Dark patterns, however, present evidence located outside the consumer's subjective mind: the interface itself, the symmetry of options, the sequence of prompts, and the relative burden of acceptance and refusal.

A substantive consent inquiry can therefore remain objective. It need not ask whether the individual consumer felt manipulated. It can ask whether the design, viewed in context, foreseeably impaired the ability of consumers to make and implement a choice.

This inquiry resembles the assessment of an overall commercial practice rather than a psychological examination of a particular user.

Four autonomy harms are especially relevant. The first is decisional displacement, where the interface steers the consumer away from an existing preference through defaults, salience, or timing. The second is obstruction, where refusal or withdrawal requires substantially more effort than acceptance. The third is concealment by design, where material consequences are technically disclosed but placed outside the consumer's likely attention. The fourth is behavioural exploitation, where personalisation uses inferred susceptibility to intensify pressure unrelated to product merits.

These harms may exist without a large financial loss. A consumer may pay a modest recurring fee, disclose more data than intended, or spend time cancelling a service. The small individual value is part of the business logic: low-value harms are less likely to produce complaints, while aggregation creates significant benefit for the platform. A legal model that recognises only substantial individual economic loss will systematically under-detect such practices.

4.6. Complaint-Based Enforcement Is Poorly Matched to Engineered Consent

The doctrinal gap is reinforced by enforcement structure. Dark patterns often leave consumers uncertain about what happened. A consumer may blame inattention, assume that cancellation difficulty is normal, or decide that the amount involved is too small to justify a complaint. The practice succeeds partly because it diffuses responsibility and reduces the likelihood of challenge.

Even when a complaint is made, the consumer may possess only screenshots from the final stage. Evidence of personalisation, internal testing, conversion objectives, and alternative interface versions is held by the platform. The consumer may be unable to demonstrate that the design was selected because it increased unwanted acceptance or reduced cancellation. A case-by-case model therefore confronts information asymmetry at both the transaction and enforcement stages.

Cross-border platforms add practical complexity. Interface decisions may be made outside Malaysia and deployed through globally standardised systems. Multiple agencies may have overlapping interests in consumer protection, communications, data, and competition. Fragmented authority and reactive enforcement are structural weaknesses. In the context of engineered consent, those weaknesses mean that no single complaint may reveal the design system as a whole.

This finding supports a shift towards proactive and design-focused oversight. Regulators need not inspect every interface before deployment. They can identify high-risk categories, request information about testing and personalisation where justified, conduct coordinated sweeps, and issue guidance on acceptable design. The objective is to move from proving isolated subjective harm to evaluating repeatable architecture.

4.7. A Design-Sensitive Test for Substantive Consent

The central doctrinal recommendation is to interpret consumer consent and unfairness through a design-sensitive test. The test should not replace existing rules on misrepresentation or unconscionability. It should organise the factors relevant when formal assent may have been engineered.

The first factor is choice symmetry. Acceptance and refusal should not be assessed merely by their technical availability. The analysis should compare visual prominence, number of steps, language, timing, and default status. A platform need not make every option identical, but it should not systematically privilege the option that benefits the platform while burdening the consumer's alternative.

The second factor is material prominence. Information affecting price, duration, renewal, data use, or cancellation should be displayed at the point of decision in a manner reasonably capable of attracting attention. A disclosure that is formally present but predictably obscured should not automatically validate consent. The more consequential the term, the stronger the justification for clear and proximate presentation.

The third factor is freedom from disproportionate friction. The effort required to refuse, cancel, or withdraw should not be substantially greater than the effort required to accept or enrol unless the difference is objectively necessary for security, verification, or another legitimate purpose. This principle directly addresses subscription traps and obstruction without prohibiting reasonable safeguards.

The fourth factor is resistance to repeated pressure. Repeated prompts, emotional framing, or artificial urgency may become manipulative when they are designed to wear down a previously expressed choice. The law should distinguish a reasonable reminder from a sequence that makes refusal unstable or costly.

The fifth factor is personalisation and vulnerability. Where a platform uses behavioural data to adapt persuasive design, the assessment should consider whether the personalisation exploits a foreseeable vulnerability unrelated to the merits of the transaction. The use of artificial intelligence should not itself create liability, but it may increase the platform's knowledge and control over the consumer's decision environment.

The sixth factor is reversibility. A decision induced through a simplified or accelerated pathway should be reasonably easy to reverse, particularly for recurring services, data permissions, and ancillary purchases. Reversibility reduces the harm of impulsive acceptance and provides a practical safeguard where the initial interface is necessarily streamlined.

These factors can operate within a broader interpretation of unfair practice and unconscionability. They offer courts and regulators observable criteria rather than an open-ended appeal to autonomy. They also preserve innovation. Platforms remain free to recommend, simplify, and personalise, provided that the design does not materially undermine the consumer's capacity to understand, refuse, and withdraw.

4.8. Interpretation, Guidance, and Targeted Reform

A design-sensitive approach can be advanced incrementally. The first route is purposive interpretation. Misleading conduct can be assessed by the overall impression of the interface rather than isolated words. Unfairness and unconscionability can take account of system design, repetition, and data-driven asymmetry. Electronic assent can be treated as evidence of agreement without being conclusive where the choice architecture was materially unbalanced.

The second route is regulatory guidance. Clear examples of prohibited or presumptively unfair practices would improve certainty. Guidance could address preselected ancillary purchases, concealed automatic renewal, materially unequal acceptance and refusal pathways, repeated prompts after rejection, and cancellation processes that are substantially more burdensome than enrolment. The categories should be tied to effects rather than aesthetic preferences.

The third route is evidence and accountability. Where a platform uses personalised or experimental design in a high-risk context, regulators should be able to request relevant records, including the objective of the test and the effect on acceptance or cancellation rates. This would respond to the evidential asymmetry without requiring consumers to reconstruct proprietary systems. Any such power would require clear statutory authority and procedural safeguards; the present article identifies the need but does not claim that such powers already exist.

Institutional coordination is also necessary because dark patterns may implicate consumer, data-protection, communications, and competition concerns. In addition, Malaysian interface audits, complaint analysis, consumer testing, and sector-specific studies are needed to identify prevalent practices and vulnerable groups. Foreign prevalence estimates should not substitute for a domestic evidence base.

4.9. The Proper Boundary Between Persuasion and Manipulation

Reform requires a limiting principle. Consumer autonomy does not require a marketplace without influence: traders may recommend products, emphasise benefits, and reduce transactional friction. Intervention is justified when design materially subverts the consumer’s capacity to pursue their preferences. Assessment should focus on foreseeable effect, the significance and reversibility of the transaction, and any legitimate reason for asymmetry. Security verification, fraud prevention, or legal compliance may justify additional steps if the burden is proportionate. This boundary prevents “dark patterns” from becoming a label for all effective marketing while rejecting the proposition that formal assent ends the inquiry.

4.10. Overall Doctrinal Finding

The overall finding is that Malaysian consumer law is not wholly unfit for engineered consent, but its protection is incomplete and uneven. Existing rules can address false content, non-disclosure, and extreme exploitation. They do not yet provide a clear, integrated method for evaluating manipulation that is embedded in accurate information, interface hierarchy, procedural friction, repeated pressure, or personalised optimisation.

The gap can be narrowed without wholesale legislative replacement. A purposive, design-sensitive interpretation of existing concepts, supported by regulatory guidance and better evidence access, would allow the law to examine the quality rather than merely the form of consent. The central shift is from asking only whether the consumer clicked to asking whether the platform preserved a reasonable and genuine opportunity to choose.

5. Conclusion

This article examined whether Malaysian consumer law can protect consumers whose electronic assent is formally visible but substantively engineered through AI-amplified dark patterns. The analysis shows that the existing framework has a meaningful but limited capacity. The Consumer Protection Act 1999 can respond to false representations and some misleading omissions. The Consumer Protection (Electronic Trade Transaction) Regulations 2024 can require material information to be supplied. The Electronic Commerce Act 2006 validly facilitates electronic transactions. Malaysian judicial principles also recognise that exploitation and serious unfairness can affect consent.

The difficulty lies in the interaction of these rules. Disclosure may be present but functionally obscured. Electronic assent may be attributable to the consumer but produced through unequal defaults, visual prominence, procedural friction, repeated prompts, or personalised pressure. Misrepresentation doctrine may find no false statement, while unconscionability may appear too demanding for practices designed to look routine. The result is a zone in which autonomy can be impaired without a clear legal pathway.

The article therefore argues for a design-sensitive account of substantive consent. Courts and regulators should consider choice symmetry, material prominence, ease of refusal and withdrawal, repeated pressure, personalisation, vulnerability, and reversibility. These factors are observable and can be applied without treating consumers as incapable or prohibiting legitimate persuasion. They direct attention to the platform's control over the decision environment and to the foreseeable effect of that control.

Incremental development is possible through purposive interpretation, regulatory guidance, coordinated oversight, and targeted evidence powers where authorised by law. Empirical research remains necessary to establish the prevalence and impact of particular practices in Malaysia. The doctrinal conclusion, however, is clear: the validity of digital consent should not depend solely on the presence of a click. Consumer law must also examine whether the architecture surrounding that click preserved a meaningful opportunity to choose.

Ethics Approval and Consent to Participate

Not applicable. This doctrinal legal study did not involve human participants or the collection of personal data.

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Conflict of Interest

The authors declare no conflict of interest.

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