

DARK PATTERNS IN DIGITAL TRANSACTION: CHALLENGES AND DIRECTIONS FOR CONSUMER PROTECTION REGULATION

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Abstract

The growth of the digital economy has increased the use of interface designs intended to influence consumer behavior, including dark patterns. These practices raise legal concerns because they can manipulate consumer choices, conceal material information, obstruct cancellation, and influence consent to personal data processing. This study aims to examine the limitations of consumer self-protection against dark patterns, their implications for consumer protection and collective welfare, and the adequacy of Indonesia's legal framework in addressing these practices. The research employs a normative-juridical method using conceptual, statutory, and comparative legal approaches, examining Law Number 8 of 1999 concerning Consumer Protection, regulations on electronic transactions, and Law Number 27 of 2022 concerning Personal Data Protection, alongside empirical studies on dark patterns and consumer behavior. The findings indicate that consumers' ability to recognize and avoid dark patterns remains limited because manipulation is embedded in digital choice architecture and can be intensified by algorithmic personalization. These practices may also undermine market trust, fair competition, and collective welfare. Indonesia's current legal framework does not yet explicitly or comprehensively regulate dark patterns. Therefore, clearer prohibitions, fairer digital choice architecture, and risk-based regulatory oversight are needed to safeguard consumer autonomy and ensure fair digital transactions.

Keyword: *Consumer Autonomy; Consumer Protection; Dark Patterns; Digital Economy; Personal Data Protection.*

A. INTRODUCTION

The growth of e-commerce and digital platforms has transformed how consumers seek information, compare products, make choices, and conduct transactions. Within this process, user interface design plays a pivotal role in shaping consumer behavior. An issue garnering increasing attention is that of "dark patterns" or commonly defined as digital design practices intended to steer, confuse, or hinder users when making specific decisions.¹ These

¹ Yusuf Bagus Febrianto, Selamat Widodo, and Yusuf Saefudin, "Criminal Liability for Dark Pattern Practices in Personal Data Processing," *Journal of Law and Policy Transformation* 10, no. 2 (2025): 239. See too, Maulana Nurdin Hasibuan, and Akmaluddin Syahputra, "Reconstruction

practices manifest in various forms, such as pre-selected options, cost information revealed only at the final transaction stage, the creation of a false sense of urgency, and cancellation processes designed to be far more difficult than the sign-up process.²

The issue of dark patterns is significant in consumer protection law because such practices do not always involve information that is overtly false or misleading. Manipulation can occur through the presentation of information, the sequencing of choices, default settings, or the level of difficulty involved in declining an offer. Consequently, while consumers may formally provide their consent, that choice does not necessarily stem from a free and informed decision-making process. In Indonesia, these practices can be examined under Law Number 8 of 1999 concerning Consumer Protection, regulations governing electronic transactions, and Law Number 27 of 2022 concerning Personal Data Protection, particularly when interface designs influence consumer decisions or consent to personal data processing. Brenncke³ links this issue to the concept of consumer autonomy, demonstrating that dark patterns can constitute a form of behavioral exploitation via digital choice architecture. Luguri and Strahilevitz⁴ further illustrate that manipulative design can significantly influence consumer decisions.

The scale of this issue is evident in research by Mathur et al.⁵, covering approximately 11,000 online shopping sites, which identified various forms of dark patterns in digital commerce. Their study indicates that design manipulation is not merely a technical matter of site or application development; rather, it can be employed to influence purchasing decisions and the disclosure of user information. Other experimental studies also demonstrate that the degree of design manipulation can tangibly affect user

of the Concept of Will Defect (Wilsgebreken) in the Era of Digital Contracts: A Study on Manipulative Design Practices and Algorithmic Nudging on E-Commerce Platforms," *LEGAL BRIEF* 15, no. 3 (2026): 276; Jamie Luguri, and Lior Jacob Strahilevitz, "Shining a Light on Dark Patterns," *Journal of Legal Analysis* 13, no. 1 (2021): 44.

² Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, "Dark patterns at scale: Findings from a crawl of 11K shopping websites," In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019.

³ Martin Brenncke, "A Theory of Exploitation for Consumer Law: Online Choice Architectures, Dark Patterns, and Autonomy Violations: M. Brenncke," *Journal of Consumer Policy* 47, no. 1 (2024): 129.

⁴ Jamie Luguri, and Lior Jacob Strahilevitz, "Shining a Light on Dark Patterns," *Journal of Legal Analysis* 13, no. 1 (2021): 46. See too, Yuyut Prayuti, Happy Yulia Anggraeni, Erna Listiawati, and Hadi Baku Pangestu, "Digital Consumer Vulnerability and and Legal Pluralism: Reconstructing Digital and Muslim Consumer Protection in Indonesia's Fragmented Legal System," *DIKTUM: Jurnal Syariah dan Hukum* 24, no. 2 (2026): 434.

⁵ Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, "Dark patterns at scale: Findings from a crawl of 11K shopping websites," In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019, 14.

behavior.⁶ This situation raises legal issues regarding the boundary between legitimate commercial persuasion and manipulation that can undermine consumer freedom of choice.

In the evolution of international regulation, the issue of “dark patterns” is increasingly being addressed within the frameworks of consumer protection, data protection, and competition law.⁷ Santos et al.⁸ demonstrate that various legal regimes can be employed to address the harms arising from dark patterns, although these approaches still face conceptual and regulatory challenges. Brenncke⁹ also highlights the evolving European Union legal approach, which views dark patterns as issues concerning behavioral exploitation and consumer autonomy. These developments indicate that the core challenge lies not only in identifying dark patterns but also in determining the appropriate legal basis and forms of consumer protection.

In the Indonesian context, research on dark patterns is still an emerging field. Hayati¹⁰ indicates that dark pattern practices on digital platforms pose challenges for consumer protection law, as the existing legal framework does not yet specifically regulate such practices. Comparative research by Az-Zahra et al.¹¹ also highlights the need to develop clearer provisions, definitions, and enforcement mechanisms by drawing on the experiences of the European Union and South Korea. Other studies, such as those conducted by Apriliyadi

⁶ Jamie Luguri, and Lior Jacob Strahilevitz, “Shining a Light on Dark Patterns.” *Journal of Legal Analysis* 13, no. 1 (2021): 47. See too, Arvind Narayanan, Arunesh Mathur, Marshini Chetty, and Mihir Kshirsagar, “Dark Patterns: Past, Present, and Future,” *Communications of the ACM* 63, no. 9 (2020): 44.

⁷ Sri Lestari Poernomo, S. Sivakumar, Nur Afti Aulia, and Abd Kahar Muzakkir, “Reformulating Indonesia’s Consumer Protection Law in the AI-Driven Digital Economy: A Gap Analysis and Regulatory Roadmap,” *Khazanah Hukum* 8, no. 1 (2026): 119. See too, Dimas Aditya Prakoso, Aulia Safitri, and Fajar Ramadhan, “Dark Patterns pada Platform Digital dalam Perspektif Hukum Perlindungan Konsumen di Indonesia,” *Legal Note* 2, no. 3 (2026): 108.

⁸ Cristiana Santos, Viktorija Morozovaite, and Silvia De Conca, “No Harm No Foul: How Harms Caused by Dark Patterns are Conceptualised and Tackled Under EU Data Protection, Consumer and Competition Laws,” *Information & Communications Technology Law* 34, no. 3 (2025): 331.

⁹ Martin Brenncke, “A Theory of Exploitation for Consumer Law: Online Choice Architectures, Dark Patterns, and Autonomy Violations: M. Brenncke,” *Journal of consumer policy* 47, no. 1 (2024): 129.

¹⁰ Adis Nur Hayati, “The Issue of Dark Patterns in Digital Platforms: The Challenge for Indonesia’s Consumer Protection Law,” *Asian Journal of Law and Society* 11, no. 4 (2024): 455.

¹¹ Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, “Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU,” *Journal of Judicial Review* 27, no. 2 (2025): 423. See too, Elysa Putri Rahmawati, Putri Nurhandayani, and Dimas Pramodya Dwipayana, “Ilusi Persetujuan (Consent Illusion) dalam Kebijakan Privasi Digital: Tinjauan Hukum terhadap Validitas Persetujuan Pengguna,” *Jurnal Cendekia Hukum Indonesia (JCHI)* 2, no. 2 (2026): 34.

et al.¹² and Prasetya et al.¹³ have begun to examine dark patterns within specific contexts, such as in financial technology (fintech) applications and digital marketing. These developments reflect growing academic interest in the issue, yet the research remains somewhat fragmented, often categorized by platform type or specific forms of practice.

From a legal perspective, the regulation of dark patterns in Indonesia can be examined through several existing legal instruments, particularly Law Number 8 of 1999 concerning Consumer Protection, regulations governing electronic transactions, and Law Number 27 of 2022 concerning Personal Data Protection. The Consumer Protection Law provides a basis for assessing business practices that may mislead or disadvantage consumers, while electronic transaction regulations establish obligations for businesses operating through digital platforms. Meanwhile, the Personal Data Protection Law is relevant when manipulative interface designs affect consent to personal data processing. However, these instruments do not explicitly regulate dark patterns as a distinct category of digital design practices, raising questions about their adequacy in addressing different forms of manipulation in digital transactions.

This situation highlights several avenues for future research. First, further systematic examination is needed to clarify the legal status of dark patterns as potential violations of consumer protection law, particularly their relationship with principles of accurate information, transparency, and the prohibition of practices that harm consumers. Second, the relationship between dark patterns, consumer autonomy, consent, and freedom of choice warrants further investigation, as manipulation may occur even in the absence of explicitly false information. Third, the adequacy of Indonesia's existing legal framework in addressing various forms of dark patterns should be assessed, while considering potential regulatory improvements informed by the experiences of other countries.¹⁴

¹² Wisnu Cahyo Apriliyadi, Hasnah Aziz, Muhammad Fajar Alfahimi, and Aditya Putra Setyawan, "Konstruksi Hukum Perlindungan Konsumen Terhadap Dark Pattern Pada Aplikasi Fintech," *Berajah Journal* 6, no. 3 (2026): 915.

¹³ Dwi Arman Prasetya, Narumi Hayakawa, and Rahayu Sri Utami, "Analisis Yuridis terhadap Praktik Dark Patterns dalam Digital Marketing dan Dampaknya bagi Konsumen," *Al-Zayn: Jurnal Ilmu Sosial & Hukum* 4, no. 2 (2026): 1448.

¹⁴ Annisa, and Sylvana Murni Deborah Hutabarat, "Legal Protection for Consumers in the Context of Dark Patterns in Indonesian Marketplace Applications: A Comparative Study With the Netherlands," *Rechtsidee* 14, no. 1 (2026): 8. See too, Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, "Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU," *Journal of Judicial Review* 27, no. 2 (2025): 425; Adis Nur Hayati, "The Issue of Dark Patterns in Digital Platforms: The Challenge for Indonesia's Consumer Protection Law," *Asian Journal of Law and Society* 11, no. 4 (2024): 456; Cristiana Santos, Viktorija Morozovaite, and Silvia De Conca, "No Harm No Foul: How Harms Caused by Dark Patterns are Conceptualised and Tackled Under EU Data Protection, Consumer and Competition Laws," *Information & Communications Technology Law* 34, no. 3 (2025): 333.

The urgency of this research lies in the need to establish a clearer legal framework for addressing dark patterns in Indonesia's digital marketplace. Without adequate legal standards and enforcement mechanisms, manipulative interface designs may continue to undermine consumer autonomy, informed consent, and freedom of choice. Therefore, a comprehensive legal assessment is necessary to clarify the boundaries of unlawful digital practices and identify regulatory improvements that strengthen consumer protection amid the continuing expansion of digital transactions.

Against this backdrop, this study examines dark patterns as an emerging challenge within consumer protection law regarding digital transactions. This study aims to assess the limitations of consumer self-protection against dark patterns, analyze their implications for consumer protection and collective welfare, and evaluate the adequacy of Indonesia's legal framework in addressing these practices. Specifically, this study addresses three questions:

1. How can dark patterns be legally classified from a consumer protection perspective?
2. How do dark patterns affect consumer autonomy, consent, and freedom of choice in digital transactions?
3. To what extent can the existing consumer protection legal framework regulate dark patterns, and how can regulatory strengthening be developed based on international experience?

B. RESEARCH METHODS

This study employs a normative legal research method (doctrinal legal research) focusing on the analysis of legal norms, principles, concepts, and provisions related to "dark patterns" in digital transactions and consumer protection. This approach is used to assess how manipulative interface design practices can be classified within the prevailing legal framework and to identify the need for regulatory development. The research adopts a normative legal perspective, incorporating conceptual developments and international regulations for comparative purposes.

The research utilizes three approaches: the statute approach, the conceptual approach, and the comparative approach. The statute approach is used to analyze relevant provisions in consumer protection and digital transaction laws, specifically Law Number 8 of 1999 concerning Consumer Protection, regulations on electronic transactions, and Law Number 27 of 2022 concerning Personal Data Protection. The conceptual approach is used to examine concepts such as dark patterns, consumer autonomy, consent, transparency, and freedom of choice. The comparative approach is used to observe the evolution of dark pattern regulations within international legal

frameworks, particularly that of the European Union, to evaluate potential ways to strengthen consumer protection laws.

Legal materials consist of primary, secondary, and tertiary sources. Primary legal materials include relevant legislation and international legal instruments. Secondary legal materials comprise journal articles, books, and academic studies regarding dark patterns, digital consumer protection, and platform regulation. These materials were gathered through literature review and analyzed qualitatively by interpreting norms, comparing legal concepts, and formulating arguments to address the three research questions.

C. RESULTS AND DISCUSSION

1. Legal Classification of Dark Patterns under Consumer Protection Law

Dark patterns demonstrate that the issue of digital consumer protection cannot be fully resolved by placing the burden on consumers to recognize and avoid manipulative practices. In digital transactions, consumers encounter interface designs deliberately structured to steer behavior, whether through the concealment of information, pre-selected choices, the obstruction of cancellation processes, or the presentation of options that incline consumers to act in the business's interest. In the literature, dark patterns are understood as interface designs that steer, persuade, or deceive users into making decisions that benefit the service provider, decisions that may not align with the user's initial preferences.¹⁵ Thus, the issue of dark patterns relates not only to a lack of consumer knowledge but also to the power imbalance between consumers and platform operators.

Empirical findings by Kugler et al.¹⁶ provide a crucial basis for examining the limitations of the "consumer self-help" approach. Their study examined several forms of privacy-related dark patterns, including obstruction, interface interference, preselection, confusion, and nagging. The results showed that these patterns remained effective in influencing consumer decisions, even when consumers had a clear goal of maximizing their privacy protection and fully understood that objective. These findings are significant because they demonstrate that a consumer's ability to read information or exercise

¹⁵ Colin M. Gray, Yubo Kou, Bryan Battles, Joseph Hoggatt, and Austin L. Toombs, "The dark (patterns) side of UX design," In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, pp. 1-14. Association for Computing Machinery, 2018. See too, Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, "Dark patterns at scale: Findings from a crawl of 11K shopping websites," In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019, 15.

¹⁶ Matthew B. Kugler, Lior Jacob Strahilevitz, Marshini Chetty, Chirag Mahapatra, and Yaretsi Ulloa, "Can Consumers Protect Themselves Against Privacy Dark Patterns?," *The University of New Hampshire Review* 23, no. 2 (2025): 243.

heightened vigilance is not always sufficient to overcome design-based manipulation.

Building on the limitations of consumer self-protection, the assumption that rational consumers can always avoid digital harm becomes inadequate when available choices are manipulatively designed. Dark patterns operate not merely by providing false information, but by structuring how information is presented and how choices are made available. Mathur et al.¹⁷ demonstrate that dark patterns encompass diverse design forms that influence user decisions through visual elements, information, choices, and interaction structures. Consequently, consumers may formally possess a choice without exercising meaningful freedom. This distinction is relevant under Law Number 8 of 1999 concerning Consumer Protection, particularly Article 4(b) and (c), which recognize consumers' rights to choose goods and services and obtain accurate, clear, and honest information. Furthermore, Law Number 27 of 2022 concerning Personal Data Protection is relevant when manipulative interfaces influence consent to personal data processing. Brenncke¹⁸ situates dark patterns within the framework of behavioral exploitation, particularly when choice architecture is employed to capitalize on consumers' cognitive limitations. Similarly, Yang and Leiser¹⁹ explain that design manipulation can curtail consumer freedom of choice by leveraging the way information and options are structured in digital environments.

Beyond restricting consumer autonomy in general transactions, dark patterns pose particular challenges when digital services involve the collection and processing of personal data.²⁰ Interface designs may encourage consumers to disclose information while making it more difficult to refuse or limit data processing. Kugler et al.²¹ demonstrate that consumers are generally

¹⁷ Arunesh Mathur, Mihir Kshirsagar, and Jonathan Mayer, "What makes a dark pattern... dark? Design attributes, normative considerations, and measurement methods," In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, 2021, 12.

¹⁸ Martin Brenncke, "A Theory of Exploitation for Consumer Law: Online Choice Architectures, Dark Patterns, and Autonomy Violations: M. Brenncke," *Journal of consumer policy* 47, no. 1 (2024): 131.

¹⁹ Mark R. Leiser, "Dark patterns: The case for regulatory pluralism between the European Unions consumer and data protection regimes," In *Research handbook on EU data protection law*, Cheltenham: Edward Elgar Publishing, 2022, 272.

²⁰ Romario Christian Falco Kuntag, "Sinkronisasi Hukum Perlindungan Konsumen dan Perlindungan Data Pribadi Dalam Mengatasi Iklan Digital yang Menyesatkan di Indonesia," *Al-Zayn: Jurnal Ilmu Sosial & Hukum* 4, no. 4 (2026): 16095.

²¹ Matthew B. Kugler, Lior Jacob Strahilevitz, Marshini Chetty, Chirag Mahapatra, and Yarezi Ulloa, "Can Consumers Protect Themselves Against Privacy Dark Patterns?," *The University of New Hampshire Review* 23, no. 2 (2025): 245. See too, Wen-Ting Yang, and Mark Leiser, "Illuminating Manipulative Design: From "Dark Patterns" to Information Asymmetry and the Repression of Free Choice under the Unfair Commercial Practices Directive," *Loyola Consumer Law Review* 34, no. 2 (2022): 484.

responsive to clear options for opting out of data sales or sharing; however, this effectiveness diminishes when choices are presented within a manipulative interface environment. This issue is relevant to Law Number 27 of 2022 concerning Personal Data Protection, particularly its provisions on consent and the lawful processing of personal data. Nevertheless, transparency alone cannot guarantee meaningful protection, as privacy policies may coexist with interfaces that steer consumers toward specific choices. Waldman²² links this issue to the “privacy paradox,” a phenomenon where consumers express concern for privacy yet make different decisions in practice because information, choices, and the digital environment shape their behavior. Accordingly, consumer protection should move beyond an “information disclosure” paradigm toward a “fair choice architecture” paradigm that safeguards informed consent and meaningful control over personal data.

The limitations of transparency-based protection further highlight the need to examine empirical evidence on how dark patterns influence consumer behavior and how widely these practices are implemented in digital markets. Findings by Luguri and Strahilevitz²³ reinforce this argument by demonstrating through experiments that manipulative designs increase the likelihood of users making decisions that benefit service providers, with stronger effects observed as the designs become more aggressive. These findings establish that dark patterns extend beyond matters of aesthetics or user experience, producing measurable changes in consumer behavior. Moreover, the prevalence of these practices suggests that such manipulation is not merely sporadic or accidental. In a study examining approximately 11,000 shopping websites, Mathur et al.²⁴ identified 1,818 instances of “dark patterns,” spanning 15 specific types and seven broader categories. Their research also documented misleading practices across multiple websites and identified third-party providers offering dark patterns as ready-made solutions for businesses. Taken together, these findings indicate that dark patterns can function as a systematic commercial strategy rather than an isolated design error, reinforcing the need to assess their implications for consumer protection law and fair digital market practices.

Consequently, consumer protection should not rely solely on an individual’s ability to read terms and conditions, compare options, or reverse a decision after a transaction has occurred. Such an approach overlooks the

²² Ari Ezra Waldman, “Cognitive Biases, Dark Patterns, and the ‘Privacy Paradox’,” *Current Opinion in Psychology* 31, no. 1 (2020): 106.

²³ Jamie Luguri, and Lior Jacob Strahilevitz, “Shining a Light on Dark Patterns,” *Journal of Legal Analysis* 13, no. 1 (2021): 48.

²⁴ Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, “Dark patterns at scale: Findings from a crawl of 11K shopping websites,” In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019, 15.

reality that digital design can influence decisions before consumers even realize they are being steered. The legal issue, therefore, lies in the decision-making process itself, not just the final outcome. Dickinson²⁵ demonstrates that the issue of dark patterns can be addressed through private law mechanisms; however, this approach still faces challenges regarding the consistent definition, identification, and proof of manipulative practices.

The limitations of self-protection are also linked to the nature of “dark patterns,” which are often difficult to recognize. Mathur et al.²⁶ demonstrate that dark patterns take diverse forms and involve varying degrees of manipulation, making it difficult to simply categorize every practice. Some patterns are highly explicit, while others operate through visual changes, the sequencing of choices, language, or navigation structures that appear normal to the user. Research on mobile applications by Di Geronimo et al.²⁷ for instance, reveals that dark patterns are widespread in popular apps and influence user perceptions and experiences. This complexity makes it difficult for consumers to distinguish between designs that are merely persuasive and those that substantively manipulate choices.

This issue is further compounded by the scale at which digital technology is used. Dark patterns can be deployed simultaneously against millions of users via digital platforms. Di Porto and Egberts²⁸ explain that the impact extends beyond individual harm, potentially evolving into collective issues such as behavioral market failure, eroded market trust, unfair competition, and the entrenchment of data dominance by digital platforms. This perspective is crucial, as it highlights that protection against dark patterns is not merely about remedying individual consumer harm but also about maintaining fair conditions in the digital marketplace.

Consequently, approaches relying solely on consumer vigilance face structural limitations. Even consumers with the knowledge and motivation to protect themselves can still be influenced by manipulative designs.²⁹ Legal

²⁵ Gregory M. Dickinson, “Privately Policing Dark Patterns,” *Georgia Law Review* 57, no. 4 (2022): 1635.

²⁶ Arunesh Mathur, Mihir Kshirsagar, and Jonathan Mayer, “What makes a dark pattern... dark? Design attributes, normative considerations, and measurement methods,” In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, Association for Computing Machinery, 2021, 14.

²⁷ Linda Di Geronimo, Larissa Braz, Enrico Fregnan, Fabio Palomba, and Alberto Bacchelli, “UI dark patterns and where to find them: a study on mobile applications and user perception,” In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, Association for Computing Machinery, 2020.

²⁸ Fabiana Di Porto, and Alexander Egberts, “The Collective Welfare Dimension of Dark Patterns Regulation,” *European Law Journal* 29, no. 1-2 (2023): 117.

²⁹ Weiwei Yi, and Zihao Li, “Mapping the Scholarship of Dark Pattern Regulation: A Systematic Review of Concepts, Regulatory Paradigms, and Solutions from an Interdisciplinary Perspective,” *arXiv preprint arXiv:2407.10340* (2024): 34.

protection is necessary not to replace consumer choice, but to ensure that such choices are made under conditions that are sufficiently transparent, fair, and free from undue manipulation. In this context, “dark patterns” should be understood as an issue concerning consumer autonomy. Consumers need not be shielded from every form of commercial persuasion; advertising, promotions, and persuasive design are inherent to commercial activity. Trzaskowski³⁰ emphasizes the importance of distinguishing between persuasion, manipulation, and choice architecture, as not every form of influence on consumers can automatically be classified as a dark pattern.

Therefore, the findings suggest that consumers alone cannot be relied upon to adequately defend themselves against dark patterns. While self-protection remains important, it serves a complementary role. When manipulation stems from interface structures deliberately designed by entities possessing advantages in information, technology, and resources, legal intervention is required to establish limits on such forms of manipulation. This approach aligns with regulatory developments across various jurisdictions, which increasingly recognize that addressing dark patterns necessitates a combination of consumer protection laws, data protection frameworks, and digital platform regulations.³¹

2. The Impact of Dark Patterns on Consumer Autonomy, Consent, and Freedom of Choice

Dark patterns were initially discussed primarily as issues concerning the relationship between business operators and individual consumers. However, evolving research indicates that their impact has broader dimensions. Manipulative designs can not only lead consumers to purchase unplanned products or share data they did not intend to disclose, but can also affect the quality of competition, trust in digital markets, and the broader distribution of welfare. Fundamentally, dark patterns are a form of interface design that exploits users’ behavioral characteristics and cognitive limitations to steer them toward specific decisions.³² Consequently, the issue is no longer solely about

³⁰ Jan Trzaskowski, “Persuasion, manipulation, choice architecture and dark patterns.” In *Research Handbook on EU Internet Law*, Cheltenham: Edward Elgar Publishing, 2023, 310.

³¹ Martin Brenneke, “Regulating Dark Patterns,” *Notre Dame J. Int’l Comp. L.* 14, No. 1(2024): 39. See too, Mark R. Leiser, “Dark patterns: The case for regulatory pluralism between the European Unions consumer and data protection regimes,” In *Research handbook on EU data protection law*, Cheltenham: Edward Elgar Publishing, 2022, 273; Cristiana Santos, Viktorija Morozovaite, and Silvia De Conca, “No Harm No Foul: How Harms Caused by Dark Patterns are Conceptualised and Tackled Under EU Data Protection, Consumer and Competition Laws,” *Information & Communications Technology Law* 34, no. 3 (2025): 336.

³² Colin M. Gray, Yubo Kou, Bryan Battles, Joseph Hoggatt, and Austin L. Toombs, “The dark (patterns) side of UX design,” In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, pp. 1-14. Association for Computing Machinery, 2018. See too, Arunesh Mathur, Mihir Kshirsagar, and Jonathan Mayer, “What makes a dark pattern... dark? Design attributes, normative considerations, and measurement methods,” In *Proceedings of the 2021*

whether an individual consumer suffers a loss in a specific transaction, but also about how such practices, when applied widely, can influence consumer behavior and the structure of digital markets.

Di Porto and Egberts³³ distinguish between individual welfare and collective welfare regarding the regulation of dark patterns. At the individual level, the law seeks to protect consumers from financial loss, privacy violations, and the manipulation of autonomy. However, at the collective level, dark patterns can generate behavioral market failures, erode trust in the market, reinforce the position of dominant firms, and contribute to data accumulation and concentration. This perspective broadens the understanding that the harm caused by dark patterns does not necessarily stop at the contractual relationship between a single consumer and a single business operator. When manipulative patterns are applied systematically and on a large scale, the consequences can affect overall market welfare.³⁴

Beyond their individual effects, the scale of dark patterns also raises concerns about collective welfare and trust in digital markets. Although preselected options may generate only minor additional costs for individual consumers, their systematic application across millions of users can produce substantial aggregate gains for businesses. Mathur et al.³⁵ demonstrate the widespread prevalence of dark patterns across online shopping websites, highlighting the importance of implementation scale in assessing their legal implications. Such practices may also erode trust when consumers repeatedly encounter concealed costs, difficult cancellation procedures, or manipulative data-sharing options. Porto and Egberts³⁶ emphasize that declining market trust warrants regulatory attention beyond individual consumer protection. In Indonesia, Law Number 8 of 1999 concerning Consumer Protection provide relevant frameworks for examining these practices. Furthermore, Yi and Li³⁷

CHI Conference on Human Factors in Computing Systems. Association for Computing Machinery, 2021, 15.

³³ Fabiana Di Porto, and Alexander Egberts, "The Collective Welfare Dimension of Dark Patterns Regulation," *European Law Journal* 29, no. 1-2 (2023): 119.

³⁴ Agustianto, Nurlaily Nurlaily, Lu Sudirman, Nur Fatimah, and Hari Sutra Disemadi, "Dark Patterns and Consumer Welfare in Digital Banking Practices in Southeast Asia: A Study of Indonesia, Malaysia, and Vietnam," *Politica: Jurnal Hukum Tata Negara dan Politik Islam* 13, no. 1 (2026): 152.

³⁵ Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, "Dark patterns at scale: Findings from a crawl of 11K shopping websites," In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019, 16.

³⁶ Fabiana Di Porto, and Alexander Egberts, "The Collective Welfare Dimension of Dark Patterns Regulation," *European Law Journal* 29, no. 1-2 (2023): 122.

³⁷ Weiwei Yi, and Zihao Li, "Mapping the Scholarship of Dark Pattern Regulation: A Systematic Review of Concepts, Regulatory Paradigms, and Solutions from an Interdisciplinary Perspective," *arXiv preprint arXiv:2407.10340* (2024): 35.

highlight the growing focus on regulatory models, oversight mechanisms, and the broader societal consequences of manipulative digital design.

These collective harms are further compounded by the limitations of individual consumer vigilance, particularly as dark patterns become increasingly sophisticated through algorithmic personalization. Consumers generally lack access to information about interface design, optimization data, and platform experiments, creating an information asymmetry that weakens their position.³⁸ Raj et al.³⁹ emphasize that dark patterns must be understood through the interaction between psychological mechanisms and legal frameworks, as cognitive biases cannot always be overcome through greater consumer awareness. These challenges intensify when platforms use personal data and artificial intelligence to tailor interface layouts, sequencing, and choices to individual behaviors. Leiser⁴⁰ demonstrates that AI-driven digital design enables increasingly covert and personalized forms of influence, complicating regulatory oversight. In Indonesia, Law Number 27 of 2022 concerning Personal Data Protection is relevant when such practices involve personal data processing, while Law Number 8 of 1999 concerning Consumer Protection provides a broader basis for assessing harmful business practices. Together, these concerns highlight the need for effective legal oversight.

Literature on “privacy dark patterns” also highlights a strong link between this issue and personal data protection. Kugler et al.⁴¹ show that even users consciously seeking to maximize their privacy can still be influenced by tactics such as preselection, confusion, obstruction, and interface interference. Thus, the existence of consumer rights to refuse or withdraw consent does not automatically guarantee protection if the processes for exercising those rights are deliberately made difficult. These findings align with Waldman⁴², who explains that dark patterns can conceal, obscure, or complicate a user’s understanding of privacy consequences, thereby affecting the quality of the decisions made.

This issue can be explained through the concept of “meaningful consent.” Consent formally granted via a button or checkbox does not necessarily reflect a truly free decision if the interface design substantially

³⁸ Alison Hung, “Keeping Consumers in the Dark,” *Columbia Law Review* 121, no. 8 (2021): 2487.

³⁹ Prithivi Raj, Soubhagya Sundar Nanda, and Murtaza S Noorani, “Safeguarding the Digital Consumer: A Comparative Legal and Psychological Analysis of Dark Patterns in E-Commerce,” *Advances in Consumer Research* 2, no. 4 (2025): 3568.

⁴⁰ Mark R. Leiser, *Dark patterns, deceptive design, and the law: AI’s hidden influence on our digital experience*, (London: Bloomsbury Publishing, 2025), 32.

⁴¹ Matthew B. Kugler, Lior Jacob Strahilevitz, Marshini Chetty, Chirag Mahapatra, and Yaretti Ulloa, “Can Consumers Protect Themselves Against Privacy Dark Patterns?,” *The University of New Hampshire Review* 23, no. 2 (2025): 245.

⁴² Ari Ezra Waldman, “Cognitive Biases, Dark Patterns, and the ‘Privacy Paradox’,” *Current Opinion in Psychology* 31, no. 1 (2020): 108.

steers consumers toward a specific choice. Leiser⁴³ highlights the importance of examining the relationship between consumer protection law and data protection, as manipulation in obtaining consent can give rise to issues spanning multiple legal regimes. In the context of consumer protection law, this shifts the focus from the question “Has the consumer been provided with information?” to “Can the consumer use that information to make a free and fair choice?”

The findings of Luguri and Strahilevitz⁴⁴ reinforce the argument that the impact of dark patterns cannot be reduced to a mere design issue. Their experiments demonstrate that exposure to manipulative designs can increase the likelihood of users making decisions that benefit the service provider, with the level of influence intensifying as the manipulative patterns become more aggressive. These findings are significant because they reveal a link between choice architecture and behavior changes that can be empirically observed. Thus, dark patterns possess characteristics that distinguish them from ordinary commercial persuasion.

Recent legal literature also indicates that the regulation of “dark patterns” is evolving toward a more specific approach. Brenncke⁴⁵, for instance, examines the legal response to dark patterns in the European Union, highlighting a shift toward regulations that more explicitly identify digital design manipulation. King and Stephan⁴⁶ similarly trace the evolution of the U.S. legal approach to privacy-related dark patterns, including the concept that interface designs may be deemed problematic when they substantially impact user autonomy. These approaches suggest that while general rules regarding unfair trade practices can address some dark patterns, they may not suffice to tackle the full spectrum of digital manipulation.

This perspective is relevant to the development of Indonesian consumer protection law. A study by Hayati⁴⁷ reveals that dark patterns on digital platforms pose a challenge to Indonesian consumer protection law, while Az-

⁴³ Mark R. Leiser, “Dark patterns: The case for regulatory pluralism between the European Unions consumer and data protection regimes,” In *Research handbook on EU data protection law*, Cheltenham: Edward Elgar Publishing, 2022, 276.

⁴⁴ Jamie Luguri, and Lior Jacob Strahilevitz, “Shining a Light on Dark Patterns.” *Journal of Legal Analysis* 13, no. 1 (2021): 49.

⁴⁵ Martin Brenncke, “A Theory of Exploitation for Consumer Law: Online Choice Architectures, Dark Patterns, and Autonomy Violations: M. Brenncke,” *Journal of Consumer Policy* 47, no. 1 (2024): 132.

⁴⁶ Jennifer King, and Adriana Stephan, “Regulating privacy dark patterns in practice-drawing inspiration from California Privacy Rights Act,” *Georgetown Law Technology Review* 5, no. 1 (2021): 25.

⁴⁷ Adis Nur Hayati, “The Issue of Dark Patterns in Digital Platforms: The Challenge for Indonesia’s Consumer Protection Law,” *Asian Journal of Law and Society* 11, no. 4 (2024): 459. See too, Yana Sutiana, “Reconstructing Muslim Consumer Protection Norms Against Manipulative Practices in Digital Economic Transactions from the Perspective of Maqashid al-Shariah,” *COMPETENTIE: Journal International Sustainable Research* 3, no. 2 (2026): 79.

Zahra et al.⁴⁸ emphasize the need for more explicit provisions regarding the definition, prohibition, and enforcement mechanisms concerning dark patterns. These findings indicate that the issue in Indonesia is not merely the absence of consumer protection norms, but rather the capacity of existing norms to address forms of manipulation that operate through interface design and choice architecture.

A proportionate regulatory approach should distinguish legitimate digital persuasion from practices that disproportionately undermine consumer autonomy. De Porto and Egberts⁴⁹ propose a risk-based framework that considers the degree of manipulation, the context of implementation, and the number of affected users. Within consumer protection law, this assessment should examine how strongly a design obstructs or steers consumer choices, the interests affected, including financial assets, privacy, health, and freedom of choice, and the scale of its implementation. Accordingly, dark patterns should not be viewed merely as another form of deception, as their defining feature lies in how choice architecture influences behavior. Legal instruments focusing exclusively on false or misleading information may therefore be insufficient to address manipulative interface designs. Effective consumer protection requires examining the decision-making process itself, alongside the information presented. From a collective welfare perspective, legal intervention is justified when systematic manipulation threatens consumer trust, fair competition, and the distribution of benefits and risks within the digital economy.⁵⁰

3. Adequacy of the Legal Framework and Regulatory Direction for Dark Patterns

In the context of national law, the primary issue is not merely the absence of consumer protection rules, but rather whether existing regulations are capable of capturing the specific characteristics of "dark patterns." A study by Hayati⁵¹ indicates that Indonesia's consumer protection legal framework faces challenges in addressing dark patterns on digital platforms. While some existing provisions can be applied indirectly to certain forms, their application

⁴⁸ Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, "Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU," *Journal of Judicial Review* 27, no. 2 (2025): 426.

⁴⁹ Fabiana Di Porto, and Alexander Egberts, "The Collective Welfare Dimension of Dark Patterns Regulation," *European Law Journal* 29, no. 1-2 (2023): 117.

⁵⁰ Corina Cara, "Dark Patterns in the Media: A Systematic Review," *Network Intelligence Studies* 7, no. 14 (2019): 106. See too, Johanna Gunawan, Cristiana Santos, and Irene Kamara, "Redress for dark patterns privacy harms? A case study on consent interactions," In *Proceedings of the 2022 Symposium on Computer Science and Law*, pp. 181-194. Association for Computing Machinery, 2022.

⁵¹ Adis Nur Hayati, "The Issue of Dark Patterns in Digital Platforms: The Challenge for Indonesia's Consumer Protection Law," *Asian Journal of Law and Society* 11, no. 4 (2024): 459.

is limited because they were not specifically designed to regulate manipulation via interface design. In Indonesia, Law Number 8 of 1999 concerning Consumer Protection (*Undang-Undang Perlindungan Konsumen* or UUPK), and Law Number 27 of 2022 concerning Personal Data Protection provide relevant legal foundations for assessing consumer rights, transparency in digital transactions, and consent to personal data processing. Various studies on digital consumer protection in Indonesia indicate that while the Consumer Protection Law (UUPK) and regulations concerning electronic transactions do provide a foundation for consumer protection, they do not yet comprehensively address manipulative digital design practices.⁵²

These findings reveal a regulatory gap. The problem is not that consumers lack legal protection entirely, but rather that such protection is fragmented across various legal regimes and lacks a concept that consistently defines design manipulation. Consequently, one form of dark pattern might be viewed as an issue of misleading information, another as a matter of consent, while other patterns might only be addressable through provisions regarding unfair trade practices. This situation aligns with the systematic review by Yi and Li⁵³ which shows that the literature on dark pattern regulation has evolved through diverse legal and disciplinary approaches, yet no single, uniform regulatory approach has emerged.

These limitations are also linked to conceptual issues. The term “dark patterns” encompasses a wide range of design techniques involving varying degrees of manipulation. Mathur et al.⁵⁴ demonstrate that not all manipulative practices share the same characteristics and that identifying dark patterns requires considering design attributes, context, and the impact on user choices. The evolution of taxonomies also reveals an increasing diversity of dark pattern forms; thus, legal approaches that rely too heavily on lists of specific types risk falling behind technological advancements.⁵⁵ Consequently,

⁵² Maulana Nurdin Hasibuan, and Akmaluddin Syahpputra, “Reconstruction of the Concept of Will Defect (Wilsgebreken) in the Era of Digital Contracts: A Study on Manipulative Design Practices and Algorithmic Nudging on E-Commerce Platforms,” *Legal Brief* 15, no. 3 (2026): 278. See too, Satrio Pamungkas Wicaksono, Desti Fitriana, Mukhammad Alvin, Nurkarimah Nasuha Amalia, and Muh Zulkifli Muhdar, “Digital consumer protection from the perspective of consumer protection law,” In *Proceedings International Seminar Tulungagung University*, Universitas Tulungagung, 2025.

⁵³ Weiwei Yi, and Zihao Li, “Mapping the Scholarship of Dark Pattern Regulation: A Systematic Review of Concepts, Regulatory Paradigms, and Solutions from an Interdisciplinary Perspective,” *arXiv preprint arXiv:2407.10340* (2024): 37.

⁵⁴ Arunesh Mathur, Mihir Kshirsagar, and Jonathan Mayer, “What makes a dark pattern... dark? Design attributes, normative considerations, and measurement methods,” In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, 2021, 15.

⁵⁵ Colin M. Gray, Cristiana Teixeira Santos, Nataliia Bielova, and Thomas Mildner, “An ontology of dark patterns knowledge: Foundations, definitions, and a pathway for shared knowledge-

regulations need to be formulated clearly enough to provide legal certainty, yet flexible enough to address emerging forms of manipulation.

A study by Az-Zahra et al.⁵⁶ comparing regulatory approaches in the European Union and South Korea, highlights the need for clearer definitions, prohibitions, and enforcement mechanisms addressing dark patterns. These findings demonstrate that effective regulation requires not only substantive legal standards but also institutional capacity to identify and evaluate manipulative interface designs. In Indonesia, Law Number 8 of 1999 concerning Consumer Protection, and Law Number 27 of 2022 concerning Personal Data Protection provide relevant foundations for addressing practices that undermine consumer rights, transparency, and valid consent. However, their application to diverse forms of digital manipulation requires further examination. Specific regulation need not establish dark patterns as an isolated legal category; instead, it may adopt an impact-based approach that prohibits designs that substantially undermine consumer autonomy, conceal material information, obstruct the exercise of consumer rights, or exploit behavioral vulnerabilities. This approach aligns with legal scholarship emphasizing choice manipulation and autonomy rather than conventional deception alone.⁵⁷

This approach also resonates with the arguments of Hayati,⁵⁸ who emphasizes that the law need not always provide a technical definition of dark patterns; instead, it should strictly limit the use of interface designs that diminish consumer autonomy and exploit behavioral biases. An impact-based approach is relatively more adaptable to technological advancements, given that the nature of dark patterns can shift alongside developments in design and algorithms. This is crucial, as research indicates that manipulation can occur through combinations of language, visuals, choice sequencing, navigation, and interface configurations as elements that may appear simple in isolation but collectively influence consumer decisions.⁵⁹

building," In *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, pp. 1-22. Association for Computing Machinery, 2024.

⁵⁶ Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, "Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU," *Journal of Judicial Review* 27, no. 2 (2025): 427.

⁵⁷ Martin Brennecke, "Regulating Dark Patterns," *Notre Dame J. Int'l Comp. L.* 14, no. 1 (2024): 41. See too, Tim Kollmer, and Andreas Eckhardt, "Dark Patterns. Business & Information Systems Engineering." *The International Journal of Wirtschaftsinformatik* 63, no. 8 (2023): 206; Jan Trzaskowski, "Persuasion, manipulation, choice architecture and dark patterns." In *Research Handbook on EU Internet Law*, Cheltenham: Edward Elgar Publishing, 2023, 311.

⁵⁸ Adis Nur Hayati, "The Issue of Dark Patterns in Digital Platforms: The Challenge for Indonesia's Consumer Protection Law," *Asian Journal of Law and Society* 11, no. 4 (2024): 458.

⁵⁹ Arunesh Mathur, Mihir Kshirsagar, and Jonathan Mayer, "What makes a dark pattern... dark? Design attributes, normative considerations, and measurement methods," In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, 2021, 19.

From the perspective of personal data protection, this need is even more pronounced. "Privacy dark patterns" can influence how consumers grant, refuse, or withdraw consent for data processing. Kugler et al.⁶⁰ demonstrate that consumers are not always able to overcome such manipulation, even when motivated to protect their privacy. These findings reinforce the view that the right to grant or refuse consent must be accompanied by designs that enable consumers to exercise that right effectively. Waldman⁶¹ has previously shown that dark patterns can conceal or obscure privacy consequences, thereby exacerbating the "privacy paradox" and diminishing the quality of user decision-making. Therefore, safeguarding consent requires more than simply ensuring an acceptance button is available; systems must also ensure that the option to decline is not inadvertently made more difficult or less visible. In this context, the issue of "dark patterns" intersects with the concept of meaningful consent. Leiser⁶² highlights the critical link between consumer protection and data protection regimes, noting that manipulative practices in obtaining consent can simultaneously give rise to both consumer and privacy issues. Indeed, research on the validity of consent under Indonesian law suggests that the use of manipulative design raises questions about whether digital consent truly reflects free will.⁶³

From an institutional perspective, Di Porto and Egberts⁶⁴ propose a risk-based approach that could inform enforcement efforts. Regulators could prioritize practices based on their level of influence on consumer behavior, the economic context of their use, and the number of affected users. This approach is more realistic than attempting to identify and comprehensively ban all forms of persuasive design. A risk-based approach is also pertinent given that not all forms of digital persuasion carry the same level of risk; for

⁶⁰ Matthew B. Kugler, Lior Jacob Strahilevitz, Marshini Chetty, Chirag Mahapatra, and Yaretsi Ulloa, "Can Consumers Protect Themselves Against Privacy Dark Patterns?," *The University of New Hampshire Review* 23, no. 2 (2025): 247.

⁶¹ Ari Ezra Waldman, "Cognitive Biases, Dark Patterns, and the 'Privacy Paradox'," *Current Opinion in Psychology* 31, no. 1 (2020): 109.

⁶² Mark R. Leiser, "Dark patterns: The case for regulatory pluralism between the European Unions consumer and data protection regimes," In *Research handbook on EU data protection law*, Cheltenham: Edward Elgar Publishing, 2022, 277.

⁶³ Glory Sylviana, Diah Pawestri Maharani, and Afrizal Mukti Wibowo, "Keabsahan Praktik Dark Patterns Terhadap Pemerolehan Persetujuan Pemrosesan Data Pribadi di Indonesia," *RechtJiva* 2, no. 1 (2025): 69. See too, Van Hong Tran, Aarushi Mehrotra, Ranya Sharma, Marshini Chetty, Nick Feamster, Jens Frankenreiter, and Lior Strahilevitz, "Dark patterns in the opt-out process and compliance with the california consumer privacy act (ccpa)," In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, 2025, 25.

⁶⁴ Fabiana Di Porto, and Alexander Egberts, "The Collective Welfare Dimension of Dark Patterns Regulation," *European Law Journal* 29, no. 1-2 (2023): 120. See too, Putu Aprilia Natasya Putri, and Bagus Hermanto, "Konstruksi Pengaturan Pelindungan Konsumen Bagi Layanan Subscription-Based Services Yang Bersifat Auto-Renewal," *Jurnal Media Akademik (JMA)* 4, no. 7 (2026): 42.

instance, “false urgency” employed in certain contexts may have different consequences than designs that deliberately obstruct consumers from cancelling subscriptions or refusing data processing.

At the national level, this direction can be developed through three layers of protection. First, substantive prohibitions as the provisions that clearly ban designs that manipulate consumer choices or impede the exercise of consumer rights. Second, obligations for fair design, particularly regarding critical choices such as add-on purchases, automatic subscriptions, cancellations, personal data usage, and consent to specific terms. Third, oversight and enforcement, including the authority’s capacity to audit interface designs and demand explanations regarding the mechanisms employed by platforms. This model aligns with the recommendations of Az-Zahra et al.⁶⁵ regarding the need for clearer definitions, prohibitions, and oversight mechanisms.

The need for such oversight is increasingly critical because “dark patterns” can be deployed on a massive scale. Mathur et al.⁶⁶ identified the use of various manipulative practices across thousands of online retail sites, while Luguri and Strahilevitz⁶⁷ experimentally demonstrated that the level of design manipulation correlates with changes in user behavior. Consequently, enforcement cannot rely solely on individual consumer complaints. Proactive oversight is particularly relevant for platforms with large user bases and the capability for continuous interface optimization.

Thus, the study’s findings indicate that the regulation of dark patterns need not aim to ban all forms of digital persuasion.⁶⁸ The primary objective is to establish a boundary between legitimate persuasion and manipulation that undermines consumer autonomy. This approach is more consistent with the goals of consumer protection law, as it preserves space for innovation and marketing strategies while preventing businesses from leveraging technological advantages to curtail consumers’ ability to make free decisions. A similar approach is supported by the theory of exploitation in consumer law,

⁶⁵ Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, “Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU,” *Journal of Judicial Review* 27, no. 2 (2025): 427.

⁶⁶ Arunesh Mathur, Gunes Acar, Michael J. Friedman, Eli Lucherini, Jonathan Mayer, Marshini Chetty, and Arvind Narayanan, “Dark patterns at scale: Findings from a crawl of 11K shopping websites,” In *Proceedings of the ACM on Human-Computer Interaction*. Association for Computing Machinery, 2019, 18.

⁶⁷ Jamie Luguri, and Lior Jacob Strahilevitz, “Shining a Light on Dark Patterns.” *Journal of Legal Analysis* 13, no. 1 (2021): 52. See too, Xin Ye, “Dark Patterns and Addictive Designs,” *Weizenbaum Journal of the Digital Society* 5, no. 3 (2025): 20.

⁶⁸ Corina Cara, “Dark Patterns in the Media: A Systematic Review,” *Network Intelligence Studies* 7, no. 14 (2019): 106. See too, J. Sharma, “Dark Patterns in a Bright World: An Analysis of the Indian Consumer Legal Architecture,” *International Journal on Consumer Law and Practice* 11, no. 7 (2023): 123.

which treats behavioral manipulation and the infringement of autonomy as issues warranting distinct legal attention.⁶⁹

Existing studies indicate a growing emphasis on collective well-being alongside individual harm. Empirical findings suggest that consumers have limited capacity to protect themselves, while legal scholarship indicates that current regulations do not adequately address the manipulative mechanisms underlying dark patterns.⁷⁰ In the Indonesian context, recent studies consistently identify a need to strengthen the legal framework regarding dark patterns, particularly in e-commerce and personal data processing.⁷¹ Therefore, the most relevant direction for reform is not merely to impose additional information-disclosure obligations, but to establish standards for a “fair digital choice architecture” that integrates transparency, autonomy, proportionality, and platform accountability.

D. CONCLUSION

This study demonstrates that “dark patterns” constitute an issue extending beyond merely unethical interface design practices; they must be understood as a matter of consumer protection law within the digital economy. Key findings indicate that manipulative designs can systematically influence consumer choices through preselection, obstruction, interface interference, confusion, nagging, and various forms of information concealment or the hindrance of consumer rights. Empirical evidence further shows that increased consumer awareness and the motivation to protect one’s interests are not always sufficient to neutralize the influence of dark patterns. Consequently, approaches relying solely on consumer vigilance and self-protection capabilities suffer from structural limitations.

The implication is that consumer protection must shift from an information disclosure paradigm to one based on “fair digital choice architecture.” The issue of dark patterns also possesses a collective dimension, as their large-scale deployment can impact consumer trust, the quality of competition, data accumulation, and the overall welfare of the digital marketplace. In the Indonesian context, the existing legal framework does not

⁶⁹ Martin Brenncke, “Regulating Dark Patterns,” *Notre Dame J. Int’l Comp. L.* 14, no. 1(2024): 42.

⁷⁰ Adis Nur Hayati, “Rethinking Consent: Examining the Adequacy of the Concept of Consent in Digital Platform Agreements Under Indonesian Civil Code,” *Jurnal Ham* 16, no. 2 (2025): 155. See too, Matthew B. Kugler, Lior Jacob Strahilevitz, Marshini Chetty, Chirag Mahapatra, and Yaretzi Ulloa, “Can Consumers Protect Themselves Against Privacy Dark Patterns?,” *The University of New Hampshire Review* 23, no. 2 (2025): 248.

⁷¹ Putri Nabila Az-Zahra, Nurlaily Nurlaily, and Agustianto Agustianto, “Regulating Dark Patterns in Indonesian E-Commerce: Comparative Lessons from South Korea and the EU,” *Journal of Judicial Review* 27, no. 2 (2025): 428. See too, Glory Sylviana, Diah Pawestri Maharani, and Afrizal Mukti Wibowo, “Keabsahan Praktik Dark Patterns Terhadap Pemerolehan Persetujuan Pemrosesan Data Pribadi di Indonesia,” *RechtJiva* 2, no. 1 (2025): 73.

explicitly or comprehensively regulate dark patterns, resulting in a regulatory gap and fragmented protection.

Therefore, regulatory reform incorporating three elements is required. First, establishing prohibitions against designs that substantially undermine consumer autonomy or exploit vulnerabilities and behavioral biases. Second, mandating “fair design” standards for critical decisions, such as purchases, auto-renewals, cancellations, and consent for personal data processing. Third, strengthening regulatory oversight and technical capacity to conduct design audits and implement risk-based enforcement. Such an approach must distinguish between legitimate commercial persuasion and manipulation that erodes freedom of choice.

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