

CAUGHT IN THE WEB: HOW E-COMMERCE PLAYS WITH CONSUMER MINDS

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Abstract: In the context of contemporary e-commerce, the cognitive exploitation of consumers has become a significant concern. This article addresses how suppliers use advanced techniques such as nudges, dark patterns, heuristics, and cognitive biases to unduly influence consumer decisions by exploiting their cognitive vulnerability. The analysis includes discussions on informational asymmetry, informational fatigue, and the manipulation of consumers' selective attention. Furthermore, measures are proposed to balance digital consumer relations, including updating regulations, promoting best practices by suppliers, educating consumers, and the active role of regulatory bodies and the judiciary. The conclusion emphasizes that effective consumer protection in the digital environment requires a multidisciplinary and collaborative approach aimed at building a fairer and more transparent market.

Keywords: Cognitive exploitation; E-commerce; Dark patterns; Cognitive biases; Consumer protection.

INTRODUCTION

In the contemporary e-commerce landscape, the cognitive exploitation of consumers has become an emerging concern due to the complexity of technologies and techniques used by suppliers to influence purchasing decisions. The inherent vulnerability of consumers in the marketplace motivated legislators to establish safeguards within the Brazilian legal framework, as stipulated in Article 8 of the Consumer Protection Code, which aims to ensure protection and integrity in the provision of products and services.

However, these regulations were conceived in a traditional commerce context, where transactions were conducted in person and products were predominantly tangible. With the digitization of the market, new forms of interaction between suppliers and consumers have emerged, enabling the use of advanced techniques to direct attention and influence consumers' will, often exploiting their cognitive vulnerability.

The main objective of this article is to discuss the cognitive exploitation of consumers through the technologies and techniques used in e-commerce. To this end, the concepts of informational asymmetry and choice architecture will be addressed, highlighting how suppliers act as choice architects and

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influence consumer behavior.

Additionally, the techniques of nudges and dark patterns, which are used to manipulate consumer behavior in the digital environment, will be analyzed. The discussion will include the impact of these practices on exacerbating informational asymmetry and exploiting consumers' cognitive biases through mental triggers and other persuasive strategies.

Finally, the article intends to reflect on the need to update existing regulations and propose best practices aimed at balancing consumer relations within e-commerce. The goal is to contribute to the development of a fairer and more transparent commercial environment, where consumers can make informed decisions without being subjected to manipulative techniques that exploit their cognitive vulnerability.

I. CONSUMER VULNERABILITY IN E-COMMERCE

Consumer vulnerability is a central concept in consumer law, serving as the foundation for the special protection afforded to consumers in commercial relationships¹. The Consumer Protection Code (CDC), enacted in 1990, was developed in a traditional market context, where commercial transactions were conducted in person and the products and services offered were predominantly tangible.

In this scenario, the CDC sought to balance the relationship between suppliers and consumers, recognizing the vulnerability of the latter and establishing protection mechanisms such as the right to clear and adequate information about products and services (Article 6, III, of the CDC) and the prohibition of abusive commercial practices (Article 6, IV, of the CDC). However, these regulations were conceived considering a consumer environment different from the current one, not anticipating the peculiarities of e-commerce.

With the advent of the digital age and the expansion of e-commerce, new forms of interaction between suppliers and consumers have emerged, intensifying informational asymmetry and exploiting the cognitive vulnerability of the consumer. Cognitive vulnerability refers to the consumer's limitation in fully understanding the information and contractual terms presented, especially in the face of complex techniques used by suppliers to steer their choices.

In addition to the vulnerability recognized in all consumers, there exists the concept of hyper-susceptibility, which relates to a vulnerability above

¹ Grinover, Ada Pellegrini, et al. *Código Brasileiro de Defesa do Consumidor: Comentado pelos Autores do Anteprojeto – Direito Material e Processo Coletivo*. 12th ed. Rio de Janeiro: Forense, 2019.

average, characterized by personal factors such as age, level of education, or socioeconomic condition². While vulnerability is a universal trait among consumers, hyper-susceptibility is specific to certain groups, intensifying the need for differentiated legal protection.

Traditional regulations have proven limited in the digital environment, as they were not designed to deal with the complexities of online transactions. In e-commerce, consumers are frequently exposed to extensive terms and conditions, drafted in complex legal language, making comprehension and informed decision-making difficult³. Studies indicate that most consumers do not read these terms, whether due to the document's length, the language used, or the perception that they have no option but to accept the terms to access the product or service⁴.

This reality evidence a failure in the protections offered by existing regulations, which cannot effectively ensure consumers' rights in the digital environment. Informational asymmetry is aggravated, and suppliers can exploit techniques that influence the consumer's will, compromising their autonomy and capacity for consent.

In this context, the consumer faces additional challenges, such as the use of advanced data collection and analysis techniques by suppliers, intensifying the phenomenon of surveillance capitalism⁵. The lack of transparency and the complexity of the algorithms used further hinder the consumer's understanding and control over their own information and choices.

Given this, it becomes essential to rethink regulatory strategies for e-commerce, adapting them to the new market dynamics and the techniques used by suppliers to exploit consumers' cognitive vulnerability. Only in this way will it be possible to ensure effective protection and balance consumer relationships in the digital environment, promoting justice and equity in commercial transactions.

² Grinover, Ada Pellegrini, et al. *Código Brasileiro de Defesa do Consumidor: Comentado pelos Autores do Anteprojeto – Direito Material e Processo Coletivo*. 12th ed. Rio de Janeiro: Forense, 2019.

³ Europe. European Commission. *Study on Consumers' Attitudes towards Terms and Conditions (T&Cs)*. Final Report, 2016. Accessed October 13, 2024. <https://op.europa.eu/en/publication-detail/-/publication/45ebfd93-3d90-11ea-ba6e-01aa75ed71a1/language-en>.

⁴ Bakos, Yannis, Florencia Marotta-Wurgler, and David R. Trossen. "Does Anyone Read the Fine Print? Consumer Attention to Standard Form Contracts." *Journal of Legal Studies* 43, no. 1 (2014): 1–35.

⁵ Zuboff, Shoshana. *A Era do Capitalismo de Vigilância: A Luta por um Futuro Humano na Nova Fronteira do Poder*. Translated by George Schlesinger. Rio de Janeiro: Intrínseca, 2020.

II. THE SUPPLIER AS A CHOICE ARCHITECT AND INFORMATIONAL ASYMMETRY

Informational asymmetry is an economic phenomenon that occurs when one party involved in a transaction possesses more information than the other regarding the offered product or service⁶. In the context of e-commerce, this disparity is accentuated because suppliers hold vast knowledge about products, services, and especially about consumer behavior, while consumers have limited access to relevant information necessary for making informed decisions.

Suppliers act as true choice architects, a term explored by Richard H. Thaler and Cass R. Sunstein to describe those who organize the context in which people make decisions⁷. By manipulating the presentation of options, information, and stimuli, suppliers can significantly influence consumers' decisions, often steering them toward choices that favor commercial interests over their own.

This ability to influence choices is intrinsically linked to the concept of surveillance capitalism, developed by Shoshana Zuboff, which characterizes the contemporary economic model based on the massive extraction of personal data and constant monitoring of individuals⁸. In this scenario, suppliers use advanced technologies to collect, analyze, and predict behaviors, establishing a surveillance system that allows them to manipulate consumers' preferences and decisions without their full awareness of this influence.

Frank Pasquale deepens this discussion by introducing the concept of the one-way mirror, where companies have broad access to consumers' personal and behavioral information while keeping their own operations secret⁹. This imbalance reinforces informational asymmetry, as consumers cannot comprehend or question the mechanisms used to direct their choices.

The impacts of informational asymmetry on consumer relations are significant. Consumers, limited in their ability to access and process relevant information, become more susceptible to undue influences and

⁶ Martins, João Victor Ruiz, and Marcia Carla Pereira Ribeiro. "Economia do Compartilhamento, Assimetria Informacional e Regulação Econômica Consumerista." *Revista de Direito, Economia e Desenvolvimento Sustentável* 2, no. 2 (2016).

⁷ Thaler, Richard H., and Cass R. Sunstein. *Nudge: Como Tomar Melhores Decisões sobre Saúde, Dinheiro e Felicidade*. Translated by Ângelo Lessa. Rio de Janeiro: Objetiva, 2019.

⁸ Zuboff, Shoshana. *A Era do Capitalismo de Vigilância: A Luta por um Futuro Humano na Nova Fronteira do Poder*. Translated by George Schlesinger. Rio de Janeiro: Intrínseca, 2020.

⁹ Pasquale, Frank. *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge: Harvard University Press, 2015.

manipulations. Suppliers, in turn, can exploit this vulnerability to maximize profits, employing strategies ranging from behavioral segmentation to the implementation of persuasive and manipulative techniques that interfere with consumers' cognitive and decision-making processes.

This exploitation aggravates consumer vulnerability and challenges the principles of transparency and good faith that should guide consumer relations. Additionally, the lack of clarity and the difficulty in accessing basic information about suppliers, such as tax identification numbers and addresses, hinder accountability and the defense of consumer rights.

Informational asymmetry also facilitates the occurrence of abusive practices, such as adverse selection, where suppliers can hide or manipulate information to influence the consumer's decision to their benefit. This scenario evidences the need for more effective regulatory mechanisms that address the specificities of the digital environment and protect consumers against the undue exploitation of their cognitive vulnerability.

In sum, informational asymmetry and choice architecture configure an environment in which suppliers hold significant power to influence and manipulate consumer decisions. The lack of transparency, coupled with advanced data collection and analysis techniques, intensifies consumer vulnerability and compromises equity in consumer relations. Therefore, it is fundamental to rethink regulatory strategies and promote practices that ensure the effective protection of consumers in contemporary e-commerce.

III. INFORMATIONAL FATIGUE AND CONSUMER SELECTIVE ATTENTION

In the contemporary context, information overload has become a striking characteristic of society, significantly affecting consumer behavior. The abundance of available data, especially in the digital environment, can lead to what is called informational fatigue or cognitive overload – a phenomenon where an individual is exposed to a volume of information exceeding what they can consciously process.

Herbert Simon already emphasized that “a wealth of information creates a poverty of attention,” highlighting that human attention capacity is limited and cannot keep up with the accelerated pace of information production¹⁰. In this scenario, consumers tend to develop mechanisms to cope with the overload, such as selective attention, focusing only on certain stimuli considered most relevant and ignoring the rest¹¹.

¹⁰ Simon, Herbert A. "Designing Organizations for an Information-Rich World." In *Computers, Communications, and the Public Interest*, edited by Martin Greenberger. Baltimore: The Johns Hopkins Press, 1971.

¹¹ Caliman, Luciana. "Os Regimes da Atenção na Subjetividade Contemporânea."

Selective attention is a cognitive strategy that allows individuals to direct their focus to certain elements, filtering out irrelevant or excessive information. In the context of e-commerce, suppliers can exploit this characteristic by manipulating the salience of presented stimuli, highlighting information they wish to emphasize and hiding or minimizing that which may discourage a purchase.

This manipulation is carried out through techniques that influence both voluntary and involuntary stimuli. Voluntary stimuli are those that the consumer consciously decides to focus on, such as features of a product they already intend to purchase. Involuntary stimuli are induced by the environment, such as pop-ups, vibrant colors, urgency messages, or flash sales.

Suppliers use textual and graphic elements – colors, fonts, images, and illustrations – to direct the consumer’s attention, exploiting their limited information-processing capacity¹². Additionally, the use of complex messages and technical terms can further overload the consumer, discouraging them from seeking detailed information or fully understanding the terms of an offer.

Informational fatigue can lead consumers to make hasty decisions based on superficial judgments or heuristics instead of detailed analyses¹³. For example, when faced with an excess of options or information, consumers may opt for the most highlighted alternative or the one that requires the least cognitive effort, even if it is not the most advantageous for their interests.

Tim Wu reinforces that “every instant of every day we are bombarded with information,” and to avoid overload, humans need to block part of this flow and concentrate on specific stimuli¹⁴. Suppliers, aware of this dynamic, structure the presentation of information to guide the consumer’s attention toward aspects that favor the purchase decision, often to the detriment of a more critical and informed evaluation.

This strategy can result in an environment where “information is no longer informative but deformative, and communication is no longer communicative but cumulative”¹⁵. In other words, instead of assisting the consumer, the excess of information and the way it is presented can confuse and unduly influence their choices.

Arquivos Brasileiros de Psicologia 64, no. 1 (2012): 2–17.

¹² Solomon, Michael R. *Consumer Behavior: Buying, Having, and Being*. 8th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2009.

¹³ Simon, Herbert A. "A Behavioral Model of Rational Choice." *The Quarterly Journal of Economics* 69, no. 1 (1955): 99–118.

¹⁴ Wu, Tim. *The Attention Merchants: The Epic Scramble to Get Inside Our Heads*. New York: Knopf, 2016.

¹⁵ Han, Byung-Chul. *No Exgame: Perspectivas do Digital*. Translated by Lucas Machado. Petrópolis, RJ: Vozes, 2018.

Therefore, informational fatigue and selective attention intensify the cognitive vulnerability of consumers in e-commerce. Suppliers can exploit these limitations to influence purchasing decisions, taking advantage of the consumer's difficulty in processing all relevant information and discerning between the essential and the superfluous.

The overload of information and the manipulation of consumer selective attention represent significant challenges for the protection of consumer rights in the digital environment. It is imperative to recognize these phenomena and develop regulatory and educational strategies that empower consumers to make more conscious and informed decisions, mitigating the effects of informational fatigue and promoting transparency in commercial practices.

IV. NUDGES, DARK PATTERNS, HEURISTICS, AND COGNITIVE BIASES IN E-COMMERCE

In the contemporary digital environment, suppliers utilize sophisticated techniques to influence consumer behavior, exploiting cognitive and emotional vulnerabilities. Among these techniques, nudges and dark patterns stand out, which, allied with heuristics, cognitive biases, and mental triggers, can manipulate consumer decisions in e-commerce.

Richard H. Thaler and Cass R. Sunstein introduced the concept of a nudge as a stimulus or "small push" that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives¹⁶. Nudges can be used to assist consumers in making decisions that benefit their well-being, such as promoting healthy choices or encouraging financial savings.

However, these same techniques can be employed manipulatively, giving rise to the so-called dark patterns. Dark patterns are design strategies that induce users to make decisions they did not intend or that may not be in their interest, exploiting cognitive or emotional flaws¹⁷. These practices compromise consumer autonomy and violate ethical and legal principles in consumer relations.

Karen Yeung expands the concept of nudges in the digital environment by introducing the idea of hypernudges, which are nudges enhanced by the algorithmic processing of big data. Hypernudges utilize predictive insights

¹⁶ Thaler, Richard H., and Cass R. Sunstein. *Nudge: Como Tomar Melhores Decisões sobre Saúde, Dinheiro e Felicidade*. Translated by Ângelo Lessa. Rio de Janeiro: Objetiva, 2019.

¹⁷ Susser, Daniel, Beate Roessler, and Helen Nissenbaum. "Online Manipulation: Hidden Influences in a Digital World." *Georgetown Law Technology Review* 4 (2019): 1–45.

about consumers' habits, preferences, and interests to influence their decisions dynamically and personally¹⁸. This allows suppliers to continuously adjust the user's choice environment, making the influence even more subtle and effective.

Dark patterns manifest in various forms in e-commerce, such as creating a sense of urgency with fake countdown timers, hiding relevant information, making it difficult to cancel services or subscriptions, and using misleading messages about product availability¹⁹. These practices directly violate provisions of the Consumer Protection Code, such as the right to clear and adequate information about products and services (Art. 6, III) and protection against coercive and unfair commercial methods (Art. 6, IV).

The manipulation of consumer behavior is facilitated by the exploitation of heuristics and cognitive biases. Heuristics are mental shortcuts that the brain uses to simplify decision-making in uncertain situations, saving cognitive effort²⁰. Although useful, heuristics can lead to systematic errors or cognitive biases, which can be exploited by suppliers to unduly influence consumers' choices.

Daniel Kahneman and Amos Tversky identified several cognitive biases, such as the confirmation bias – where people tend to seek and interpret information that confirms their prior beliefs – and the anchoring bias, in which an initial value influences subsequent estimate²¹. In e-commerce, suppliers may present high initial prices and then offer apparent discounts, influencing the consumer's perception of value.

Mental triggers, or weapons of persuasion, are techniques that take advantage of these cognitive biases to influence behavior. Robert B. Cialdini identified six principles of persuasion: reciprocity, commitment and consistency, social proof, liking, authority, and scarcity²². For example, the principle of scarcity is often used in limited offers or countdowns, inducing the consumer to act quickly to avoid missing the opportunity.

The intersection between dark patterns and mental triggers occurs when suppliers use these principles manipulatively. An example is the use of false or misleading testimonials from other consumers or celebrities to generate social proof and influence purchasing decisions. Another example is the

¹⁸ Yeung, Karen. "Hypernudge: Big Data as a Mode of Regulation by Design." *Information, Communication & Society* 20, no. 1 (2017): 118–136.

¹⁹ USA. Federal Trade Commission. *Bringing Dark Patterns to Light: Staff Report*. 2022. Accessed October 13, 2024. <https://www.ftc.gov/reports/bringing-dark-patterns-light>.

²⁰ Gigerenzer, Gerd, and Wolfgang Gaissmaier. "Heuristic Decision Making." *Annual Review of Psychology* 62 (2011): 451–482.

²¹ Kahneman, Daniel. *Rápido e Devagar: Duas Formas de Pensar*. Translated by Cássio de Arantes Leite. Rio de Janeiro: Objetiva, 2012.

²² Cialdini, Robert B. *As Armas da Persuasão: Como Influenciar e Não se Deixar Influenciar*. Translated by Ivo Korytowski. Rio de Janeiro: Sextante, 2012.

implementation of obstacles to canceling services (obstruction), exploiting the consumer's commitment and consistency.

This exploitation of cognitive biases aggravates informational asymmetry and consumer vulnerability, compromising their autonomy and capacity for informed consent. Besides economic impacts, there are psychological consequences such as stress, anxiety, and post-purchase regret.

From a legal standpoint, the use of dark patterns and manipulation through heuristics and cognitive biases can be considered abusive practices, violating not only the Consumer Protection Code but also the Brazilian General Data Protection Law (LGPD). The LGPD prohibits the processing of personal data under vitiated consent and ensures the right of easy access to information by data subjects (Art. 8, §3, and Art. 9).

Frank Pasquale warns about the phenomenon of the "one-way mirror," where companies collect extensive information about consumers while keeping their internal operations opaque²³. This prevents consumers from understanding how they are being influenced or what decisions are being made based on their data.

The exploitation of heuristics and cognitive biases is also related to the lack of transparency in the terms and conditions presented to consumers. Studies show that most consumers do not read the terms of use due to the length and complexity of the documents²⁴. This facilitates the insertion of abusive or disadvantageous clauses without the consumer's knowledge.

Understanding these techniques is essential for developing effective regulatory strategies. It is necessary for suppliers to adopt transparent and ethical practices, respecting consumers' rights and avoiding undue manipulation of their choices. Additionally, educating and raising consumers' awareness about heuristics, cognitive biases, and dark patterns can strengthen their ability to make informed decisions.

Regulatory bodies and consumer protection entities play a crucial role in identifying and combating these practices. The implementation of clear guidelines and effective oversight can discourage the use of manipulative techniques and promote a fairer and more balanced e-commerce environment²⁵.

In summary, the integration of nudges, dark patterns, heuristics, cognitive biases, and mental triggers configures a challenging scenario in e-commerce,

²³ Pasquale, Frank. *The Black Box Society: The Secret Algorithms That Control Money and Information*. Cambridge: Harvard University Press, 2015.

²⁴ Bakos, Yannis, Florencia Marotta-Wurgler, and David R. Trossen. "Does Anyone Read the Fine Print? Consumer Attention to Standard Form Contracts." *Journal of Legal Studies* 43, no. 1 (2014): 1–35.

²⁵ Nadler, Jerrold, and David N. Cicilline. *Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations*. Washington, D.C.: U.S. House of Representatives, 2020.

where consumers are subject to influences that can compromise their autonomy and well-being. Effective consumer protection requires a multidisciplinary approach involving legal, psychological, and technological aspects, aiming to promote transparent and ethical commercial practices in the digital environment.

V. IMPACTS AND CHALLENGES IN CONTEMPORARY E-COMMERCE

The cognitive exploitation of consumers in contemporary e-commerce presents significant impacts that affect not only individuals' autonomy and decision-making capacity but also generate substantial economic and moral consequences. The practical scenarios in which this exploitation manifests are diverse and complex, reflecting the sophisticated strategies used by suppliers to influence consumer behavior.

A practical example of this exploitation is the use of dark patterns on e-commerce platforms, where interface design is deliberately crafted to confuse consumers or induce them to make unintentional decisions. Practices such as automatically adding items to the shopping cart (sneak-into-basket), making it difficult to cancel subscriptions or services, and creating a sense of urgency with false temporary offers are strategies that compromise consumers' ability to make informed and voluntary choices²⁶.

These scenarios highlight the profound effects on consumer autonomy and decision-making. The manipulation of heuristics and cognitive biases, such as the scarcity bias or confirmation bias, causes consumers to act impulsively or contrary to their rational interests. Information overload and informational fatigue exacerbate this situation, as the excess of available data surpasses the individual's cognitive capacity, leading to decisions based on mental shortcuts rather than careful analyses²⁷.

Moreover, the massive collection of personal and behavioral data allows suppliers to personalize manipulation strategies, making them more effective and harder for consumers to detect. The use of algorithms and artificial intelligence to predict and influence individual preferences intensifies informational asymmetry and further reduces consumers' ability to fully exercise their autonomy.

The economic consequences of these practices are significant. Consumers

²⁶ Santos, Isabela de Araújo. *Violação de (Con)sentimentos: Uma Análise Psicojurídica da Vulnerabilidade de Titulares de Dados Diante de Técnicas Manipulatórias Comportamentais*. Undergraduate thesis, Universidade de Brasília, 2023. Accessed October 13, 2024. <https://bdm.unb.br/handle/10483/34162>.

²⁷ Simon, Herbert A. "A Behavioral Model of Rational Choice." *The Quarterly Journal of Economics* 69, no. 1 (1955): 99–118.

may be led to acquire unnecessary products or services, pay prices above market value, or assume financial commitments they did not intend. This can result in indebtedness, dissatisfaction, and loss of trust in the digital market. From the suppliers' perspective, although such practices may generate short-term financial gains, in the medium and long term, they can lead to negative reputations, legal actions, and increased regulation²⁸.

Morally, the cognitive exploitation of consumers raises ethical questions about suppliers' responsibility regarding consumers' well-being. The intentional manipulation of cognitive vulnerabilities violates principles of honesty, transparency, and respect for individual autonomy²⁹. Additionally, such practices can contribute to the erosion of trust in digital environments and consumer relations in general.

The challenges to mitigate these impacts are manifold. From a regulatory standpoint, there is a need to update and strengthen existing norms, adapting them to the specificities of the digital environment and new manipulation techniques³⁰. The effective enforcement of the Brazilian General Data Protection Law (LGPD) is crucial to guarantee the right to privacy and control of personal data by consumers.

Furthermore, consumer education and awareness are fundamental to strengthening their ability to identify and resist manipulative practices. Initiatives that promote digital literacy and knowledge about heuristics, cognitive biases, and dark patterns can empower consumers and encourage more critical and reflective behaviors.

Suppliers also play an important role in promoting ethical and transparent commercial practices. Adopting user-centered design standards that facilitate understanding and informed decision-making contributes to building trust relationships and the sustainability of the digital market³¹.

It is clear, therefore, that the impacts and challenges in contemporary e-commerce related to the cognitive exploitation of consumers require a multidisciplinary and collaborative approach. Protecting consumer rights and promoting a fair and balanced digital environment depend on the joint action of regulators, suppliers, consumers, and civil society, seeking solutions that

²⁸ Frazão, Ana. "A Falácia da Soberania do Consumidor." *Jota*, December 8, 2021. Accessed October 13, 2024. <https://www.jota.info/opiniao-e-analise/colunas/constituicao-empresa-e-mercado/falacia-soberania-do-consumidor-08122021>.

²⁹ Susser, Daniel, Beate Roessler, and Helen Nissenbaum. "Online Manipulation: Hidden Influences in a Digital World." *Georgetown Law Technology Review* 4 (2019): 1–45.

³⁰ Nadler, Jerrold, and David N. Cicilline. *Investigation of Competition in Digital Markets: Majority Staff Report and Recommendations*. Washington, D.C.: U.S. House of Representatives, 2020.

³¹ Marques, Cláudia Lima. *Contratos no Código de Defesa do Consumidor: O Novo Regime das Relações Contratuais*. 9th ed. São Paulo: Revista dos Tribunais, 2019.

reconcile technological innovation with fundamental ethical and legal principles.

VI. PROPOSALS FOR BALANCING DIGITAL CONSUMER RELATIONS

Considering the challenges presented by the cognitive exploitation of consumers in e-commerce, it becomes essential to adopt measures that promote balance in digital consumer relations. The first fundamental initiative is updating existing regulations, adapting them to the specificities of the digital environment. The Consumer Protection Code, although still an important milestone, was conceived in a traditional commerce context and does not fully contemplate the complexities of contemporary e-commerce.

Legislative updates should consider new commercial practices and advanced techniques used by suppliers, including dark patterns, manipulation of heuristics, and exploitation of cognitive biases. It is necessary to establish norms that expressly prohibit such practices, clearly defining the ethical and legal limits for suppliers' actions in the digital environment. Additionally, the effective enforcement of the Brazilian General Data Protection Law (LGPD) must be reinforced, ensuring that the processing of personal data is carried out transparently and with the free and informed consent of the data subjects.

In parallel, promoting good practices by suppliers is essential to build a fairer and more trustworthy digital environment. Companies should adopt principles of transparency, clarity, and respect for consumer autonomy in their interfaces and offers. This includes developing user-centered interface designs that facilitate the understanding of information and conscious decision-making, avoiding the use of manipulative techniques.

Implementing codes of conduct and adhering to best practice certifications can encourage companies to follow ethical standards and differentiate themselves positively in the market. Moreover, incorporating mechanisms that allow consumers to personalize their privacy preferences, and the reception of information promotes greater control and trust in consumer relations.

Consumer education and awareness play a crucial role in protecting their rights and promoting more informed decisions. Educational campaigns and digital literacy programs can empower consumers to identify manipulative practices, understand their rights, and exercise more critical and reflective behavior in the digital environment. Integrating topics related to heuristics, cognitive biases, and digital security into school curricula and continuing education initiatives broadens the reach of this awareness.

Consumer protection organizations, academic institutions, and the media can also contribute by disseminating information and alerts about abusive

practices, as well as offering practical guidance for consumers to protect their interests. Collaboration among different sectors of society enhances educational efforts and strengthens the culture of respect for consumer rights.

Finally, the role of regulatory bodies and the judiciary is fundamental to ensure the effectiveness of the proposed measures. Regulatory agencies should intensify the monitoring of commercial practices in the digital environment, applying appropriate sanctions in cases of infractions and encouraging legal compliance. Proactive action by authorities contributes to the prevention of abuses and the promotion of a more balanced market.

The judiciary, in turn, by interpreting and applying the norms, can consolidate understandings that discourage cognitive exploitation and effectively protect consumers. Judicial decisions that recognize the nullity of abusive clauses, liability for damages caused by manipulative practices, and the need for transparency strengthen jurisprudence in favor of consumer rights.

International cooperation is also relevant, given the transnational nature of e-commerce. The harmonization of norms and participation in global forums allow for the sharing of experiences and the establishment of high standards of consumer protection.

Balancing digital consumer relations requires an integrated approach involving legislative updates, adoption of good practices by suppliers, consumer education and awareness, and effective action by regulatory bodies and the judiciary. Only through the combination of these efforts will it be possible to build a digital environment that is fairer, more transparent, and respectful of the rights and autonomy of consumers.

CONCLUSIONS

The cognitive exploitation of consumers in e-commerce represents a multifaceted challenge involving legal, technological, psychological, and ethical aspects. Throughout this article, it has been demonstrated how the intrinsic vulnerability of consumers is exacerbated in the digital environment, where informational asymmetry and advanced manipulation techniques – such as nudges, dark patterns, heuristics, and cognitive biases – are used by suppliers to unduly influence purchasing decisions.

The inadequacy of traditional regulations in the context of contemporary e-commerce was highlighted as a factor contributing to the perpetuation of these abusive practices. The need for legislative updates is imperative to establish clear boundaries and effectively protect consumers against the exploitation of their cognitive vulnerability.

The proposals presented aim to promote balance in digital consumer relations through an integrated approach involving the updating of norms, the

adoption of good practices by suppliers, consumer education and awareness, and effective action by regulatory bodies and the judiciary. Implementing these measures can contribute to building a digital environment that is fairer, more transparent, and respectful of consumer rights.

It is fundamental to recognize that the responsibility for consumer protection in e-commerce is shared. Suppliers must act ethically and transparently, avoiding manipulative practices and respecting the autonomy and dignity of consumers. Consumers, in turn, should be empowered through education and access to clear and understandable information, enabling informed decisions.

Regulatory bodies and the judiciary play a crucial role in oversight, enforcement of norms, and the creation of precedents that discourage abusive practices. International cooperation and the harmonization of regulations are also relevant, given the global nature of e-commerce and the need to protect consumers in a transnational scenario.

In summary, confronting the cognitive exploitation of consumers in e-commerce requires a collective and multidisciplinary effort. Building a balanced and fair digital market depends on the combination of legal, business, and educational initiatives that promote transparency, ethics, and respect for consumers' fundamental rights. Only in this way will it be possible to ensure that technological evolution and the expansion of e-commerce occur in harmony with democratic values and the protection of human dignity.

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