



LEGAL LIABILITY OF INTERACTIVE DIGITAL GAME PLATFORMS FOR VIRTUAL TRANSACTIONS BY MINORS

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Abstract

The rapid rise of interactive digital games has led to virtual transactions in which players purchase in-game items with real money. This becomes problematic when children, as dominant users without legal capacity, are involved. Game designs often exploit microtransactions and loot boxes that trigger impulsive spending, making children targets of economic exploitation. This study examines the legal liability of digital game platform providers under Government Regulation No. 17 of 2025, which implements Articles 16A (5) and 168(3) of the 2024 ITE Law. Using a normative juridical approach, the study analyzes regulations and literature. Findings highlight the need for stronger platform obligations, including age verification, parental consent, bans on covert practices, and tiered sanctions. Active state regulation and collaboration with platforms, parents, and society are crucial to ensuring a safe and child-friendly digital environment.

Keywords: *legal; Liability; Interactive Digital Game Platforms; Virtual Transactions By Minors; Dominant Users.*

I. INTRODUCTION

The advancement of digital technology has transformed human interactions, including in the entertainment industry. Interactive digital games, or online games, have become a global phenomenon, with children as dominant users. The number of gamers across PCs, consoles, tablets, and smartphones is expected to surpass 3.26 billion in 2023 and reach 3.32 billion by 2024¹. In Indonesia, the Indonesian Internet Service Providers Association (APJII) reported that the number of internet users in 2024 was 221,563,479, representing 79.8% of the total population of 278,696,200². Furthermore, the Minister of Communication and Digital emphasized the urgent need for careful monitoring and regulation of internet use, given the high proportion of

¹ Marko Dimitrievski, "33 Evolutionary Gaming Statistics of 2024," 2025, <https://truelist.co/blog/gaming-statistics/>.

² Muhammad Arif, "APJII Jumlah Pengguna Internet Indonesia Tembus 221 Juta Orang," 2025, <https://apjii.or.id/berita/d/apjii-jumlah-pengguna-internet-indonesia-tembus-221-juta-orang>.

teenage users. Based on recent data, 48%³ of Indonesia's internet users are under 18 years old, reflecting that nearly half of the national internet users belong to a vulnerable age group exposed to the negative impacts of the digital world. More concerningly, Indonesian teenagers spend an average of over 5 hours per day online. This intense digital interaction provides opportunities for information access and self-development⁴, but also increases the risk of various threats, particularly from interactive digital games.

The business model of the interactive digital game industry has undergone a significant transformation. The growing enthusiasm of teenagers for online games has become a major source of profit for industry players. Revenues from online and electronic games have even surpassed those of the film industry, making online gaming one of the most popular forms of entertainment globally⁵. This phenomenon has been further reinforced by the widespread adoption of smartphones, which have significantly increased the intensity of online gaming among the public⁶. Previously, the gaming industry relied on selling physical products or licenses; now it relies on the microtransaction model through in-game purchases, a system designed to enhance the user experience by allowing players to spend small amounts of real money. These small-value exchanges, known as microtransactions, enable players to buy virtual items such as skins, outfits, avatars, weapons, power-ups, boosters, new levels, or other premium features. This business model has proven highly profitable, creating a perpetually revolving digital economy⁷. However, alongside this rapid digital economic growth, serious legal challenges have emerged. Children and teenagers, as the largest user segment, frequently engage in digital financial transactions without adequate understanding of the financial implications. Moreover, these transactions often occur without parental consent or supervision, raising legal issues regarding child consumer protection, misuse of financial data, and contractual aspects that may be legally invalid as they involve legally incompetent subjects.

From the perspective of Indonesian civil law, as regulated in Article 1330 of the Civil Code (KUHPerdata), minors are categorized as legally incompetent to engage in

³ Josua Sihombing, "RRI.Co.Id - Menkomdigi: 48 Persen Pengguna Internet Remaja Di Bawah 18 Tahun," 2025, <https://rri.co.id/nasional/1517144/menkomdigi-48-persen-pengguna-internet-remaja-di-bawah-18-tahun>.

⁴ Corinne David-Ferdon and Marci Feldman Hertz, "Electronic Media, Violence, and Adolescents: An Emerging Public Health Problem," *Journal of Adolescent Health* 41, no. 6 (December 2007): S1-5, <https://doi.org/10.1016/j.jadohealth.2007.08.020>.

⁵ Lucas Lopes Ferreira de Souza and Ana Augusta Ferreira de Freitas, "Consumer Behavior of Electronic Games' Players: A Study on the Intentions to Play and to Pay," *Revista de Administração* 52, no. 4 (October 2017): 419-30, <https://doi.org/10.1016/j.rausp.2017.08.004>.

⁶ Pei-Shan Wei and Hsi-Peng Lu, "Why Do People Play Mobile Social Games? An Examination of Network Externalities and of Uses and Gratifications," *Internet Research* 24, no. 3 (May 27, 2014): 313-31, <https://doi.org/10.1108/IntR-04-2013-0082>.

⁷ Nenad Tomic, "Effects of Micro Transactions on Video Games Industry," *Megatrend Revija* 14, no. 3 (2017): 239-57, <https://doi.org/10.5937/MegRev1703239T>.

binding agreements without parental or guardian consent. This means that any transaction conducted by a minor without such consent is legally null and void, or at least voidable. However, in practice, there remains a significant gap in monitoring and age verification mechanisms on digital platforms. Many interactive digital game platforms lack strict identity verification systems, allowing children to easily create accounts and conduct financial transactions independently. This practice leads to situations where children engage in financial transactions they are not legally authorized to perform, yet these transactions are still accepted and processed by digital platforms. This scenario raises complex legal questions about the validity and enforceability of such transactions, the extent of parental liability, especially in cases of financial loss, and the legal responsibility of platform providers to ensure adequate consumer protection for children, including obligations to implement age verification systems and data privacy safeguards. Digital platform providers cannot merely rely on user agreements, as Indonesian law recognizes special protections for children as a vulnerable group, as mandated by Article 5(3) of Law No. 39 of 1999 on Human Rights, which stipulates that individuals in vulnerable groups are entitled to special treatment and protection. These groups include the elderly, children, the poor, pregnant women, and persons with disabilities⁸. This is further reinforced by the enactment of Government Regulation No. 17 of 2025 on the Governance of Electronic Systems for Child Protection⁹ against virtual transactions conducted by minors within interactive digital game ecosystems in Indonesia, which implements Article 16A (5) and Article 168(3) of Law No. 1 of 2024 on the Amendment to the Electronic Information and Transactions Law.

Children face significant risks as consumers in the digital realm, including embedded advertisements, privacy-invading practices, and exploitation of their naivety and inexperience, leading to overspending or falling victim to online transaction fraud. Children, as consumers, are often the object of business activities, making them highly vulnerable to violations in buying and selling transactions due to their weaker bargaining position. This imbalance is systematically exploited by business actors within distribution and marketing systems to achieve business productivity targets¹⁰. Behind the seemingly innocent and entertaining activity of interactive digital gaming for children lies a complex business model designed for corporate profit. Therefore, the introduction of Government Regulation No. 17 of 2025 on the Governance of Electronic Systems for Child Protection is expected to foster a safer and fairer digital ecosystem.

⁸ Andrie Irawan and Muhammad Haris, "Urgensi Peraturan Daerah Bantuan Hukum Bagi Masyarakat Miskin Dan Kelompok Rentan Di Daerah Istimewa Yogyakarta," *Nuansa Akademik: Jurnal Pembangunan Masyarakat* 7, no. 1 (April 9, 2022): 35–54, <https://doi.org/10.47200/jnajpm.v7i1.1123>.

⁹ Indonesia, "Government Regulation No. 17 of 2025 on the Governance of Electronic Systems for Child Protection" (2025).

¹⁰ Redjeki Sri Hartono, *Kapitas Selektia Hukum Ekonomi* (Bandung: Mandar Maju, 2000).

Previous research¹¹ only explored conventional legal responsibility of business actors in the context of physical goods, whereas this study expands the scope to address the emerging phenomenon of economic exploitation in digital spaces, with a more specific vulnerable subject children involved in virtual transactions within interactive digital games. This study employs a more contemporary regulatory approach, grounded in digital regulations (Government Regulation No. 17 of 2025) and incorporates dimensions of international legal frameworks. The objective of this research is to analyze the legal liability of interactive digital game platform providers concerning virtual transactions conducted by minors in Indonesia, to examine the existing legal challenges, and to propose policy recommendations aimed at strengthening legal protection for children in digital environments.

II. RESEARCH METHOD

This research employs a normative juridical approach¹², which involves legal research conducted by examining legal materials or secondary data through a comprehensive review of regulations and literature related to the practices of economic exploitation of children in the digital world, viewed from the perspective of child protection law and human rights. This approach is chosen to analyze relevant legal provisions, both in national legislation and international legal instruments, concerning the protection of children as digital consumers. Data is collected through library research (literature study) involving primary, secondary, and tertiary legal sources. Document analysis is carried out systematically by examining regulatory texts, academic literature, and empirical studies related to the economic exploitation of children on digital platforms. The analysis is conducted by interlinking consumer protection law theories, children's rights, and the concept of platform providers' liability concerning the risks faced by children as users of interactive digital services.

III. ANALYSIS AND DISCUSSION

1. The Evolution of Virtual Transaction Models in Interactive Digital Gaming Platform

Virtual transactions in interactive digital games refer to economic activities where players purchase virtual goods or digital services within the game ecosystem using real money or convertible digital currency¹³. These virtual goods include cosmetic items (such as avatars, skins, and character accessories), functional items (weapons, equipment, power-ups), virtual currency (in-game currency), and access to exclusive

¹¹ Edy Purwito, "Konsep Perlindungan Hukum Konsumen Dan Tanggung Jawab Hukum Pelaku Usaha Terhadap Produk Gula Pasir Kadaluarsa Di Kota Surabaya," *Jurnal Magister Ilmu Hukum* 13, no. 1 (June 30, 2023): 109–29, <https://doi.org/10.56943/dekrit.v13n1.152>.

¹² Soerjono Soekanto dan S Mamudji, *Penelitian Hukum Normatif (Suatu Tinjauan Singkat)* (Jakarta: Rajawali Pers, 2001).

¹³ V Hamari, J and Lehdonvirta, "Game Design as Marketing: How Game Mechanics Create Demand for Virtual Goods," *Journal of Business Science and Applied Management* 5, no. 1 (2010): 14–29.

content such as additional levels, premium features, or battle passes¹⁴. Virtual goods are defined as digital representations that can be owned and consumed by players within the game context, despite lacking intrinsic value in the real world¹⁵. The characteristics of virtual transactions are: (1) intangible in form; (2) limited to specific game/platform ecosystems; (3) their value and utility are determined by game rules and player community interactions; (4) transactions often involve virtual currency as an intermediary.

Virtual transactions have become an integral part of modern digital game business models, shifting revenue streams from upfront product sales (premium model) to recurring consumption patterns throughout the game's lifecycle. This model is commonly known as freemium or free-to-play (F2P), where the core game is offered for free to maximize user base acquisition, while monetization occurs through in-game purchases (microtransactions)¹⁶. In the early stages of the gaming industry, monetization predominantly relied on premium models, where players paid upfront to access the entire game¹⁷. However, with the rise of the internet and digital distribution particularly through mobile platforms and online marketplaces business models shifted towards free-to-play strategies. These models remove initial financial barriers, expanding the player base, and subsequently converting a portion of users into paying customers through recurring microtransactions.

A 2014 study¹⁸ analyzing the top 300 applications on the Apple App Store found that approximately 80% were games relying on free-to-play models with microtransactions as their primary revenue source. The advancement of big data and behavioral analytics has also enabled developers to personalize monetization strategies, such as offering promotions tailored to player purchasing behavior and optimizing game design to maximize engagement and conversion rates. Microtransaction monetization mechanisms involve small-value digital transactions where players purchase virtual goods or additional services within the game. Common forms of microtransactions include purchasing currency packs, cosmetic items (skins, costumes), and power-ups (character ability enhancements). Although individual transaction values are small, their cumulative effect makes microtransactions the main revenue source for many F2P games. A survey revealed that children and teenagers (aged 2–18) are the primary

¹⁴ Juho Hamari et al., "Why Do Players Buy In-Game Content? An Empirical Study on Concrete Purchase Motivations," *Computers in Human Behavior* 68 (March 2017): 538–46, <https://doi.org/10.1016/j.chb.2016.11.045>.

¹⁵ Vili Lehdonvirta, "Virtual Item Sales as a Revenue Model: Identifying Attributes That Drive Purchase Decisions," *Electronic Commerce Research* 9, no. 1–2 (June 10, 2009): 97–113, <https://doi.org/10.1007/s10660-009-9028-2>.

¹⁶ Hamari, J and Lehdonvirta, "Game Design as Marketing: How Game Mechanics Create Demand for Virtual Goods."

¹⁷ Elena Petrovskaya and David Zendle, "Predatory Monetisation? A Categorisation of Unfair, Misleading and Aggressive Monetisation Techniques in Digital Games from the Player Perspective," *Journal of Business Ethics* 181, no. 4 (December 20, 2022): 1065–81, <https://doi.org/10.1007/s10551-021-04970-6>.

¹⁸ Gunwoong Lee and T. S. Raghu, "Determinants of Mobile Apps' Success: Evidence from the App Store Market," *Journal of Management Information Systems* 31, no. 2 (January 7, 2014): 133–70, <https://doi.org/10.2753/MIS0742-1222310206>.

drivers of industry growth¹⁹, actively purchasing skins, power-ups, and battle passes that provide social identity and competitive advantages within gaming communities.

One of the most controversial forms of microtransactions is loot boxes or gacha mechanics. These mechanisms allow players to pay for random items, without knowing the outcome in advance. Loot boxes are categorized as predatory monetization schemes²⁰ due to their elements of hidden gambling and potential to trigger addictive behaviors. A large-scale 2018 survey²¹ found a significant correlation between loot box purchases and problem gambling, especially among players under 18 years old. Psychologically, loot box monetization techniques rely on surprise and uncertainty mechanisms that stimulate dopamine release, enhancing player mood and leading to repetitive spending, particularly among children who lack full impulse control²².

Virtual transactions not only transform business models but also reshape the paradigm of digital game design. Modern game design emphasizes continuous service-oriented experiences rather than one-time product purchases. The concept of “game design as marketing”²³ suggests that game mechanics are deliberately structured to encourage player consumption behaviors. Common strategies employed to drive in-game purchases include:

- a. Progress Gates: Limiting game progression to encourage players to buy items or services to accelerate advancement.
- b. Time Skips: Offering players the option to bypass waiting periods through payments.
- c. Status Signaling: Providing exclusive items that enhance a player's social status within the game community.

In the rapidly evolving digital landscape, multiplayer Android games have become increasingly popular in 2025²⁴. These games offer a more engaging experience by enabling real-time interaction with friends and players from around the world. Each year, the gaming industry introduces new titles with stunning visuals, fresh gameplay mechanics, and enhanced social features. As of 2025, multiplayer games across action,

¹⁹ Abdurrahman Mulachela, “Analisis Perkembangan Industri Game Di Indonesia Melalui Pendekatan Rantai Nilai Global (Global Value Chain),” *Indonesian Journal of Global Discourse* 2, no. 2 (December 31, 2020): 32–51, <https://doi.org/10.29303/ijgd.v2i2.17>.

²⁰ Daniel L. King and Paul H. Delfabbro, “Predatory Monetization Schemes in Video Games (e.g. ‘Loot Boxes’) and Internet Gaming Disorder,” *Addiction* 113, no. 11 (November 28, 2018): 1967–69, <https://doi.org/10.1111/add.14286>.

²¹ David Zendle and Paul Cairns, “Video Game Loot Boxes Are Linked to Problem Gambling: Results of a Large-Scale Survey,” ed. George Joseph Youssef, *PLOS ONE* 13, no. 11 (November 21, 2018): e0206767, <https://doi.org/10.1371/journal.pone.0206767>.

²² David Zendle, Rachel Meyer, and Harriet Over, “Adolescents and Loot Boxes: Links with Problem Gambling and Motivations for Purchase,” *Royal Society Open Science* 6, no. 6 (June 19, 2019): 190049, <https://doi.org/10.1098/rsos.190049>.

²³ Juho Hamari and Aki Järvinen, “Building Customer Relationship through Game Mechanics in Social Games,” in *Business, Technological, and Social Dimensions of Computer Games* (IGI Global, 2011), 348–65, <https://doi.org/10.4018/978-1-60960-567-4.ch021>.

²⁴ Jihan Firdausya, “8 Game Online Gratis Terbaik 2025: Wajib Dicoba,” 2025, <https://www.cermati.com/artikel/games-online-free>.

strategy, battle royale, and casual genres have become more diverse and widely enjoyed by gamers. Categorizing games is not merely intended to describe gameplay mechanics; it also plays a crucial role in various aspects, including industry classification, legal regulation, and socio-cultural impacts on society.

Table 1. Categories of Popular Mobile Games by Genre

No	Game Genre	Game Title	Description	Source
1	Battle Royale	PUBG Mobile	The king of battle royale games featuring vast maps and diverse modes for a realistic combat experience.	PUBG Corporation 2024; Sensor Tower 2024
		Free Fire	Fast-paced battle royale game with unique characters and a variety of weapons, optimized for low-end devices.	Garena Free Fire Official 2024; App Annie 2024
		Call of Duty: Mobile	Mobile adaptation of the Call of Duty franchise with stunning graphics and intense battle royale and multiplayer gameplay.	Activision 2024; Newzoo 2024
2	MOBA	Mobile Legends: Bang Bang	The most popular MOBA game in Southeast Asia with easy-to-learn gameplay and diverse heroes.	Moonton 2024; Statista 2024
		League of Legends: Wild Rift	Mobile version of LoL PC offering fast-paced and competitive MOBA experience.	Riot Games 2024; PocketGamer.biz 2024
		Arena of Valor	MOBA with engaging characters and regular events appealing to both casual and professional players.	Tencent Games 2024; Niko Partners 2024
3	Casual Party Game	Among Us	Social deduction game where players identify impostors while completing tasks on a spaceship.	Innersloth 2024; Polygon 2024
		Fall Guys: Ultimate Knockout	Casual battle royale with jelly bean-like characters and unique obstacle courses.	Mediatonic 2024; IGN 2024

		Stumble Guys	A mobile game similar to Fall Guys featuring fun and competitive mini-games.	Kitka Games 2024; PocketGamer.biz 2024
4	Action RPG	Genshin Impact	Open-world RPG with stunning graphics, exploration-based gameplay, and co-op multiplayer mode.	miHoYo 2024; Sensor Tower 2024
5	Augmented Reality RPG	Pokémon GO	AR-based game allowing players to catch Pokémon in the real world.	Niantic Labs 2024; Statista 2024
6	Sandbox Survival	Minecraft Mobile	Mobile version of Minecraft that enables players to build and explore a vast virtual world freely.	Mojang Studios 2024; Business of Apps 2024
7	User-Generated Game Platform	Roblox	A gaming platform featuring thousands of user-generated games created by its community.	Roblox Corporation 2024; App Annie 2024
8	Sports Arcade	Rocket League Sideswipe	Mobile adaptation of Rocket League combining soccer elements with RC car gameplay.	Psyonix 2024; The Verge 2024

Source: Official websites as listed in the table above.

In addition, game categories serve as a basis for monitoring virtual transaction and microtransaction features, especially in games that carry exploitative risks for child players through loot box or gacha mechanics resembling gambling. The list of online games utilizing microtransactions and projected to remain popular in 2025 includes Genshin Impact²⁵, Call of Duty: Mobile, PUBG Mobile²⁶, Mobile Legends: Bang Bang, and Sonic Rumble. Moreover, other well-established and continuously evolving games such as Free Fire, Arena of Valor, and Roblox are also expected to maintain their microtransaction systems²⁷. It is important to note that some of the aforementioned games may not have officially confirmed the implementation of microtransaction systems. However, given current industry trends and the high popularity of these games, it is highly likely that they will adopt or continue utilizing microtransaction models as a strategy to retain player engagement and boost revenue.

²⁵ Telecommunication, "15 Games Aksi Android Tahun 2025, Ada Pokemon GO Sampai HoK!," 2025, <https://www.telkomsel.com/jelajah/jelajah-lifestyle/15-games-aksi-android-tahun-2025-ada-pokemon-go-sampai-hok>.

²⁶ Netciti, "Rekomendasi Games Online Android Dan IOS, Bikin Mabar Lebih Seru," 2025, <https://netciti.co.id/article/rekomendasi-games-online-android-dan-ios-bikin-mabar-lebih-seru>.

²⁷ Netciti, "Rekomendasi Games Online Android Dan IOS, Bikin Mabar Lebih Seru."

2. Legal Perspective on the Capacity of Children to Engage in Virtual Transactions within Interactive Digital Games

Children are both a trust and a precious gift bestowed by God upon every parent. They are the embodiment of love and hope, creating new dynamics within family life. The presence of a child is an inseparable part of human continuity and the survival of a nation. Children are a vital segment of a country's future, as they determine the fate of the next generation²⁸. Therefore, every child must be given the broadest possible opportunities to grow and develop optimally physically, mentally, and socially²⁹. However, alongside these blessings comes a great responsibility. Parents are not only tasked with fulfilling the physical needs of their children but are also obliged to protect, educate, and shape their character and morality³⁰.

In the digital era, parenting challenges have become increasingly complex. Parental roles are no longer sufficient if limited to material provision but must also ensure that children grow up in an environment that is healthy, safe, and conducive to psychosocial development. Thus, within the family, a child is not merely viewed as an individual who was born, but as a trust that must be safeguarded, guided, and prepared for life's challenges. They are a long-term investment that requires continuous attention, love, and education to grow into independent, moral, and socially beneficial individuals.

Digital technology has fundamentally transformed how children access entertainment and play. In the past, play activities were synonymous with physical outdoor interactions with peers, serving as more than just leisure activities but also as mediums for expressing deep social, cultural, and even spiritual values. Today, however, children's play interactions are shifting into the virtual realm through digital devices like smartphones, tablets, and gaming consoles. This shift has brought wide-ranging impacts, both positive and challenging. Childhood is a critical period marked by intense interaction and communication with new individuals in their surroundings. While children inherently enjoy direct play and social interactions, engagement with digital technology tends to foster passive behavior, with children glued to devices, neglecting their environment³¹. Excessive and unsupervised use of digital technology can significantly alter children's social behavior, especially when prolonged over time³².

Under Indonesian civil law, the provisions concerning legal capacity are stipulated in Article 1330 of the Civil Code (KUHPPerdata), which states that minors (those under the age of 21 who are unmarried) are considered legally incompetent to perform certain legal acts, including entering into economic contracts. Article 1329 of the Civil

²⁸ Wagianti Suttedjo, *Hukum Pidana Anak*, ed. PT. Refika Aditama (Bandung, 2010).

²⁹ Indonesia, "Law Number 35 of 2014 Concerning Child Protection" (2014).

³⁰ United Nations, "Convention on the Rights of the Child" (1989).

³¹ Munisa, "Pengaruh Penggunaan Gadget Terhadap Interaksi Sosial Anak Usia Dini Di TK Panca Budi Medan," *Jurnal Ilmiah Abdi Ilmu* 13, no. 1 (2020): 102-14, <https://jurnal.pancabudi.ac.id/index.php/abdiilmu/article/view/896>.

³² et al. Nauvan, "Dampak Teknologi Digital Terhadap Perilaku Sosial Generasi Muda," *TECHSI - Jurnal Teknik Informatika* 15, no. 2 (October 31, 2024): 87-95, <https://doi.org/10.29103/techsi.v15i2.19443>.

Code affirms that every person is presumed legally competent unless declared otherwise by law. Although the Code does not explicitly define who is legally competent, Articles 330, 433, and 1330 imply that competence is tied to age, mental capacity, and guardianship status. Article 1330 categorizes the legally incompetent as: (1) minors, (2) those under guardianship, and (3) women in cases prescribed by law.

A person reaches legal competence when they are able to exercise their rights and fulfill their obligations independently. Any legal act they perform will thus carry binding legal consequences, subjecting them to rights and responsibilities. Conversely, minors are deemed legally incompetent to perform legal acts independently, including electronic transactions. Therefore, virtual transactions conducted by minors in interactive digital games without guardian consent are inherently flawed and subject to annulment. In essence, a minor's legal incapacity reflects a juridical condition where they cannot be held fully responsible for their actions. On the other hand, electronic system providers (platform operators) bear legal responsibility to ensure that transactions involving minors are conducted under parental supervision, in line with consumer protection principles.

The primary factors motivating children to purchase virtual goods in interactive digital games³³ are :

- a. **Functional Value:** This refers to the utility of virtual goods that aid or accelerate game progress, such as powerful weapons, rare equipment, or power-ups. Players driven by this motivation view purchases as investments to enhance their gameplay efficiency³⁴.
- b. **Social Value:** Social value relates to how virtual goods elevate a player's status, self-image, or recognition within the gaming community³⁵. Exclusive, rare, or visually striking items serve as status symbols. Peer influence and the desire for social recognition are significant drivers of virtual purchases³⁶.
- c. **Hedonic Value:** Hedonic value involves the aesthetic pleasure and emotional satisfaction derived from owning or using virtual items. These may include visually appealing items, special animations, or unique features that enrich the gameplay experience³⁷.

³³ Lehdonvirta, "Virtual Item Sales as a Revenue Model: Identifying Attributes That Drive Purchase Decisions."

³⁴ Juho Hamari and Lauri Keronen, "Why Do People Buy Virtual Goods: A Meta-Analysis," *Computers in Human Behavior* 71 (June 2017): 59–69, <https://doi.org/10.1016/j.chb.2017.01.042>.

³⁵ Elsa and Iqbal M and Susanti Yeni Azalika, "Pengaruh Fomo Dan Konformitas Teman Sebaya Terhadap Pembelian Impulsif Pada E-Commerce Tiktok Dengan Emotional Shopping Sebagai Variabel Mediasi Dalam Perspektif Bisnis Islam (Studi Pada Gen Z Pengguna E-Commerce Tiktok Di Bandar Lampung)," *Juremi: Jurnal Riset Ekonomi* 4, no. 5 (2024): 1143–58, <https://bajangjournal.com/index.php/Juremi/issue/view/332>.

³⁶ Yu-Hao Lee and Donghee Yvette Wohn, "Are There Cultural Differences in How We Play? Examining Cultural Effects on Playing Social Network Games," *Computers in Human Behavior* 28, no. 4 (July 2012): 1307–14, <https://doi.org/10.1016/j.chb.2012.02.014>.

³⁷ Juho Hamari, "Why Do People Buy Virtual Goods? Attitude toward Virtual Good Purchases versus Game Enjoyment," *International Journal of Information Management* 35, no. 3 (June 2015): 299–308, <https://doi.org/10.1016/j.ijinfomgt.2015.01.007>.

These three motivational factors often intersect, where a child may have multiple reasons for purchasing virtual goods depending on the game's context and their psychological profile.

According to legal expert³⁸, the motivation of children engaging in delinquency is divided into two categories: intrinsic motivation and extrinsic motivation, with the following explanations:

a. Intrinsic Motivation

Intrinsic motivation is the drive or desire within an individual that does not require external stimulation. The factors categorized as intrinsic motivations for juvenile delinquency include:

1) Intelligence Factor (Intelegentia)

According to Wundt and Eister, as cited by Romli Atmasasmita, intelligence is a person's ability to weigh and decide on something. Juveniles who engage in delinquent acts generally have lower levels of intelligence, resulting in poor academic performance. With limited cognitive abilities and narrow social perspectives, they become more vulnerable to negative peer influences.

2) Age Factor

Stephen Hurwitz, quoted by Romli Atmasasmita, states that age is a significant factor in the emergence of deviant behavior. Research findings indicate that the ages between 15-18 years are the phase where children most frequently engage in delinquent acts or criminal offenses. However, due to the strong influence of environmental factors, adolescent cognitive maturity is not solely determined by age. Therefore, the Ministry of Health³⁹ classifies the age range of 10-20 years as a vulnerable period for delinquency⁴⁰.

3) Gender Factor

Paul W. Tappan, as quoted by Romli Atmasasmita, reveals that both boys and girls possess the potential to engage in delinquent behavior, although statistically, boys are more frequently involved in such acts than girls. Gender differences not only affect the number of offenders but also the types of delinquency. Boys tend to engage in criminal acts such as theft, assault, robbery, and even murder, whereas girls are more inclined toward violations of decency or public order, such as promiscuity.

4) The Child's Position within the Family

A child's birth order within the family also influences their tendency to engage in delinquency. Romli Atmasasmita, citing De Creef, explains that the third and fourth children in a family are more prone to delinquency. Meanwhile, research by Noach in Indonesia indicates that firstborns, only children, or the sole daughter in a family are more susceptible to criminal acts. This is associated with parenting styles that tend to spoil the child, excessive supervision, and the overindulgent fulfillment of the child's desires.

³⁸ Sutedjo, *Hukum Pidana Anak*.

³⁹ Bunadi Hidayat, *Pemidanaan Anak Di Bawah Umur* (Bandung: PT Alumnus, 2010).

⁴⁰ Sutedjo, *Hukum Pidana Anak*.

b. Extrinsic Motivation

Extrinsic motivation is the drive that comes from outside an individual⁴¹. The factors categorized as extrinsic motivations include:

1) Household Factors

The family is the first and closest social environment for children to grow and learn. As the smallest unit of society, the family plays a major role in shaping a child's personality, especially during the period before the child enters school. A harmonious family will have a positive influence on a child's development, whereas a problematic family tends to have a negative impact. Families experiencing conditions such as broken homes (divorce, death of a parent, or the prolonged absence of a parent) often become a trigger for children to fall into delinquency. However, this impact can be minimized if parents continue to provide full love and attention, so the child does not feel the loss of parental roles.

2) Education and School Factors

School is not only a place where children acquire knowledge but also plays a role in shaping their character and behavior. If the educational system at school fails to educate properly, it can trigger children to commit violations or delinquent acts. An educational process that does not meet the emotional needs of children, or a school environment that is unsupportive, can have a negative influence and become one of the causes of juvenile delinquency.

3) Peer Group Factors

In daily interactions, children often seek self-recognition outside the family, especially if their relationship with the family is not harmonious. Sutherland proposed the Differential Association theory, which explains that children learn delinquent behavior from their social environment. If a child frequently associates with peers who exhibit delinquent behavior, the likelihood of the child adopting such behavior increases. Therefore, the role of parents in guiding, instilling self-confidence, and educating children to be assertive in choosing their social circles is very important.

4) Mass Media Factors

Mass media, such as television, the internet, books, and magazines, have a significant influence on the formation of children's behavior. Broadcasts or readings that contain violence, pornography, or negative behaviors can encourage children to imitate such acts. Efforts that can be made include censoring films or broadcasts that are not educational, directing children towards more positive content, monitoring the distribution of children's reading materials, and utilizing media to deliver educational messages.

This legal reality gap places minors at risk of engaging in virtual transactions that could result in legal, economic, and moral harm. Therefore, there is an urgent need for stricter age verification systems and mandatory parental consent mechanisms for every transaction involving minors. Furthermore, digital literacy education for both children and parents is essential to help minors identify and avoid exploitative practices in virtual transactions. Understanding the motivations behind children's

⁴¹ Sutedjo.

delinquency is crucial for analyzing their legal capacity in conducting virtual transactions within interactive digital games. It highlights that the vulnerability of children in digital ecosystems stems not only from individual factors but also from regulatory gaps, lack of supervision, and inadequate digital literacy at family, school, and societal levels. Hence, a more adaptive and holistic legal approach is necessary to provide effective legal protection for children in this era of digital transformation.

3. Legal Responsibility of Interactive Digital Game Platform Operators Regarding Virtual Transactions Involving Children

The advancement of digital technology, particularly in the interactive digital gaming industry, has given rise to the phenomenon of virtual transactions (in-game purchases), which are increasingly accessible to minors. The Free-to-Play (F2P) business model, which relies on microtransactions (such as purchasing skins, power-ups, and loot boxes), poses a significant risk of economic exploitation towards children who lack sufficient impulse control and financial literacy. Although legally, minors are considered subjects of law without legal capacity (absolute legal incapacity under 18 years old), in practice, many gaming platforms fail to implement effective safeguards to prevent unsupervised transactions by children.

The legal obligations of Electronic System Providers (ESP), specifically interactive digital game platform operators, are stipulated in Article 16A (5) and Article 168(3) of Law Number 1 of 2024 on Electronic Information and Transactions, further regulated by Government Regulation No. 17 of 2025 concerning Electronic System Governance for Child Protection. This regulation establishes the fundamental principle that children, as vulnerable legal subjects, must be provided with special protection when accessing products, services, and features within Electronic Systems (ES). Such protection must not remain conceptual or normative but must be concretely implemented by platform providers through technical measures from product design to full-scale operations.

Article 2 of Government Regulation No. 17 of 2025 clearly mandates:

- (1) ESPs are obliged to provide protection for children using or accessing Electronic Systems.
- (2) This protection covers the rights of children concerning the use of products, services, and features developed and/or provided by ESPs.
- (3) ESPs must apply technology and operational technical measures to ensure protection from development to the operation stages.
- (4) ESPs are required to provide:
 - a) Information on minimum age restrictions;
 - b) Mechanisms for verifying child users;
 - c) Reporting systems for products, services, or features violating children's rights.

This provision clarifies that platform providers cannot excuse violations of children's rights as beyond their control. The regulation explicitly mandates the integration of child protection principles into system design, algorithms, and platform operations, making it a preventive legal responsibility (preventive liability) enforced from product

development through service delivery. The obligations of interactive digital game platform providers regarding virtual transactions by minors, according to Government Regulation No. 17 of 2025, include:

- a. Parental Consent: Platforms must obtain explicit consent from parents or guardians before minors can access products, services, or features involving virtual transactions (Article 9(1)).
- b. Age Verification and Access Control: Platforms must implement robust age assurance technologies to ensure that only users meeting the age requirements can conduct transactions (Article 22).
- c. Transparent and Understandable Information: Platforms must provide clear, accurate, and accessible information regarding products, services, and associated transaction risks to both minors and their guardians (Article 11).
- d. Parental Control Features: Platforms are obligated to offer real-time monitoring and transaction-limiting features for parents (Article 21(2)).
- e. Digital Literacy and Ecosystem Empowerment: Platforms must conduct educational programs for children, parents, and the community on the risks and benefits of digital transactions (Article 12).
- f. Reporting and Complaint Handling Mechanisms: Platforms are required to facilitate accessible reporting systems for children and parents to report misuse or potential violations (Article 23).

Prohibitions for interactive digital game platform providers regarding virtual transactions by minors include:

- a. Ban on Dark Patterns: Platforms are prohibited from using deceptive or non-transparent designs that manipulate children into impulsive transactions (Article 17).
- b. Restriction on Precise Geolocation Data Collection: Platforms may not collect children's precise geolocation data by default unless necessary, temporary, and with clear notifications (Article 18).
- c. Ban on Child Profiling for Commercial Purposes: Platforms are forbidden from profiling children for personalized commercial strategies, except when it serves the best interest of the child (Article 19).
- d. Prohibition on Prioritizing Commercial Interests over Child Rights: In all digital transactions, the child's best interest must prevail over business interests (Article 8).

These provisions signify a paradigm shift from industry self-regulation towards state-enforced accountability, especially concerning exploitative business models like microtransactions, loot boxes, and dark patterns targeting children's psychological immaturity. In legal dictionaries⁴², "liability" refers to legal responsibility the

⁴² Henry Campell Black, *Black's Law Dictionary (6th Ed.)* (St. Paul, MN: West Publishing Co., 1990).

obligation to bear the consequences of unlawful acts committed by legal subjects⁴³, while "responsibility" often pertains to political or moral accountability, not necessarily involving legal sanctions.

Hans Kelsen's Liability Theory asserts that legal responsibility arises when a subject is accountable for sanctions resulting from actions contrary to law⁴⁴. This theory emphasizes that negligence in adhering to legal duties whether through action or omission constitutes culpability. The transition from self-regulation to state-enforced accountability reinforces that interactive digital game platform providers' business practices affecting children's rights can no longer rely on industry goodwill but must be subjected to state-imposed legal norms (*ius constituendum* transformed into *ius constitutum*). In the context of virtual transactions by minors, platform providers remain legally liable if they fail to implement child protection features (e.g., age verification), even when violations arise from parental negligence or children's lack of awareness. Hence, platform providers are liable for losses incurred by child consumers without the need to prove fault, as stipulated in Articles 2 and 9 of Government Regulation No. 17 of 2025.

Administrative sanctions for platform providers violating child protection obligations are outlined in Articles 38–44 of Government Regulation No. 17 of 2025, structured as follows:

- a. Written Warning (Article 39): Initial formal notice for non-compliance.
- b. Administrative Fine (Article 40): Imposed if warnings are ignored, with amounts determined by further regulations.
- c. Temporary Suspension of Products/Services/Features (Article 41): Enforced if violations persist.
- d. Platform Blocking (Articles 42–44): Ultimate sanction for systemic and severe violations.

Administrative sanctions serve both preventive and repressive legal functions as deterrents to ensure compliance from the outset and as corrective measures to restore legal order when violations occur⁴⁵. Directly, Government Regulation No. 17 of 2025 Does Not Regulate Criminal Sanctions Government Regulation No. 17 of 2025 only stipulates administrative sanctions (warnings, administrative fines, service suspension, and access termination/platform blocking). Criminal sanctions may be imposed if administrative violations (under Government Regulation No. 17/2025) are accompanied by actions that fall under the category of child exploitation (Article 76I of Law No. 35 of 2014 on Child Protection), data misuse (Articles 67 & 68 of Law No. 27 of 2022 on Personal Data Protection⁴⁶), or digital fraud (Article 28 paragraph (1) in

⁴³ Shinta Tutik, Titik Triwulan, and Febrian, *Perlindungan Hukum Bagi Pasien* (Jakarta: Prestasi Pustaka., 2010).

⁴⁴ M Asshiddiqie, Jimly dan Ali Safa'at, *Teori Hans Kelsen Tentang Hukum* (Jakarta: Konstitusi Press, Cet ke-4, 2014).

⁴⁵ Philipus M. Hadjon, *Perlindungan Hukum Bagi Rakyat Indonesia: Sebuah Studi Tentang Prinsip-Prinsipnya, Penanganannya Oleh Pengadilan Dalam Lingkungan Peradilan Umum Dan Pembentukan Peraturan Perundang-Undangan Di Indonesia* (Surabaya: Bina Ilmu, 1987).

⁴⁶ Indonesia, "Law Number 27 of 2022 Concerning Personal Data Protection" (2022).

conjunction with Article 45A paragraph (1) of Law No. 1 of 2024 on Electronic Information and Transactions⁴⁷). This aligns with the principle of *ultimum remedium*: criminal sanctions are applied as a last resort when administrative measures fail to stop or rectify the violation, particularly in cases of severe breaches that systemically harm children.

The business practices of interactive digital game platform providers, particularly within interactive digital platforms such as games, can no longer rely solely on self-regulation mechanisms or the industry's goodwill. The complexity of virtual transactions involving children as vulnerable digital consumers demands active legal intervention by the state (*state-enforced accountability*). Government Regulation No. 17 of 2025 reflects this paradigm by incorporating several provisions that emphasize the state's obligation to control, supervise, and enforce legal compliance by interactive digital game platform providers in the context of protecting children's rights. The state's obligations stipulated include the following:

- a) The Role of the State in Child Protection within Electronic Systems (Article 5). The state has an obligation to protect children from the negative impacts of electronic system usage, including within the digital platform ecosystem. The state cannot delegate the responsibility of child protection entirely to the goodwill of interactive digital game platform providers but must act as an active regulator.
- b) State Authority in Controlling Legal Norms in the Business Activities of Interactive Digital Game Platform Providers (Article 6). The state establishes legal norms for procedures of risk level assessment and self-assessment regarding the products, services, and features of interactive digital games.
- c) The State's Obligation to Establish a Child Protection Ecosystem (Article 12). The government is obliged to develop educational programs, outreach, and community empowerment initiatives, including for interactive digital game platform providers, parents, and children, to ensure child protection in the digital space.

State Authority in Enforcing Administrative Sanctions on Interactive Digital Game Platform Providers (Articles 43-48). The state enforces compliance by interactive digital game platform providers through mechanisms of warnings, fines, temporary service suspension, and access/platform blocking.

IV. CONCLUSION

The development of the interactive digital game industry has fundamentally changed children's consumption patterns in the digital era. Virtual transactions, initially considered an additional feature, have evolved into a core business model that generates substantial profits for interactive digital game platform providers. This model is manifested through in-game purchases, microtransactions, loot boxes, and battle passes, increasingly targeting children as primary users. This situation raises urgent legal concerns, as children, by law, lack the legal capacity to enter into binding

⁴⁷ Indonesia, "Law Number 1 of 2024 Concerning Electronic Information and Transactions" (2024).

agreements, as stipulated in Article 1330 of the Indonesian Civil Code⁴⁸. Children's limited understanding of the legal implications of virtual transactions is often exploited by platform providers through aggressive monetization strategies and manipulative application designs (dark patterns). These realities demonstrate that self-regulation models based on voluntary compliance by platform providers are no longer sufficient to protect children's rights in digital spaces. In this context, Government Regulation No. 17 of 2025 concerning the Governance of Electronic Systems for Child Protection emerges as a concrete manifestation of the State's role in enforcing mandatory legal norms on interactive digital game platform providers. This regulation provides a solid legal foundation outlining the obligations of platform providers, including mandatory age verification, parental consent requirements, default high privacy settings, prohibition of exploitative practices, and tiered administrative sanctions ranging from warnings, fines, temporary suspensions, to platform blocking. The State no longer allows digital business practices to rely solely on industry goodwill but asserts itself as an active regulator to supervise, control, and enforce compliance with child protection standards by platform providers.

However, the success of Government Regulation No. 17 of 2025's implementation does not solely depend on the strength of its written provisions. The effectiveness of child protection in the digital ecosystem is highly dependent on the synergy among key stakeholders: the government as policy maker and enforcer, platform providers as responsible business actors, parents as primary educators, and society along with educational institutions in fostering children's digital literacy. This cross-sectoral collaboration forms the foundation for creating a safe, fair, and child-friendly digital ecosystem. Consequently, the State bears the responsibility to continuously strengthen regulations, establish effective oversight systems, and ensure that the digital space evolves into an inclusive, ethical environment that respects children's rights as protected citizens under the law.

REFERENCES

- Arif, Muhammad. "APJII Jumlah Pengguna Internet Indonesia Tembus 221 Juta Orang," 2025. <https://apjii.or.id/berita/d/apjii-jumlah-pengguna-internet-indonesia-tembus-221-juta-orang>.
- Asshiddiqie, Jimly dan Ali Safa'at, M. *Teori Hans Kelsen Tentang Hukum*. Jakarta: Konstitusi Press, Cet ke-4, 2014.
- Azalika, Elsa and Iqbal M and Susanti Yeni. "Pengaruh Fomo Dan Konformitas Teman Sebaya Terhadap Pembelian Impulsif Pada E-Commerce Tiktok Dengan Emotional Shopping Sebagai Variabel Mediasi Dalam Perspektif Bisnis Islam (Studi Pada Gen Z Pengguna E-Commerce Tiktok Di Bandar Lampung)." *Juremi: Jurnal Riset Ekonomi* 4, no. 5 (2024): 1143-58. <https://bajangjournal.com/index.php/Juremi/issue/view/332>.

Black, Henry Campell. *Black's Law Dictionary (6th Ed.)*. St. Paul, MN: West Publishing

⁴⁸ Indonesia, "Indonesian Civil Code" (1847).

Co., 1990.

David-Ferdon, Corinne, and Marci Feldman Hertz. "Electronic Media, Violence, and Adolescents: An Emerging Public Health Problem." *Journal of Adolescent Health* 41, no. 6 (December 2007): S1-5. <https://doi.org/10.1016/j.jadohealth.2007.08.020>.

Dimitrievski, Marko. "33 Evolutionary Gaming Statistics of 2024," 2025. <https://truelist.co/blog/gaming-statistics/>.

Firdausya, Jihan. "8 Game Online Gratis Terbaik 2025: Wajib Dicoba," 2025. <https://www.cermati.com/artikel/games-online-free>.

Hadjon, Philipus M. *Perlindungan Hukum Bagi Rakyat Indonesia: Sebuah Studi Tentang Prinsip-Prinsipnya, Penanganannya Oleh Pengadilan Dalam Lingkungan Peradilan Umum Dan Pembentukan Peraturan Perundang-Undangan Di Indonesia*. Surabaya: Bina Ilmu, 1987.

Hamari, J and Lehdonvirta, V. "Game Design as Marketing: How Game Mechanics Create Demand for Virtual Goods." *Journal of Business Science and Applied Management* 5, no. 1 (2010): 14-29.

Hamari, Juho. "Why Do People Buy Virtual Goods? Attitude toward Virtual Good Purchases versus Game Enjoyment." *International Journal of Information Management* 35, no. 3 (June 2015): 299-308. <https://doi.org/10.1016/j.ijinfomgt.2015.01.007>.

Hamari, Juho, Kati Alha, Simo Järvelä, J. Matias Kivikangas, Jonna Koivisto, and Janne Paavilainen. "Why Do Players Buy In-Game Content? An Empirical Study on Concrete Purchase Motivations." *Computers in Human Behavior* 68 (March 2017): 538-46. <https://doi.org/10.1016/j.chb.2016.11.045>.

Hamari, Juho, and Aki Järvinen. "Building Customer Relationship through Game Mechanics in Social Games." In *Business, Technological, and Social Dimensions of Computer Games*, 348-65. IGI Global, 2011. <https://doi.org/10.4018/978-1-60960-567-4.ch021>.

Hamari, Juho, and Lauri Keronen. "Why Do People Buy Virtual Goods: A Meta-Analysis." *Computers in Human Behavior* 71 (June 2017): 59-69. <https://doi.org/10.1016/j.chb.2017.01.042>.

Hartono, Redjeki Sri. *Kapitas Selektta Hukum Ekonomi*. Bandung: Mandar Maju, 2000.

Hidayat, Bunadi. *Pemidanaan Anak Di Bawah Umur*. Bandung: PT Alumni, 2010.

Indonesia. Government Regulation No. 17 of 2025 on the Governance of Electronic Systems for Child Protection (2025).

— — —. Indonesian Civil Code (1847).

- — —. Law Number 1 of 2024 Concerning Electronic Information and Transactions (2024).
- — —. Law Number 27 of 2022 Concerning Personal Data Protection (2022).
- — —. Law Number 35 of 2014 Concerning Child Protection (2014).
- Irawan, Andrie, and Muhammad Haris. "Urgensi Peraturan Daerah Bantuan Hukum Bagi Masyarakat Miskin Dan Kelompok Rentan Di Daerah Istimewa Yogyakarta." *Nuansa Akademik: Jurnal Pembangunan Masyarakat* 7, no. 1 (April 9, 2022): 35–54. <https://doi.org/10.47200/jnajpm.v7i1.1123>.
- King, Daniel L., and Paul H. Delfabbro. "Predatory Monetization Schemes in Video Games (e.g. 'Loot Boxes') and Internet Gaming Disorder." *Addiction* 113, no. 11 (November 28, 2018): 1967–69. <https://doi.org/10.1111/add.14286>.
- Lee, Gunwoong, and T. S. Raghu. "Determinants of Mobile Apps' Success: Evidence from the App Store Market." *Journal of Management Information Systems* 31, no. 2 (January 7, 2014): 133–70. <https://doi.org/10.2753/MIS0742-1222310206>.
- Lee, Yu-Hao, and Donghee Yvette Wohn. "Are There Cultural Differences in How We Play? Examining Cultural Effects on Playing Social Network Games." *Computers in Human Behavior* 28, no. 4 (July 2012): 1307–14. <https://doi.org/10.1016/j.chb.2012.02.014>.
- Lehdonvirta, Vili. "Virtual Item Sales as a Revenue Model: Identifying Attributes That Drive Purchase Decisions." *Electronic Commerce Research* 9, no. 1–2 (June 10, 2009): 97–113. <https://doi.org/10.1007/s10660-009-9028-2>.
- Mulachela, Abdurrahman. "Analisis Perkembangan Industri Game Di Indonesia Melalui Pendekatan Rantai Nilai Global (Global Value Chain)." *Indonesian Journal of Global Discourse* 2, no. 2 (December 31, 2020): 32–51. <https://doi.org/10.29303/ijgd.v2i2.17>.
- Munisa. "Pengaruh Penggunaan Gadget Terhadap Interaksi Sosial Anak Usia Dini Di TK Panca Budi Medan." *Jurnal Ilmiah Abdi Ilmu* 13, no. 1 (2020): 102–14. <https://jurnal.pancabudi.ac.id/index.php/abdiilmu/article/view/896>.
- Nations, United. *Convention on the Rights of the Child* (1989).
- Nauvan, et al. "Dampak Teknologi Digital Terhadap Perilaku Sosial Generasi Muda." *TECHSI - Jurnal Teknik Informatika* 15, no. 2 (October 31, 2024): 87–95. <https://doi.org/10.29103/techsi.v15i2.19443>.
- Netciti. "Rekomendasi Games Online Android Dan IOS, Bikin Mabar Lebih Seru," 2025. <https://netciti.co.id/article/rekomendasi-games-online-android-dan-ios-bikin-mabar-lebih-seru>.

- Petrovskaya, Elena, and David Zendle. "Predatory Monetisation? A Categorisation of Unfair, Misleading and Aggressive Monetisation Techniques in Digital Games from the Player Perspective." *Journal of Business Ethics* 181, no. 4 (December 20, 2022): 1065–81. <https://doi.org/10.1007/s10551-021-04970-6>.
- Purwito, Edy. "Konsep Perlindungan Hukum Konsumen Dan Tanggung Jawab Hukum Pelaku Usaha Terhadap Produk Gula Pasir Kadaluarsa Di Kota Surabaya." *Jurnal Magister Ilmu Hukum* 13, no. 1 (June 30, 2023): 109–29. <https://doi.org/10.56943/dekrit.v13n1.152>.
- Sihombing, Josua. "RRI.Co.Id - Menkomdigi: 48 Persen Pengguna Internet Remaja Di Bawah 18 Tahun," 2025. <https://rri.co.id/nasional/1517144/menkomdigi-48-persen-pengguna-internet-remaja-di-bawah-18-tahun>.
- Soekanto dan S Mamudji, Soerjono. *Penelitian Hukum Normatif (Suatu Tinjauan Singkat)*. Jakarta: Rajawali Pers, 2001.
- Souza, Lucas Lopes Ferreira de, and Ana Augusta Ferreira de Freitas. "Consumer Behavior of Electronic Games' Players: A Study on the Intentions to Play and to Pay." *Revista de Administração* 52, no. 4 (October 2017): 419–30. <https://doi.org/10.1016/j.rausp.2017.08.004>.
- Sutedjo, Wagiyati. *Hukum Pidana Anak*. Edited by PT. Refika Aditama. Bandung, 2010. Telecommunication. "15 Games Aksi Android Tahun 2025, Ada Pokemon GO Sampai HoK!," 2025. <https://www.telkomsel.com/jelajah/jelajah-lifestyle/15-games-aksi-android-tahun-2025-ada-pokemon-go-sampai-hok>.
- Tomic, Nenad. "Effects of Micro Transactions on Video Games Industry." *Megatrend Revija* 14, no. 3 (2017): 239–57. <https://doi.org/10.5937/MegRev1703239T>.
- Tutik, Titik Triwulan, and Febrian, Shinta. *Perlindungan Hukum Bagi Pasien*. Jakarta: Prestasi Pustaka., 2010.
- Wei, Pei-Shan, and Hsi-Peng Lu. "Why Do People Play Mobile Social Games? An Examination of Network Externalities and of Uses and Gratifications." *Internet Research* 24, no. 3 (May 27, 2014): 313–31. <https://doi.org/10.1108/IntR-04-2013-0082>.
- Zendle, David, and Paul Cairns. "Video Game Loot Boxes Are Linked to Problem Gambling: Results of a Large-Scale Survey." Edited by George Joseph Youssef. *PLOS ONE* 13, no. 11 (November 21, 2018): e0206767. <https://doi.org/10.1371/journal.pone.0206767>.
- Zendle, David, Rachel Meyer, and Harriet Over. "Adolescents and Loot Boxes: Links with Problem Gambling and Motivations for Purchase." *Royal Society Open Science* 6, no. 6 (June 19, 2019): 190049. <https://doi.org/10.1098/rsos.190049>.