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Dilemma of Legal Policy to Address Cybercrime in the Digital Era

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ABSTRACT
Cybercrime in Indonesia poses increasing challenges due to the rapid advancement of technology and the inadequacy of existing legal frameworks, particularly the Law on Information and Electronic Transactions (UU ITE) and personal data protection regulations. As technologies like artificial intelligence (AI), blockchain, and cryptocurrency evolve, current legal policies struggle to address emerging cyber threats effectively. This study aims to analyze the legal dilemmas in combating cybercrime, focusing on regulatory gaps, privacy protection, and the transnational nature of cybercrime. Using a normative legal research method with legislative and conceptual approaches, the study examines Indonesia's legal responses and compares them with international standards. The findings reveal significant gaps in current regulations, particularly in regulating advanced technologies and facilitating international collaboration for law enforcement. The study also highlights the tension between protecting individual privacy and enabling data access for investigations. To address these challenges, the research advocates for adaptive legal reforms, stronger personal data protection mechanisms, and enhanced international cooperation through extradition agreements and regulatory harmonization. In conclusion, comprehensive reforms are essential to balance digital security, privacy rights, and technological advancements, ensuring Indonesia’s readiness to combat cybercrime while fostering a safe and resilient digital ecosystem.

Introduction

Cybercrime refers to a variety of criminal activities conducted through computer networks and the internet. Forms of cybercrime include online fraud, identity theft, malware attacks, hacking, and misuse of personal data. With the rapid advancement in information and communication technology, cybercrime has become increasingly prevalent and complex, causing negative impacts on individuals, organizations, and nations (Hapsari et al., 2021). In today's digital era, we are witnessing significant

advancements in many aspects of life, including in the fields of economy, education, and health. However, these developments also create opportunities for criminals to exploit technology for illegal gains (Habibi & Liviani, 2020). The presence of the internet and increasing access to digital devices provides a space for individuals to carry out various detrimental actions without geographical limitations. Cybercrime is not only an individual problem; its impacts are also felt by organizations and even nations. For example, cyberattacks on critical infrastructure can disrupt public services and harm the economy (Saputra & Pranoto, 2023).

Addressing cybercrime is essential given the negative effects it has on the economy, security, and individual privacy. This type of crime can not only lead to significant financial losses but also damage reputations, create a sense of insecurity, and instill fear in society (Laksana & Mulyani, 2024). In the legal context, one of the main challenges is adapting existing regulations to keep up with the ever-evolving nature of cybercrime. Laws must be designed not only to protect the rights of victims but also to enforce justice against perpetrators of crime. Furthermore, it is crucial for regulations to include effective preventive mechanisms to ensure that similar incidents do not occur in the future (Sari, 2021). As technology advances, the patterns and methods used in cybercrime are becoming increasingly diverse.

An effective legal process requires the ability to quickly adapt and appropriate regulations to cope with the rapid technological changes. In the context of society, it is crucial to raise awareness of the risks of cybercrime and preventive measures. This aims to create a safe and trustworthy digital environment. The public needs to receive education and information on how to protect themselves from various cyber threats (Purba et al., 2024). Knowledge of good digital security practices can help individuals recognize potential risks and take preventive measures. For example, understanding how to create strong passwords, recognizing phishing emails, and safeguarding personal data privacy are important aspects that should be known. This increase in awareness is not only the responsibility of individuals but also involves the roles of the government, educational institutions, and the private sector. Educational programs and information campaigns should be promoted to reach various segments of society (Meinarni, 2019).

Indonesia has implemented various policies to address cybercrime, including a number of laws and regulations that govern activities in the digital realm. One of the most important regulations is Law No. 19 of 2016 concerning Electronic Information and Transactions (ITE Law) (Budhijanto, 2010). This law encompasses various aspects related to cybercrime and is designed to provide a solid legal foundation in confronting the different forms of crime that arise with the advancement of technology. The ITE Law also aims to protect users of information technology from potential abuse and the risks that may arise (Antoni, 2017). In addition to the enactment of the ITE Law, the Indonesian government has also established agencies and specialized units to handle and investigate cybercrime cases. One of these agencies is the National Cyber and Crypto Agency (BSSN), which is responsible for overseeing and securing the national cyber infrastructure. BSSN plays a crucial role in coordinating between various parties, both government and private, to enhance cybersecurity in Indonesia (Sitompul, 2012).

In the effort to combat cybercrime, a significant dilemma arises in balancing internet freedom and digital security. Strict regulations are necessary to protect society from threats of crime in the cyber world, such as identity theft, fraud, and attacks on critical infrastructure (Soesanto et al., 2023). However, on the other hand, excessive regulation can threaten internet freedom, violate privacy, and restrict individuals' rights

to express themselves freely in the digital space. Overly restrictive measures may raise concerns regarding government censorship and violations of civil rights. In this situation, the government faces a significant challenge in designing policies that provide protection from cybercrime without constraining individual freedoms. One approach that can be taken is to ensure transparency in the implementation of regulations and involve the community in the policy-making process, so that the applied rules remain proportional and balanced (Raodia, 2019).

Additionally, the issue of personal data protection versus government access for law enforcement is also an important aspect of cybersecurity policy. Cybercrime is often difficult to investigate without access to relevant user data, especially in cases involving serious threats such as terrorism or global financial crimes (Mahendra & Pinatih, 2023). However, such access can be abused by authorities, undermining public trust in their privacy in the digital world. Overly strict or excessive surveillance can trigger concerns that the government is using security justifications to spy on or collect data on a mass scale, even on individuals not involved in criminal activities. This dilemma creates a need to establish policies that ensure limited access, closely monitored by independent institutions, to ensure that individual privacy is preserved without hindering legitimate law enforcement efforts (Awaluddin & Mulyana, 2024).

Another aspect that adds complexity to addressing cybercrime is the issue of legal jurisdiction. Cybercrimes often involve perpetrators from various countries, while the laws in each country differ, creating challenges in determining which country has jurisdiction to take action against the criminals (Karim et al., 2023). These regulatory differences often lead to difficulties in extraditing offenders or enforcing consistent penalties. For instance, an offender operating from a country with lax cyber regulations may be difficult to reach by the laws of another country that is a victim of their attack. This challenge highlights the need for closer international cooperation in cyber legislation, enabling countries to share information and enforce laws across borders without infringing on each other's sovereignty.

On the other hand, a dilemma arises regarding the effectiveness versus the flexibility of legal regulations in addressing cybercrime. Regulations that are too rigid may fail to keep pace with the rapid advancements in technology, rendering them quickly outdated and ineffective. Conversely, regulations that are too flexible may grant too much freedom to offenders, creating legal loopholes that can be exploited. In response to this dilemma, the government should design regulations that can adapt to technological changes, for instance, by periodically updating laws or introducing principle-based regulatory mechanisms that are more general, ensuring that laws remain relevant without stifling technological innovation.

While Indonesia’s UU ITE provides a foundational legal framework to combat cybercrime, it fails to address the rapid development of advanced technologies such as AI, blockchain, and cryptocurrency, which are increasingly being exploited for cybercrime. Existing studies predominantly focus on cybercrime’s impact but lack comprehensive analysis of the legal policy dilemmas, particularly in balancing digital security and privacy rights. Furthermore, few studies address the challenges of international collaboration in combating cross-border cybercrime, leaving a significant void in research concerning regulatory harmonization and enforcement across jurisdictions.

This study introduces a multi-dimensional approach to addressing cybercrime in Indonesia by advocating for adaptive legal reforms that incorporate technological

advancements. Unlike prior research, it emphasizes the dual role of legal policy in enhancing law enforcement capabilities while safeguarding personal privacy. The novelty lies in proposing a framework that combines domestic regulatory reforms, robust personal data protection, and international legal collaboration to tackle the transnational nature of cybercrime effectively.

This research aims to identify the limitations of current legal policies in addressing cybercrime and to propose strategies for more adaptive and effective regulations. The study benefits policymakers, law enforcement agencies, and cybersecurity practitioners by offering evidence-based recommendations to strengthen legal frameworks, protect personal data, and foster international cooperation. It also aims to raise public awareness of cybersecurity risks and advocate for a balanced approach to privacy and security, ultimately fostering a safer digital environment for individuals and organizations in Indonesia.

Research Methods

The normative legal research method is used to analyze legal issues related to cybercrime through the study of existing legal norms. This method emphasizes the study of legal documents, such as legislation, court decisions, and legal literature, to understand how legal rules apply in specific contexts. In the context of research on the dilemmas of legal policy on cybercrime, the normative legal method helps researchers examine existing regulations and assess their suitability for the development of cybercrime and the need to protect individual rights and digital security. The analysis is conducted by examining the underlying legal principles of cyber policy formation in Indonesia and comparing them with international standards.

The legislative and conceptual approaches are used to complement the normative legal method. The legislative approach focuses on the analysis of laws and relevant regulations, such as UU ITE, which serves as the legal basis for addressing cybercrime. This approach assists in identifying gaps or shortcomings in the existing legal framework. Meanwhile, the conceptual approach is utilized to understand fundamental concepts in cyber law, such as digital security, privacy, and internet freedom. This approach helps build a deeper theoretical understanding of how the law should respond to the challenges posed by the ever-evolving nature of cybercrime.

Results and Discussions

Challenges Faced in Law Enforcement Against Cybercrime in the Digital Era

Cybercrime has become one of the serious challenges in the digital era, with far-reaching impacts on individuals, businesses, and nations (Ali, 2012). The economic losses caused by cybercrime are significant, ranging from online fraud and identity theft to credit card fraud involving hard-to-trace techniques. Many companies suffer substantial losses due to cyberattacks such as data theft or system destruction, which disrupt operations and require large costs for recovery (Arifah, 2011). In addition, security and privacy have become major concerns, as numerous data breaches have resulted in sensitive information falling into the hands of irresponsible parties. Attacks on critical infrastructure such as banking, energy, or communications have the potential to threaten national security and social stability (Hafidz, 2014). These challenges are exacerbated by the complexity of laws and regulations that often fail to keep pace with the rapid development of technology, creating legal gaps that are exploited by criminals. Effective law enforcement requires coordination among various agencies at both national and international levels,

but the lack of synergy and regulatory gaps often act as obstacles. Additionally, low digital literacy in society leaves many individuals unaware of the risks of cybercrime and the preventive measures that should be taken. This situation worsens the scenario, as the public's minimal knowledge of digital security makes them more vulnerable to attacks. Technical barriers in combating cybercrime also raise concerns, where existing security technologies often fall short compared to the sophistication of the attack techniques used by perpetrators. Furthermore, the limited number of trained human resources in the field of cybersecurity exacerbates the handling of this issue. Identifying and apprehending perpetrators is often difficult as they can operate from various locations using methods that complicate tracking. Meanwhile, slow legal processes and complicated bureaucracy also diminish the effectiveness of law enforcement. Rapid social changes, such as urbanization and globalization, coupled with high internet penetration, further amplify the risks of cybercrime.

As technology advances rapidly, the modus operandi of cybercrime becomes increasingly sophisticated and difficult to detect. Technologies such as artificial intelligence (AI), blockchain, the dark web, and cryptocurrency provide new tools for cybercriminals to conceal their identities and carry out more complex attacks. AI can be used by cybercriminals to automate attacks, such as creating malware that is harder to detect or conducting more personalized phishing using data collected through AI techniques. Meanwhile, blockchain technology and cryptocurrencies offer a high level of anonymity, allowing illegal transactions to occur without clear traces, such as money laundering or purchasing illegal goods on the dark web. These technologies not only complicate law enforcement's ability to detect and track perpetrators but also hinder efforts to stop the flow of illegal funds associated with cybercrime. Additionally, the dark web provides a platform for cybercriminals to operate secretly, accessing black markets that offer hacking services, stolen data sales, and malicious software. The anonymity provided by these networks makes it difficult for law enforcement to trace the origin of attacks, while the decentralized structure makes it nearly impossible to shut down. In this regard, technological developments challenge law enforcement's ability to detect, identify, and take action against cybercriminals, as they must constantly keep pace with the evolving technological innovations in the hands of criminals.

Limitations in human resources, technological infrastructure, and training pose significant challenges for law enforcement in addressing cybercrime. One fundamental issue is the lack of personnel trained with adequate technical skills to face this complex crime. Many law enforcement officials lag behind in understanding the latest technologies, which are often exploited by cybercriminals to conduct attacks. Furthermore, the lack of adequate technological infrastructure, such as digital forensic analysis software or advanced cyber surveillance systems, prevents law enforcement from responding quickly and effectively to ongoing attacks. On the other hand, training and skill development in cybersecurity are often insufficient, creating a significant gap between law enforcement's capabilities and the sophistication of the attacks they face. Rapid technological advancements require continuous skills enhancement; however, limited budgets and resources often hinder this process. The lag in technical skills and the lack of supporting infrastructure for law enforcement result in slow and ineffective responses to cybercrime, allowing criminals to operate more freely.

Existing laws are often not flexible enough to keep up with the pace of the ever-evolving nature of cybercrime. In Indonesia, for example, the Information and Electronic Transactions Law (ITE Law) serves as an important legal foundation for addressing

criminal activities in the digital realm. However, this regulation is often seen as not fully capable of encompassing the increasingly complex and diverse nature of cybercrime, such as cyberattacks that utilize cutting-edge technologies like AI and blockchain. Many articles in the ITE Law are generalized and do not specifically address the details of modern cybercrime modus operandi, creating gaps that can be exploited by criminals. Rapid technological development necessitates laws that can adapt quickly, while the reality of law enforcement is often rigid and slow in the process of regulatory updates. Delays in adapting regulations result in existing rules becoming irrelevant in addressing the latest cyber threats. Consequently, although legal instruments are already in place, efforts at law enforcement often prove ineffective because the regulations were not designed to deal with the innovations emerging in the world of cybercrime. This situation necessitates legal updates that are more responsive to advancements in digital technology.

Cybercrime has a transnational nature, where perpetrators and victims often exist in different jurisdictions, adding complexity to the law enforcement process. Different regulations in each country create barriers in handling cases, as not all countries have the same rules for addressing cybercrime. For instance, what is considered illegal in one country may not be strictly regulated in another, allowing perpetrators to hide in countries with more lenient regulations or lacking extradition agreements. Another major challenge is international coordination. To take action against perpetrators operating in other countries, international cooperation involving various law enforcement agencies and governments is often required. However, extradition processes, regulatory differences, and varying security standards between countries often hinder seamless enforcement actions. Additionally, many countries lack strong infrastructure to handle transnational cybercrime, allowing criminals to exploit these gaps to evade capture. The complexity of jurisdiction requires more intensive international cooperation and the establishment of global standards for more effectively addressing cybercrime.

The Dilemma of Law Enforcement and Legal Protection Efforts in the Enforcement of Cybercrime in Indonesia

The Law on Information and Electronic Transactions (UU ITE) in Indonesia is indeed designed to address cybercrime, yet various legal vacuums exist that prevent this regulation from fully managing the technological advancements and increasingly complex nature of cybercrime. One of the main weaknesses of UU ITE is that this law does not specifically regulate the use of rapidly advancing new technologies, such as artificial intelligence (AI), blockchain, and cryptocurrency. For instance, UU ITE does not detail how AI can be used for both legal and illegal purposes, or how this technology can facilitate crimes such as identity theft or automated cyberattacks. Similarly, blockchain technology and cryptocurrency often serve as tools for cybercriminals to conduct money laundering or illegal transactions on the dark web. The absence of technical regulations to monitor and control these technologies creates considerable difficulties for law enforcement in conducting effective investigations.

Another legal vacuum lies in the issue of user privacy protection in the digital space. While UU ITE contains some provisions regarding data protection, its regulations are not detailed or robust enough to balance the right to privacy with the need for data access for law enforcement. On the one hand, users are entitled to the protection of their personal data, as stipulated in UU ITE and the Personal Data Protection Law. On the other hand, law enforcement often requires access to this personal data to investigate cybercrime cases. This conflict creates a dilemma that existing laws have not completely resolved. In many cases, requests for data access frequently clash with principles of privacy rights,

and UU ITE does not provide clear guidelines on safe boundaries for law enforcement to access personal information without violating individual rights.

Additionally, UU ITE faces serious challenges in terms of international legal jurisdiction. Cybercrime knows no geographical boundaries and often involves offenders located in other countries. This generates dilemmas concerning jurisdiction, where laws in one country may not apply or be effective in dealing with perpetrators operating in another country. While there are some forms of international cooperation, such as extradition agreements, this cross-border legal process remains very limited and slow. The legal vacuums regarding international coordination and global legal standards make it challenging for UU ITE to follow through on cybercrime cases that are transnational in nature. Effective international collaboration and regulatory alignment among countries remains a significant challenge that has not yet been fully addressed in law enforcement against cybercrime. While UU ITE provides an important legal basis for addressing cybercrime, many gaps remain in addressing the modern challenges posed by new technologies, privacy protection, and international jurisdiction. These gaps underscore the need for regulatory reforms that are more flexible and adaptive to developments in technology and the dynamics of cybercrime that continue to evolve.

Legal protection efforts in addressing cybercrime in Indonesia require profound regulatory reforms to overcome the existing legal vacuums. The UU ITE, as the primary legal instrument governing digital activities, has proven to be not fully relevant in confronting the rapid development of technology and the increasingly sophisticated modus operandi of cybercrime. This regulation has not explicitly addressed the use of new technologies such as artificial intelligence (AI), blockchain, and cryptocurrency that are frequently used by cybercriminals. Therefore, reforming UU ITE is necessary to provide a more flexible and adaptive legal framework. This reform can involve adding provisions that explicitly regulate the use of new technologies in a legal context, as well as providing guidelines for law enforcement on how to handle cases of crime that exploit these technologies. Specific regulations that are more flexible are needed to enable the government to respond more quickly to technological innovations without getting caught in rigid rules.

Furthermore, the implementation of the Personal Data Protection Law (UU PDP) plays an important role in strengthening legal protection against cybercrime, particularly regarding privacy. During investigations of cybercrime, conflicts often arise between individual privacy rights and the data access needs of law enforcement officials. The Personal Data Protection Law must be effectively enforced to ensure that individuals' privacy rights are upheld even when authorities require data access for investigations. For this to be more effective, UU PDP must be enforced with a balance between privacy protection and granting powers to law enforcement to conduct legal and proportional investigations. The government should establish clear mechanisms on when and how personal data can be accessed without infringing users' rights, while ensuring strict oversight to prevent the abuse of power.

Additionally, the role of international collaboration becomes a crucial factor in law enforcement against cross-border cybercrime. Given the transnational nature of cybercrime, Indonesia cannot rely solely on domestic regulations. Efforts to build cooperation with other countries, particularly through extradition agreements and collaborative investigations of cybercrime, are essential to cover legal gaps related to jurisdiction. In cybercrime cases, offenders often operate from different countries than the victims' locations, necessitating cross-national collaboration for effective case

management. Indonesia needs to continuously strengthen its international network through bilateral and multilateral agreements to tackle these challenges. On the other hand, harmonizing regulations related to cyber security at the international level should also be pursued to create more uniform standards in handling cross-border cases.

International collaboration is not just a matter of formal agreements, but also about sharing information, resources, and technical expertise in addressing cybercrime. Indonesia can take initiatives to join or strengthen cooperation in international forums that address cyber security issues, such as the ASEAN Cybersecurity Cooperation, INTERPOL, or the G20 Cybersecurity Working Group. Through these forums, Indonesia can enhance its capacity to deal with cyber threats, both from a law enforcement perspective and from a technical standpoint, to face the evolving fraudulent tactics in the digital world.

Conclusion

In facing the increasingly complex challenges of cybercrime in the digital era, Indonesia needs to take strategic steps in legal reform and strengthening legal protection. Reforming the Law on Information and Electronic Transactions (UU ITE) is crucial to address the existing legal vacuums, particularly in regulating the use of new technologies such as artificial intelligence, blockchain, and cryptocurrency. Moreover, the implementation of the Personal Data Protection Law (UU PDP) must ensure a balance between protecting individual privacy rights and meeting data access needs for law enforcement. Adaptive and flexible regulations will enable law enforcement agencies to respond swiftly to the dynamics of cybercrime while maintaining public trust in privacy protection. In addition to domestic regulatory reforms, international collaboration is essential in addressing cross-border cybercrime. Indonesia must actively forge relationships with other countries through extradition agreements and collaborative mechanisms to deal with offenders operating beyond jurisdictional boundaries. Strengthening international networks for cyber law enforcement will not only enhance Indonesia's capacity to address cyber threats but also contribute to establishing better cybersecurity standards at the global level. With a comprehensive approach combining legal reform, strong personal data protection, and international cooperation, Indonesia can better protect its society from the growing threats of cybercrime and create a safe, resilient, and trustworthy digital environment.

References

Ali, I. (2012). Kejahatan terhadap informasi (cybercrime) dalam konteks perpustakaan digital. *Visi Pustaka*, *14*(1), 32–38.

Antoni, A. (2017). Kejahatan Dunia Maya (Cyber Crime) Dalam Simak Online. *Nurani: Jurnal Kajian Syari'ah dan Masyarakat*, *17*(2), 261–274.

Arifah, D. A. (2011). Kasus cybercrime di indonesia. *jurnal Bisnis dan Ekonomi*, *18*(2).

Awaluddin, F., & Mulyana, M. (2024). Tantangan dan Peran Digital Forensik dalam Penegakan Hukum terhadap Kejahatan di Ranah Digital. *HUMANIORUM*, *2*(1), 14–19.

Budhijanto, D. (2010). *Hukum telekomunikasi, penyiaran, dan teknologi informasi: Regulasi dan konvergensi*. Refika Aditama.

Habibi, M. R., & Liviani, I. (2020). Kejahatan Teknologi Informasi (Cyber Crime) dan Penanggulangannya dalam Sistem Hukum Indonesia. *Al-Qanun: Jurnal Pemikiran Dan Pembaharuan Hukum Islam*, *23*(2), 400–426.

Hafidz, J. (2014). Kajian Yuridis dalam antisipasi kejahatan Cyber. *Jurnal Pembaharuan Hukum*, *1*(1), 32–40.

Hapsari, D., Riyanto, S., & Endri, E. (2021). The Role of transformational leadership in building organizational citizenship: The civil servants of Indonesia. *The Journal of Asian Finance, Economics and Business*, *8*(2), 595–604.

Karim, A. R., Ismail, D. E., & Imran, S. Y. (2023). Upaya Kepolisian Dalam Penegakan Hukum Terhadap Pelaku Tindak Pidana Tabrak Lari Di Kota Gorontalo. *Jurnal Ilmu Sosial, Humaniora dan Seni*, *1*(2), 194–198.

Laksana, T. G., & Mulyani, S. (2024). Pengetahuan Dasar Identifikasi Dini Deteksi Serangan Kejahatan Siber Untuk Mencegah Pembobolan Data Perusahaan. *Jurnal Ilmiah Multidisiplin*, *3*(01), 109–122.

Mahendra, Y. C., & Pinatih, N. K. D. S. A. (2023). Strategi Penanganan Keamanan Siber (Cyber Security) Di Indonesia. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, *6*(4), 1941–1949.

Meinarni, N. P. S. (2019). Tinjauan Yuridis Cyber Bullying Dalam Ranah Hukum Indonesia. *Ganaya: Jurnal Ilmu Sosial Dan Humaniora*, *2*(1), 299–308.

Purba, R. E., Maharani, D., BMY, M. A. A., & Al Zahra, R. Z. (2024). Peranan Hukum Positif Dalam Mengatur Cyberspace Untuk Menghadapi Tantangan Dan Peluang Di Era Digital. *Mandub: Jurnal Politik, Sosial, Hukum dan Humaniora*, *2*(2), 167–176.

Raodia, R. (2019). Pengaruh Perkembangan Teknologi Terhadap Terjadinya Kejahatan Mayantara (Cybercrime). *Jurisprudentie: Jurusan Ilmu Hukum Fakultas Syariah Dan Hukum*, *6*(2), 230–239.

Saputra, M. Y. V., & Pranoto, E. (2023). Pencegahan Tindak Pidana Perjudian Online. *PLEDOI (Jurnal Hukum dan Keadilan)*, *2*(1), 20–30.

Sari, U. I. P. (2021). Kebijakan Penegakan Hukum Dalam Upaya Penanganan Cyber Crime Yang Dilakukan Oleh Virtual Police Di Indonesia. *Jurnal Studia Legalia*, *2*(01), 58–77.

Sitompul, J. (2012). *Cyberspace, cybercrimes, cyberlaw: tinjauan aspek hukum pidana*. Pt Tatanusa.

Soesanto, E., Romadhon, A., Mardika, B. D., & Setiawan, M. F. (2023). Analisis dan Peningkatan Keamanan Cyber: Studi Kasus Ancaman dan Solusi dalam Lingkungan Digital Untuk Mengamankan Objek Vital dan File. *Sammajiva: Jurnal Penelitian Bisnis dan Manajemen*, *1*(2), 172–191.