

Public Awareness on Data: Case in Indonesian Elections and Advocating For Cybersecurity Reinforcement

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Abstract: *The rapid pace of internet advancement necessitates heightened vigilance from internet users and the broader community to combat the pervasive adverse effects, including counterfeiting and data theft. This research aims to present a comprehensive analysis of the level of public awareness regarding data protection during the election process in Indonesia. It also explores different suggestions to enhance cyber security in the context of elections, based on previous literature analysis and current observations. Our finding shows the public has been aware regarding the security of their personal data, specifically the Population Identification Number (NIK), due to the revelation of reporting or complaints, as well as extensive verification of personal identities on political party member validation platforms. On the other hand, the issue of NIK data theft must be taken seriously by the government. As a result, this article suggests that policymakers increase public awareness by increasing digital literacy and strengthening data security regulations.*

Keywords: *Public awareness; Indonesian election; cybersecurity; identity protection*

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Introduction

Currently, the extensive use of information and communication technology (ICT) for providing services in many areas of life is evident. The significance of ICT in contemporary culture has significantly transformed the way people engage in obtaining information and learning in a prompt and convenient manner. The effective use of ICT in governance confers several advantages to society, such as heightened worker productivity, the stimulation of novel ideas and collaborations, and the mitigation of expenses associated with information sharing (Ahmed & Ahmed, 2023). But, due to the remarkable growth of information technology, internet-based data breaches are a frequent occurrence, impacting a vast number of people every day. For example, a substantial amount of personal data has been collected, analysed, and shared with third parties (Dinev & Hart, 2004). Despite receiving substantial media coverage, consumers often underestimate the importance of data leakage events. Obtaining information on data breaches can be challenging as they are sometimes disseminated in fragmented portions across several hacker forums or personal websites (Jaeger et al., 2015). Therefore, privacy and data protection are universal concerns of paramount significance globally. Technology is implicated in several privacy issues since it enables the collection and manipulation of data. As users navigate the internet, utilise their cellphones, and engage in online transactions, they inadvertently leave traces of data in many locations. Technology, however, does not intrinsically infringe upon our privacy (Dorrajji & Barcys, 2014). Thus, monitoring and protecting these devices

is in demand. Interconnected data-collecting devices must be authenticated to maintain system credibility. An organisation must be able to identify and track network users and trust the technology that does so (Carnley & Kettani, 2019). Citizenship, state surveillance, security, privacy, and governmentality are key issues in the debate over ID cards, especially those based on national identity systems. Many factors have driven ID card adoption throughout history and across regions. These systems aim to prove legal existence by including identity information on ID cards (Çavlin, 2011). This practice originated when states granted surnames and stable names to individuals (Caplan, 2001; Çavlin, 2011; Lyon & Bennett, 2008).

Public awareness of the importance of data in the digital era is also important in the context of elections. Elections in Indonesia often have data collection problems such as double recording (e.g., one person lives in two regions, or mutase) or inaccurate or out-of-date community data collection (deceased but still recorded). This also needs to be a concern for the public, especially since there is an issue of profiteering as a member of a political party (CNN Indonesia, 2022a, 2022b). This also occurs frequently because internet users are unable to identify for what purpose the provided data will be utilised, as a result of unauthorised data gathering and user ignorance of these technologies (Alguliyev, 2018). Data can be readily integrated into systems that, if open to resharing and reuse, might serve as a source for other systems (Höchtel et al., 2016). However, in the context of elections, there are a minimum of 10 essential components that need to be

fulfilled in order to conduct democratic elections. The ten key components of a democratic electoral process are as follows: 1) the electoral system, 2) the arrangement of electoral districts, 3) the administration of elections, 4) the protection of voting rights and voter registration, 5) the provision of civics education and voter information, 6) the regulation of candidates, political parties, and campaign funding, 7) ensuring media access and protecting campaign speech and expression, 8) facilitating the act of voting, 9) monitoring the election process, and 10) resolving disputes that may arise during elections. (Dwijayanti & Edwinarta, 2023; Rosanti, 2020). This shows that the protection of voter data is also an important component of healthy elections.

Thus, this paper seeks to highlight and provide an overview of the extent of public awareness of data protection during the election process in Indonesia and provide recommendations on how to strengthen cybersecurity during elections. The act of citizens participating in elections to exercise their right to vote is a kind of legitimacy that a political system holds over its citizens. Evidently, the democratic system of a nation improves proportionally with the increased participation of its inhabitants in exercising their right to vote. This is predicated on the fundamental notion that widespread endorsement in national elections functions as the foundation of a democratic political framework (Yani et al., 2017). Thus, this study can be learning material for policymakers for the next election.

Understanding Importance of Data Awareness

Understanding the importance of data awareness is important in the digital

transformation era, where amounts of information, both public and personal, are generated and processed daily. A wide variety of communication strategies are frequently utilised by governments all over the world in order to raise awareness among their citizens regarding Open Government Data (Berends et al., 2020; Chokki, Simonofski, & Frénay, 2022; Michael et al., 2014; OECD, 2019) (Chokki, Simonofski, Frénay, et al., 2022). This is a sign that technological advances also need to be accompanied by increased awareness of open data. Data awareness is important because, in the use of the internet, users usually focus on interactions in the media, such as sharing personal experiences with other users or looking for information about something, and ignore the importance of safeguarding personal data (Höper & Schulte, 2023). Meanwhile, the negative impact of the internet is becoming increasingly negligible.

Data awareness is more than just the vague idea that data collection is happening and personal data is being processed for specific purposes (Höper & Schulte, 2023). Data awareness involves recognising the value and significance of data as well as comprehending the potential risks and opportunities associated with its collection, storage, and utilization. In various fields, including business, healthcare, education, and technology, being aware of the data at one's disposal empowers individuals and organisations to make informed decisions. It enables the identification of trends, patterns, and insights that can drive innovation and efficiency. Data awareness also discusses how people have digital literacy and how the use of data carried out without permission has a further impact on various sectors. People who do not have awareness of the

importance of data protection feel that cyberterrorism or identity theft is not a dangerous thing, but vice versa (Gross et al., 2017). Data theft in the economic sector, for example, identity theft for online loan applications, has occurred several times in the community (Bestari, 2022; CNN Indonesia, 2023). This can affect the personal lives of victims of identity theft. Thus, as data plays an increasingly integral role in shaping our world, recognising its importance has become critical to navigating the complexities of an information-driven landscape.

Method

This study seeks to highlight and provide an overview of the extent of public awareness of data protection during the election process in Indonesia and provide strategies on how to strengthen cybersecurity during elections. So that the use of literature reviews from previous studies was carried out by limiting the discussion to public awareness of data from various international literature sources in the last 10 years. By combining results and viewpoints from multiple empirical findings, a literature review may answer research problems with a power that no one study has, and it can also serve to offer an overview of areas where the research is divergent and multidisciplinary (Snyder, 2019). Literature reviews provide substantial contributions to the conceptual, methodological, and thematic advancement of several fields (Hulland & Houston, 2020; Palmatier et al., 2018; Paul & Criado, 2020). An examination of the expanding body of literature can offer a comprehensive understanding of the present state of research and assist researchers in identifying prevailing

research patterns in this field (Scott, 2021). Research on similar topics using a literature review has also been conducted before (Baxter, 2011; Henriksen-Bulmer & Jeary, 2016; Newman & McNally, 2005; Sung & Park, 2021). To sharpen the discussion analysis, this study also uses an observational approach on Google Trends and Twitter social media to see how the public views data security during the election period in Indonesia. Google Trends is a publicly available web tool from Google, Inc. that displays the volume of searches generated by a specific search term over a certain period of time in proportion to the maximum number of searches conceivable at that time (<http://trends.google.com/trends>) (Chumnumpan & Shi, 2019; Kam et al., 2019). Data is taken from Google Search, a great platform for tracking customers' information-seeking actions that also provides a prompt reflection of its users' requirements, desires, and interests (Jun et al., 2018). The combination of these two approaches reinforces the findings of the initial picture of conditions in society related to identity security awareness during the election period.

Result and Discussion

Public Awareness of Data and Government Response in The Case of Elections in Indonesia

Technological developments in the global scene also found a threat in the dissemination of public information on social media, surveillance of users, fraudulent acquisition of personal identification, deceptive online tactics, and malicious software such as viruses, spyware, trojans, and keyloggers, all of which pose risks to user information (Jeske & Van Schaik, 2017; Rocha Flores et al., 2014). The same thing also happens in Indonesia, where data theft,

falsification, manipulation, and duplication, often known as cloning, are all instances of population data misuse in the KTP-EL system (Tangkilisan et al., 2022). The problem of NIK and KTP in Indonesia is indeed very complicated, starting from the case of corruption in the procurement of E-KTP (Zulfitri et al., 2023) to the description of NIK data theft. Over the past decade, governments worldwide have adopted Open Government Data (OGD) policies to share their data and encourage citizen participation. Although much data is shared, few citizens are aware of its existence and value. (Chokki, Simonofski, Frénay, et al., 2022). These apps include platforms designed to make it easier for consumers to access government data as well as concrete demonstrations of what can be done with publicly available data (Berends et al., 2020; Chokki, Simonofski, Frénay, et al., 2022; European Environment Agency, 2019).

This data disclosure then becomes a danger gap for the community, where there is profiteering from the identities of NIK people who are registered as members of political parties. People's ignorance is often used for the benefit of several parties. Because of the potential for anti-regime mobilisation, the low level of public knowledge of electoral fraud is especially crucial under authoritarian governments (Reuter & Szakonyi, 2013). In order for political parties in Indonesia to be eligible to compete in general elections, they must first be able to successfully complete the registration and verification process that is conducted by the General Elections Commission (KPU) (Maad, 2023). In the registration and verification process using the Political Party Information System (Sipol) application (Maad, 2023; Wisanggeni, 2021). Sipol is a platform provided by the

KPU to verify candidates participating in general elections by uploading registration and verification files (Astutik & Angin, 2023; Azmy & Harahap, 2022). In registration and verification, there are several requirements that must be met by political parties, one of which is related to membership, which must be at least one thousand people or one thousandth of the total population in the management of political parties, as stipulated in Article 7 letter F of the Election Law. However, in its implementation, the membership provision causes problems with the rampant membership obtained from the profiteering of people's names using the National Identity Number (NIK) and occurs massively in various regions in Indonesia (Antara News, 2022; Maad, 2023).

In the 2024 elections, especially in the stage of factual verification of the management and membership of political parties, his relationship with Sipol was also found to have a number of problems. Among them, the verification found a number of false and manipulative data and a lot of double data caused by the transfer of party administrators, which showed that political parties did not have sincere intentions in order to meet the verification requirements as stipulated (Pandey et al., 2023). Behind this case is the fact that a number of residents have multiple ID cards. This is actually used by the elements to inflate the voice (Samihardjo et al., 2021). In addition, it was found that there were still data on political party members in Sipol that did not match the copy of the Identity Card (KTP) submitted. At this stage, there were also many members of the political party from the sampling who did not recognize or support their political party, because they did not feel they were members of the political party and only knew about it

at the time of factual verification by the KPU, and it was found that there was profiteering of the National Identity Number (NIK) recorded in Sipol (Pandey et al., 2023). Name profiteering by political parties has implications for losses for the community in various public interests, such as fulfilling the requirements to register as candidates and members of the Indonesian National Army (TNI), Civil Servant Candidates (CPNS) or Civil Servants (PNS), Government Employees with Work Agreements (PPPK), and companies that have provisions related to non-involvement in political parties such as administrators and/or members of political parties (Maad, 2023; Sultan et al., 2022). The phenomenon of profiteering people's personal data at the 2024 election stage is an indisputable fact, especially in the 2024 election stage,

especially the registration and verification period for candidates participating in the election and candidacy for DPD members. In fact, when guiding the population administration law (Law No. 23 of 2006), Article 85 explains, "If the state has an obligation to store and provide protection for residents' personal data," 14. Then, in the regulation of Article 1, it states, "Personal data must be stored, maintained, and maintained truthfully and confidentially."The state must have a role to play in protecting the personal data of its citizens (Deviana et al., 2023).

Observations on the extent of public awareness of data security can also be seen from data obtained from various sources. Based on data from Bawaslu DKI Jakarta as of August 29, 2022, Bawaslu received a total of 20 complaints from the public questioning the profiteering of NIK without prior permission.

Table 1. Data of Complaint as of 29 August 2022

| No. | Region | Number of Complaints | Cause of complaint |
|-----|----------------------|----------------------|---|
| 1 | DKI Jakarta Province | 0 | 1. NIK is registered with Sipol but has never joined a political party; |
| 2 | East Jakarta | 0 | |
| 3 | Central Jakarta | 5 People | 2. NIK has registered despite never been solicited or asked by any political party; |
| 4 | West Jakarta | 6 People | |
| 5 | North Jakarta | 1 Person | |
| 6 | South Jakarta | 7 People | 3. Take issue with political parties using his NIK. |
| 7 | Kepulauan Seribu | 1 Person | |
| | Jumlah | 20 People | |

Source: Bawaslu DKI Jakarta as of 29 August 2022 in (Anang, 2022)

Furthermore, looking at the news in the media and online complaint reports, there were 20,565 individuals' personal information registered by political parties in the Political Party Information System (SIPOL) to meet the membership criteria for potential participants in the 2024 election that was conducted on December 7, 2022. (CNN Indonesia, 2022b). Previously, one of the

non-governmental communities engaged in voter education, the Voter Education Network for the People (JPPR), reported that 95.8 percent of the 24 political parties participating in the 2024 general election used the names of KPU Political Committee members. The aforementioned findings were obtained from the Command Post for 'Name Protection in Civil Affairs,' which was

formed by JPPR on August 30, 2022. The purpose of creating this post was to receive grievances from individuals whose identities had been misused by political organisations. A total of 60 individuals lodged a protest, alleging that political parties were using their identities. (CNN Indonesia, 2022a).

This situation was then addressed by the General Elections Commission (KPU) by providing access to the public to check their respective identity numbers (NIK) to ascertain whether they were registered as members of political parties on the "Check Members & Management of Political Parties as Candidates for Election Contestants" tool on their official website at (<https://infopemilu.kpu.go.id/Pemilu/Ca>

ri_nik) (Murti & Rizkika, 2023; Wulandari & Herawati, 2023). This represents a significant effort to enhance transparency and empower the community.

Furthermore, this study then analyzed public sentiment related to sipol kpu. The results in the last 6 months, from June to December 2023, showed that there were 107 tweets discussing the SIPOL KPU. Of these, 71 tweets came from personal accounts, 26 tweets came from KPU accounts, and 10 tweets came from mass media accounts. An analysis of the most-mentioned keywords was also carried out, and it was found that complaints of name profiteering were also widely mentioned, as shown in the following table.

Table 2. Amounts of Keywords in Tweets of “Sipol KPU”

| <i>Amounts</i> | <i>Keywords</i> | <i>Amounts</i> | <i>Keywords</i> |
|----------------|------------------|----------------|------------------|
| 113 | <i>kpu</i> | 18 | <i>politik</i> |
| 85 | <i>sipol</i> | 16 | <i>ada</i> |
| 34 | <i>partai</i> | 16 | <i>parpol</i> |
| 27 | <i>saya</i> | 14 | <i>kabupaten</i> |
| 21 | <i>anggota</i> | 14 | <i>pemilu</i> |
| 21 | <i>aplikasi</i> | 14 | <i>psi</i> |
| 20 | <i>sistem</i> | 13 | <i>nik</i> |
| 19 | <i>data</i> | 13 | <i>provinsi</i> |
| 19 | <i>informasi</i> | 12 | <i>nama</i> |
| 19 | <i>kpu_id</i> | 12 | <i>sebagai</i> |

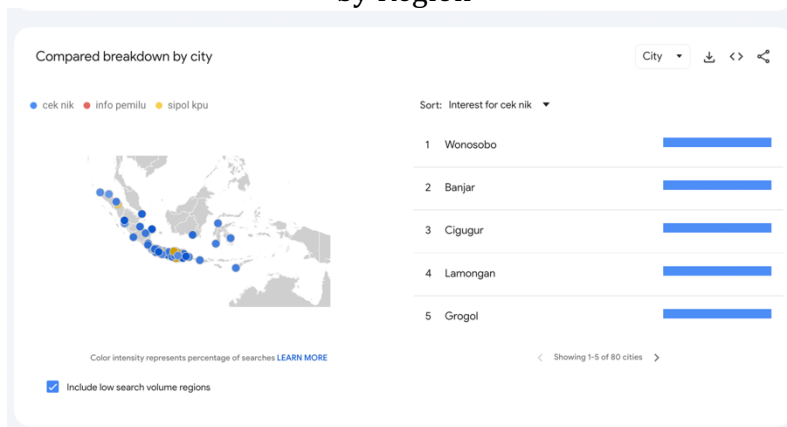
Source: Author`s Primary Data (2024)

Source: Google Trends (2024)

As shown in the picture, there has been an increase in NIK checks from the beginning of December to their peak on December 11, 2023, ahead of the first presidential debate on December 12,

2023. This can happen because of an increase in public awareness about their participation in the elections that will take place soon in 2024.

Figure 3. Trends of User`s Web-Searching regarding Checking Personal Identity Number by Region



Source: Google Trends (2024)

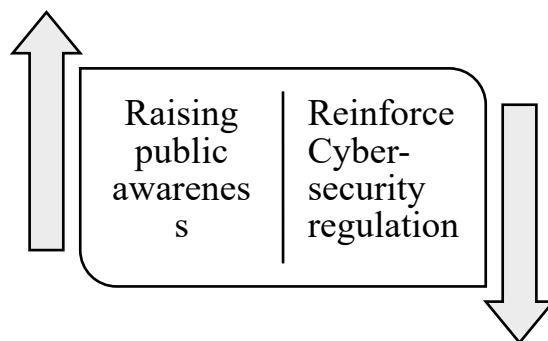
Next, looking at the distribution of internet users who are looking for this information, it can be seen that information about checking NIK has not reached all of Indonesia, with it concentrated in Java and Sumatra, as well as several regions in Sulawesi and Kalimantan and in Nusa Tenggara. In the picture, it also appears that several areas, such as Wonosobo, Banjar, Cigugur, Lamongan, and Grogol, dominate the area that searches "check nik" on Google.

Based on cross-checking the variety of data, this shows that Indonesians have a fairly high level of awareness of their personal data during the election period. Although it also appears from the data that there are areas that do not seem to have captured the level of awareness regarding data security.

Enhancing Citizen Role and Cybersecurity Reinforcement

Currently, many internet users lack awareness of the potential consequences of sharing personal information online, and only a small number of people possess the necessary knowledge and skills to participate in such discussions. Seeing the complexity of elections this year, the people are required to have knowledge, understanding, and awareness from the community itself (Erawati et al., 2020). Individuals may possess an understanding that their personal information is being gathered on the internet, although their awareness and understanding of the potential outcomes of revealing such data are restricted (Sander, 2020).

Figure 4. Proposed Action on Data Security Awareness



Source: Authors Analysis. 2024

The operation of the Internet necessitates the utmost importance of security and privacy in its day-to-day activities. The primary trends being implemented in new and developing applications, which cater to various activities such as leisure, communication, commerce, and online payments, are privacy, data security, and secure user identification. (Laskowski, 2017). Individuals should be aware of the aforementioned risks and develop the ability to critically evaluate data collection methods. Nonetheless, in societies where data is collected and analysed extensively, only a small number of people have this knowledge and the ability to express their ideas and fulfil their democratic role (Sander, 2020). Thus, it is essential to educate individuals, including young people, about their obligations while also offering appropriate guidance on how they might actively participate in public or semi-public aspects of the Internet (Camacho et al., 2012). In all instances, the most crucial factor is the human element, specifically the user's comprehension of the threats and adherence to safety regulations. Lack of action and refusal to acknowledge potential dangers can lead to severe consequences, such as the loss

of confidential information. (Laskowski, 2017). Some recent studies in America, Europe, and Germany have consistently highlighted a lack of understanding about data, algorithms, and online privacy among internet users (Berka & Creamer, 2018; Grzymek & Puntschuh, 2019; Müller-Peters, 2020; Sander, 2020). Therefore, it is essential to educate young individuals about their obligations while also offering appropriate guidance on how they might actively participate in public or semi-public aspects of the Internet (Camacho et al., 2012). Citizens' involvement with media and how they develop their agency have long been explored through the perspective of written, media, and information literacy, or digital 'literacy' (Carmi et al., 2020). Otherwise, users with poorer Internet technical literacy have heightened concerns about privacy due to their belief that they lack the ability to protect their computer and handle intrusive equipment that collects personal data (Dinev & Hart, 2004). Consequently, we posit that Internet users who actively participate in social activities and possess a heightened degree of social consciousness will possess greater information regarding the ongoing discourse on privacy, privacy rules, the potential privacy hazards linked

to the Internet, as well as the legal consequences of privacy breaches and instances of identity theft. As a result, these users would get a more thorough understanding of privacy and its relevance in social circumstances. Because the issues surrounding internet privacy are closely linked to the technological proficiency, social engagement, and understanding of internet users (Dinev & Hart, 2004). To investigate how data literacy and misinformation interact, we highlight three ways data citizenship might shed insight on citizens' digital media use:

1. Focusing on networks rather than individuals
2. Understanding key media aspects
3. learning proactive skills instead of passive engagement (Carmi et al., 2020; Yates et al., 2020).

Enhancing those actions should also be fully supported by the government. Amidst an unprecedented period of worldwide transformation, governments must enhance their ability to accurately anticipate, strategize for, and effectively manage forthcoming shifts (van Ooijen et al., 2019). Research indicates that adequately addressing customers' privacy concerns leads to a decrease in their sensitivity to risk factors. The incorporation of ICTs into public administration has increased the state's ability to handle and process large volumes of personal data at the same time, resulting in the rise of e-governance and, eventually, more citizen-centric public services. The resolution emphasised the importance of the government's commitment to protecting citizen data privacy (Tsulukidze et al., 2019). Anticipatory governance refers to governments' purposeful and systematic

efforts to examine and plan for the future in order to influence current policy decisions. It enables governments to adopt proactive steps rather than reactive ones, relying on factual information rather than personal experience and traditional practices (van Ooijen et al., 2019). Existing privacy and data protection rules must be followed (Höchtel et al., 2016). Processing personal data is a routine duty for government agencies, and data security is emphasised over stakeholder involvement (Breuer & Pierson, 2021). Ultimately, digital identification technology must strictly comply with regulatory rules around data protection and privacy. Hence, it is imperative for domestic laws that establish digital identity programmes to explicitly delineate their scope, the measures they implement to secure data storage, retention, utilisation, erasure, and third-party entry, as well as the safeguards against capriciousness and misuse. (Alguliyev, 2018). In order to meet the demands of the public for elections that are both secure and fair, it is imperative to enhance the regulations that safeguard voter data (Kobach, 2012). Then, in this context, the KPU, as the manager of the information system containing population data and personal data, must be truly committed to being responsible for maintaining the confidentiality of the data. The process of digitising data must continue to be developed by paying attention to its security in addition to efficiency. Because the purpose of modernization and digitalization is not only to make it easier but also to maintain human rights in the private sphere, this can be guaranteed as a mandate from the constitution (Deviana et al., 2023).

Conclusion

This study illustrates the importance of public awareness of the dangers of sharing personal data in today's digital era. In the context of elections in Indonesia, this study reveals that there are many records of incidents related to irresponsible use of personal data. Answering research questions related to the extent of public awareness of data protection during the election process in Indonesia. The findings show how the public has a fairly high level of vigilance, from efforts to find data security information they have to efforts to make complaints as victims of identity profiteering without their knowledge. This needs to be of particular concern to policymakers, so this study also provides suggestions on how to strengthen cybersecurity during elections. That increasing public awareness of data security also needs to be improved, but the government must also increase supervision of the data collection process of political party members. The study was limited to the use of data from social media and previous literature. So further studies that can map the level of public awareness of data security also still need to be done.

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