



## The Influence of Digital Security Awareness and Psychological Factors on Digital Technology Use Among Gen Z

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ARTICLE INFO	ABSTRACT
<b>Keywords:</b> Digital security awareness Generation Z Mental health Self-regulation Cyber risks	<b>Background/Context:</b> The rapid growth of information technology has shaped the behavior and mental health of Generation Z, a group deeply connected to digital platforms. This development provides many opportunities for communication and learning but also introduces significant risks such as identity theft, online fraud, and cyberbullying, which may increase their psychological vulnerability. <b>Objective/Purpose:</b> The purpose of this study is to analyze the influence of digital security awareness and psychological factors on technology use among Generation Z, as well as its implications for their mental well-being. <b>Method:</b> A quantitative research method was applied with 106 respondents from Universitas Negeri Makassar. Data were collected through questionnaires covering aspects of personal data protection, safe online interaction, and healthy internet use. <b>Results:</b> The results show that although Generation Z exhibits a relatively high awareness of digital security, excessive use of technology, particularly during the pandemic period, has led to increased levels of anxiety and feelings of insecurity. <b>Conclusion:</b> This study concludes that digital self-regulation is a key factor in maintaining mental health when engaging with technology. Support from parents, educators, and policymakers is essential to guide young generations in managing digital risks effectively and ensuring that technological benefits are maximized without compromising psychological well-being.
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### INTRODUCTION

The development and advancement of information technology have had a significant impact on various aspects of life. Every year, increasingly sophisticated and modern technological innovations bring new systems that change the way we interact, work, and manage information (Nasution, 2017). This technology can now be accessed through various devices, such as computers, mobile phones, and smart devices, used in various places, such as schools, offices, and homes (Herawati et al., 2024). This provides a great opportunity for Generation Z to become a highly technologically savvy generation. However, behind these opportunities, there are major challenges that must be faced, especially related to safe and effective digital literacy (Putra & others, 2024). As technology use increases, the threat of cybercrime is also increasingly real, such as identity theft, intimidation, fraud, and online theft that often occur on digital communication platforms (Kuswulandari et al., 2023). Although various parties have made efforts to raise awareness about the importance of digital privacy and security, these challenges remain. Therefore, Generation Z needs to be equipped with adequate knowledge and skills to manage their digital identities wisely. In this context, the role of parents, educators, and policymakers is very

crucial in creating a safe and supportive environment for the younger generation in using technology responsibly (Yosida, 2024).

Previous research conducted by Mekler (2022), found that Generation Z, who grew up in the digital era, is highly vulnerable to various types of cybercrime, such as identity theft and account hacking. This situation not only affects their digital security but also often triggers feelings of anxiety and insecurity, which in turn can worsen their mental health (Martha, 2024; Slonje & Smith, 2018). Furthermore, the fear of becoming a victim of cybercrime adds to the feeling of uncertainty and significantly impairs their mental well-being. Another study by Almansoori et al. (2023) & Jubaidi & Fadilla (2020) also supports these findings, showing that cybercrime not only results in financial losses but also has a significant psychological impact. When someone feels threatened or has been a victim of cybercrime, feelings of distrust in cybersecurity are strengthened. This is especially relevant for Generation Z, who are highly dependent on technology, as they are prone to prolonged stress and feelings of helplessness, which ultimately worsen their mental health.

Furthermore, relevant research conducted by Pahrurroji et al. (2023) found that increased digital technology use during the pandemic also impacted the mental health and social behavior of Generation Z. Specifically, adolescents' increased reliance on social media interactions during the pandemic led to them becoming less physically active and experiencing increased feelings of insecurity. Consequently, decreased physical activity coupled with excessive digital content consumption exacerbated their mental health, particularly related to anxiety and self-doubt. Overall, these studies indicate that cybercrime and excessive digital technology use are important factors negatively impacting the mental health of Generation Z. The combination of these two factors increases anxiety, uncertainty, and exacerbates existing mental health conditions. While previous research has provided a good understanding of the impact of digital technology use on adolescent mental health, several questions remain unanswered. For example, how can self-limiting digital media use reduce the negative impact on adolescent mental health, particularly related to feelings of insecurity and other psychological disorders? How does cyberbullying affect adolescent mental health, and what steps can be taken to mitigate its negative effects? These questions will be the focus of this research and may provide new insights into how to protect adolescent mental health amidst the rapid use of digital technology.

This research is important, especially for students majoring in Informatics and Computer Engineering, because they will work with various digital technologies and software, and have a deep understanding of the impact of technology on the mental health of users, including Generation Z who are highly connected to technology. As developers and users of technology, students need to be trained to identify existing risks and develop solutions to mitigate the negative impacts of technology. In addition, this research encourages students to pay more attention to aspects of digital security and privacy in their work, and develop systems that can protect users from the threat of cybercrime. By understanding the role of psychological factors and digital security awareness, students can design applications or systems that are more responsive to mental health issues and cybercrime. The purpose of this study is to understand the influence of digital security awareness and psychological factors on the use of digital technology by Generation Z, and explore how these two factors increase their vulnerability to cybercrime and worsen their mental health. This study also aims to analyze the application of self-regulation theory to reduce the negative impact of cybercrime and excessive use of digital technology, and provide insight into the importance of self-management in the use of digital technology.

## **METHOD**

This study used a quantitative approach with a cross-sectional design to assess the influence of digital security awareness and psychological factors on the use of digital technology among Generation Z (Abduh et al., 2023; Creswell & Creswell, 2018). The research subjects were students of Makassar State University with a total of 106 respondents. The sample was obtained through the distribution of

an online questionnaire through campus social media for two weeks in November 2024. The research instrument was a Google Forms-based questionnaire consisting of 14 with a four-point Likert scale, ranging from Strongly Agree to Strongly Disagree (Sarstedt et al., 2021). This questionnaire was compiled based on a literature review and has undergone content validation by experts to ensure the suitability of the indicators with the research variables.

The collected data was then analyzed using Jamovi software. The analysis phase included data cleaning, descriptive analysis to calculate averages and percentages, and data visualization in tables and graphs (Martias, 2021; Rifka Agustianti et al., 2022). Inferential analysis was also conducted to examine the influence of digital security awareness and psychological factors on digital technology use. Google Forms facilitated instrument distribution and data collection, while Jamovi was chosen because it supports transparent statistical analysis, allowing for verification and replication of research results in subsequent studies.

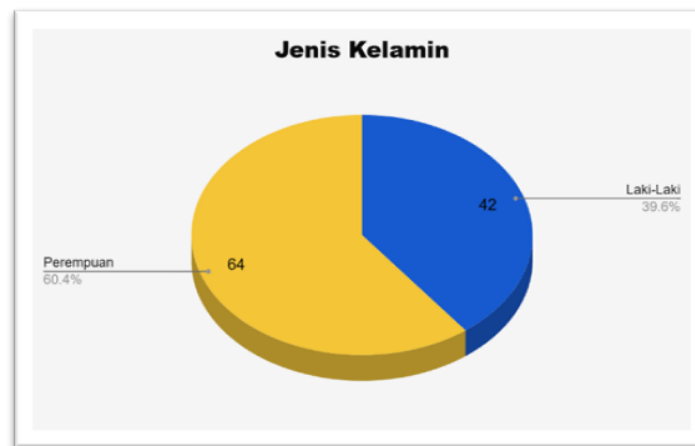
**Table 1.** Research instrument

No	Aspect/Sub-Factor	Statement	Reference
1	Personal Data Protection (PDP)	I avoid sharing personal information on social media	12
		I only provide personal information on trusted websites	
		I keep copies of important information in digital files or cloud storage	
		I am cautious when sharing my location while using online applications	
		I use different passwords for various social media accounts	
2	Secure Relationships (SR)	I decline friend requests from people I do not know personally	12
		I block people who try to harm me on social media	
		I am cautious when communicating with people I have just met online	
		I avoid joining groups or forums that are unfamiliar on the internet	
		I do not share personal photos or videos with people I have just met on social media	
3	Healthy Internet Use (HIU)	I limit online time to maintain mental health	12
		I feel comfortable being offline for several hours	
		I avoid internet use that makes me stressed or anxious	
		I manage daily social media usage time	

The PDP aspect focused on individual efforts to protect personal information, such as avoiding the disclosure of private data, using trusted websites, and applying different passwords for multiple accounts. The SR aspect emphasized the importance of building safe interactions in digital spaces, including rejecting suspicious friend requests, blocking harmful individuals, and avoiding risky online groups or forums. Meanwhile, the HIU aspect highlighted the practice of maintaining a balanced and healthy online lifestyle, such as limiting screen time, feeling comfortable being offline, and managing daily social media use. These statements were adapted and refined from previous research (Peraza-Balderrama et al., 2024), ensuring their relevance to the context of Generation Z students.

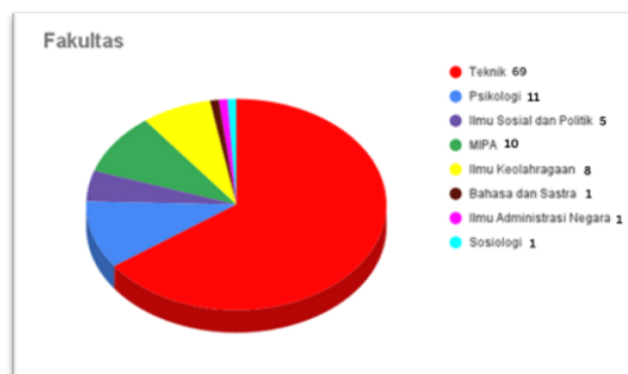
## RESULTS AND DISCUSSION

Based on the results of the questionnaire distribution, respondent data were obtained which were grouped according to gender, faculty, and student class. In terms of gender, there were 64 female respondents and 42 male respondents (Isma et al., 2024).



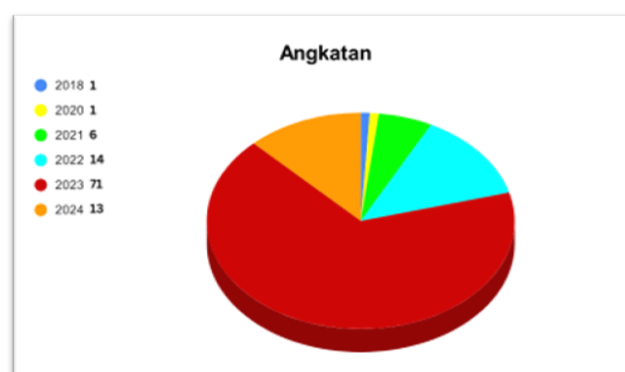
**Figure 1.** Distribution of Respondents by Gender

Furthermore, demographic data on respondents based on faculty origin indicates that the largest participation came from students from the Faculty of Engineering, followed by several other faculties with smaller numbers. This suggests that the research was dominated by students with engineering backgrounds, although it also involved respondents from various other faculties. This diversity of faculty origins reflects cross-disciplinary representation, which can enrich the research findings.



**Figure 2.** Distribution of Respondents by Faculty

Furthermore, the distribution of respondents by year shows a greater tendency towards new students. This condition also indicates that the majority of the respondent group represents active students who are still studying full-time in the current semester (Isma et al., 2024).



**Figure 3.** Distribution of Respondents by Generation

This study employed descriptive analysis to describe quantitative data obtained from a questionnaire regarding students' perceptions of digital security. Three variables measured in this study were personal data protection, secure relationships, and safe internet use. Irrelevant data were removed, and responses were coded into numbers. Jamovi was used to analyze the mean, median, mode, total, and maximum and minimum values. The results of the analysis were presented in tables and graphs to facilitate visualization of data distribution and interpretation of relationships between variables. The table below presents descriptive data that illustrates various aspects or factors relevant to this study. This data provides an overview of the characteristics of the variables studied, including distribution, central tendency (mean, median, mode), and variability (minimum and maximum). Thus, this table serves as a basis for a deeper understanding of the patterns and relationships between the variables in the study.

**Table 2.** Descriptive Data Analysis Results

	PDP	HA	PIS
<b>N</b>	106	106	106
<b>Missing</b>	0	0	0
<b>Mean</b>	3.98	4.05	3.47
<b>Median</b>	4.00	4.00	3.40
<b>Mode</b>	4.00	5.00	3.00
<b>Sum</b>	422	429	368
<b>Standard deviation</b>	0.705	0.763	0.745
<b>Variance</b>	0.497	0.583	0.555
<b>Minimum</b>	2.00	1.60	1.60
<b>Maximum</b>	5.00	5.00	5.00

Based on the descriptive analysis results in Table 2, the three variables Personal Data Protection (PDP), Healthy/Secure Relationships (HA), and Practices of Internet Safety (PIS) have relatively high average scores of 3.98, 4.05, and 3.47, respectively. This indicates that students' perceptions of digital security are generally good, particularly regarding personal data protection and healthy digital relationships, which achieved average scores above 4. The median and mode, which tend to approach the mean, also demonstrate a relatively balanced data distribution without any extreme differences. The range of minimum and maximum scores indicates variation in perceptions among respondents. For example, for the HA and PIS variables, some respondents gave scores as low as 1.6, indicating that some students still do not feel fully secure or practice good digital behaviors. However, the standard deviation, which ranges from 0.705 to 0.763, indicates a moderate level of diversity in responses, allowing the data to be interpreted as a consistent representation. Overall, these findings provide a picture that the majority of students have positive digital security awareness and practices, although a small number still show vulnerabilities in certain aspects.

This study revealed that Generation Z students' awareness of digital security is still lacking, especially regarding personal data protection and safe internet use. 53.2% of respondents rarely utilize more than one security feature, while 38.3% use the same password across multiple platforms, increasing the risk of digital crimes such as hacking and data theft. These findings are supported by research (Syafuddin et al., 2023), which highlights digital awareness among Indonesian students and the importance of education regarding password management and personal data protection. Research Yosida (2024) also supports this, showing that although Generation Z is aware of the privacy risks associated with oversharing, they are still encouraged to share personal information for social

validation. Furthermore, research Waluyoajati & Swari (2024) highlights the negative impacts of digital technology use on Generation Z's mental health, such as anxiety and stress, thus emphasizing the importance of balance and awareness in utilizing technology. This third study reinforces the urgency of increasing education regarding digital security and balance in the use of technology to protect Generation Z's data and mental health.

The findings of this study are significant because they provide a deeper understanding of how digital awareness and psychological factors can help mitigate the negative impact of technology use on the mental health of Generation Z. In the digital era, where young people rely heavily on technology for various aspects of their lives, awareness of the importance of digital security and the ability to manage technology use are key to maintaining mental well-being. The results of this study confirm that awareness of personal data protection, safe digital relationships, and healthy internet usage practices have a significant influence on technology usage behavior among Generation Z. These findings are in line with previous studies, such as Mekler (2022) and Almansoori et al. (2023), which highlight Generation Z's vulnerability to cybercrime threats and the psychological impact of excessive technology use. Our research confirms that threats such as identity theft and account hacking not only impact digital security but also increase anxiety that contributes to mental health disorders.

Furthermore, research Pahruraji et al. (2023) also shows that the pandemic has accelerated the younger generation's dependence on digital technology, resulting in decreased physical activity and increased feelings of insecurity among adolescents. Unlike previous studies, this study provides a more comprehensive picture by linking digital awareness including personal data protection, safe relationships, and healthy internet use with aspects of mental health. Thus, this study adds a new perspective on the role of digital awareness and self-regulation as protective factors against the negative impacts of technology. However, this study has limitations. The sample only included students at Makassar State University, so the results are not necessarily representative of all Generation Z in Indonesia. Furthermore, the quantitative approach through questionnaires limits the scope for exploring more complex psychological aspects, as it does not include in-depth interviews or direct observation. Based on these limitations, further research is recommended using a wider sample and a mixed methods approach to provide a more comprehensive understanding. Furthermore, it is necessary to develop digital literacy programs that emphasize mental health and self-regulation so that Generation Z is better prepared to face the risks of cybercrime and is able to maintain their psychological well-being in their daily use of technology.

## CONCLUSIONS

This study shows that although college students have a relatively high level of awareness regarding personal data protection, safe relationships, and healthy internet use, there is considerable variation in their understanding and practices regarding these issues. Data analysis indicates that while students understand the importance of personal data protection and safe relationships, there are significant differences in their practices regarding healthy internet use. This indicates the need for increased educational efforts and stronger policies regarding the safe use of digital technology on campus. Therefore, students need to not only be aware of the importance of data protection and safe relationships, but also be able to consistently implement them in their daily lives. Furthermore, the psychological impacts of unhealthy digital technology use, such as increased stress or mental health disorders, should also be a major concern. Therefore, campuses need to take more proactive steps in providing education and support to students to prevent potentially greater negative impacts and create a safe and supportive environment for students to face the challenges of the digital world.

## REFERENCES

- Abduh, M., Alawiyah, T., Apriansyah, G., Sirodj, R. A., & Afgani, M. W. (2023). Survey design: Cross sectional dalam penelitian kualitatif. *Jurnal Sains Pendidikan Dan Komputasi*, 3(1). <https://www.semanticscholar.org/paper/Survey-Design%3A-Cross-Sectional-dalam-Penelitian-Abduh-Alawiyah/2bde3d03b105a5ea77e699cc3f711605771b7c88>
- Almansoori, A., Al-Emran, M., & Shaalan, K. (2023). Exploring the Frontiers of Cybersecurity Behavior: A Systematic Review of Studies and Theories. *Applied Sciences*, 13(9), 5700. <https://doi.org/10.3390/app13095700>
- Creswell, J. w, & Creswell, J. D. (2018). *Research Design Quanlitative, Quantitative, and Mixed Methods Approaches*.
- Herawati, E. S. B., Mustofa, Z., Sari, M. N., Mirsa, N. R. P., Widiyan, A. P., & Astuti, Y. (2024). Edukasi Digital Safety Dalam Meningkatkan Kecakapan Bermedia Digital Siswa. *Lamahu J. Pengabdian Masyarakat Terintegrasi*, 3(1), 47–54. <https://doi.org/10.37905/ljpm.v3i1.24090>
- Isma, A., Fakhri, M. M., Fardan, M., Adistia, A. Z., & Fadhilatunisa, D. (2024). Pengaruh Model Blended Learning Terhadap Perkembangan Kognitif Mahasiswa. *J. Mediat.*, 6(1), 1–7. <https://doi.org/10.59562/mediatik.v6i1.1346>
- Jubaidi, M., & Fadilla, N. (2020). Pengaruh Fenomena Cyberbullying Sebagai Cyber-Crime Di Instagram Dan Dampak Negatifnya. *Shaut Al-Maktabah: Jurnal Perpustakaan, Arsip Dan Dokumentasi*, 12(2), 117–134.
- Kuswulandari, R., Jowanka, A. W. I., Riyanto, T. N. P., & Listiani, T. (2023). Analisis Manajemen Risiko Ancaman Kejahatan Siber (Cyber Crime) Dalam Aplikasi Whatsapp. *Unknown Journal*.
- Martha, E. (2024). Perundungan Siber (Cyberbullying) Melalui Media Sosial Instagram dalam Teori the Space Transition of Cybercrimes. *Ius Quia Iustum Law Journal*, 31(1). <https://doi.org/10.20885/iustum.vol31.iss1.art9>
- Martias, L. D. (2021). Statistika Deskriptif Sebagai Kumpulan Informasi. *Fihris: Jurnal Ilmu Perpustakaan Dan Informasi*, 16(1), 40. <https://doi.org/10.14421/fhrs.2021.161.40-59>
- Mekler, J. (2022). Mental well-being of Generation Z as potential victims of cybercrime. *Unknown Journal*.
- Nasution, L. M. (2017). Statistik Deskriptif. *Unknown Journal*, 14(1).
- Pahruroji, M., Azhar, S. F., & Harras, K. A. (2023). Intensitas Penggunaan Teknologi Digital dan Implikasinya Terhadap Perilaku serta Kesehatan Mental Remaja. *JDSB*, 25(2), 176. <https://doi.org/10.26623/jdsb.v25i4.5179>
- Peraza-Balderrama, J. N., Valdés-Cuervo, Á. A., Parra-Pérez, L. G., & Urías-Murrieta, M. (2024). Multidimensional Scale to Assess Digital Security in Adolescents. *REDIE*, 26, 1–19. <https://doi.org/10.24320/redie.2024.26.e06.5992>
- Putra, Y., & others. (2024). Edukasi Internet Sehat Bagi Gen Z: Membangun Literasi Digital yang Aman dan Produktif di SMPN 1 X Koto Diatas. *Unknown Journal*, 3.
- Rifka Agustianti, P., Nussifera, L., Angelianawati, L., Meliana, I., Alfiani Sidik, E., Nurlaila, Q., Simarmata, N., Sophan Himawan, I., Pawan, E., Ikhrum, F., Dwi Andriani, A., & Rai Hardika Editor Ni Putu Gatriyani Nanny Mayasari, I. (2022). *METODE PENELITIAN KUANTITATIF DAN KUALITATIF TOHAR MEDIA*. <https://toharmedia.co.id>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial Least Squares Structural Equation Modeling. In *Handbook of Market Research* (pp. 1–47). Springer International Publishing. [https://doi.org/10.1007/978-3-319-05542-8\\_15-2](https://doi.org/10.1007/978-3-319-05542-8_15-2)
- Slonje, R., & Smith, P. K. (2018). Social norms and cyberbullying: A cross-national comparison. *Computers in Human Behavior*, 80, 196–202. <https://doi.org/10.1016/j.chb.2017.11.012>
- Syafuddin, K., Jamalullail, & Rafi'i. (2023). Peningkatan Literasi Keamanan Digital dan Perlindungan Data Pribadi Bagi Siswa di SMPN 154 Jakarta. *Jurnal Impact Servis*, 1(03), 122–133. <https://doi.org/10.58812/ejimcs.v1i03.119>

- Waluyoajati, M. P., & Swari, D. I. (2024). Peran Psikologi Tasawuf Mengenai Kesehatan Mental dan Spiritualitas Generasi Z Pada Era Digital. *Mutiara*, 2(4), 199–209. <https://doi.org/10.59059/mutiara.v2i4.1484>
- Yosida, E. (2024). Persepsi Gen Z Mengenai Perilaku Oversharing di Media Sosial. *Ikraith-Humaniora*, 9(1), 1–9. <https://doi.org/10.37817/ikraith-humaniora.v9i1.4200>