



The Influence of Social Media, Geoint Literacy, and Socio-Demographic Factors on Geoint Awareness among Generation Z

Safnita Andriani Rambe^{1*}, Asep Adang Supriyadi², Yosef Prihanto³

Department of Remote Sensing, Faculty of Defense Engineering and Technology,
Republic of Indonesia Defense University, Bogor Regency, Indonesia

Corresponding Author: Safnita safnita.rambe@tp.idu.ac.id

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ABSTRACT

This study re-examines the role of socioeconomic inequality in shaping academic achievement by introducing learning motivation as a key mediating mechanism. While socioeconomic status has long been recognized as a major determinant of educational outcomes, existing research often assumes a direct and deterministic relationship, overlooking the internal processes through which external conditions influence learning. This study addresses this gap by proposing an integrative model that links socioeconomic inequality, learning motivation, and academic achievement in higher education.

Using a quantitative approach, this study employs a cross-sectional survey design involving undergraduate students. Data are collected through structured questionnaires and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine both direct and indirect relationships among variables. The findings indicate that the direct effect of socioeconomic inequality on academic achievement is limited, while its indirect effect through learning motivation is substantial. Learning motivation emerges as a central mechanism that transforms structural conditions into academic outcomes, suggesting that students' internal engagement plays a more decisive role than external resources alone. This study contributes to the literature by challenging deterministic views of educational inequality and advancing a mediated and process-oriented understanding of academic achievement. The findings highlight the need for educational policies that move beyond resource provision toward fostering student motivation as a key driver of learning.

INTRODUCTION

Sharing locations is no longer just a feature, but has become part of our digital daily lives, from simple activities such as checking in to uploading geotagged photos. Each upload is not just a trace, but also shapes social perceptions and interactions around us. In the last five years, the boundaries between physical and digital spaces have become increasingly blurred (Nyrhinen et al., 2022). Location technology, now available at our fingertips on our mobile phones, has transformed geospatial intelligence from something specialised to something everyday, even often taken for granted. What makes it interesting is that this habit has a real social impact. Location sharing by friends or family on social media can significantly motivate someone to plan a trip (Park & Han, 2018). This is particularly evident in individuals who are more open to social influence and place greater trust in information from online reviews (Van Binh et al., 2023). When viewing locations shared by those close to them, the desire to explore often arises naturally. However, behind this intriguing social impact lies an important aspect that is often overlooked: the security of personal location data. The convenience offered by applications such as Instagram, Facebook, TikTok, and Google Maps often obscures our awareness of the vulnerability of the data we share every day (Asvikaa & Gupta, 2018).

Recent facts over the past five years further confirm the urgency of this issue. The 2018 Cambridge Analytica scandal proved that data leaks are not the end of the story, but rather the beginning of systematic manipulation of users' preferences and even locations for political gain (Hinds et al., 2020; Lipschultz, 2019). The impact is very close to home: Facebook admitted that the data of at least 87 million users was leaked inappropriately, and around 1.1 million of them were from Indonesia (BBC News Indonesia, 2018). This is clear evidence of how our citizens have become direct victims of global data security negligence. In Indonesia, the wave of cyberattacks has also reached an alarming scale. Data from the National Cyber and Crypto Agency (BSSN) revealed that there were over 1.6 billion instances of cyberattacks during 2021, with phishing and data breaches dominating. This fantastic surge is not a sudden phenomenon. It is the culmination of an upward trend that has been evident in previous years (Intan & Intan, 2023), with Indonesia experiencing an escalation in attacks from tens of millions to hundreds of millions of cases, even entering the top ten countries with the highest ransomware infections in the world in 2017 (Mulyadi & Rahayu, 2019).

This increase is part of a global cybercrime pattern that is increasingly focused on financial motives. In India, for example, 85% of the approximately 7,000 daily cybercrime complaints in 2023 were online financial fraud (Akshaya et al., 2024). In Europe, Poland is facing an increase in ransomware and phishing attacks that use sophisticated techniques such as 'Browser in the Browser' (Dorobisz, 2024). The most dangerous modus operandi is when leaked personal data (doxing) is used as a direct means of blackmail, where perpetrators threaten victims with their sensitive information to obtain money (Mondal et al., 2022). These threats provide clear evidence of how negligence in protecting digital data,

starting from the locations we carelessly share, can lead to material losses and deeply personal trauma.

What is interesting and at the same time worrying is that often the root of the problem lies not in unsafe technology, but in our attitudes, knowledge, and even cultural backgrounds as users. Location sharing behaviour cannot be separated from the socio-cultural context (Sroka & Popiolek, 2020). Various studies show that practices and attitudes towards location sharing are greatly influenced by factors such as the level of trust within a community (Chen & Ha, 2019), social norms (Shore & Cummings, 2024; Van Binh et al., 2023), and motivations that apply within a culture (Patil et al., 2012). Demographic factors such as age, marital status, and intensity of social media use also shape this behaviour. For example, single individuals are reported to be more easily influenced by location-sharing content in making their travel decisions (Ha & Chen, 2016).

By understanding this framework, the phenomenon among young people and students (Generation Z) becomes clearer. As a highly active group, they are driven not only by platform logic, but also by social norms and peer pressure that are characteristic of their age group's culture. We find that many of them place more importance on the number of likes or the coolness factor of a post than on the security of the location information being shared (Lund et al., 2025). Hidden privacy settings are rarely opened, and technical terms such as 'photo metadata' sound unfamiliar. This gap highlights the clash between massive digital participation culture and lagging security literacy. A small survey I conducted among university students in 2025 confirmed these concerns: 16 out of 20 respondents were unaware that the Personal Data Protection Act (PDP Act) had been in effect since 2022 (Astuti et al., 2024; Gunawan et al., 2025), and almost all of them rarely checked the location privacy settings on their applications (Vilar et al., 2024). This is not merely individual negligence, but also a reflection of a socio-cultural environment that has not prioritised privacy awareness.

Although there have been many previous studies examining digital literacy and location-sharing behaviour, researchers see a significant gap in GEOINT (Geospatial Intelligence) awareness among active social media users, especially among Generation Z in Indonesia. The existing literature is primarily qualitative or centered on technical security aspects, with a paucity of quantitative investigations into the relationship between social media usage patterns and geospatial risk awareness. Addressing this gap, the present study is designed to achieve two core objectives: firstly, to measure the degree of GEOINT awareness among active Indonesian Generation Z social media users; and secondly, to analyze the influence exerted by social media usage intensity, GEOINT literacy, and sociodemographic factors on this awareness. Third, to provide data-driven recommendations to improve geospatial security literacy among young users.

Therefore, this study will use an objective quantitative approach (Sugiyono, 2020). Data will be collected through structured questionnaires and analysed statistically using SPSS to identify patterns and relationships between variables objectively. It is hoped that the findings of this study will not only add

to the literature on cyber security and media studies, but also provide input for social media platforms, policymakers, and the education sector in designing educational programmes that better address the real needs of users. Ultimately, raising awareness of GEOINT is not just about understanding technology, but about protecting our privacy and safety in an increasingly connected world.

IMPLEMENTATION AND METHODS

This study adopts an explanatory quantitative approach to examine the relationship between social media use, GEOINT literacy, sociodemographic factors, and GEOINT awareness among Generation Z. A total of 100 participants born between 1997 and 2012 who actively use at least one social media platform (Instagram, TikTok, Facebook, or WhatsApp) participated in this study through purposive sampling. The characteristics of the respondents were quite diverse, including variations in educational background, daily usage duration, and platform preferences, reflecting the heterogeneity of young digital users in Indonesia. Data collection was conducted via an online questionnaire divided into two parts. The first part contained demographic questions, while the main part contained 40 statements with a 1-5 Likert scale and the score for each variable was the total sum of all items, so that the theoretical score range for each variable was 10 (minimum) to 50 (maximum), designed to measure the four research constructs. Then, construct validity and internal reliability were tested statistically.

Data analysis was conducted in three consecutive stages. The process began with descriptive statistics to outline the sample profile and response distribution. This was followed by a validation stage using classical assumption tests (normality, homoscedasticity, and multicollinearity) to meet the prerequisites for inferential analysis. The procedure concluded with multiple linear regression analysis to assess the combined impact of the three predictor variables on GEOINT awareness. All data processing was performed using SPSS 25 at a significance level of 0.05. Research ethics were strictly adhered to. Each participant provided electronic informed consent before participating. Respondents' personal identities were kept confidential by not including identifying data in the report, and all data was used solely for academic purposes.

RESULTS AND DISCUSSION

Respondent Profiles and Sample Characteristics

Of the 100 Generation Z respondents who participated, the demographic characteristics show interesting variations, as presented in Table 1.

Table 1. Demographic Profile of the Sample

Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Female	59	59,00
	Male	41	41,00
Field of Study	STEM	66	66,00
	Non-STEM	34	34,00
Duration of Social Media Use/Day	<1 hour	10	10,00
	1-3 hours	35	35,00
	3-5 hours	31	31,00
	>5 hours	24	24,00
Main Platform	Instagram	60	60,00
	TikTok	33	33,00
	Facebook	3	3,00
	X (Twitter)	4	4,00
Ever had digital security education	Yes	64	64,00
	No	36	36,00
Ever Shared Your Location	Yes	78	78,00
	No	22	22,00

Source: Compiled by researcher, 2026

The data presented in Table 1 shows that out of 100 Generation Z respondents, 78% have shared their location on social media, while 64% have participated in digital security education. The majority of respondents came from STEM fields, accounting for 66%. The most common duration of social media use was 1-3 hours per day, accounting for 35%, followed closely by 3-5 hours, accounting for 31%. Instagram was the most popular platform, chosen by 60% of respondents.

Results of Instrument Validity and Reliability Tests

Data Validity Test

The validity of the instrument was tested by conducting a bivariate correlation analysis to obtain Pearson's correlation coefficient for each item, then comparing these calculated values with the critical values from the correlation table, r_{table} value for $\alpha = 0.05$ with degrees of freedom ($df = n-2$) to obtain r_{table} . The validity sample size of 100 ($df = 98$). The r_{table} value is 0.197. Consequently, declared any item with an $r_{calculated} > 0.197$ as valid.

a. X_1 Validity Test (Intensity & Patterns of Social Media Use)

Table 2. Validity Test for Intensity & Social Media Usage

Questions	$r_{calculated}$	r_{table}	Description
1	0,703	0,197	Valid
2	0,517	0,197	Valid
3	0,599	0,197	Valid

4	0,602	0,197	Valid
5	0,630	0,197	Valid
6	0,696	0,197	Valid
7	0,663	0,197	Valid
8	0,587	0,197	Valid
9	0,722	0,197	Valid
10	0,637	0,197	Valid

Source: Compiled by researcher, 2026

For the Social Media Usage Intensity variable in Table 2, all statement items showed a correlation. The $r_{\text{calculated}} > 0.197$, so the instrument was declared valid.

b. X₂ Validity Test (GEOINT Literacy)

Table 3. Technical Knowledge & Regulatory Validity Test

Quetions	$r_{\text{calculated}}$	r_{table}	Description
1	0,656	0,197	Valid
2	0,604	0,197	Valid
3	0,593	0,197	Valid
4	0,610	0,197	Valid
5	0,719	0,197	Valid
6	0,628	0,197	Valid
7	0,651	0,197	Valid
8	0,733	0,197	Valid
9	0,611	0,197	Valid
10	0,635	0,197	Valid

Source: Compiled by researcher, 2026

For the Technical Knowledge & Regulations variable in Table 3, all statement items showed a correlation. The $r_{\text{calculated}} > 0.197$, so the instrument was declared valid.

c. X₃ Validity Test (Sociodemographic Factors & Social Influence)

Table 4. Testing the Validity of Socio-Demographic Factors & Social Influence

Quetions	$r_{\text{calculated}}$	r_{table}	Description
1	0,606	0,197	Valid
2	0,650	0,197	Valid
3	0,685	0,197	Valid
4	0,698	0,197	Valid
5	0,570	0,197	Valid
6	0,633	0,197	Valid
7	0,688	0,197	Valid
8	0,643	0,197	Valid

9	0,611	0,197	Valid
10	0,641	0,197	Valid

Source: Compiled by researcher, 2026

For the Sociodemographic Factors & Social Influence variables in Table 4, all statement items showed a correlation. The $r_{\text{calculated}} > 0.197$, so the instrument was declared valid.

d. Y Validation Test (GEOINT Awareness)

Table 5. GEOINT Awareness Validation Test

Questions	$r_{\text{calculated}}$	r_{table}	Description
1	0,817	0,197	Valid
2	0,790	0,197	Valid
3	0,771	0,197	Valid
4	0,809	0,197	Valid
5	0,805	0,197	Valid
6	0,819	0,197	Valid
7	0,755	0,197	Valid
8	0,832	0,197	Valid
9	0,752	0,197	Valid
10	0,796	0,197	Valid

Source: Compiled by researcher, 2026

For the Geoint Awareness variable in Table 5, all statement items showed a correlation. The $r_{\text{calculated}} > 0.197$, so the instrument was declared valid.

Data Reliability Test

The reliability of the instrument was evaluated through Cronbach's Alpha, a measure of internal consistency. Coefficient values closer to 1 reflect higher reliability. Following conventional benchmarks, data were deemed reliable if the Cronbach's Alpha value met or exceeded the threshold of 0.60.

Table 6. Results of Reliability Testing for Each Variable

Variable	Cronbach's Alpha	N of Items	Reabilitas Status
Intensity & Patterns of Social Media Use	0,837	10	Reliabel
GEOINT Literacy	0,844	10	Reliabel
Sociodemographic Factors & Social Influence	0,841	10	Reliabel
GEOINT Awareness	0,935	10	Reliabel

Source: Compiled by researcher, 2026

The results confirm the reliability of the measurement instruments (see Table 6). The Cronbach's Alpha for the scale is above the minimum criterion of 0.6. Specifically, all variables show Alpha values between 0 and 1, with a

tendency toward the upper limit, thereby establishing the reliability of the measures used in this study.

Results of Classical Regression Assumption Tests

a. Testing for Normality

The normality of the regression residuals was tested to validate a key model assumption. The analysis employed a Normal P-P Plot of the Regression Standardised Residuals for this purpose, which is provided in the following figure.

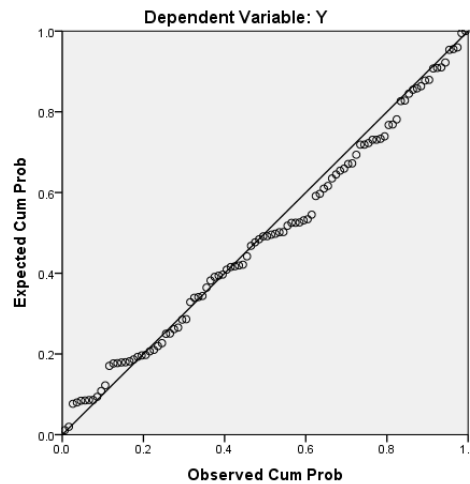


Figure 1. P-P Plot for Testing Normality of Residuals

Source: Compiled by researcher, 2026

Based on the results of the P-P Plot in Figure 2, the regression model with the dependent variable GEOINT Awareness shows that the normal distribution is satisfied. The visual results show that the observation points are scattered fairly closely around the diagonal line, with no systematic pattern of deviation. In other words, there are no indications of significant deviations from the normal reference line. This condition indicates that the residuals of the regression model analysed have satisfied the assumption of normality, so that the results of inferential statistical tests such as parameter significance tests and model suitability tests can be relied upon methodologically.

b. Multicollinearity Test

Before interpreting the influence of variables, a crucial step is to check for potential multicollinearity. If this problem is found, the regression results become unstable and unreliable. The following are the results of the examination using Tolerance and Variance Inflation Factor (VIF) as a guide.

Table 7. Statistics on Multicollinearity Between Variables

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Intensity & Patterns of Social Media Use	.174	5.747
GEOINT literacy	.154	6.508
Sociodemographic Factors & Social Influence	.181	5.518

a. Dependent Variable: GEOINT Awareness

Source: Processed by researcher, 2026

Table 7. above provides information about multicollinearity. If we observe the Tolerance values for the three variables, these figures are clearly above the critical limit of 0.1, which is a good result. On the other hand, the VIF values obtained further confirm that these findings are far below the critical limit of 10, and even below the conservative value of 5, so that the model constructed is not disturbed by information redundancy between independent variables; multicollinearity does not threaten this model.

c. Heteroscedasticity Test

An important step after running the regression model is to ensure that there are no heteroscedasticity issues. One way to check this is by observing the scatterplot between these two components, the values predicted by the model and the errors (residuals) from each observation.

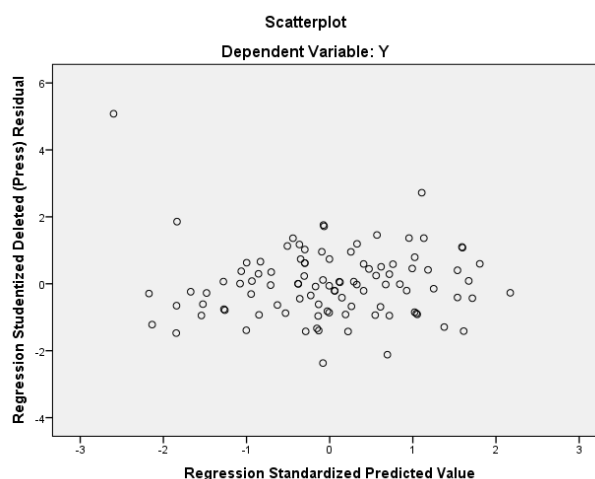


Figure 2. Heteroscedasticity Test
Source: Processed by researcher, 2026

The scatterplot in Figure 2, between the standard predicted values and the studentised deleted residuals (PRESS), shows a random distribution of points, without the formation of a systematic trend line. In regression analysis, such a random pattern indicates that the assumption of homoscedasticity is satisfied. This means that the residual variance remains stable at various prediction levels, from low to high values, and there are no signs of heteroscedasticity, which often undermines the reliability of the model. Therefore, the influence of variables in the context of GEOINT awareness can be assessed with greater confidence, as the resulting model is not burdened by variance inconsistency issues.

Multiple Regression Analysis Results

a. Hypothesis Testing

The multiple linear regression model was statistically significant, indicating that the predictors significantly influence GEOINT awareness ($p < 0.05$). The detailed output for each variable, coefficients, t-values, and p-values is shown in Table 8.

Table 8. Regression Coefficient Statistical Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.033	1.408		2.154	.034
Intensity & Patterns of Social Media Use	.431	.125	.334	3.462	.001
GEOINT literacy	.409	.128	.327	3.186	.002
Sociodemographic Factors & Social Influence	.371	.118	.296	3.128	.002

a. Dependent Variable: GEOINT Awareness

Source: Processed by researcher, 2026

Table 8 also shows that all variables have $t_{\text{calculated}} > t_{\text{table}}$, which is above 1.984, indicating that the data is significant and has a positive effect. Thus, the regression analysis produces the equation $Y = 3.033 + 0.431X_1 + 0.40X_2 + 0.371X_3$.

Table 9.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df ₁
1	.919 ^a	.845	.840	2.503	.845	173.832	3

a. Predictors: (Constant), Intensity & Patterns of Social Media Use, GEOINT Literacy, Sociodemographic Factors & Social Influence

b. Dependent Variable: GEOINT Awareness

Source: Processed by researcher, 2026

As shown in Table 9, the model demonstrates excellent explanatory power. An R^2 of 0.845 means that 84.5% of the variation in the dependent variable is accounted for by the three independent variables. The remaining 15.5% is attributable to other factors or random error. The model's overall significance is confirmed by the calculated $F_{\text{calculated}}$ is 173.832, which is greater than the critical F_{table} is 2.70. Thus, the $F_{\text{calculated}} > F_{\text{table}}$, confirming that the regression model as a whole is significant.

Respondent Profile and the Privacy Paradox Phenomenon

The descriptive data in Table 1 reveals an interesting and paradoxical pattern in the digital behaviour of Generation Z. As many as 78% of respondents admitted to having shared their location on social media, while on the other hand, 64% of them had undergone digital security education. The considerable gap between knowledge and actual practice is not a coincidence, but rather a manifestation of the Privacy Paradox (Arzoglu et al., 2022), which describes the paradox where individuals, despite expressing concerns and being aware of privacy risks, still behave as if these risks do not exist or are insignificant (Memarian et al., 2025).

Upon further analysis, the distribution of educational participation based on gender, as shown in Figure 3, and the distribution of gender with digital security literacy, indicates that awareness of the importance of digital literacy is

relatively evenly distributed. Among women, 67.8% have participated in education, while among men the figure reaches 60.98%. This insignificant difference indicates that the drive to acquire digital security literacy is not strongly influenced by gender.

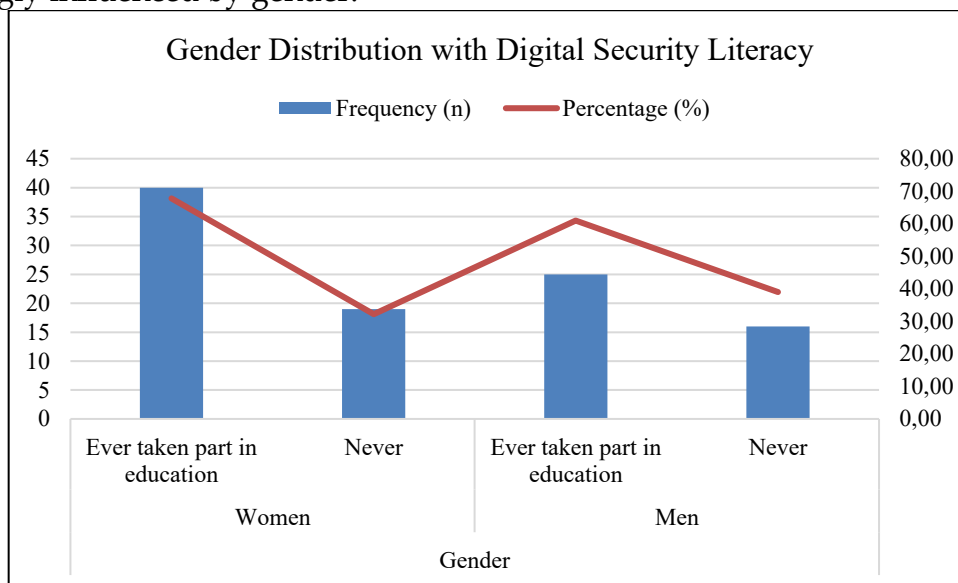


Figure 3. Gender Distribution with Digital Security Literacy
Source: Processed by researcher, 2026

These results further reinforce the context-dependent nature of the Privacy Paradox. Although awareness and access to education appear to be quite high and inclusive, as evidenced by the even distribution between genders, location sharing behaviour remains dominant ((Ha & Chen, 2016). This shows that Generation Z has made location sharing such an integral part of their digital habitus/habits that security considerations are often outweighed by the urge to connect and participate. This finding is also in line with the observations of Shore & Cummings (2024), who state that in the context of social media, social influence and group norms can shift individual privacy calculations. What is known cognitively (that sharing location is risky) does not necessarily override what is felt socially (that not sharing location can make someone appear closed off or out of touch) (Saura et al., 2025). In other words, in the digital space of Generation Z, the social currency gained from sharing activities often has a higher 'exchange value' than the 'assets' of privacy they possess.

The implications of these findings are quite significant. A digital security education approach that only focuses on the transfer of cognitive knowledge, as may have been experienced by 64% of respondents who have received education, is not enough to change behaviour. Such education fails to touch on social and cultural motivations. There needs to be a more contextual approach that touches on the social motivations of users. Intervention programmes need to be designed with an understanding that for Generation Z, social media is a lifeworld, a world where identities are built and social relationships are maintained. Therefore, effective GEOINT literacy must be able to enter into this social logic, using narratives, influencers, or content formats that are in line with the participatory culture of this generation.

The Influence of Social Media as the Strongest Predictor

Based on the results of multiple linear regression analysis in Table 8, the variables of Intensity and Pattern of Social Media Use are the strongest predictors of GEOINT Awareness with a Beta coefficient of 0.334, with $t_{\text{calculated}} = 3.462$. This value far exceeds the t_{table} ($3.462 > 1.984$). With a significance value (Sig.) of 0.001 (< 0.05), it can be concluded that the positive influence of this variable on the dependent variable is statistically significant. The results obtained reflect the reality that social media has evolved into the main gateway for Generation Z to access, process, and select information, including content related to geospatial intelligence. In this context, digital platforms no longer function merely as communication channels but have transformed into filtered information ecosystems, actively shaping the perceptions, norms, and awareness priorities of their users. This is in line with the findings of Suryani et al (2025), which suggest that interactive and participatory patterns of social media use (such as sharing locations, commenting, and discussing) are the main explanations for the strong influence of variable X_1 , as they represent a form of shared experience in the context of GEOINT.

The power of social media's influence can be explained through the Uses and Gratifications theory. Generation Z not only uses social media for entertainment or communication, but also to fulfil cognitive and affective needs related to social identity, community sustainability, and self-image management. The higher Beta coefficient of social media compared to formal literacy also implies a paradigm shift in how knowledge and awareness are built in the digital age. Whereas in previous eras, knowledge was largely found in educational institutions or official bodies, in this generation, platforms such as Instagram, TikTok, and X/Twitter have taken on the role of curators and connectors of information (Esquen & Palomino-Flores, 2025). This is in line with observations Rousseau (2022) and Trifiro & Prena (2021) that the intensity of social media use is positively correlated with individuals' exposure to digital security content, while accelerating the internalisation of these awareness messages through social validation and peer endorsement mechanisms.

Efforts to raise GEOINT awareness among Generation Z need to prioritise social media-based engagement strategies (Hamedani et al., 2025). This can be achieved through collaboration with relevant content creators, the development of educational materials in native formats for each platform (such as short videos, interactive stories, or podcasts), and the use of engagement features such as polling, Q&A, and community challenges. This approach ensures that GEOINT awareness messages not only reach their target audience but also resonate with the logic and communication rhythm of this digital generation.

The Significant but Weaker Role of GEOINT Literacy

The regression analysis results in Table 8 show that GEOINT literacy has a significant effect on GEOINT awareness with a Beta coefficient of 0.327, with $t_{\text{calculated}} = 3.186$, which is also much greater than 1.984 (Sig. = 0.002). This provides strong evidence to reject H_0 . Individuals' level of understanding and ability in GEOINT significantly contributes positively to the dependent variable. Although

statistically significant, this value is slightly below the influence of social media ($\beta = 0.334$). This slightly lower level of GEOINT literacy can be examined through the framework of Constructal Level Theory (Hess et al., 2018). For Generation Z, GEOINT issues, such as spatial data regulations, remote sensing techniques, or geospatial security concepts, are often perceived as abstract, complex, and distant from everyday life (Tolstikova et al., 2022). Meanwhile, similar content presented through social media, such as reels about the dangers of geotagging or threads discussing cases of location data leaks, is presented with a more personal, visual, and contextual narrative. Thus, this approach through social media successfully reduces psychological distance, making GEOINT issues feel more relevant, urgent, and easier to understand, so that the impact on awareness is stronger and faster.

Furthermore, these results are in line with and complement the findings of Sukmayadi & Yahya (2021), which emphasise the importance of regulatory knowledge. This study supports the finding that geographic media literacy remains important in this digital age. In a world saturated with information, people are trying to cope with the overload of information and images. It is evident that the level of digital literacy among young people is still uneven, and the digital divide remains between urban and rural populations (P. Harshitha et al., 2025). Digital advances have changed and expanded our communication capabilities, access to information, and spatial formation, so new literacy is needed to master this digital world. Therefore, the position of GEOINT literacy as a significant factor that is slightly behind is not an indication of failure, but rather a process of transformation, calling for a hybrid approach that combines the depth of formal literacy with the reach and engagement of social media strategies. This synergy is expected to elevate the role of literacy from a mere supporting variable to a primary driver that is equal to, or even surpasses, the influence of social media in building comprehensive and sustainable GEOINT awareness.

Discussion of the Contribution of Sociodemographic Factors and Social Influence

Based on the regression analysis results in Table 8, Sociodemographic Factors and Social Influence contribute significantly to GEOINT awareness with a Beta coefficient of 0.296, with $t_{\text{calculated}} = 3.128$ (Sig. = 0.002). Because $3.128 > 1.984$, H_0 is rejected. The results of this study indicate that social and demographic backgrounds, as well as the dynamics of social influence surrounding individuals, are significant determining factors. Generational selection significantly differentiates preferences related to rights and awareness, particularly for Generation Z. This is supported by research Gumay et al (2025) showing that age also has a significant effect on technology adoption, with the 18-22 age group exhibiting higher technology usage patterns.

Although its value is lower than the other two predictors, this influence remains substantive and confirms that individual awareness of geospatial issues is not formed in a vacuum. Rather, this awareness is embedded and grows within social networks (Alrayes et al., 2025), cultural norms (Hall, 2017), and specific demographic contexts (Mohammed & Mohammed, 2025). However, the lower

contribution of these factors also indicates that in the Indonesian context, demographic characteristics (such as gender or field of study) and direct social influence are not yet the main drivers of GEOINT awareness. Supported by research whose context is not directly in Indonesia but has similar results, education, occupation, and age are the strongest sociodemographic predictors of General Data Protection Regulation awareness, with minor influences from gender, subjective economic well-being, or region size (Rughiniş et al., 2021). Awareness is more easily formed through digital channels such as social media than by relying solely on limited social interaction. It appears that the nature of GEOINT issues themselves has not yet become part of everyday social conversation outside of certain groups.

Socio-demographic factors and social influence function as contextual reinforcers and connectors for GEOINT awareness, as social influences including peers, family, and media play a crucial role in shaping consumer behaviour and awareness (Jyothi & Mohan, 2025). Their role is not as the main driver, but rather as a catalyst that accelerates and reinforces the effects of information exposure through social media and literacy. An effective strategy is to create convergence where messages from social media and literacy materials are then reinforced, discussed, and normalised within various social strata and communities, so that GEOINT awareness is not only attached to individuals, but also becomes part of group norms.

CONCLUSIONS AND RECOMMENDATIONS

Generation Z's awareness of GEOINT in Indonesia is growing amid tensions between knowledge and habit. The majority (64%) are familiar with digital security education, but 78% still actively share their location. This fact is not merely a loophole, but a true reflection of the privacy paradox, where the need to connect and be socially recognised often outweighs security considerations in everyday digital practices. Further analysis reveals that the three factors studied have a strong influence, but with differing roles. Social media emerged as the main shaper (strongest predictor) with ($\beta=0.334$), actively framing how this generation understands digital space. GEOINT literacy served as an important knowledge foundation, although its influence was slightly smaller ($\beta=0.327$), as it was considered less directly related to their social interactions. Meanwhile, socio-demographic background serves as a contextual factor ($\beta=0.296$), although it is not the main driver. The combination of these three factors successfully explains most (84.5%) of how this GEOINT awareness is formed.

Therefore, efforts to improve geospatial security literacy require a more intelligent and user-centred approach. Rather than simply providing technical instructions, strategies must be integrated into their digital ecosystem. Education needs to be presented in an organic and engaging form, such as short video content, interactive discussions, or collaborations with figures they follow, so that security messages feel relevant and contextual. Furthermore, the approach must acknowledge the diversity within this generation, tailoring materials to different geographical and social backgrounds. Ultimately, building sustainable GEOINT awareness is about instilling security values as a natural part of their

digital culture, not as an obstacle, but as a principle that supports how they interact and explore the world.

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