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Original Article

Decoupling Literacy and Verification: A Quantitative Study of Misinformation Resistance among Undergraduate Students

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Abstract: The rapid spread of misinformation on social media has increased the importance of developing social media literacy as a core educational competency in higher education. This study examined the relationship between social media literacy and hoax-news prevention among undergraduate students and identified the specific competencies requiring instructional attention. A cross-sectional survey was conducted with 100 undergraduate students using a validated 27-item questionnaire measuring social media literacy and hoax-news prevention. Data were analyzed using descriptive statistics and simple linear regression after confirming instrument validity, reliability, and model assumptions. The findings revealed that students demonstrated a high overall level of social media literacy, which was positively and significantly associated with hoax-news prevention ($p < .001$). However, indicator-level analysis showed that source verification, particularly verifying the credibility of accounts before sharing information, was the weakest competency despite the high overall literacy score. These findings suggest that general social media literacy does not necessarily translate into effective misinformation verification behaviours. From an educational perspective, the results highlight the need to integrate structured instruction on critical evaluation and source verification into higher education curricula. Strengthening these competencies through teaching and learning activities may better prepare students to critically evaluate online information and reduce the spread of misinformation.

Keywords : Hoax-news prevention; Media literacy education; Misinformation resistance; Social media literacy; Higher education.

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INTRODUCTION

The way people obtain information has shifted toward social media. In Indonesia, internet use has reached approximately 77 percent of the population, with around 213 million users by 2023 (Effendi, 2023), and a growing share treat social media as a routine

rather than occasional source of news (Surjatmodjo et al., 2024). Platforms such as Instagram are part of the daily routine of young adults, who frequently meet news incidentally while using the platform for other purposes (Anter, 2023; Huang & Su, 2018). This shift has changed the direction of communication. Traditional mass media's flow has shifted to a participatory network where users dynamically exchange and share content. The participatory feature that makes social media attractive also removes the editorial gatekeeping that once filtered what reached the public, and it places a new demand on education. Graduates are expected to evaluate information for themselves.

One consequence of this open flow is the rapid spread of misinformation, and one of its most visible forms in Indonesia is hoax news. A hoax is a message that presents false or misleading information as fact, typically built around a provocative headline, an unverified or concealed source, and an appeal to emotion (Beauvais, 2022). Hoax news therefore sits within the broader family of information disorders, alongside other forms of misinformation, fabricated news, clickbait, and satire taken out of context; in this study the misinformation under examination is the hoax form circulating on Instagram. In Indonesia, hoax content has spread quickly across social media, with documented effects on political opinion, public health behaviour, and relations between social groups (Effendi, 2023; Surjatmodjo et al., 2024). Misinformation has been described as a threat to public health in its own right (Denniss & Lindberg, 2025) and research shows that false content travels faster and wider than accurate content because it is engineered to attract attention, while platform algorithms reward the engagement it generates (Pennycook & Rand, 2021). National concern over the problem intensified around general elections and during the COVID-19 pandemic, when false health claims circulated alongside official guidance and affected the decisions people made (Melki et al., 2021; Naeem & Boulos, 2021; Singh et al., 2022).

Undergraduate students occupy a particular position in this environment. Many have used internet-enabled devices since childhood and report frequent social media use, although access and digital readiness vary across socioeconomic groups within Indonesia (Harmawati et al., 2024; Perdana et al., 2019). They are also often assumed by educators and the wider public to be skilled at handling digital information. Frequent and fluent use, however, does not guarantee the ability to judge accuracy. A study of 500 undergraduates at two universities in Aceh found that, although almost all students operated multiple platforms competently and understood the content they received, many were not confident in distinguishing fake from real news, and some deliberately shared controversial posts (Syam & Nurrahmi, 2020). Comparable patterns appear among undergraduates in Vietnam and Barcelona, where heavy reliance on social media for news coexists with weak verification habits and limited confidence in their own judgement (Lan et al., 2024; Tejedor et al., 2021). Indonesian research has also linked the intensity of social media use to the way users respond to hoaxes and hate speech (Lestari et al., 2024). The distance between technical fluency and evaluative skill is the problem that education is expected to close.

Media literacy is the response most often proposed. It is the capacity to access, analyse, evaluate, and create media content (Cho et al., 2022; Koc & Barut, 2016). How media literacy is positioned matters for how it is acted upon. When it is treated as a general

public attribute, the natural response is a public-awareness campaign. When it is treated as a teachable competency, a measurable outcome that formal education is responsible for developing, the response becomes a question of curriculum, teaching, and assessment. The second framing is becoming more common. Digital competence frameworks place the critical use of information among the core capabilities graduates need (Falloon, 2020; Martinez-Bravo et al., 2022), and reviews of media literacy education show that schools and universities are its main delivery setting and that students and educators are its primary target groups (Rojas-Estrada et al., 2023; Suarez-Perdomo et al., 2025).

Evidence that media literacy education can reduce susceptibility to online misinformation has been reported primarily in Western contexts. A meta-analysis of 49 experiments involving more than 80,000 participants found stronger intervention effects among college students than among adults, highlighting higher education as an appropriate setting for examining media literacy outcomes (Huang et al., 2024). Similarly, a meta-analysis by Lu et al. (2024) confirmed that media literacy interventions improve the ability to evaluate fake news. Experimental studies have also shown that brief media literacy interventions enhance the ability to distinguish false from legitimate news (Guess et al., 2020), increase resilience to misinformation among older adults (Moore & Hancock, 2022), and strengthen resistance through inoculation-based training on social media platforms (Roozenbeek et al., 2022). However, the evidence is not entirely consistent. Jones-Jang et al. (2019) reported that information literacy, rather than media or digital literacy, predicted accurate identification of fake news, while Bulger and Davison (2018) cautioned that media literacy training may foster overconfidence if not accompanied by critical verification skills. Despite these advances, empirical evidence from Indonesia remains limited, particularly in the context of Instagram. Moreover, most previous studies relied on experimental settings rather than examining naturally occurring literacy behaviours. Therefore, this study investigates whether social media literacy is associated with hoax-news prevention among Indonesian undergraduate students and whether a high overall literacy score conceals weaknesses in specific verification behaviours essential for resisting misinformation.

What still gives the Indonesian setting its particular shape is the size of the gap between everyday platform competence and critical evaluation. National data and regional surveys both report that Indonesian students operate platforms with ease but evaluate information much less consistently (see Harmawati et al., 2024; Perdana et al., 2019; Zulkarnain et al., 2024). The national response to this gap has so far been communication-led, relying on fact-checking partnerships with platforms and public-awareness campaigns rather than on the formal curriculum. An educational framing instead places the competency to evaluate inside the learner, as a teachable outcome of higher education teaching. Whether undergraduate students' social media literacy, treated in this way, is associated with their actual hoax-prevention behaviour on Instagram has not been tested in any Indonesian provincial setting; the present study fills that gap at the indicator level.

Two gaps in the literature motivate this study. First, Indonesian research on media literacy has largely focused on communication and public awareness, with limited

attention to social media literacy as a measurable educational outcome that can be systematically developed through higher education curricula (Dianah et al., 2024; Effendi, 2023; Lestari et al., 2024; Nuryadi & Widiatmaka, 2023). Second, empirical evidence from provincial regions remains scarce, despite studies showing considerable regional disparities in digital literacy across Indonesia (Harmawati et al., 2024; Perdana et al., 2019; Zulkarnain et al., 2024). To address these gaps, this study examines the relationship between social media literacy and hoax-news prevention on Instagram among undergraduate students in Mataram and identifies the weakest competencies at the indicator level. By positioning social media literacy as a teachable competency rather than an informally acquired skill, the study contributes empirical evidence supporting its integration into higher education teaching and curriculum while extending the literature to an underrepresented regional context.

THEORETICAL SUPPORT

Media literacy refers to the ability to access, analyze, evaluate, and produce media content (Lee, 2018). As digital communication has evolved from traditional mass media to participatory social media platforms, the concept has expanded into the new media literacy framework, which recognizes users as both consumers and producers of content. This framework organizes media literacy into two intersecting dimensions: consuming versus prosuming and functional versus critical competencies, resulting in four measurable domains: functional consuming, critical consuming, functional prosuming, and critical prosuming (Koc & Barut, 2016). These domains encompass technical skills for accessing and creating content as well as higher-order abilities to analyze, evaluate, and critically assess the credibility of information and its sources. The framework further emphasizes that media literacy development is influenced by media education, policy, and access to digital technologies, positioning formal education as a key mechanism for developing these competencies. Building on this perspective, social media literacy narrows the focus to users' interactions, decision-making, and participation within specific social media platforms (Cho et al., 2022), while recent studies have demonstrated that these four dimensions constitute measurable and teachable competencies among undergraduate students (Hsiao et al., 2023).

Placing these competencies within education connects media literacy to wider agendas. Twenty-first-century skill frameworks list media literacy alongside critical thinking, communication, and collaboration as educational outcomes (Wrahatnolo & Munoto, 2018), and these outcomes draw on epistemic cognition, the ability to construct, evaluate, and use knowledge (Greene & Yu, 2016). Digital citizenship education extends the same idea to responsible and safe participation online, including the evaluation of information before it is shared (Gutierrez-Aguilar et al., 2024; Prasetiyo et al., 2023). Treating media literacy as a stated learning outcome has its limits: intended learning outcomes are open to varied interpretation, and they can narrow teaching to what is easiest to assess (Erikson & Erikson, 2018). The advantage of the framing is that it makes the competency a stated object of teaching and assessment, which a treatment of media literacy as a diffuse public attribute does not.

Although the new media literacy framework proposes that critical consuming and critical prosuming are the competencies most relevant to resisting misinformation, empirical evidence remains mixed. Jones-Jang et al. (2019) found that, among media, news, information, and digital literacies, only information literacy significantly predicted the accurate identification of fake news. Because information literacy primarily emphasizes locating, evaluating, and using information sources, it overlaps with but does not fully represent the broader dimensions of new media literacy, which also include participatory and content-production competencies. Hoax-news prevention itself is best understood as a set of behaviours, including verifying information sources and authors, comparing claims across multiple sources, critically evaluating headlines, and refraining from sharing unverified content (Sencan & Yilmaz, 2023). These behaviours are not automatic, as users often rely on trust in social networks when sharing information. However, social media literacy has been shown to weaken the relationship between network trust and uncritical information sharing (Wei et al., 2022), while fact-checking and source verification can be strengthened through explicit educational instruction rather than being viewed as innate abilities (Nee, 2019). Consequently, it remains unclear whether social media literacy, operationalized through the four-dimensional new media literacy framework, is associated with hoax-news prevention behaviours among university students. To address this gap, the present study examines the relationship between social media literacy and hoax-news prevention among undergraduate students using Instagram, thereby extending the evidence to an underexplored educational context.

A growing body of intervention research links literacy training to misinformation resistance. In experimental designs that manipulated literacy training, media and information literacy programmes improved students' ability to detect fake news and reduced their intention to share it (Adjin-Tettey, 2022; Al-Zou'bi, 2022), and audio-visual social media literacy programmes have produced comparable gains (Zhao et al., 2023). Information literacy has been associated with lower acceptance of false information in non-experimental work (Durodolu & Ibenne, 2020), and literacy concepts used as intervention strategies have improved fake news knowledge and detection skills (Apuke & Omar, 2022). Critical thinking dispositions, which are closely tied to the critical dimensions of media literacy, statistically predict fake news detection among undergraduate students (Orhan, 2023). Although these results show that literacy training can produce gains in experimental settings, the present cross-sectional design measures existing literacy levels rather than the effects of any intervention. The same evidence therefore supports the more modest expectation that students with stronger existing social media literacy will engage more consistently in hoax-prevention behaviour. The study accordingly hypothesises (H1) that social media literacy is positively and significantly associated with hoax-news prevention behaviour on Instagram among undergraduate students in Mataram.

Conceptual framework

The conceptual framework links social media literacy (X) to hoax-news prevention behaviour (Y) and guides variable selection and hypothesis testing rather than implying a

causal model. The structure of X follows the new media literacy framework (Koc & Barut, 2016), which sets out four competence dimensions, functional consuming, critical consuming, functional prosuming, and critical prosuming, together with three environmental factors that condition their growth: media education, media literacy policy, and media availabilities. The structure of Y draws on prior work on user-level prevention behaviour and is operationalised through three indicators: source verification, content scrutiny, and sharing caution (Nee, 2019; Sencan & Yilmaz, 2023; Wei et al., 2022). Theoretically, students whose critical-consuming and critical-prosuming competencies are stronger should be better placed to verify sources, scrutinise posts, and withhold unverified material. X and Y were entered in the regression as composite scores, with indicator-level analysis reserved for descriptive interpretation; the environmental factors were not measured as moderators or mediators in this design, and any role they play in shaping the literacy-prevention link is left for later work with a more elaborate model. Figure 1 represents the predicted directional association from X to Y, not a causal arrow; the cross-sectional self-report design used here cannot rule out reverse direction or shared-method variance between the two scales. The study accordingly tests the hypothesis (H1) that social media literacy is positively and significantly associated with hoax-news prevention behaviour on Instagram among undergraduate students in Mataram.

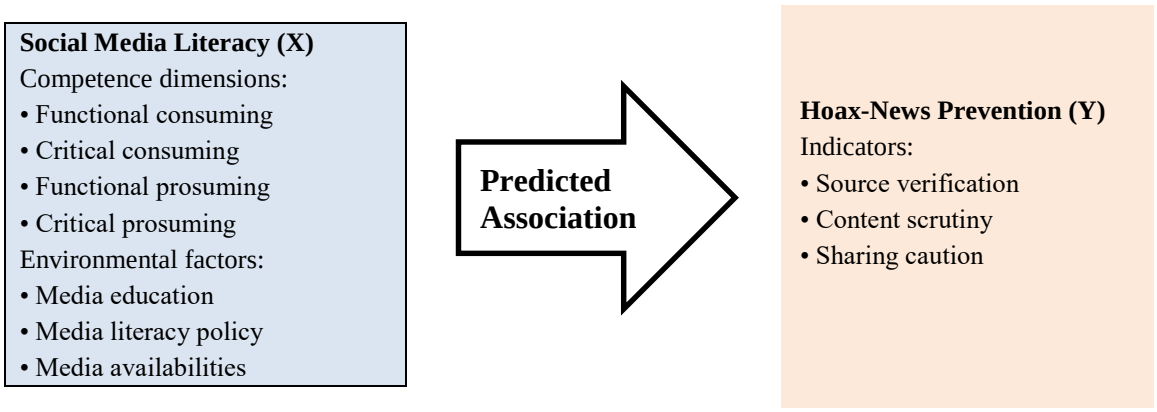

Figure 1. Conceptual framework of the study

Source: Adapted from the new media literacy framework (Koc & Barut, 2016)

METHOD

This study employed a quantitative approach using a correlational survey design to examine the relationship between social media literacy and hoax-news prevention among undergraduate students. A correlational design was considered appropriate because the study sought to investigate the extent to which variations in one variable were associated with variations in another without manipulating the research conditions or introducing experimental interventions. Accordingly, the design enabled the measurement of naturally occurring differences in students' social media literacy and their reported behaviours in preventing the spread of misinformation. The independent variable was social media literacy, while the dependent variable was hoax-news prevention on Instagram. The research was conducted in Mataram, the capital city of West Nusa Tenggara Province,

Indonesia, and involved undergraduate students enrolled at several public and private universities. Mataram was selected because of its diverse higher education institutions and high level of social media engagement among university students, providing an appropriate context for examining the relationship between digital competencies and misinformation prevention behaviours. Data were collected through a structured self-administered questionnaire designed to measure both constructs using validated indicators, and the resulting data were analyzed to determine the direction and strength of the relationship between the study variables.

The population was undergraduate students in Mataram, estimated at 120,000. Because the population is large and a complete sampling frame was not available, the sample size was determined with the Taro Yamane formula at a precision level of 10 percent, a level commonly accepted in social surveys of large populations. The calculation produced a required sample of 100 respondents. Sampling combined two non-probability techniques. Purposive sampling set the inclusion criteria: a respondent had to be a student aged between 18 and 24, a range consistent with the youth category used by Indonesia's National Population and Family Planning Board, and an active user of Instagram, meaning a person who owns an account and uses it regularly. Accidental sampling was then used to reach respondents who met these criteria and were available to take part. A comparable Indonesian study used the same Taro Yamane procedure to examine responses to hoaxes and hate speech on social media (Lestari et al., 2024).

The two variables were defined operationally so that they could be measured. Social media literacy was defined, following the new media literacy framework, as a student's competence across functional consuming, critical consuming, functional prosuming, and critical prosuming on Instagram. Hoax-news prevention was defined as the behaviours a student reports when dealing with potentially false information on Instagram, namely the verification of sources, the scrutiny of content and headlines, and caution before sharing. Table 1 sets out the dimensions and indicators used to construct the instrument.

Table 1. Operational definition of the research variables

Variable	Dimension	Indicator
Social media literacy	Functional consuming	Operating Instagram; understanding the literal meaning of content
	Critical consuming	Analysing, synthesising, and evaluating messages and sources
	Functional prosuming	Producing and distributing content on the platform
	Critical prosuming	Reflective and contextual participation in circulating content
Hoax news prevention	Source verification	Checking the source and the profile of the posting account
	Content scrutiny	Analysing content and questioning provocative headlines
	Sharing caution	Verifying information before sharing; not forwarding unverified content

Source: Adapted from the new media literacy framework (Koc & Barut, 2016).

Data were collected through a questionnaire distributed online. The questionnaire contained 27 statements: 21 measuring social media literacy across the four dimensions and 6 measuring hoax-news prevention across its three indicators. Each statement was answered on a four-point scale, from strongly disagree (1) through disagree (2) and agree (3) to strongly agree (4). The four-point format omits a neutral midpoint, so it requires every respondent to take a position and reduces central-tendency responding. To interpret the mean scores, the range of the scale was divided into four equal intervals, each of width 0.75, which produced the category boundaries shown in Table 2. The theoretical range of the total social media literacy score was 21 to 84 (21 items, each scored 1 to 4) and the theoretical range of the total hoax-news prevention score was 6 to 24 (6 items, each scored 1 to 4); all total scores were converted to item-level means for interpretation against the four category boundaries.

Table 2. Criteria for interpreting mean scores

Mean score interval	Category
1.00 - 1.75	Very low (strongly disagree)
1.76 - 2.50	Low (disagree)
2.51 - 3.25	High (agree)
3.26 - 4.00	Very high (strongly agree)

Source: Authors' calculation based on a four-point scale

Before the main analysis, the instrument was tested for validity and reliability. Validity was assessed through item-total correlation: an item was considered valid when its correlation coefficient exceeded 0.30. Reliability was assessed with Cronbach's alpha, and a coefficient above 0.70 was taken as the threshold for an internally consistent scale. Both tests were run in SPSS. Data collection followed a set procedure. The questionnaire was administered through an online form, and before answering it each respondent was informed of the purpose of the study and confirmed that participation was voluntary; no identifying information beyond gender and age was recorded. Simple linear regression was employed because the study examined the relationship between a single independent variable and a single dependent variable. This approach was considered appropriate for estimating the linear association between the two variables and assessing the extent to which social media literacy predicts hoax-news prevention. Prior to conducting the regression analysis, the underlying assumptions of the model were evaluated to ensure that the data satisfied the requirements for valid statistical inference. The results of these assumption tests are presented in the following section.

Data analysis was conducted in three sequential stages. First, descriptive statistics were used to summarize respondents' demographic characteristics and describe the distribution of scores for each research variable. This stage included the calculation of minimum and maximum values, means, standard deviations, and category classifications based on the four-point Likert scale. Second, prior to hypothesis testing, a series of classical assumption tests was performed to evaluate the suitability of the data for simple linear regression analysis. These included tests of residual normality, linearity of the relationship between the independent and dependent variables, and homoscedasticity to

verify the constancy of residual variance. Satisfying these assumptions ensured the validity of the regression estimates and statistical inferences. Finally, the research hypothesis was tested using simple linear regression to examine the extent to which social media literacy predicted hoax-news prevention on Instagram. The significance of the regression model was evaluated using the *t*-test for the regression coefficient and the *F*-test for overall model significance, while the coefficient of determination (R^2) was used to estimate the proportion of variance in hoax-news prevention explained by social media literacy. All statistical analyses were conducted using a significance level of 0.05, with $p < .05$ considered statistically significant.

RESULT AND DISCUSSION

A total of 100 students completed the questionnaire. Table 3 summarises their characteristics. Of the respondents, 68 were women and 32 were men, and the largest age group was 20 to 21 years, which accounted for 55 percent of the sample, followed by the 18-to-19 and 22-to-23 groups at 18 percent each and the 24-year group at 9 percent. The predominance of women (68 percent) and of students aged 20 to 21 reflects who responded under accidental sampling rather than a documented population parameter; while women are reported as more active Instagram users than men in studies of young adults in some settings (Huang & Su, 2018), no Indonesian population estimate of Instagram users by gender was located, so the imbalance should be treated as a sample feature that limits how far the findings generalise to male students.

Table 3. Characteristics of Respondents

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	32	32.0
	Female	68	68.0
Age	18 to 19 years	18	18.0
	20 to 21 years	55	55.0
	22 to 23 years	18	18.0
	24 years	9	9.0
Total		100	100.0

Before conducting the descriptive and inferential analyses, the instrument was evaluated for validity and reliability. Construct validity was assessed using corrected item–total correlations, with a minimum criterion of 0.30. All 27 items, comprising 21 social media literacy items and 6 hoax-news prevention items, exceeded this threshold and were retained. Reliability was evaluated using Cronbach's alpha, yielding coefficients of 0.958 for the social media literacy scale and 0.871 for the hoax-news prevention scale, both indicating excellent internal consistency. As shown in Table 4, these results confirm that the instrument was both valid and reliable and was therefore suitable for subsequent analyses.

Table 4. Validity And Reliability of The Research Instruments

Scale	Items	Items valid	Cronbach's alpha	Decision
Social media literacy	21	21	0.958	Reliable
Hoax-news prevention	6	6	0.871	Reliable

Table 5 presents the descriptive statistics for the two study variables. Social media literacy scores ranged from 34 to 84 (M = 66.23, SD = 11.110), while hoax-news prevention scores ranged from 10 to 24 (M = 16.91, SD = 3.459). For both variables, the standard deviations were substantially smaller than the corresponding means, indicating relatively homogeneous responses and limited score variability. The observed score ranges also suggest sufficient variation among respondents to support subsequent regression analysis examining the relationship between social media literacy and hoax-news prevention.

Table 5. Descriptive statistics of the research variables

Variable	N	Minimum	Maximum	Mean	Std. Dev.
Social media literacy	100	34	84	66.23	11.110
Hoax-news prevention	100	10	24	16.91	3.459

To interpret the variables on the four-point scale, the total scores were converted to item-level means and matched against the category boundaries in Table 2. The results are shown in Table 6. Social media literacy reached an overall item mean of 3.15, which falls in the high category, and hoax-news prevention reached an overall item mean of 2.82, also in the high category. The two means are close to each other, but the second sits lower within the same band, near its lower boundary.

Table 6. Level of The Research Variables on The Four Point Scale

Variable	Item mean	Category
Social media literacy	3.15	High
Hoax-news prevention	2.82	High

The two variables were also examined at the level of their indicators, by averaging the item means within each indicator of the questionnaire. Table 7 reports the ten indicators of social media literacy and Table 8 the three indicators of hoax-news prevention. This breakdown shows where the high overall means come from and, more usefully, where they do not.

Table 7. Mean score per Indicator of Social Media Literacy

Indicator	Mean	Category
Analysis	2.70	High
Understanding	3.19	High
Consuming skill	3.17	High
Synthesis and evaluation	2.96	High

Prosuming skill	3.41	Very high
Distribution	3.55	Very high
Production and participation	3.18	High
Media education	3.52	Very high
Media literacy policy	2.57	High
Media availabilities	3.55	Very high

To provide a more detailed understanding of students' hoax-news prevention behaviours, the mean scores for each indicator were analyzed separately. This analysis identifies the relative strengths and weaknesses across the dimensions of hoax-news prevention. The results are presented in Table 8.

Table 8. Mean Score per Indicator of Hoax News Prevention

Indicator	Mean	Category
Recognising provocative captions	3.33	Very high
Scrutinising unverified accounts	1.83	Low
Checking facts behind posts	3.30	Very high

The indicator means make the uneven profile precise. For social media literacy, the indicators that load on critical consuming, analysis (2.70) and synthesis and evaluation (2.96), together with consuming skill (3.17), sit at the lower end of the high band, while the indicators connected to producing and circulating content, prosuming skill (3.41) and distribution (3.55), reach the very high band. Students are stronger at creating and sharing content than at analysing and evaluating it. For hoax-news prevention the contrast is sharper. Recognising provocative captions (3.33) and checking facts behind a post (3.30) are both in the very high band, but scrutinising the account behind a post (1.83) is the single indicator in the study that falls into the low category. Students report verifying a claim, yet they do not report verifying who is making it.

Beneath these overall figures the profile was uneven. Within the social media literacy scale, students scored most strongly on items in the functional consuming dimension, which concern operating Instagram and understanding the content they encounter, and they scored lowest on an item describing an immediate public response, namely commenting critically on a post as soon as it is seen. Within the hoax-news prevention scale, the lowest-scoring item concerned checking the profile of the account that posted information before reading that information. The pattern is consistent across the two scales: students are most confident in the technical and interpretive use of social media and least consistent in the evaluative and verification behaviours that bear most directly on resisting hoaxes.

RQ2 asked which behaviours of social media literacy and hoax-news prevention are weakest among undergraduate students in Mataram, and whether the weakness falls on the indicators most directly tied to hoax recognition. The composite picture is favourable: social media literacy reached an item mean of 3.15, well within the high category. This is

a more favourable picture than the low level reported among undergraduates in Aceh, where many students could not confidently separate fake from real news (Syam & Nurrahmi, 2020), and comparable to levels documented elsewhere in Indonesia, including among social science education students in Garut, where media literacy was significantly linked to the prevention of hoax news (Dianah et al., 2024). The favourable overall level, however, should not obscure the uneven profile beneath it. Students scored highest on functional consuming, the operation of the platform and the understanding of content, and lowest on the behaviours connected to immediate evaluation and to checking the source of information. The same pattern appears in the hoax-prevention scale, where verifying an account's profile before reading its content was the weakest item, and it explains why hoax-news prevention, at a mean of 2.82, sits lower in the high band than literacy does. A single high score can mask a specific deficit, and the deficit here is in exactly the verification behaviour most closely tied to resisting hoaxes.

The indicator-level analysis showed that, despite students' high overall social media literacy, the analysis and synthesis and evaluation dimensions of critical consuming, together with account verification (M = 1.83), were the weakest competencies. These findings suggest that critical evaluation and source verification should be prioritized in efforts to strengthen students' resistance to misinformation. Before testing the hypothesis, the assumptions for simple linear regression were examined. As shown in Table 9, the data satisfied the assumptions of normality (p = .200), linearity (p = .159), and homoscedasticity (p = .418), confirming that simple linear regression was appropriate for the analysis.

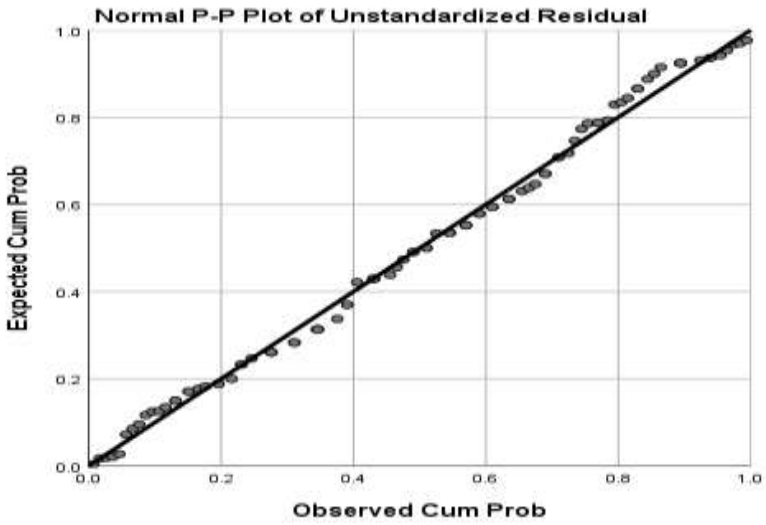

Figure 2. Normal Probability Plot

Linearity was tested through the deviation-from-linearity term, which returned a significance of 0.159; because this is above 0.05, the relationship between the two variables is linear. Homoscedasticity was tested with the Glejser procedure, in which the absolute residuals are regressed on social media literacy; the predictor returned a significance of 0.418, again above 0.05, so the variance of the residuals is constant across observations.

All three assumptions were met, and simple linear regression was an appropriate method for testing the hypothesis.

Table 9. Results of The Classical Assumption Tests

Assumption	Test	Statistic	Significance	Decision
Normality of residuals	One-sample Kolmogorov-Smirnov	0.057	0.200	Met
Linearity	Deviation from linearity	-	0.159	Met
Homoscedasticity	Glejser test	-	0.418	Met

The hypothesis was tested with simple linear regression, with social media literacy as the predictor and hoax-news prevention as the outcome. Table 10 reports the coefficients. The constant was -0.906, with a standard error of 1.063, a t value of -0.852, and a significance of 0.396; it does not differ significantly from zero and carries no substantive meaning on its own, because a literacy score of zero lies far outside the observed range of the data. The coefficient on social media literacy was 0.269, with a standard error of 0.016, a standardised coefficient of 0.864, a t value of 16.996, and a significance of 0.000. The estimated regression equation is therefore $Y = -0.906 + 0.269X$, where Y is hoax-news prevention and X is social media literacy. The positive coefficient means that a one-unit increase in the social media literacy score is associated with an increase of 0.269 units in the hoax-news prevention score, and the significance of 0.000, well below the 0.05 threshold, indicates that this association is unlikely to be a product of sampling variation.

Table 10. Regression Coefficients

Predictor	B	Std. error	Beta	t	Sig.
Constant	-0.906	1.063	-	-0.852	0.396
Social media literacy	0.269	0.016	0.864	16.996	0.000

The overall fit of the model is summarised in Table 11. The multiple correlation coefficient (R) was 0.864, and the coefficient of determination (R-square) was 0.747, with an adjusted R-square of 0.744 and a standard error of the estimate of 1.750. Social media literacy thus accounts for 74.7 percent of the variation in hoax-news prevention among the students sampled, while the remaining 25.3 percent is associated with factors not included in the model. The analysis of variance returned an F value of 288.865 with a significance of 0.000, which confirms that the model fits the data and that social media literacy is a statistically significant predictor of hoax-news prevention. The hypothesis stated in RQ1, that social media literacy is positively and significantly associated with hoax-news prevention behaviour, is therefore supported in a statistical sense. The R-square of 0.747 is exceptionally high for a single predictor in behavioural research and most plausibly reflects common-method bias and partial construct overlap between two self-report scales

completed in the same questionnaire by the same respondents, rather than a purely substantive association; the cross-sectional design rules out any causal reading.

Table 11. Model summary and analysis of variance

Component	Value
Multiple correlation (R)	0.864
Coefficient of determination (R-square)	0.747
Adjusted R-square	0.744
Std. error of the estimate	1.750
F (model fit)	288.865
Significance of F	0.000

RQ1 asked whether social media literacy is associated with hoax-news prevention, and the analysis shows that it is: positively and significantly, so the hypothesis of an association is supported. Because the design is cross-sectional and both variables are self-reported in the same instrument, this is a statistical association, not a causal effect. Read as evidence about learning, the result has a direct meaning. When social media literacy is treated as a competency rather than a passive trait, the finding shows that students who have developed the analytical and evaluative dimensions of the new media literacy framework, critical consuming and critical prosuming, are better placed to question sources, scrutinise headlines, and withhold unverified content. This is consistent with intervention research showing that media literacy training improves discernment and reduces misinformation sharing (Adjin-Tettey, 2022; Guess et al., 2020; Huang et al., 2024; Lu et al., 2024), and with evidence that the critical thinking dispositions tied to media literacy predict fake-news detection among undergraduate students (Orhan, 2023). It also fits the moderating role of social media literacy in models of fake-news sharing, where higher literacy weakens the link between trust in one's network and uncritical forwarding (Wei et al., 2022). The competency, in other words, does not merely correlate with good intentions; it is associated with the behaviour that prevention requires.

It is worth separating what the four dimensions of the framework contribute to this result. The high scores on functional consuming mean that students can operate Instagram and follow what they read, which is a precondition for prevention but not prevention itself. The behaviours that resist hoaxes belong instead to critical consuming, where a user analyses a message and questions the credibility of its source, and to critical prosuming, where a user decides reflectively whether to pass content on. The regression result and the item pattern point in the same direction: prevention rises with literacy overall, but the weakest items, checking an account before reading its content and responding to a post without first evaluating it, sit squarely in the critical dimensions. A composite score that is high on average can therefore still leave the protective sub-skills underdeveloped, which is the practical reason for measuring and teaching the dimensions separately rather than as a single block.

The strength of the relationship should be read with care, and saying so plainly is part of an honest reading of the results. A coefficient of determination of 0.747 is high for

a model with a single predictor. Part of it probably reflects a genuine association, but part is likely to be an artefact of measurement. Both variables were measured with self-report items in the same questionnaire, and self-report measures of distinct constructs administered together tend to share method variance, which inflates the observed association. Self-reported literacy has also been shown to be an imperfect proxy for the actual ability to identify false news (Jones-Jang et al., 2019), and reviews caution that media literacy is not a complete solution and can even produce overconfidence (Bulger & Davison, 2018). Attempts to strengthen brief media literacy interventions by adding self-efficacy components have produced only modest gains (Ferrucci et al., 2023), a further reminder that literacy operates as one element of a system. The defensible conclusion is not that literacy guarantees resistance to hoaxes, but that it is a necessary and teachable part of a wider response that also depends on verification habits, platform design, and regulation (Surjatmodjo et al., 2024).

The hesitancy in source verification found in this sample is not unique to Mataram; studies of university students in Vietnam, Portugal, and Spain report the same pairing of fluent platform use with limited and inconsistent verification of what is read (Lan et al., 2024; Tejedor et al., 2021). This narrowly defined weakness is the kind of target that instruction can address, and the point matters because the type of instruction is not indifferent. Unlike fact-checking of a particular claim, which mainly affects the item it addresses, media literacy instruction appears to help students evaluate information more generally (Berger et al., 2025), and verification skills are known to improve with explicit teaching rather than to appear on their own (Nee, 2019; Sencan & Yilmaz, 2023). A curriculum that responds to this finding would not aim to raise a general awareness that students in Mataram already have; it would give them repeated, structured practice in the specific act of checking who is behind a post before treating its content as information.

Read as evidence about education, these results support treating social media literacy as a deliberate component of the higher-education curriculum rather than a skill that students are assumed to acquire on their own. Several routes are available, and they are not mutually exclusive. Media and information literacy can be integrated across existing courses, so that the evaluation of sources becomes a routine expectation in every discipline, or it can be offered as a dedicated course; curriculum reviews across several countries document both approaches and the conditions under which each works (Rojas-Estrada et al., 2023; Suarez-Perdomo et al., 2025). Whichever route is chosen, lecturers are central to it, because the media education factor in the new media literacy framework depends on teaching capacity, and the digital competence of teachers is itself a recognised condition for effective digital learning (Falloon, 2020; Gisbert Cervera et al., 2022; Nguyen & Habok, 2023). The instructional designs with the strongest support combine the critical dimensions of literacy with critical thinking and digital citizenship through project-based work, structured exercises in which students verify real posts, and the guided discussion of authentic cases (Gutierrez-Aguilar et al., 2024; Prasetiyo et al., 2023; Reynders et al., 2020); innovative pedagogies of this kind have been linked to measurable gains in students' critical thinking and learning outcomes (Bhuttah et al., 2024). One further design point

follows from the evidence: the effects of single, one-off interventions tend to fade, so media literacy education should be distributed and reinforced across a programme rather than delivered once (Nygren et al., 2025).

National datasets report digital literacy that is uneven across regions and across levels of education (Harmawati et al., 2024; Perdana et al., 2019; Zulkarnain et al., 2024), and the demands of a digital, post-truth information environment continue to grow (Effendi, 2023; Pennycook & Rand, 2021). Making media literacy education an explicit goal in the curricula of provincial universities is one way to keep the competency from depending on circumstance, and it is consistent with broader calls to close digital skills gaps in education (Jackman et al., 2021). For a journal concerned with education and teaching across all regions, this is the practical core of the study: the competency that protects students from misinformation is teachable, it is measurable, and there is no good reason to confine its deliberate development to the main academic centres. The four competence dimensions should be taught and assessed separately, so that a course can act on the part of the profile that is weak rather than on a composite average that hides it. Lecturers need institutional support to do this, since the new media literacy framework makes media education a condition for the growth of the competency, and teacher digital competence is a documented requirement for effective digital teaching (Gisbert Cervera et al., 2022; Nguyen & Habok, 2023). For policymakers, the implication is that media literacy education belongs in the standing provision of higher education across regions, not in occasional campaigns, since the gains from one-off interventions tend to decay without reinforcement (Roozenbeek et al., 2022), so that the competency does not depend on where a student happens to study.

Several limitations qualify these conclusions. The study used a cross-sectional design, so it establishes association rather than causation; the data are equally consistent with the interpretation that students who already avoid hoaxes become more literate through practice. Both variables were measured by self-report in a single instrument, which raises the possibility of common-method bias and means that the reported behaviours may differ from observed behaviour. The sample was drawn from one region and reached partly through accidental sampling, which limits how far the findings can be generalised. The model included a single predictor, and factors such as critical thinking, prior media education, interest in news, and the intensity of platform use were not measured, although the literature indicates that they matter (Indah et al., 2022; Tully et al., 2020; Vraga et al., 2020). Finally, the uneven profile of sub-skills shows that a single composite literacy score can conceal important variation, so future measurement should report the four dimensions separately. The R-square of 0.747 reported here is exceptionally high for a single predictor in behavioural research and is best read as a signal of construct overlap and common-method variance between the two self-report scales rather than as an exceptional substantive effect. Because the regression model includes only one predictor, multicollinearity diagnostics in the conventional sense do not apply, discriminant validity between the two scales should instead be tested in future work through confirmatory factor analysis.

CONCLUSION

This study examined the relationship between social media literacy and hoax-news prevention among undergraduate students and demonstrated that social media literacy is positively and significantly associated with students' preventive behaviours against misinformation on Instagram. Although students generally exhibited a high level of social media literacy, the indicator-level analysis revealed that source verification remained the weakest competency, indicating that many students were less likely to verify the credibility of accounts and information sources before accepting or sharing online content. These findings suggest that social media literacy should be viewed not only as a digital competency but also as an important educational outcome that can support students in navigating increasingly complex information environments. While the cross-sectional design does not permit causal inference, the results indicate that social media literacy is closely associated with students' ability to critically evaluate information and respond more responsibly to potential misinformation.

From an educational perspective, the findings underscore the importance of integrating social media literacy into higher education curricula as a core component of digital citizenship and information literacy education. Rather than relying on occasional awareness campaigns, universities should incorporate structured learning activities that explicitly develop critical analysis, source verification, and evidence-based evaluation of online information. Teaching strategies such as inquiry-based learning, case analysis, collaborative fact-checking, and authentic evaluation of social media content may provide students with repeated opportunities to practice identifying and responding to misinformation in real-world contexts. These findings also have implications for curriculum developers, lecturers, and educational policymakers, who should consider embedding media literacy competencies across disciplines to prepare students for responsible participation in digital society. Future research should investigate the effectiveness of specific instructional interventions through longitudinal or experimental designs, examine how teaching practices influence the development of social media literacy, and explore additional educational factors that may strengthen students' resistance to misinformation across different higher education contexts.

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