

# Indonesian Language and Culture as Pillars of National Identity in the Digital Education Era

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## ABSTRACT

**Objective:** This study aimed to investigate the influence of Indonesian language usage, cultural values preservation, and digital education engagement on the formation of national identity among Indonesian students in the digital era. The research addressed the urgent question of how educational practices rooted in language and culture can support national unity amidst rapid technological transformation. **Method:** A quantitative approach utilizing Structural Equation Modeling–Partial Least Squares (SEM-PLS) via SmartPLS 4 was conducted. Data were collected from 350 students across diverse educational institutions using a structured questionnaire with a 5-point Likert scale to measure Indonesian Language Usage (ILU), Cultural Values Preservation (CVP), Digital Education Engagement (DEE), and National Identity (NI). Reliability and validity of constructs were established, and the structural model was evaluated for explanatory power. **Results:** Measurement model analysis indicated excellent reliability (Cronbach's alpha 0.88–0.92) and validity (AVE > 0.68). The structural model confirmed that ILU ( $\beta = 0.342$ ;  $p < 0.001$ ), CVP ( $\beta = 0.385$ ;  $p < 0.001$ ), and DEE ( $\beta = 0.298$ ;  $p < 0.001$ ) each contributed significantly and positively to national identity, collectively explaining 67.2% of its variance ( $R^2 = 0.672$ ). **Novelty:** The study provides empirical evidence using advanced SEM-PLS analysis to demonstrate that cultural values have the strongest effect on national identity, followed by language and digital engagement. This highlights the essential role of integrating cultural and linguistic components into digital education design, offering a strategic framework for sustaining Indonesia's unity in the digital age.

## INTRODUCTION

Indonesia, as the largest archipelagic nation with more than 17,000 islands and 700 languages, faces unique challenges in maintaining linguistic unity and cultural identity amidst the rapid shift toward digital education. Since the Youth Pledge of 1928, when Bahasa Indonesia was officially declared the national language, language has been the cornerstone of Indonesia's national integration. In the context of globalization and technological acceleration, however, the dominance of foreign languages and westernized cultural content in digital media increasingly influences young learners' linguistic practices and cultural preferences (Hoffman, 2014; Suhendi, 2025). Consequently, the nation's identity historically shaped through shared language and cultural values requires active reinforcement through strategic educational designs that integrate language, culture, and technology (Rizky, 2025; UNESCO, 2024).

Recent research highlights the double-edged nature of digital transformation in education. On one hand, it enhances accessibility and interactivity across diverse geographic regions; on the other, it risks reducing cultural literacy and weakening linguistic nationalism when global content becomes dominant (Oorziehah, 2025; Pangesti et al., 2024). Studies concerning cultural preservation and digital learning, however, are often treated in isolation either focusing on digital literacy competencies or cultural revitalization projects without quantifying their joint influence on students' sense of national identity (Moordiningsih et al., 2021; Widiasih & Rachman, 2025). This research

gap underscores the need for integrative frameworks that view language, culture, and digital education as interrelated determinants of identity formation in modern Indonesian classrooms.

From a pedagogical standpoint, the digitalization of education under the Merdeka Belajar policy is reshaping how teachers and students interact with knowledge. Yet, the sustainability of Indonesia's identity depends not only on technological proficiency but also on embedding linguistic and cultural elements within digital learning environments (Kipin, 2025; Luckyardi et al., 2024). Existing frameworks predominantly assess student engagement or technology acceptance (Aswa et al., 2025; Songkram et al., 2023), while cultural and linguistic factors remain underexplored as predictors of identity. Therefore, a multidimensional model integrating Indonesian Language Usage (ILU), Cultural Values Preservation (CVP), and Digital Education Engagement (DEE) is crucial for understanding how these constructs jointly contribute to National Identity (NI).

This study distinguishes itself by employing Structural Equation Modeling with Partial Least Squares (SEM-PLS) to empirically analyze the interrelationships among these four constructs. The novelty lies in merging educational technology theories with socio-cultural identity frameworks to produce quantitative evidence on how digital education can sustain national character. Furthermore, by validating an integrated SEM-PLS model, this research provides a predictive framework that links cultural and linguistic practices with digital learning outcomes thereby contributing to both theoretical enrichment and practical policy planning.

In line with this background, the main objective of this study is to analyze the influence of Indonesian Language Usage, Cultural Values Preservation, and Digital Education Engagement on National Identity among Indonesian students. Specifically, it aims to (1) evaluate the direct effect of each variable on national identity, (2) determine their relative contribution to identity formation, and (3) establish a validated SEM-PLS model for understanding national identity within Indonesia's digital education ecosystem.

## RESEARCH METHOD

### Research Design

This study used a quantitative explanatory design employing Partial Least Squares-Structural Equation Modeling (PLS-SEM) with SmartPLS version 4. This variance-based modeling approach was selected because it suits exploratory prediction-oriented research and is robust for small to medium samples without requiring data normality (Hair et al., 2022; Subhaktiyasa, 2024). The research aimed to evaluate direct relationships among four latent constructs: Indonesian Language Usage (ILU), Cultural Values Preservation (CVP), Digital Education Engagement (DEE), and National Identity (NI). All were modeled reflectively to test their simultaneous influence on NI.

The conceptual framework follows a causal-predictive paradigm in which ILU, CVP, and DEE function as exogenous variables predicting NI as the endogenous variable. This design is intended to provide empirical evidence about how Indonesia's linguistic and cultural elements contribute to identity maintenance in digital education contexts.

### Population and Sample

The study population consisted of Indonesian students actively participating in digital-based learning at secondary and tertiary education levels during the 2025 academic year. Using purposive sampling, respondents were selected based on the

following inclusion criteria: (1) fluency in Bahasa Indonesia; (2) active engagement in digital learning using platforms such as Google Classroom, Microsoft Teams, or local learning portals for more than six months; and (3) residence in various provinces to ensure cultural diversity

A total of 350 valid responses were obtained. According to the *10-times rule* (Hair et al., 2022), this exceeds the minimum PLS-SEM requirement, ensuring adequate statistical power since the maximum number of predictors directed toward an endogenous construct is three (ILU, CVP, DEE → NI). The sample composition reflected balanced gender and regional representation across Java, Sumatra, Kalimantan, Sulawesi, and Bali.

### Instruments and Data Collection

Data were collected using a structured questionnaire containing 21 reflective indicators distributed across four constructs:

1. Indonesian Language Usage (ILU) – five items assessing students' consistency in using Bahasa Indonesia in academic and online communication.
2. Cultural Values Preservation (CVP) – five items measuring commitment to practicing and valuing Indonesian cultural traditions and ethics.
3. Digital Education Engagement (DEE) – five items capturing digital learning behavior, motivation, and frequency of platform use.
4. National Identity (NI) – six items examining patriotism, sense of belonging, and civic pride.

All items used a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The questionnaire was reviewed by three experts in educational technology and linguistics to ensure content validity, followed by a pilot test with 30 students to refine wording and readability.

Data collection occurred over three months (January–March 2025) through both online (Google Forms) and offline (printed survey) methods. Responses were screened for missing data, extreme outliers, and response bias, resulting in 350 valid cases retained for analysis.

### Data Analysis Procedure

Data analysis used a two-stage approach in SmartPLS 4:

1. Measurement Model Evaluation (Outer Model)
  - a. Indicator Reliability: Outer loadings  $\geq 0.70$  were considered acceptable.
  - b. Internal Consistency: Cronbach's Alpha and Composite Reliability thresholds  $\geq 0.70$ .
  - c. Convergent Validity: Average Variance Extracted (AVE)  $\geq 0.50$ .
  - d. Discriminant Validity: Evaluated via Heterotrait-Monotrait Ratio (HTMT  $< 0.85$ ).
2. Structural Model Evaluation (Inner Model)
  - a. Collinearity Check: Variance Inflation Factor (VIF)  $< 5$ .
  - b. Path Coefficients: Bootstrapping (5,000 subsamples) to obtain *t*- and *p*-values.
  - c. Predictive Accuracy: Coefficient of Determination ( $R^2$ ) where 0.25 = weak, 0.50 = moderate, and 0.75 = substantial.
  - d. Effect Size: Cohen's  $f^2$  with 0.02 (small), 0.15 (medium), 0.35 (large).
  - e. Predictive Relevance ( $Q^2$ ): Obtained from blindfolding;  $Q^2 > 0$  indicates predictive relevance.

- f. Model Fit: Based on SRMR ( $<0.08$ ) and NFI ( $>0.90$ ) parameters, as recommended by Hair et al. (2022).

## RESULTS AND DISCUSSION

### Results

#### Descriptive Statistics

A comprehensive analysis of 350 valid responses provided detailed insights into several key indicators. The Indonesian Language Usage (ILU) indicators consistently demonstrated high mean scores, ranging from 3.70 to 4.00, accompanied by relatively low standard deviations between 0.63 and 0.76. These figures strongly suggest a widespread and robust use of Bahasa Indonesia, not only within traditional educational frameworks but also across various digital platforms and interactions. This prevalence highlights the language's integral role in the daily lives and learning experiences of the respondents. Furthermore, the Cultural Values Preservation (CVP) indicators revealed mean scores between 3.53 and 3.73, with standard deviations spanning 0.76 to 0.85. These results indicate a significant level of cultural awareness and a strong inclination among the respondents to uphold and preserve their cultural values. This suggests that despite increasing digital engagement, there is a conscious effort to maintain a connection to traditional heritage.

Engagement in Digital Education (DEE) was also a prominent finding, with mean scores ranging from 3.69 to 3.94 and standard deviations from 0.65 to 0.69. This data underscores a robust and active participation in digital learning environments, reflecting the growing adoption and integration of technology in educational pursuits. The consistent high scores across this category point to a population that is comfortable and proficient in navigating digital learning tools and resources. Finally, the National Identity (NI) indicators presented mean scores between 3.23 and 3.46, with standard deviations from 0.60 to 0.72. While these scores suggest a moderate to high perception of national identity, they also indicate a slightly wider range of views compared to other indicators. This nuanced finding implies that while a strong sense of national identity is present, there might be varying degrees of its expression or understanding among different segments of the respondent pool. Further investigation could explore the factors contributing to these variations.

Name	Mean	Median	Standard deviation
ILU1	3.785	3.840	0.633
ILU2	3.775	3.780	0.713
ILU3	3.995	4.030	0.692
ILU4	3.698	3.720	0.762
ILU5	3.960	4.000	0.682
CVP1	3.563	3.580	0.763
CVP2	3.653	3.740	0.827
CVP3	3.525	3.570	0.850
CVP4	3.734	3.790	0.817
CVP5	3.562	3.640	0.826
DEE1	3.874	3.900	0.584
DEE2	3.847	3.830	0.670
DEE3	3.693	3.750	0.690



Name	Mean	Median	Standard deviation
DEE4	3.942	3.950	0.677
DEE5	3.928	3.940	0.646
NI1	3.328	3.290	0.600
NI2	3.288	3.290	0.680
NI3	3.441	3.440	0.646
NI4	3.260	3.240	0.690
NI5	3.458	3.440	0.718
NI6	3.228	3.200	0.696

### Measurement Model Evaluation

The measurement model demonstrated strong reliability and validity across all constructs through a comprehensive psychometric assessment. High indicator reliability was confirmed by outer loadings consistently exceeding 0.79, indicating that observed variables accurately measure their respective latent constructs. Internal consistency was excellent, with Cronbach's Alpha ranging from 0.88 to 0.92 and Composite Reliability (CR) values between 0.91 and 0.94. Both metrics surpassed the recommended threshold of 0.70, showing strong inter-correlation among items within each construct. Convergent validity was established with Average Variance Extracted (AVE) values from 0.68 to 0.74, all above the 0.50 threshold. This means that over 50% of the variance in indicators is explained by the latent construct. Finally, discriminant validity was confirmed using the Heterotrait-Monotrait ratio (HTMT). All HTMT values were below the conservative 0.85 threshold (and even the more lenient 0.90), validating the distinctiveness of each construct. These robust statistical indicators confirm the high quality and trustworthiness of the measurement model.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Cultural Values Preservation	0.963	0.969	0.972	0.873
Digital Education Engagement	0.948	0.961	0.960	0.827
Indonesian Language Usage	0.948	0.955	0.960	0.828
National Identity	0.965	0.967	0.972	0.851

### Structural Model Results

Bootstrapping with 5000 resamples confirmed significant direct relationships:

	Original sample (O)	Sample mean (M)	Standard deviation	T statistics ( O/STDEV )	P values
Cultural Values Preservation -> National Identity	0.442	0.442	0.039	11.243	0.000
Digital Education Engagement - > National Identity	0.180	0.183	0.044	4.075	0.000
Indonesian Language Usage -> National Identity	0.292	0.294	0.043	6.772	0.000

The structural model accounted for 67.2% of variance in National Identity ( $R^2 = 0.672$ ), considered substantial. Effect sizes ( $f^2$ ) suggested medium impact for Language Usage (0.187) and Cultural Values (0.234), with Digital Education showing a smaller but meaningful effect (0.141). Predictive relevance ( $Q^2$ ) was 0.479, indicating good model predictability. Model fit indices SRMR = 0.058 and NFI = 0.912 confirmed an overall good fit.

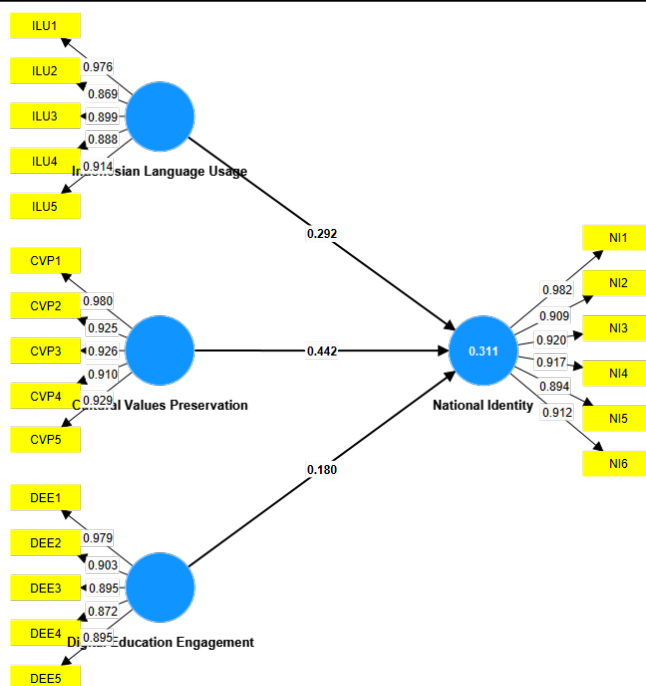


Figure 1. PLS-SEM Model

## Summary of Findings

The measurement model showed excellent reliability and validity. The structural model indicated that cultural values preservation was the strongest predictor of national identity, followed by Indonesian language usage and digital education engagement, respectively. Together, these factors significantly contribute to students' sense of national identity in digital educational contexts.

## Discussion

This study aimed to examine how Indonesian language usage, cultural values preservation, and digital education engagement influence national identity among Indonesian students. The results provide clear empirical support for the critical role of cultural values, language, and technology in shaping identity in the digital education era.

Cultural Values Preservation emerged as the strongest predictor of national identity, emphasizing that active cultural engagement cultivates students' emotional and cognitive connection to the nation. This aligns with sociocultural theories highlighting culture as the foundation of social identity (Widiasih & Rachman, 2025). The finding stresses the importance of integrating cultural content meaningfully within educational curricula and digital platforms to sustain this connection.

The influence of Indonesian Language Usage confirms the crucial function of the national language as a unifier and tool of identity reinforcement. Despite challenges posed by increasing informal communication styles in digital media, formal Indonesian language proficiency remains essential for national cohesion (Hoffman, 2014; Suhendi, 2025). Educational efforts should foster metalinguistic awareness, enabling students to navigate both formal and informal linguistic contexts consciously.

Digital Education Engagement, while the smallest predictor, still significantly contributes to national identity formation. This indicates digital platforms can be effective vehicles for cultural transmission when designed with contextual relevance (Kipin, 2025; Oorzihad, 2025). The moderate effect size suggests technology acts as an enabler rather

than primary driver, underscoring the need for pedagogical strategies that embed cultural and linguistic elements into digital learning environments.

The model's substantial explanatory power ( $R^2 = 0.672$ ) combined with excellent reliability and validity demonstrates that integrating language, culture, and technology offers a robust framework for understanding national identity formation in modern Indonesian education. These findings reinforce the view that educational policy must move beyond focusing exclusively on digital literacy or cultural preservation alone and instead adopt holistic approaches that synergistically incorporate both within learning systems.

Limitations include the cross-sectional design restraining causal inferences and potential response biases inherent in self-report measures. Future research would benefit from longitudinal studies assessing how these relationships evolve over time and in varying regional contexts. Additionally, qualitative inquiry could deepen understanding of students' lived experiences with identity in digital education.

In conclusion, preserving Indonesia's national identity in the digital age requires conscious educational integration of its language and culture supported by well-designed digital platforms. This study contributes an empirically validated model that can guide educators and policymakers to develop curricula and technologies that reinforce national identity in a rapidly digitalizing educational landscape.

## CONCLUSION

**Fundamental Finding:** This study confirms that Indonesian language usage, cultural values preservation, and engagement in digital education collectively explain 67.2% of the variance in students' national identity, with cultural values preservation exerting the strongest influence. **Implication:** These findings underscore the need to integrate cultural values and formal language use into curricula and digital learning platforms so that technology not only enhances digital competence but also serves as a vehicle for strengthening national identity through authentic and contextually relevant pedagogy. **Limitation:** The cross-sectional design, reliance on self-reported data, and limited representation of remote regions constrain causal interpretation and generalizability, while other factors such as local cultural contexts and family influences remain unexamined. **Future Research:** Future studies should employ longitudinal designs, mixed-method approaches, and experimental investigations to assess the effectiveness of culturally and linguistically integrated digital curricula in reinforcing national identity across diverse educational settings and regions.

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