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# The influence of digital literacy and self-efficacy on entrepreneurial intention among vocational high school students: A PLS-SEM mediation analysis

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***Abstrak***

*Rendahnya intensi berwirausaha menjadi tantangan dalam menyiapkan lulusan SMK yang mampu menciptakan peluang kerja. Penelitian ini ini bertujuan untuk mengetahui: (1) pengaruh literasi digital terhadap intensi berwirausaha; (2) pengaruh efikasi diri terhadap intensi berwirausaha; (3) pengaruh literasi digital terhadap efikasi diri; (4) pengaruh literasi digital terhadap intensi berwirausaha dengan efikasi diri sebagai variabel mediasi. Penelitian ini menggunakan metode kuantitatif tipe kausalitas. Populasi dalam penelitian ini adalah siswa kelas X dan XI MPLB SMKN 1 Karanganyar. Teknik pengambilan sampel menggunakan probability sampling dengan metode proportionate stratified random sampling. Berdasarkan perhitungan menggunakan rumus Slovin, diperoleh sampel sebanyak 105 siswa. Pengumpulan data dilakukan melalui kuesioner yang disebarkan menggunakan google form. Analisis data menggunakan metode PLS-SEM dengan bantuan SmartPLS versi 4. Hasil penelitian menunjukkan bahwa: (1) literasi digital berpengaruh positif dan signifikan terhadap intensi berwirausaha (p-value 0.000 < 0.05; t-statistic 3.997 > 1.96; original sample 0.386); (2) efikasi diri berpengaruh positif dan signifikan terhadap intensi berwirausaha (p-value 0.000 < 0.05; t-statistic 6.136 > 1.96; original sample 0.490); (3) literasi digital berpengaruh positif dan signifikan terhadap efikasi diri (p-value 0.000 < 0.05; t-statistic 5.945 > 1.96; original sample 0.448); dan (4) literasi digital berpengaruh positif dan signifikan terhadap intensi berwirausaha melalui efikasi diri sebagai mediasi (p-value 0.000 < 0.05; t-statistic 4.217 > 1.96; original sample 0.220). Hasil penelitian ini dapat digunakan sebagai dasar pengembangan kebijakan pendidikan vokasional dalam meningkatkan intensi berwirausaha guna mendukung terciptanya lulusan yang mandiri dan berdaya saing.*

*Kata kunci : keyakinan individu; kompetensi teknologi; niat kewirausahaan; kuantitatif*

Abstract
Low entrepreneurial intention among vocational high school graduates represents a persistent challenge in developing a workforce capable of generating employment opportunities. This study investigates four research questions: (1) the effect of digital literacy on entrepreneurial intention;

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(2) the effect of self-efficacy on entrepreneurial intention; (3) the effect of digital literacy on self-efficacy; and (4) the mediating role of self-efficacy in the relationship between digital literacy and entrepreneurial intention. Employing a quantitative causal research design, the study population comprised Grade X and Grade XI students enrolled in the Office Management and Business Services (MPLB) programme at SMKN 1 Karanganyar. A sample of 105 students was selected through proportionate stratified random sampling based on the Slovin formula. Data were collected via questionnaires administered through Google Forms and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS Version 4. The results revealed that: (1) digital literacy exerted a positive and significant effect on entrepreneurial intention ($\beta = 0.386$, $t = 3.997$, $p < 0.001$); (2) self-efficacy demonstrated a positive and significant effect on entrepreneurial intention ($\beta = 0.490$, $t = 6.136$, $p < 0.001$); (3) digital literacy significantly predicted self-efficacy ($\beta = 0.448$, $t = 5.945$, $p < 0.001$); and (4) self-efficacy partially mediated the relationship between digital literacy and entrepreneurial intention ($\beta = 0.220$, $t = 4.217$, $p < 0.001$). These findings may serve as a basis for informing vocational education policy, particularly in fostering entrepreneurial intention with a view to producing self-reliant and competitive graduates.

Keywords: entrepreneurial intention; self-efficacy; digital literacy; PLS-SEM; vocational education

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## Introduction

The rapid advancement of Information and Communication Technology (ICT) in the era of the Fourth Industrial Revolution (Industry 4.0) has triggered far-reaching transformations, particularly in the domains of education and employment. Amid this accelerating pace of change, Indonesia continues to grapple with the persistent challenge of unemployment. According to data released by the Central Statistics Agency (Badan Pusat Statistik [BPS], 2025a), the national unemployment rate reached 4.85% in 2025, representing a marginal decline of 0.06 percentage points compared to the preceding year. This unemployment figure constitutes a serious social problem, particularly among vocational high school (SMK) graduates. Disaggregated by educational attainment, the Open Unemployment Rate (OUR) was highest among SMK graduates at 8.63%, followed by senior high school graduates (6.88%), university graduates (5.39%), diploma holders (4.31%), junior high school graduates (3.8%), and those with primary education or no schooling (2.3%; BPS, 2025b). Notably, the OUR among SMK graduates declined by 0.38 percentage points relative to the previous year, yet it remains the highest across all educational categories, underscoring the urgency of addressing structural barriers to employment among this cohort.

The expansion of entrepreneurship in Indonesia holds considerable potential for generating employment and thereby reducing unemployment. In any business operation, human labour constitutes an integral component of the business process and contributes directly to the creation of new job opportunities. Accordingly, synergistic collaboration among government agencies, educational institutions, the business sector, and civil society is essential for fostering entrepreneurial development. Beyond its contributions to individual prosperity, the cultivation of an entrepreneurial spirit also enhances quality of life and supports sustainable economic development. Young people who are adaptive to change, possess high innovative capacity, and enjoy broad access to technology represent a significant resource for nurturing entrepreneurial intention. Entrepreneurial intention may be understood as the deliberate desire, determination, and conviction that arises within an individual to develop an entrepreneurial mindset and identify business opportunities, both in the present and the future (Simatupang, 2021).

In line with Presidential Regulation No. 68 of 2022 on the revitalisation of vocational education and training, Indonesian vocational education is oriented towards producing human resources who possess relevant competencies aligned with labour market demands and who are capable of developing entrepreneurial abilities. The policy envisions SMK graduates who are not merely prepared for employment in industry and business settings, but who are also equipped to become job creators through entrepreneurship as a viable career alternative. Students in vocational programmes are therefore expected to develop an entrepreneurial disposition, consistent with the learning objectives of Creative Products and Entrepreneurship (Produk Kreatif dan Kewirausahaan, PKK), which integrates technology and entrepreneurship to foster productive, creative, and innovative capacities.

Entrepreneurial intention is thus of critical importance for SMK students in generating a new wave of graduate entrepreneurs. Preliminary research conducted via questionnaire with 36 MPLB students at SMKN 1 Karanganyar indicated that entrepreneurial intention was relatively low. All respondents expressed a preference for formal employment in either the public or private sector over self-employment. Specifically, 63.9% of students reported no intention to pursue entrepreneurship. Among the factors identified as influencing entrepreneurial intention, 41.7% were attributable to digital literacy, 36.1% to self-efficacy, 16.7% to entrepreneurship education, and 5.5% to the family environment.

Low entrepreneurial intention was further evidenced in students' predominantly employment-oriented attitudes. Many students appeared to prefer the security of working under the direction of others to the uncertainty inherent in establishing an independent business. For the majority, entrepreneurship was not perceived as a promising career alternative; rather, it was regarded as a last resort in the event of failure to secure formal employment. This phenomenon reveals a significant misalignment between the objectives of vocational education and the realities of the contemporary labour market. Consequently, the low level of entrepreneurial intention among students constitutes a matter requiring serious and systematic attention, with the aim of identifying appropriate interventions to cultivate entrepreneurial knowledge, conviction, and motivation.

Several factors have been identified as influencing students' entrepreneurial intention. Drawing on Vernia (2018), these include the need for achievement, access to capital, self-efficacy, creativity and innovation, family background, and entrepreneurship education. Additional influencing factors comprise digital literacy, internal locus of control, and academic support (Apidana, 2022).

From a theoretical perspective, the Theory of Planned Behaviour (TPB) posits that an individual's intention to engage in a given behaviour is shaped by attitudes towards the behaviour, subjective norms, and perceived behavioural control. Within this framework, digital literacy is conceptualised as an external factor that contributes to the formation of intention through the cultivation of positive attitudes towards digital behaviour. Self-efficacy, meanwhile, is positioned as a component of perceived behavioural control, representing the individual's belief in their own capability to execute a given behaviour. Zubaidah (2016) argues that technological mastery has become a mandatory competency for individuals navigating the digital era. Consistently, Purwaningsih et al. (2023) assert that digital literacy constitutes a critical need for prospective entrepreneurs seeking to exploit emerging opportunities. Naila et al. (2021) conceptualise digital literacy as the ability and skill to utilise digital media, technological tools, and communication networks to access, process, create, and evaluate information, and to employ such information responsibly within legal and ethical parameters. Through digitalisation, individuals are able to leverage digital media platforms—including e-commerce, social media, and digital marketing—to identify market and business opportunities (Kamilah et al., 2025). In practice, however, MPLB students tend to use digital media primarily for consumption rather than productive purposes, limiting its potential contribution to entrepreneurial intention.

Self-efficacy also plays a significant role in shaping entrepreneurial intention. Citing Bandura's foundational concept, Abdullah (2019) defines self-efficacy as an individual's evaluative perception of their own capacity to execute a desired course of action. This self-referential belief influences how a person thinks, feels, and behaves, ultimately shaping their self-confidence (Widyana & Sarwono, 2023). While self-confidence tends to facilitate success, self-doubt may increase the risk of failure. In practice, many MPLB students report uncertainty about their own capabilities and a pronounced fear of failure, conditions that appear to attenuate entrepreneurial intention. The convergence of low digital literacy and low self-efficacy may thus contribute to the limited entrepreneurial readiness observed among SMK graduates.

Nisa and Sakti (2025) contend that self-efficacy cultivates the conviction and self-confidence necessary to initiate and develop a business, while digital literacy fosters positive attitudes through the capacity to utilise

technology in entrepreneurial activities. Fajriana and Fietroh (2023) conclude that higher digital literacy skills are associated with stronger entrepreneurial intentions, which in turn enhance self-confidence and further reinforce those intentions. Marcellyna et al. (2025) and Khoiriyah et al. (2022) similarly report that digital literacy and self-efficacy exert significant positive effects on entrepreneurial intention. Together, these two factors constitute important determinants of entrepreneurial intention in the digital era.

The present study was conducted to extend the generalisability of existing findings to the SMK context, as the preponderance of comparable research has been conducted among university students. Furthermore, the study seeks to corroborate and strengthen prior findings by employing a different respondent profile, thereby yielding more comprehensive and generalisable results. Distinctively, unlike previous studies that have generally examined direct relationships among variables in university samples, the present research introduces a methodological contribution by simultaneously testing the mediating role of self-efficacy using PLS-SEM among SMK students in the MPLB programme—a vocational education context that has received comparatively little attention in the entrepreneurial intention literature. Based on the foregoing, this study addresses the research problem of how digital literacy and self-efficacy influence entrepreneurial intention among MPLB students at SMKN 1 Karanganyar, with self-efficacy serving as a mediating variable. It is anticipated that the findings will provide actionable insights for efforts to enhance entrepreneurial intention among students in the vocational education sector.

## Method

This study was conducted at SMK Negeri 1 Karanganyar, located at Jalan Monginsidi No. 1, Manggeh, Tegalgede, Karanganyar, Central Java, Indonesia. The participants were Grade X and Grade XI students enrolled in the Office Management and Business Services (Manajemen Perkantoran dan Layanan Bisnis, MPLB) programme. The research adopted a quantitative causal research design, grounded in a positivist philosophical orientation, which aims to examine specific populations or samples through the use of research instruments, statistical data analysis, and hypothesis testing (Sugiyono, 2023). This design enables the examination of hypothesised relationships between exogenous and endogenous variables. In the present study, digital literacy and self-efficacy served as exogenous variables exerting direct effects on entrepreneurial intention as the endogenous variable. To construct a path analysis model, one of the exogenous variables—self-efficacy—was positioned as a mediating variable.

### Participants

The study population comprised 143 Grade X and Grade XI MPLB students at SMK Negeri 1 Karanganyar. Probability sampling using a proportionate stratified random sampling method was employed. Applying the Slovin formula, a sample of 105 students was determined.

### Instruments

Data were collected through questionnaires administered via Google Forms using Likert-scale ratings to obtain primary data. Data collection was conducted between 19 January and 24 January 2026. The research instruments were adapted from validated instruments in prior studies. The entrepreneurial intention instrument was adapted from Razi-ur-Rahim et al. (2024), the digital literacy instrument from Donaldson et al. (2025), and the self-efficacy instrument from Adjimah et al. (2025). The Likert scale employed for the digital literacy variable ranged from 1 to 7, whilst the self-efficacy and entrepreneurial intention variables used a 1–5 scale, in accordance with the scales adopted by the original instruments. The use of different Likert scales carries implications for the interpretation of mean scores, as the rating ranges are not equivalent; accordingly, a three-box method was employed for score interpretation. The 1–7 scale affords greater response variation, enabling respondents to express their views more precisely, while the 1–5 scale is comparatively simpler and more readily comprehensible. Given the differing scale ranges, mean scores across variables cannot be directly compared on a purely numerical basis; interpretation must therefore be calibrated according to the categorical thresholds of each respective scale.

### Data Analysis

PLS-SEM analysis involves two sequential stages: the measurement model (outer model) and the structural model (inner model). The measurement model assessment includes convergent validity (evaluated

via Average Variance Extracted [AVE] and outer loadings), discriminant validity (assessed through the Fornell–Larcker criterion, HTMT, and cross-loadings), and reliability (examined via composite reliability and Cronbach's alpha). SmartPLS Version 4 was used to perform structural model analysis, encompassing model fit, $R^2$, effect size ($f^2$), predictive relevance ($Q^2$), and multicollinearity. Hypothesis testing was conducted via bootstrapping, yielding t-statistics and p-values as the basis for significance determination.

## Results

The research instrument comprised 13 statement items. The entrepreneurial intention variable included five indicators, each represented by a single item. The mean score for entrepreneurial intention was 77.72, placing it in the "high" category; the highest index value was recorded for item IB 1: "I am interested in and aspire to become an entrepreneur at some point in the future." These results indicate that the majority of respondents provided generally positive responses to the entrepreneurial intention items. The digital literacy variable similarly comprised five indicators, each with a single item. The mean score for digital literacy was 78.25, also in the "high" category; the highest index value was recorded for item LD 1: "I find it easy to understand how to use digital applications on my phone or computer." For the self-efficacy variable, three indicators were included, each with a single item. The mean score was 78.67, categorised as "high"; the highest index value was recorded for item ED 1: "I am confident in my ability to identify new and profitable business opportunities that are beneficial to others and to the surrounding environment." Across all three constructs, the majority of respondents provided consistently positive responses.

### Measurement Model (Outer Model)

The measurement model was assessed in terms of convergent validity, discriminant validity, and reliability. An item is considered valid when its outer loading exceeds 0.70 and AVE exceeds 0.50 (Sa'diyah et al., 2024). Instruments are deemed reliable when Cronbach's alpha (CA) and composite reliability (CR) values exceed 0.70 (Yarsasi et al., 2025).

Table 1 presents the validity and reliability results of the original instruments (prior studies) used as the basis for adapting the measures employed in the present study. As shown in Table 1, outer loading values for all items in each construct exceed the minimum threshold of 0.70, indicating adequate validity. AVE values for all constructs exceed 0.50, confirming convergent validity. Both CA and CR values surpass 0.70 for all constructs, demonstrating satisfactory reliability. These results confirm that all prior-study instruments met the required psychometric standards for adaptation.

Table 1 presents the validity and reliability results of the original instruments from prior studies used as the basis for instrument adaptation in the present study.

**Table 1**
*Validity and Reliability Results of Original Instruments (Prior Studies)*

| Variable | Item | Loadings | CA | CR | AVE |
|---|---|---|---|---|---|
| Entrepreneurial Intention (EI) | EI1 | 0.802 | 0.864 | 0.902 | 0.649 |
| | EI2 | 0.815 | | | |
| | EI3 | 0.803 | | | |
| | EI4 | 0.822 | | | |
| | EI5 | 0.785 | | | |
| Digital Literacy (DL) | DL1 | 0.817 | 0.896 | 0.924 | 0.708 |

| | | | | | |
|---|---|---|---|---|---|
| | DL2 | 0.906 | | | |
| | DL3 | 0.742 | | | |
| | DL4 | 0.887 | | | |
| | DL5 | 0.846 | | | |
| Self-Efficacy (SE) | SE1 | 0.900 | 0.784 | 0.872 | 0.689 |
| | SE2 | 0.908 | | | |
| | SE3 | 0.678 | | | |

Note. CA = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted. Values reported from original prior-study instruments.

Table 2 presents the convergent validity and reliability results for the present study's sample. As shown in Table 2, outer loadings for all items across each construct exceed 0.70, AVE values surpass 0.50 for all constructs, and both CA and CR values exceed 0.70. These results confirm that all constructs in the present study's measurement model demonstrate satisfactory convergent validity and reliability, indicating that each item shares a strong relationship with its corresponding construct.

**Table 2**
*Convergent Validity and Reliability of the Present Study*

| Variable | Item | Loadings | CA | CR | AVE |
|---|---|---|---|---|---|
| Entrepreneurial Intention (EI) | EI1 | 0.821 | 0.882 | 0.913 | 0.679 |
| | EI2 | 0.810 | | | |
| | EI3 | 0.849 | | | |
| | EI4 | 0.760 | | | |
| | EI5 | 0.875 | | | |
| Digital Literacy (DL) | DL1 | 0.884 | 0.908 | 0.931 | 0.731 |
| | DL2 | 0.882 | | | |
| | DL3 | 0.841 | | | |
| | DL4 | 0.803 | | | |
| | DL5 | 0.862 | | | |
| Self-Efficacy (SE) | SE1 | 0.910 | 0.862 | 0.916 | 0.784 |
| | SE2 | 0.865 | | | |

| | | | |
|---|---|---|---|
| | SE3 | 0.880 | |

Note. CA = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted.

Discriminant validity was assessed using cross-loading analysis. A construct demonstrates discriminant validity when the cross-loading of each indicator on its own latent variable is higher than its cross-loading on all other latent variables (Emita et al., 2022). As presented in Table 3, all indicators (bolded values) load most strongly on their respective constructs and more weakly on all other constructs, indicating that each indicator explains its own variable better than it explains any other. These results confirm that the measurement model possesses adequate discriminant validity.

**Table 3**
*Cross-Loading Values for Discriminant Validity Assessment*

| Item | SE | EI | DL |
|---|---|---|---|
| SE1 | **0.910** | 0.678 | 0.382 |
| SE2 | **0.865** | 0.525 | 0.405 |
| SE3 | **0.880** | 0.546 | 0.407 |
| EI1 | 0.543 | **0.821** | 0.451 |
| EI2 | 0.581 | **0.810** | 0.611 |
| EI3 | 0.580 | **0.849** | 0.518 |
| EI4 | 0.428 | **0.760** | 0.381 |
| EI5 | 0.576 | **0.875** | 0.498 |
| DL1 | 0.408 | 0.557 | **0.884** |
| DL2 | 0.434 | 0.593 | **0.882** |
| DL3 | 0.419 | 0.494 | **0.841** |
| DL4 | 0.334 | 0.475 | **0.803** |
| DL5 | 0.295 | 0.443 | **0.862** |

Note. SE = self-efficacy; EI = entrepreneurial intention; DL = digital literacy. Bold values indicate each indicator's loading on its own construct.

The Fornell–Larcker criterion requires that each construct's square root of AVE exceeds its correlation with all other constructs (Arifin et al., 2023). As presented in Table 4, the square root of AVE for each construct (diagonal values) exceeds the off-diagonal correlations with other constructs. This confirms that each construct is more strongly related to its own indicators than to those of any other construct, thus satisfying the Fornell–Larcker criterion for discriminant validity.

**Table 4**
*Fornell–Larcker Criterion for Discriminant Validity*

| | DL | SE | EI |
|---|---|---|---|
| DL | **0.855** | | |
| SE | 0.448 | **0.885** | |
| EI | 0.606 | 0.663 | **0.824** |

| | DL | SE | EI |
|---|---|---|---|

Note. Diagonal values represent the square root of AVE. DL = digital literacy; SE = self-efficacy; EI = entrepreneurial intention.

Discriminant validity was further assessed using the Heterotrait–Monotrait (HTMT) ratio. A construct is considered valid when its HTMT value is below 0.90 (Sakinah et al., 2020). As shown in Table 5, all inter-construct HTMT values fall below this threshold, confirming adequate discriminant validity across all construct pairs.

**Table 5**
*Heterotrait–Monotrait (HTMT) Ratio*

| Construct Pair | HTMT |
|---|---|
| DL ↔ EI | 0.660 |
| DL ↔ SE | 0.501 |
| EI ↔ SE | 0.748 |

Note. DL = digital literacy; SE = self-efficacy; EI = entrepreneurial intention. All values below the 0.90 threshold indicate adequate discriminant validity.

**Structural Model (Inner Model)**

Table 6 presents the model fit indices. A model is considered to have an acceptable fit when the Standardised Root Mean Square Residual (SRMR) value is below 0.10 (Abdillah & Septianawati, 2023). As shown in Table 6, the SRMR value was 0.068, indicating that the proposed model achieves an acceptable level of fit. This result suggests that the hypothesised model adequately represents the observed data with a low level of residual error.

**Table 6**
*Model Fit Indices*

| Index | Saturated Model | Estimated Model |
|---|---|---|
| SRMR | 0.068 | 0.068 |
| d_ULS | 0.421 | 0.421 |
| d_G | 0.202 | 0.202 |
| $\chi^2$ | 124.724 | 124.724 |
| NFI | 0.864 | 0.864 |

Note. SRMR = standardised root mean square residual; NFI = normed fit index. SRMR < 0.10 indicates acceptable model fit (Abdillah & Septianawati, 2023).

Table 7 presents the $R^2$ values for the endogenous variables. The $R^2$ value for self-efficacy was 0.201, indicating that 20.1% of the variance in self-efficacy was explained by digital literacy, with the remaining 79.9% attributable to variables outside the model. The $R^2$ value for entrepreneurial intention was 0.559, indicating that 55.9% of its variance was jointly explained by digital literacy and self-efficacy, with the remaining 44.1% explained by other variables not included in the model.

**Table 7**
*$R^2$ Values for Endogenous Variables*

| Endogenous Variable | $R^2$ | $R^2$ Adjusted |
|---|---|---|
| Self-Efficacy (SE) | 0.201 | 0.193 |
| Entrepreneurial Intention (EI) | 0.559 | 0.550 |

Note. SE = self-efficacy; EI = entrepreneurial intention.

Effect size ($f^2$) was assessed using the criteria proposed by Cohen (as cited in Arifin et al., 2023): $f^2 > 0.02$ indicates a small effect, $f^2 > 0.15$ a medium effect, and $f^2 > 0.35$ a large effect. As presented in Table 8, digital literacy exerted a medium effect on entrepreneurial intention ($f^2 = 0.270$) and a medium effect on self-efficacy ($f^2 = 0.251$). Self-efficacy demonstrated a large effect on entrepreneurial intention ($f^2 = 0.436$), confirming that self-efficacy is the more dominant predictor of entrepreneurial intention in the present model.

**Table 8**
*Effect Size ($f^2$) Values*

| Path | $f^2$ | Interpretation |
|---|---|---|
| DL → EI | 0.270 | Medium |
| DL → SE | 0.251 | Medium |
| SE → EI | 0.436 | Large |

Note. DL = digital literacy; SE = self-efficacy; EI = entrepreneurial intention. Effect size criteria: $f^2 > 0.02$ = small; $f^2 > 0.15$ = medium; $f^2 > 0.35$ = large (Arifin et al., 2023).

Table 9 presents the predictive relevance ($Q^2$) values. A model demonstrates predictive relevance when $Q^2 > 0$. Values of $Q^2 > 0.02$, $> 0.15$, and $> 0.35$ indicate weak, moderate, and strong predictive accuracy, respectively (Budiman et al., 2024). As shown in Table 9, the $Q^2$ value for self-efficacy was 0.179 and for entrepreneurial intention was 0.349, both indicating moderate predictive relevance.

**Table 9**
*Predictive Relevance ($Q^2$) Values*

| Endogenous Variable | $Q^2$ | Interpretation |
|---|---|---|
| Self-Efficacy (SE) | 0.179 | Moderate |
| Entrepreneurial Intention (EI) | 0.349 | Moderate |

Note. SE = self-efficacy; EI = entrepreneurial intention. $Q^2 > 0.02$ = weak; $Q^2 > 0.15$ = moderate; $Q^2 > 0.35$ = strong (Budiman et al., 2024).

Multicollinearity was assessed using the Variance Inflation Factor (VIF). To avoid collinearity issues, VIF values should ideally be below 3.00 (Hair et al., 2019). As shown in Table 10, VIF values for digital literacy as a predictor of entrepreneurial intention and self-efficacy were 1.251 and 1.000, respectively; the VIF for self-efficacy as a predictor of entrepreneurial intention was 1.251. All VIF values fall well below the threshold of 3.00, indicating the absence of multicollinearity in the structural model.

**Table 10**
*Variance Inflation Factor (VIF) Values*

| | SE | EI |
|---|---|---|
| DL | 1.000 | 1.251 |
| SE | | 1.251 |

Note. DL = digital literacy; SE = self-efficacy; EI = entrepreneurial intention.

**Hypothesis Testing**

Hypothesis testing was conducted using bootstrapping with 5,000 subsamples. Significance was determined based on t-statistic values exceeding 1.96 and p-values below 0.05 (Arifin et al., 2023). A positive original sample value indicates a positive directional relationship (Qurbani & Solihin, 2021). As presented in Table 11, all four hypotheses were supported, as each path coefficient was statistically significant and positive in direction.

**Table 11**
*Hypothesis Testing Results (Bootstrapping)*

| H | Path | β | M | SD | t | p |
|---|---|---|---|---|---|---|
| H1 | DL → EI | 0.386 | 0.385 | 0.097 | 3.997 | < .001 |
| H2 | SE → EI | 0.490 | 0.494 | 0.080 | 6.136 | < .001 |
| H3 | DL → SE | 0.448 | 0.457 | 0.075 | 5.945 | < .001 |
| H4 | DL → SE → EI | 0.220 | 0.225 | 0.052 | 4.217 | < .001 |

Note. H = hypothesis; DL = digital literacy; SE = self-efficacy; EI = entrepreneurial intention; β = path coefficient (original sample); M = sample mean; SD = standard deviation; t = t-statistic. H4 represents the indirect effect via mediation.

## Discussion

### Digital Literacy and Entrepreneurial Intention

Consistent with prior studies (Marcellyna et al., 2025; Khoiriyah et al., 2022), the present findings confirm that digital literacy exerts a positive and significant effect on entrepreneurial intention ($\beta = 0.386$, $t = 3.997$, $p < 0.001$), thus supporting H1. Faikha and Nurlaili (2025) similarly affirm that digital literacy fosters a positive effect by enhancing understanding of the fundamentals of business start-ups and stimulating entrepreneurial ideas and inspiration, thereby cultivating greater creativity and innovation among young people. Furthermore, digital literacy may strengthen individuals' capacity to identify business opportunities and filter relevant information (Wulandari et al., 2024). As students' digital literacy increases, so too does their inclination to initiate a business. Higher digital literacy enables students to understand and proficiently operate a diverse range of digital tools and technologies, equipping them with broad competencies and the capacity to leverage digital applications in meaningful ways. This expanded skill set broadens students' awareness and understanding of the entrepreneurial landscape, ultimately enabling them to recognise potential business opportunities and strengthening their entrepreneurial intention.

### Self-Efficacy and Entrepreneurial Intention

Extending the evidence base of Marcellyna et al. (2025), Khoiriyah et al. (2022), Wardhani et al. (2025), and Setiawati et al. (2023), the present study confirms that self-efficacy exerts a positive and significant effect on entrepreneurial intention ($\beta = 0.490$, $t = 6.136$, $p < 0.001$), supporting H2. Students with higher self-efficacy tend to demonstrate stronger entrepreneurial intention. Elevated self-efficacy cultivates a belief in one's own capabilities, which in turn fosters an optimistic disposition and greater willingness to make decisions. This attitudinal orientation strengthens students' resolve to initiate a business and to navigate the inherent uncertainties of entrepreneurship, such as market competition and changing trends. This self-belief also sustains persistence and a solution-focused orientation in the face of adversity, thereby supporting the development of entrepreneurial intention.

A noteworthy finding is that self-efficacy exerted a stronger effect on entrepreneurial intention than digital literacy, suggesting that internal psychological factors—particularly self-belief—are more decisive in shaping entrepreneurial intention than technical digital competence alone. While digital literacy enables

students to understand and utilise technology, self-efficacy provides the psychological impetus to take risks, confront challenges, and initiate a business. This finding implies that entrepreneurship education should not focus exclusively on digital skill development, but should equally prioritise the strengthening of self-efficacy through practice, mentoring, and direct entrepreneurial experience.

### Digital Literacy and Self-Efficacy

Corroborating Mulyono et al. (2023) and Haliza (2022), the present study confirms that digital literacy exerts a positive and significant effect on self-efficacy ($\beta = 0.448$, $t = 5.945$, $p < 0.001$), supporting H3. As students' digital literacy increases, so does their self-efficacy. Higher digital literacy enables students to access, comprehend, and utilise technology more effectively. The competencies and skills associated with digital literacy allow students to complete tasks and solve problems with greater accuracy, generating concrete experiences of success that reinforce self-belief. This self-belief subsequently strengthens students' confidence in their capacity to meet challenges, make decisions, and manage risk, thereby positioning digital literacy as a foundational factor in the development of student self-efficacy through the enhancement of digital competencies and skills.

### The Mediating Role of Self-Efficacy

Perhaps the most theoretically significant finding of this study concerns the confirmation of self-efficacy as a mediating mechanism, consistent with Manullang and Waspada (2022), who report that self-efficacy significantly strengthens the effect of digital literacy on entrepreneurial intention. Mulyono et al. (2023) likewise affirm that self-efficacy mediates the influence of exogenous variables, amplifying the effect of digital literacy on entrepreneurial intention. The present mediation analysis provides empirical support for the proposition that the pathway from digital literacy to entrepreneurial intention is not exclusively direct; rather, it is partly channelled through the psychological mechanism of self-efficacy ($\beta = 0.220$, $t = 4.217$, $p < 0.001$), thus supporting H4. This partial mediation pattern implies that cultivating digital skills without simultaneously reinforcing students' self-belief may yield suboptimal results for entrepreneurship education. High digital literacy enables students to access, understand, and leverage digital technology for entrepreneurial activities, nurturing their self-belief in their capacity to launch a business, develop digital marketing strategies, and manage a technology-driven enterprise. This robust self-belief, in turn, increases students' confidence in managing risk and optimism about success, making them more willing to commit to entrepreneurial initiatives. Self-efficacy thus functions as a psychological mechanism mediating the influence of digital literacy on entrepreneurial intention, such that increases in digital literacy are accompanied by increases in self-efficacy, which in turn amplifies entrepreneurial intention. This finding reinforces Bandura's Social Cognitive Theory (SCT), which underscores the centrality of self-efficacy as a psychological mechanism shaping individual behaviour. The evidence confirms that self-efficacy mediates the relationship between digital literacy and entrepreneurial intention, indicating that fostering entrepreneurial intention requires not only the strengthening of digital skills but also the concurrent bolstering of individuals' self-belief.

## Conclusion

This study examined the influence of digital literacy and self-efficacy on entrepreneurial intention among MPLB vocational students, with self-efficacy serving as a mediating variable. Four key conclusions emerge. First, digital literacy exerts a positive and significant effect on entrepreneurial intention; higher levels of digital literacy are associated with stronger entrepreneurial intention. Second, self-efficacy exerts a positive and significant effect on entrepreneurial intention; higher self-efficacy is associated with stronger entrepreneurial intention. Third, digital literacy exerts a positive and significant effect on self-efficacy; students with higher digital literacy demonstrate greater confidence in their own capabilities. Fourth, self-efficacy partially mediates the relationship between digital literacy and entrepreneurial intention; students with higher digital literacy tend to exhibit stronger self-efficacy, which in turn fosters stronger entrepreneurial intention.

Taken together, these findings indicate that digital literacy functions as a foundational enabler that not only directly enhances entrepreneurial intention but also strengthens self-efficacy as a supporting psychological factor. Elevated self-efficacy, in turn, further amplifies entrepreneurial intention, establishing a dual pathway—both direct and mediated—through which digital literacy shapes entrepreneurial intention among MPLB

vocational students. Theoretically, these findings contribute to the development of the Theory of Planned Behaviour (TPB) by demonstrating that digital literacy and self-efficacy jointly predict entrepreneurial intention. Practically, the results underscore the importance of simultaneously strengthening digital literacy and self-efficacy within entrepreneurship education. Educational institutions are accordingly encouraged to provide technology-based training, digital business practice, and entrepreneurship mentoring to enhance students' entrepreneurial intention.

Several limitations of the present study should be acknowledged for the benefit of future researchers. First, the study was conducted exclusively among MPLB students at SMKN 1 Karanganyar; the generalisability of the findings to broader populations therefore remains to be established. Second, the study examined only digital literacy and self-efficacy as predictors of entrepreneurial intention; other potentially relevant variables were not included in the model. Third, the quantitative research design constrains the depth of insight that can be obtained; accordingly, future studies are encouraged to adopt a mixed-methods approach that integrates quantitative and qualitative data to yield a more comprehensive understanding of entrepreneurial intention development.

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