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The Role Of Self-Efficacy In Mediating The Effects Of Technological Access And Digital Literacy On Career Aspirations And Business Creation

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Abstrak

Technological access and digital literacy enhance self-efficacy, which in turn drives career aspirations and business creation among fresh graduates, highlighting that integrating digital skills with psychological empowerment is essential to translate resources into actionable career and entrepreneurial outcomes. A quantitative research design was employed, involving 120 respondents. Data were collected through a structured Likert-scale questionnaire and analyzed using PLS-SEM to evaluate both the measurement and structural models. The results indicate that Technological Access has a positive and statistically significant effect on Self-Efficacy; Digital Literacy has a positive and statistically significant effect on Self-Efficacy; Technological Access has a positive and statistically significant effect on Career Aspirations; Digital Literacy has a positive and statistically significant effect on Career Aspirations; Technological Access has a strong and statistically significant effect on Business Creation; Digital Literacy has a positive and statistically significant effect on Business Creation; Self-Efficacy has a strong and statistically significant effect on Career Aspirations; Self-Efficacy has a positive and statistically significant effect on Business Creation; and Self-Efficacy significantly mediates the relationships between Technological Access and Career Aspirations, Technological Access and Business Creation, Digital Literacy and Career Aspirations, as well as Digital Literacy and Business Creation. For future research, it is recommended to broaden the sample to include more heterogeneous participants in terms of age, education, and socio-economic background. Additionally, researchers may consider including other relevant variables, such as environmental support, or work experience, to gain a more comprehensive understanding of the influence of digital literacy, self-efficacy, and technological access on career aspirations and business creation.

Kata kunci: Technological Access, Digital Literacy, Self-Efficacy, Career Aspirations, Business Creation, Fresh Graduates

1. Research Background

Career aspirations play a critical role in determining the future of individuals, shaping their professional development, and influencing their decisions regarding investments in education, the acquisition of new skills, and overall financial security (Fordjour et al., 2025). This is particularly vital for fresh graduates, as it marks a pivotal transition from a structured and predictable academic environment to an increasingly dynamic and unpredictable labor market. High levels of career aspirations not only enhance employability but also bolster an individual's resilience in navigating the multifaceted challenges of the modern job market (Hirschi, 2020).

In an era of rapid technological change, the ability to build and pursue these career aspirations is inextricably linked with digital skills and technological access—factors that can either bridge or widen existing opportunity gaps (Laar et al., 2020). However, the pathway from aspiration to tangible action is not always straightforward. Fresh graduates frequently encounter structural obstacles, such as unequal access to technology and significant disparities in digital literacy, which can limit their ability to pursue certain career opportunities (Di Maggio & Bonikowski, 2023). Furthermore, psychological aspects, most notably self-efficacy, are crucial in determining how external resources are translated into real-world actions, such as proactive job exploration, skill development, or entrepreneurial pursuits (Santos et al., 2021). Therefore, a compelling need exists to understand how technological access and digital literacy interact with psychological factors like self-efficacy to influence career aspirations and entrepreneurial tendencies.

The importance of career aspirations in shaping positive career outcomes is consistently demonstrated in research. Well-formulated career plans are shown to enhance the likelihood of achieving labor-market stability and job satisfaction (World Economic Forum, 2022). Similarly, data from the OECD (2022) indicates that higher

professional expectations are associated with faster entry into high-skilled employment. A longitudinal study by Eva et al. (2020) further corroborates this, noting that persistent career intentions during youth lead to significantly higher lifetime earnings.

Beyond traditional employment, entrepreneurship has emerged as a vital alternative career pathway for fresh graduates. Startup initiatives offer opportunities for innovation, financial autonomy, and substantial value creation (Ngo et al., 2024). According to the Global Entrepreneurship Monitor (GEM, 2024), early-stage entrepreneurial activity among graduates has risen to 18%, signaling a global shift toward entrepreneurship as a viable and desirable career path. New business creation also contributes significantly to economic dynamism, accounting for nearly 20% of all job creation in OECD countries (OECD, 2022).

Despite this promise, the gap between entrepreneurial intention and actual business creation remains vast. Startup success rates are notoriously low, with only around 30% surviving two years and 50% surviving five years, often due to limited capital, intense market competition, and digital inequality (U.S. Bureau of Labor Statistics, 2023). Fresh graduates face additional barriers, including limited professional experience and smaller, less-developed networks (Donaldson et al., 2025). In this challenging context, technological access and digital literacy emerge as potential equalizing forces. Digital tools can significantly reduce market entry costs, expand customer reach, and improve operational business efficiency. Indeed, students with high digital literacy are 2.5 times more likely to engage in entrepreneurial activity (van der Zwan et al., 2021).

However, mere access to technology does not automatically translate into its effective use. The ability to benefit from digital tools is contingent upon knowledge, awareness, and supportive social structures (Di Maggio & Bonikowski, 2023). Digital literacy, therefore, is more than just access; it encompasses the ability to find, evaluate, and create digital information (Laar et al., 2020). While high digital literacy improves adaptability to labor-market demands, its impact on entrepreneurial behavior has shown mixed results across different contexts (Ngo et al., 2024). This discrepancy highlights the role of a critical psychological mechanism: self-efficacy.

Defined as an individual's belief in their ability to execute actions required to achieve specific goals, self-efficacy is a key mechanism that may explain these inconsistencies (Chen & Liu, 2020). Even with strong digital resources, low self-efficacy can prevent individuals from initiating or sustaining entrepreneurial action (Kuratko et al., 2021). Thus, self-efficacy has the potential to be a mediator, bridging the availability of digital resources with concrete career actions by shaping how individuals think, feel, and behave, thereby influencing their ability to convert resources into tangible career achievements (Straub et al., 2020).

Although many studies highlight positive links between technological access, digital literacy, self-efficacy, and career outcomes, findings from previous research are not entirely consistent and are at times contradictory. These inconsistencies indicate that the relationship is neither direct nor automatic. To date, no study has specifically examined how self-efficacy mediates the effects of both technological access and digital literacy on career aspirations and business creation among fresh graduates. The novelty of this study, therefore, lies in developing and testing a comprehensive mediation model that simultaneously connects these five constructs. Previous research has only examined parts of this relationship separately, meaning this study offers a more integrated approach that has not yet been explicitly explored in the digital era. Based on this discussion, it is crucial to understand the conditions under which technological access and digital literacy truly promote career aspirations and entrepreneurial orientation, and the extent to which self-efficacy shapes this process. Considering the phenomena and inconsistent findings above, the present study aims to examine "The Role of Self-Efficacy in Mediating the Effects of Technological Access and Digital Literacy on Career Aspirations and Business Creation."

2. Research methods

This study is conducted in Jakarta and Bali, two strategic regions in Indonesia that reflect contrasting economic structures and digital ecosystems. Jakarta, as the national capital and main economic hub contributing 17.2% to Indonesia's GDP (BPS, 2023), offers access to a large population of university students and young professionals supported by 95 higher education institutions (PDDikti, 2023). With an internet penetration rate of 89.5% (APJII, 2022), Jakarta represents a highly structured and competitive digital environment where digital literacy and self-efficacy are expected to strongly influence entrepreneurial capacity. In contrast, Bali experienced economic growth of 8.45% in 2022 (BPS Bali, 2023) and has been designated as a government-supported Digital Province. Known as a hub for digital nomads and creative industries (IdeaScale, 2020), Bali provides a more flexible and community-driven entrepreneurial ecosystem characterized by lower entry barriers and experimental innovation practices. These differences provide a strong basis for comparative analysis. The population of this study consists of Indonesian youth aged 18–30 who are either university students majoring in business or young entrepreneurs residing in Jakarta or Bali. This group represents a digitally native generation actively shaping career decisions,

supported by World Bank findings indicating high internet usage among this age cohort. The contrasting socio-economic conditions between Jakarta as a corporate and technological center and Bali as a tourism- and creativity-driven economy create a valuable context for examining the role of digital literacy in shaping career aspirations and business creation, with self-efficacy functioning as a key psychological mediator.

The sample size was determined using multivariate analysis guidelines suggesting 5–10 respondents per indicator for structural equation modeling (Hair et al., 2019). Using a conservative multiplier of six, the study obtained 120 respondents (20 indicators × 6). A non-probability purposive sampling technique was applied based on three criteria: (1) residence in Jakarta or Bali, (2) status as a business student or young entrepreneur, and (3) age between 18 and 30 years. To ensure balanced regional representation, 60 respondents were selected from each location. This study adopts a quantitative research design. Primary data were collected through an online questionnaire distributed via Google Forms, measuring digital literacy, self-efficacy, career aspirations, and business creation intentions using a four-point Likert scale to minimize neutral responses and reduce central tendency bias. Secondary data were obtained from academic journals, reports, and prior studies to strengthen the theoretical foundation. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM), enabling simultaneous assessment of the measurement and structural models. Validity and reliability were evaluated using AVE, HTMT, Cronbach's Alpha, and Composite Reliability, while structural relationships were examined through path coefficients, R², Q², and effect size (F²).

3. Results

Respondent Characteristics

This study was conducted in Jakarta and Bali, two regions with contrasting economic and digital environments. Jakarta, as Indonesia's capital and economic hub, hosts numerous higher education institutions and a large population of students and young professionals, fostering a competitive ecosystem where digital literacy and self-efficacy influence entrepreneurial capacity. Bali, with its distinct economic and digital context, provides diverse perspectives on how these factors affect career aspirations and business creation. To ensure participants met the study's criteria, screening questions were administered at the outset of the questionnaire. All 120 respondents were based in the target locations, with 60 participants from Jakarta and 60 from Bali. The sample comprised two key groups relevant to the research objectives: 65 university students majoring in business (representing individuals in career preparation) and 55 young business owners (representing those actively engaged in business creation). Demographically, the sample exhibited a balanced gender distribution: 63 male respondents (53%) and 57 female respondents (48%). Age-wise, participants were primarily in transitional career stages: 48 respondents (40%) were aged 22–25 years, 37 (31%) were 18–21 years old, and 35 (29%) were 26–30 years old. This age composition is highly relevant to the study's focus on career aspirations and business creation, as individuals in these ranges are particularly influenced by technological access, digital literacy, and self-efficacy when making career decisions or pursuing entrepreneurial ventures.

Data Processing Results

a. Descriptive Statistical Analysis

Descriptive statistics are used to analyze data by describing or illustrating the information collected as it is, without drawing conclusions that apply generally or making broader generalizations (Sugiyono, 2019). The quantitative assessment in this study uses an interval scale, in which the mean score is interpreted based on predetermined rating categories.

Table 1. Criteria for Questionnaire Response Assessment

Criteria	Rating Category
1.00 – 1.80	Very Poor
1.81 – 2.60	Poor
2.61 – 3.40	Fair
3.40 – 4.20	Good
4.21 – 5.00	Very Good

Source: Sugiyono (2019)

Based on the response rating criteria above, the following section presents the discussion of each research variable:

1. Technological Access (X1)

Table 2. Respondent Answers on Technological Access

No	Statement	Responden Answers				Average Score	Description
		1	2	3	4		
1	I have adequate access to computers and digital devices for my needs	1	1	63	55	3,43	Good
2	Technical limitations create difficulties for me in accessing technology	0	2	60	58	3,47	Good
3	I feel confident in using digital technologies	0	1	60	59	3,48	Good
4	Using technology makes my work more efficient	0	2	58	60	3,48	Good
Average						3,47	Good

Source: Processed by the researcher (2025)

Based on the descriptive analysis for the technological access variable, the overall average score is 3,47, which falls within the good category. This finding indicates that, in general, respondents possess adequate access to technology to support their academic, professional, and entrepreneurial activities. The lowest average score, at 3,43, is observed in the statement “I have adequate access to computers and digital devices for my needs”, although it remains within the good category. This suggests that while a small proportion of respondents may experience certain limitations in device availability, technological access does not constitute a significant barrier overall. Conversely, the highest average score of 3,48 is recorded for the statements “I feel confident in using digital technologies” and “Using technology makes my work more efficient”. These results indicate that respondents not only have access to digital technologies but are also able to utilize them effectively and with confidence. Overall, the findings confirm that respondents’ technological access is sufficiently supportive of career aspirations and business creation.

2. Digital Literacy (X₂)

Table 3. Respondent Answers on Digital Literacy

No	Statement	Responden Answers				Average Score	Description
		1	2	3	4		
1	I can use the information obtained to support the completion of assignments given on digital applications	0	2	68	50	3,40	Good
2	I understand digital security and privacy issues	0	2	71	47	3,38	Good
3	I can effectively search for and access digital information	0	2	77	41	3,33	Good
4	I understand the impact of my digital actions on others	0	4	74	42	3,32	Good
Average						3,35	Good

Source: Processed by the researcher (2025)

Based on the descriptive analysis for the digital literacy variable, the overall average score is 3,35, which falls within the good category. This indicates that respondents generally demonstrate an adequate level of digital literacy to support both academic and professional activities. The highest average score, at 3,40, is

observed in the statement “I can use the information obtained to support the completion of assignments given on digital applications”, reflecting respondents’ ability to utilize digital information in a practical and goal-oriented manner. Conversely, the lowest average score of 3,32 appears in the statement “I understand the impact of my digital actions on others”. Nevertheless, this score remains within the good category, suggesting that respondents possess a sufficiently sound understanding of digital practices and their broader implications.

3. Self-Efficacy (M)

Table 4. Respondent Answers on Self-Efficacy

No	Statement	Responden Answers				Average Score	Description
		1	2	3	4		
1	I can make decisions under uncertainty and risk	2	2	59	57	3,43	Good
2	I can be creative and innovative in my approach	0	3	69	48	3,38	Good
3	I can coordinate tasks to meet deadlines	0	4	61	55	3,43	Good
4	I can develop financial forecasts and budgets	0	3	61	56	3,44	Good
5	I can conduct market research	0	2	64	54	3,43	Good
Average						3,42	Good

Source: Processed by the researcher (2025)

Based on the descriptive analysis for the self-efficacy variable, the overall average score is 3,42, which falls within the good category. This indicates that respondents generally demonstrate a sufficient level of self-confidence in dealing with decision-making and professional tasks. The highest average score, at 3,44, is observed in the statement “I can develop financial forecasts and budgets”, reflecting respondents’ confidence in planning and financial management activities. In contrast, the lowest average score of 3,38 appears in the statement “I can be creative and innovative in my approach”. Nevertheless, this score remains within the good category, suggesting that respondents overall possess a solid level of self-efficacy to support career aspirations and business creation.

4. Career Aspiration (Y1)

Table 5. Respondent Answers on Career Aspiration

No	Statement	Responden Answers				Average Score	Description
		1	2	3	4		
1	When I am established in my career, I would like to manage other employees	2	2	61	55	3,41	Good
2	Being outstanding at what I do at work is very important to me	0	3	65	52	3,41	Good
3	Even if not required, I would take continuing education courses to become more knowledgeable	0	2	55	63	3,51	Good
Average						3,44	Good

Source: Processed by the researcher (2025)

Based on the descriptive analysis results for the career aspiration variable, the overall average score is 3,44, which falls within the good category. This indicates that respondents generally possess strong career aspirations oriented toward professional achievement and personal development. The highest average score, at 3,51, is observed in the statement “Even if not required, I would take continuing education courses to become more knowledgeable”, reflecting respondents’ commitment to continuous learning as an integral part of career advancement. In contrast, the lowest average score of 3,41 appears in the statements “When I am established in my career, I would like to manage other employees” and “Being outstanding at what I do at work is very important to me”. Nevertheless, all items remain within the good category, suggesting that respondents demonstrate a positive and consistent level of career aspiration.

5. Business Creation (Y₂)

Table 6 Respondent Answers on Business Creation

No	Statement	Responden Answers				Average Score	Description
		1	2	3	4		
1	My professional goal is to become an entrepreneur	1	3	61	55	3,42	Good
2	I am ready to start my own business	0	4	65	51	3,39	Good
3	I have taken concrete steps to establish a presence on a digital platform for my business (e.g., set up an e-commerce store, created a developer account).	0	2	58	60	3,48	Good
4	I intend to start a business that contributes positively to the environment.	0	1	62	57	3.47	Good
Average						3,44	Good

Source: Processed by the researcher (2025)

Based on the descriptive analysis of the business creation variable, the overall average score is 3,44, which falls within the good category. This indicates that respondents generally demonstrate a positive orientation and readiness toward business creation. The highest average score, at 3,48, is observed in the statement “I have taken concrete steps to establish a presence on a digital platform for my business”, suggesting that some respondents have already undertaken tangible actions by leveraging digital platforms as initial steps toward entrepreneurship. Conversely, the lowest average score of 3,39 appears in the statement “I am ready to start my own business”. Nevertheless, this score remains within the good category, indicating that respondents overall exhibit an adequate level of inclination and preparedness for business creation.

Research Model Analysis Using the PLS (Partial Least Square) Method

The research model in this study was analyzed using the PLS (Partial Least Square) approach with the assistance of the SmartPLS 3 software.

A. Evaluation of the Measurement Model (Outer Model)

There are three assessment components used in the data analysis technique with SmartPLS to evaluate the measurement model (outer model), namely:

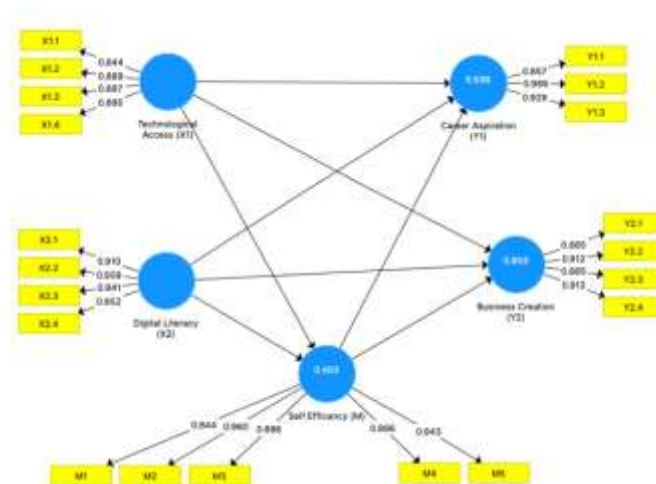


Figure 1. Outer Loading Test

Source: Processed by the researcher (2025)

1. Convergent Validity

Convergent validity for reflective indicators can be assessed by examining the correlation between each indicator and its corresponding construct. An indicator is considered reliable if it has a correlation value above 0,50. The correlation results between the indicators and their constructs can be seen in Table 7. as follows:

Table 7. Outer Loadings

No	Variable	Statement Item	Item–Total Correlation	Description
1	Technological Access (X ₁)	X1.1	0,844	Valid
		X1.2	0,889	Valid
		X1.3	0,887	Valid
		X1.4	0,895	Valid
2	Digital Literacy (X ₂)	X2.1	0,910	Valid
		X2.2	0,959	Valid
		X2.3	0,941	Valid
		X2.4	0,952	Valid
3	Self-Efficacy (M)	M1	0,844	Valid
		M2	0,960	Valid
		M3	0,886	Valid
		M4	0,886	Valid
		M5	0,943	Valid
4	Career Aspiration (Y ₁)	Y1.1	0,857	Valid
		Y1.2	0,966	Valid
		Y1.3	0,929	Valid
5	Business Creation (Y ₂)	Y2.1	0,885	Valid
		Y2.2	0,912	Valid

		Y2.3	0,885	Valid
		Y2.4	0,913	Valid

Source: Processed by the researcher (2025)

Based on the results presented in Table 7. all outer loading values exceed the threshold of 0,50 and are statistically significant. Overall, the strongest indicators for each variable are X1.4 (0,895) Technological Access (X₁), X2.2 (0,959) for Digital Literacy (X₂), M2 (0,960) for Self-Efficacy (M), Y1.2 (0,966) for Career Aspiration (Y₁), and Y2.4 (0,913) for Business Creation (Y₂). Since all indicators demonstrate high outer loading values and strong significance, it can be concluded that the research instrument is both valid and reliable for measuring Technological Access (X₁), Digital Literacy (X₂), Self-Efficacy (M), Career Aspiration (Y₁) and Business Creation (Y₂). This confirms that the indicators used successfully capture the intended constructs accurately and consistently.

2. Discriminant Validity (Fornell-Lacker dan HTMT)

Discriminant validity aims to ensure that each construct is empirically distinct from the others. Two main approaches are presented in the following table:

Fornell-Larcker Criterion

The square root of the AVE values (shown in bold on the diagonal) should be greater than the correlations between constructs in the corresponding rows and columns.

Table 8. Results of the Fornell–Larcker Test

	Business Creation (Y ₂)	Career Aspiration (Y ₁)	Digital Literacy (X ₂)	Self Efficacy (M)	Technological Access (X ₁)
Business Creation (Y ₂)	0,899				
Career Aspiration (Y ₁)	0,567	0,919			
Digital Literacy (X ₂)	0,570	0,523	0,941		
Self Efficacy (M)	0,584	0,708	0,521	0,905	
Technological Access (X ₁)	0,502	0,517	0,600	0,602	0,879

Source: Processed by the researcher (2025)

Based on the Fornell–Larcker criterion, the square root of the AVE for each construct exceeds its correlations with other constructs. This indicates that all constructs demonstrate adequate discriminant validity and are empirically distinct from one another.

Heterotrait-Monotrait Ratio (HTMT)

An HTMT value below 0.85 (or up to 0.90 in some studies) indicates that discriminant validity is established. The results of the Heterotrait–Monotrait Ratio (HTMT) test are presented in the following table:

Table 9. Results of the HTMT Test

	Business Creation (Y ₂)	Career Aspiration (Y ₁)	Digital Literacy (X ₂)	Self Efficacy (M)	Technological Access (X ₁)
Business Creation (Y ₂)					

Career Aspiration (Y ₁)	0,609				
Digital Literacy (X ₂)	0,602	0,561			
Self Efficacy (M)	0,618	0,760	0,543		
Technological Access (X ₁)	0,504	0,554	0,638	0,641	

Source: Processed by the researcher (2025)

Based on the results of the Heterotrait–Monotrait Ratio (HTMT) test, all HTMT values between constructs are below the threshold of 0,85. The highest value is observed in the relationship between Career Aspiration and Self-Efficacy (0,760), which remains within the acceptable range. These results indicate that each construct in the research model is empirically distinct and that there is no conceptual overlap among constructs. Therefore, the discriminant validity of the research model is well established.

3. Discriminant Validity Using Average Variance Extracted (AVE)

Another method used to assess discriminant validity is by comparing the Average Variance Extracted (AVE) of each variable with the correlations between that variable and other variables in the model. The AVE values for each construct are presented in Table 9. below:

Table 9. Average Variance Extracted (AVE) Values

Variable	Average Variance Extracted (AVE)
Technological Access (X ₁)	0,773
Digital Literacy (X ₂)	0,885
Self-Efficacy (M)	0,819
Career Aspiration (Y ₁)	0,844
Business Creation (Y ₂)	0,808

Source: Processed by the researcher (2025)

4. Composite Reliability

In addition to validity testing, reliability testing is also conducted using two criteria composite reliability and Cronbach’s alpha. A variable is considered reliable when both its composite reliability and Cronbach’s alpha values exceed 0,70. The composite reliability results are presented in Table 10. below:

Table 10 Composite Reliability Test Results

Variable	Composite Reliability	Cronbach’s Alpha	Description
Technological Access (X ₁)	0,932	0,750	Reliabel
Digital Literacy (X ₂)	0,969	0,957	Reliabel
Self-Efficacy (M)	0,957	0,944	Reliabel
Career Aspiration (Y ₁)	0,942	0,907	Reliabel
Business Creation (Y ₂)	0,944	0,921	Reliabel

Source: Processed by the researcher (2025)

B. Evaluation of the Structural Model (Inner Model)

R-Square (R^2)

The R^2 value measures the extent to which exogenous variables explain the variance in endogenous variables. The coefficient of determination ranges from 0 to 1. A low R^2 value indicates that the independent variables have limited ability to explain the dependent variable. The evaluation of the structural model using R-square values is presented in Table 11. as follows:

Table 11. R-Square Test Results

Variable	<i>R-Square</i>
Self-Efficacy (M)	0,692
Career Aspiration (Y_1)	0,524
Business Creation (Y_2)	0,850

Source: Processed by the researcher (2025)

Based on Table 11. the results show that Self-Efficacy (M) has an R^2 value of 0,692, indicating that 69,2% of the variance in Self-Efficacy is explained by Technological Access and Digital Literacy, while the remaining 30,8% is attributable to other factors not included in the model. This finding suggests that Technological Access and Digital Literacy have a substantial influence on the development of Self-Efficacy. Furthermore, Career Aspiration (Y_1) yields an R^2 value of 0,524, meaning that 52,4% of the variance in Career Aspiration is explained by Technological Access, Digital Literacy, and Self-Efficacy, whereas 47,6% is explained by variables outside the model. This level of explanatory power can be categorized as moderate to substantial, indicating that the proposed model adequately explains Career Aspiration. The highest R^2 value is observed for Business Creation (Y_2) at 0,850, which implies that 85,0% of the variance in Business Creation is explained by Technological Access, Digital Literacy, and Self-Efficacy, with only 15,0% accounted for by other factors. This result demonstrates a very strong predictive capability of the model with respect to Business Creation.

Overall, the R-square results indicate that the research model has strong explanatory power, particularly in explaining Business Creation outcomes. These findings support the mediating role of Self-Efficacy in transmitting the effects of Technological Access and Digital Literacy on Career Aspirations and Business Creation, as proposed in this study.

Predictive Relevance (Q^2)

The Q-square (Q^2) value reflects the predictive relevance of the structural model, indicating how well the observed values are reconstructed by the model and its parameter estimates. A Q^2 value greater than zero suggests that the model has predictive relevance, meaning that the independent variables are capable of adequately predicting the dependent variables. The evaluation of the Q-Square structural model is shown in Table 12. as follows:

Table 12. Q-Square Test Results

Variable	<i>Q-Square</i>
Self-Efficacy (M)	0,514
Career Aspiration (Y_1)	0,428
Business Creation (Y_2)	0,673

Source: Processed by the researcher (2025)

Based on Table Table 22. the Q^2 value for Self-Efficacy (M) is 0,514, indicating strong predictive relevance. This result suggests that Technological Access and Digital Literacy provide substantial predictive power in explaining variations in Self-Efficacy. The Q^2 value for Career Aspiration (Y_1) is 0,428, which also exceeds the minimum threshold of zero. This finding demonstrates that the model has good predictive relevance for Career Aspiration, indicating that Technological Access, Digital Literacy, and Self-Efficacy are effective in predicting this construct. Furthermore, Business Creation (Y_2) records the highest Q^2 value at 0,673, signifying very strong predictive

relevance. This result indicates that the model is highly capable of reproducing the observed data for Business Creation based on Technological Access, Digital Literacy, and Self-Efficacy.

Overall, the Q-square results confirm that the structural model exhibits good to strong predictive relevance across all endogenous constructs. These findings further support the adequacy of the proposed model in explaining and predicting Self-Efficacy, Career Aspiration, and Business Creation, in line with the objectives of this study.

Effect Size (F²)

Evaluating the contribution of each construct to the overall model. The evaluation of the structural model using F-square values is presented in Table 13. as follows:

Table 13. F-Square Test Results

Variable	F-Square
Technological Access (X ₁) → Career Aspiration (Y ₁)	0,362
Digital Literacy (X ₂) → Career Aspiration (Y ₁)	0,467
Self-Efficacy (M) → Career Aspiration (Y ₁)	0,425
Technological Access (X ₁) → Self-Efficacy (M)	0,220
Digital Literacy (X ₂) → Self-Efficacy (M)	0,664
Technological Access (X ₁) → Business Creation (Y ₂)	2,834
Digital Literacy (X ₂) → Business Creation (Y ₂)	0,659
Career Aspiration (Y ₁) → Business Creation (Y ₂)	0,830

Source: Processed by the researcher (2025)

Based on Table 13. the f-square test results indicate that Technological Access and Digital Literacy exert large to very large effects on Business Creation, Career Aspiration, and Self-Efficacy. In addition, Self-Efficacy plays a significant role in enhancing Career Aspiration. These findings strengthen the proposed research model and support the mediating role of Self-Efficacy in explaining the effects of Technological Access and Digital Literacy on Career Aspiration and Business Creation.

Hypothesis Testing

Based on the PLS analysis results, all twelve hypotheses were supported, revealing significant relationships between technological access, digital literacy, self-efficacy, career aspirations, and business creation. Technological access demonstrated the strongest direct influence on business creation ($\beta=0.890$, $p<0.001$), followed by its substantial impact on self-efficacy ($\beta=0.453$, $p<0.001$) and career aspirations ($\beta=0.357$, $p<0.001$). Digital literacy also showed significant positive effects on all outcomes, though with smaller coefficients: business creation ($\beta=0.142$, $p=0.013$), career aspirations ($\beta=0.190$, $p=0.047$), and self-efficacy ($\beta=0.249$, $p=0.018$). Self-efficacy emerged as a powerful predictor, with the strongest effect on career aspirations ($\beta=0.575$, $p<0.001$) and a notable impact on business creation ($\beta=0.402$, $p=0.004$). Critically, self-efficacy significantly mediated all relationships between digital resources and outcomes. The mediation pathways were strongest for technological access: its indirect effect on business creation through self-efficacy was substantial ($\beta=0.318$, $p<0.001$), as was its effect on career aspirations ($\beta=0.260$, $p<0.001$). Digital literacy's mediation effects were smaller but significant for both business creation ($\beta=0.110$, $p=0.004$) and career aspirations ($\beta=0.143$, $p=0.033$). These findings collectively demonstrate that while technological access and digital literacy directly enhance career ambitions and entrepreneurial activities, their influence is substantially amplified when they foster self-efficacy. The results underscore self-efficacy's crucial role as a psychological mechanism that translates digital competencies into concrete career and entrepreneurial actions, confirming its mediating function in bridging technological resources with tangible outcomes. This highlights the importance of not only providing digital access and skills but also cultivating confidence in one's abilities to maximize their impact on career development and business creation.

4. Discussion

Based on the results of the hypothesis testing regarding the relationships between the independent variables, mediation, and moderation on the dependent variable, the discussion is presented as follows:

1) *The Influence of Technological Access on Self-Efficacy*

This study confirms that technological access significantly and positively influences self-efficacy (path coefficient = 0.453, $p < 0.05$). Theoretically, this aligns with an integrated framework of Human Capital Theory (Becker, 1964) and Social Cognitive Theory (Bandura, 1977). Technological access acts as instrumental digital capital, but its productive use depends on individuals' self-belief. Access facilitates mastery experiences and vicarious learning, which are critical sources for developing the confidence to transform digital resources into actionable career and entrepreneurial outcomes. These findings are consistent with prior empirical research. Studies by Kim and Jeon (2020), Yildirim et al. (2023), and Zakir et al. (2025) similarly demonstrate that reliable technology access strengthens self-efficacy by enabling active engagement, confident communication, and persistence in digital environments. Therefore, technological access is established as a foundational condition for cultivating the psychological capital essential for professional success, reinforcing its critical role in human capital development and subsequent career and entrepreneurship-related outcomes.

2) *The Influence of Digital Literacy on Self-Efficacy*

This study confirms that both technological access and digital literacy significantly and positively influence self-efficacy. Technological access, with a path coefficient of 0.453, provides the foundational tools—devices and connectivity—that facilitate continuous learning and build confidence. Similarly, digital literacy (path coefficient 0.249) empowers individuals by enhancing their ability to navigate digital environments, reinforcing their belief in their own competence. These findings are supported by an integrated framework of Human Capital Theory (Becker, 1964) and Social Cognitive Theory (Bandura, 1977), which posits that access and skills create mastery experiences crucial for developing self-efficacy. The results align with prior empirical research from Santos et al. (2021), Zakir et al. (2025), and Kim and Jeon (2020), collectively underscoring that both the availability of technology and the competence to use it are essential for fostering the psychological readiness required for career development and business creation.

3) *The Influence of Technological Access on Career Aspiration*

This study confirms that technological access has a positive and statistically significant effect on career aspirations (path coefficient = 0.357, $p < 0.05$). Individuals with greater access to digital technologies develop higher and more clearly articulated career goals. This is because technology enables broader exploration of career information, a better understanding of evolving labor market demands, and the acquisition of competencies required in digitally driven industries. Consequently, technological access expands perceptions of feasible career pathways and encourages more ambitious, future-oriented goals.

Theoretically, this aligns with an expanded Human Capital Theory (Becker, 1964), which frames technological access as instrumental capital that facilitates investment in knowledge and skills, increasing the expected returns. When integrated with Social Cognitive Theory (Bandura, 1977), access also supports self-efficacy development, which is essential for transforming resources into aspirational outcomes. These findings are consistent with prior empirical research. Fordjour et al. (2025) argue that technological access is a substantial human capital investment that lowers barriers to skill development and professional networking. Conversely, limited access constrains opportunities and restricts career choices and earning potential (Di Maggio & Bonikowski, 2023). This reinforces the critical role of technological access in shaping career aspirations for individuals entering a competitive, technology-intensive labor market.

4) *The Influence of Digital Literacy on Career Aspiration*

This study confirms that digital literacy has a positive and statistically significant effect on career aspirations (path coefficient = 0.190, p -value = 0.047). Individuals with higher digital literacy develop clearer, future-oriented career goals by effectively accessing, evaluating, and utilizing digital information to understand labor market trends and align their personal objectives accordingly. This skill contributes to more informed and realistic career planning in a technology-driven market where digital competence is increasingly linked to employability.

Theoretically, this aligns with the expanded Human Capital Theory, which conceptualizes digital literacy as a form of skills-based capital that enhances productivity and competitiveness (Becker, 1964). Furthermore, when integrated with Social Cognitive Theory, the findings suggest that digital literacy fosters self-efficacy—the confidence gained through mastery experiences with digital tools—which is crucial for translating skills into

ambitious aspirations (Bandura, 1977; Chen and Liu, 2020). These results are consistent with prior empirical research, such as Laar et al. (2020), who argue that digital literacy expands access to higher-quality career opportunities, thereby raising individuals' career aspirations. Ultimately, digital literacy proves to be a critical determinant of modern career development, equipping individuals not only with essential skills but also with the psychological readiness to pursue them.

5) *The Influence of Technological Access on Business Creation*

This study demonstrates a strong and statistically significant effect of Technological Access on Business Creation (path coefficient = 0.890, $p < 0.05$), highlighting it as a particularly influential determinant. This finding underscores that access to digital technologies is not merely a supporting factor but a central catalyst, enabling individuals to identify opportunities, design and test business models, and manage operations with greater efficiency. Theoretically, this aligns with an expanded Human Capital Theory, which conceptualizes technological access as a form of instrumental digital capital that reduces entry barriers and operational costs (Becker, 1964). When integrated with Social Cognitive Theory, this access also builds self-efficacy by providing mastery experiences and experimentation, which are critical for translating resources into entrepreneurial action (Bandura, 1977; Chen and Liu, 2020). These conclusions are consistent with previous empirical research. Studies show that digital tools act as "force multipliers," optimizing business operations, expanding global market reach, and enabling flexible structures like remote teams (Laar et al., 2020; Ngo et al., 2024). Ultimately, technological access substantially increases the likelihood of business creation by enhancing potential payoffs while reducing inherent costs and uncertainties.

6) *The Influence of Digital Literacy on Business Creation*

This study confirms that digital literacy positively and significantly influences business creation (path coefficient = 0.142, $p = 0.013$). Although the effect is modest, it is meaningful, indicating that individuals with stronger digital skills are better equipped to initiate and develop business ventures. These competencies enable entrepreneurs to manage information, utilize digital platforms, and adapt strategies in a dynamic market, thereby increasing the likelihood of business formation.

Theoretically, this finding aligns with the expanded Human Capital Theory (Becker, 1964), which conceptualizes digital literacy as a form of skills-based capital that enhances productivity and economic outcomes. It provides the cognitive and practical abilities to access and apply digital information in entrepreneurial contexts (Laar et al., 2020). However, consistent with Social Cognitive Theory, the effective use of these skills also depends on self-efficacy; individuals must believe in their capacity to apply their digital competencies under conditions of uncertainty and risk (Bandura, 1977; Chen and Liu, 2020). Digital literacy fosters this belief by creating mastery experiences that strengthen entrepreneurial self-efficacy and facilitate the translation of skills into concrete business creation activities (Newman et al., 2023). These results are consistent with prior empirical research. Previous studies show that higher digital literacy increases entrepreneurial engagement by reducing informational barriers and enhancing operational efficiency (Zwan et al., 2021). Furthermore, it enables entrepreneurs to conduct market research, implement digital marketing, and manage e-commerce operations (Ngo et al., 2024). This study reinforces that digital literacy is a crucial component of entrepreneurial human capital, significantly increasing the probability of business creation in the digital economy.

7) *The Influence of Self-Efficacy on Career Aspiration*

This study reveals a strong and statistically significant effect of self-efficacy on career aspirations, with a path coefficient of 0.575 ($p < 0.05$). This finding underscores that an individual's confidence in their abilities is a central psychological determinant in shaping higher and more focused professional goals. Those with greater self-efficacy tend to articulate clearer objectives, maintain motivation for long-term success, and demonstrate greater readiness to confront career-related challenges.

Theoretically, this result aligns with an integrated framework of Human Capital Theory (Becker, 1964) and Social Cognitive Theory (Bandura, 1977). While human capital theory emphasizes the accumulation of skills as an investment, social cognitive theory posits self-efficacy as the crucial mechanism that translates these investments into purposeful action. Self-efficacy acts as a psychological catalyst, strengthening individuals' beliefs that their human capital will yield desirable outcomes, thus encouraging more ambitious career aspirations (Chen and Liu, 2020). This is consistent with prior empirical research, which shows that individuals with high self-efficacy set more challenging goals and persist through setbacks (Hirschi, 2020). Ultimately, the findings confirm that self-efficacy is a decisive driver in transforming potential into ambitious, sustained career planning, aligning with the demands of the modern labor market (World Economic Forum, 2020).

8) *The Influence of Self-Efficacy on Business Creation*

This study confirms that self-efficacy has a positive and statistically significant effect on business creation ($\beta = 0.402$, $p = 0.004$), suggesting that an individual's confidence in their capabilities is a substantial psychological factor influencing entrepreneurial behavior. Individuals with higher self-efficacy are more likely to recognize business opportunities, take calculated risks, and persist in managing challenges throughout the entrepreneurial process, thereby increasing the likelihood of successful business initiation.

Theoretically, this result aligns with an integrated model of Human Capital Theory and Social Cognitive Theory. While Human Capital Theory emphasizes the accumulation of knowledge and skills as investments that enhance productivity (Becker, 1964), Social Cognitive Theory highlights self-efficacy as the mechanism that determines whether these resources are translated into action (Bandura, 1977). In the entrepreneurial context, self-efficacy enables individuals to deploy their accumulated human capital, including digital skills, in uncertain environments. Without sufficient self-efficacy, access to technology and skills alone may not lead to entrepreneurial action, as individuals may lack the confidence required to manage risk and cope with failure (Chen and Liu, 2020; Kuratko et al., 2021).

These findings reinforce prior empirical research, which consistently identifies entrepreneurial self-efficacy as a strong predictor of entrepreneurial intention, planning, and actual startup behavior (McGee et al., 2009; Newman et al., 2023). Ultimately, self-efficacy functions as a decisive psychological catalyst that converts human capital into observable business creation.

9) *The Influence of Technological Access on Career Aspiration Mediated by Self-Efficacy*

This study confirms that self-efficacy significantly mediates the relationship between technological access and career aspirations (mediation effect = 0.260, $p < 0.05$). The findings indicate that technological access not only directly influences career goals but also indirectly enhances them by strengthening individuals' confidence in their capabilities. Greater access to digital tools fosters a belief in one's ability to navigate information, learn new skills, and adapt, which subsequently encourages the formation of higher career aspirations. Theoretically, this aligns with an integrated framework of Human Capital Theory (HCT) and Social Cognitive Theory (SCT). While HCT posits technology as a form of capital that improves economic prospects (Becker, 1964), SCT emphasizes that self-efficacy is the key mechanism determining how these resources are utilized (Bandura, 1977). Access to technology provides mastery experiences and vicarious learning, which are foundational to self-efficacy development (Chen and Liu, 2020). By confirming this mediating role, the research reinforces that self-efficacy is a crucial psychological bridge, translating technological opportunities into elevated career aspirations.

10) *The Influence of Technological Access on Business Creation Mediated by Self-Efficacy*

This study confirms that self-efficacy significantly mediates the relationship between technological access and business creation (mediation effect = 0.318, $p < 0.05$). This finding indicates that technological access contributes to entrepreneurship not only directly but also indirectly by enhancing individuals' confidence in their capabilities. Greater access to digital technologies increases readiness to recognize opportunities, initiate activities, and persist through uncertainty, positioning self-efficacy as a crucial psychological factor transforming resources into concrete entrepreneurial action.

Theoretically, this aligns with an integrated framework of Human Capital Theory (Becker, 1964) and Social Cognitive Theory (Bandura, 1977). While technological access represents instrumental capital that boosts productive potential, its conversion into business creation is not automatic. Social Cognitive Theory posits that self-efficacy is the key mechanism mobilizing these resources. Access to technology provides mastery experiences and vicarious learning—critical sources for self-efficacy development (Chen and Liu, 2020)—which in turn encourages individuals to assume entrepreneurial risks and apply digital competencies (Kuratko et al., 2021).

This result is consistent with prior empirical research highlighting self-efficacy as a psychological bridge between technological resources and entrepreneurial outcomes. By empirically confirming this mediating role, the present study reinforces existing evidence that confidence is the decisive factor in translating technological access into actual business creation, thereby extending prior findings within a mediation-based explanatory framework.

11) *The Influence of Digital Literacy on Career Aspiration Mediated by Self-Efficacy*

This study confirms that self-efficacy significantly mediates the relationship between digital literacy and career aspirations, indicated by a mediation effect value of 0.143 with a p-value of 0.033. This result validates that digital literacy contributes to the formation of career aspirations not only through its direct influence but also indirectly by strengthening individuals' confidence in their own abilities. Individuals with higher levels of digital literacy

tend to develop stronger self-efficacy, which enables them to formulate clearer, more focused, and more achievement-oriented career goals. These findings underline the importance of psychological readiness in transforming digital competencies into meaningful career-related aspirations.

From a theoretical standpoint, this aligns with an integrated framework of Human Capital Theory, where digital literacy represents a form of skills-based capital that enhances productivity and labor market competitiveness (Becker, 1964; Laar et al., 2020), and Social Cognitive Theory, which emphasizes that self-efficacy determines how individuals interpret and utilize their competencies in future-oriented decision-making (Bandura, 1977). As digital literacy increases, individuals gain mastery experiences that reinforce self-efficacy (Chen and Liu, 2020), allowing them to translate their digital skills into higher and more challenging career aspirations, particularly in technology-driven labor markets (World Economic Forum, 2020). Empirically, this supports prior hypotheses proposing a 'skills–confidence–ambition' pathway, reinforcing the argument that self-efficacy is a crucial psychological mechanism linking digital competencies to career aspirations.

12) The Influence of Digital Literacy on Business Creation Mediated by Self-Efficacy

This study confirms that self-efficacy significantly mediates the relationship between digital literacy and business creation (mediation effect = 0.110, p-value = 0.004). This finding validates that digital literacy contributes to entrepreneurial ventures not only through direct mechanisms but also indirectly by strengthening individuals' confidence in their own capabilities. Individuals with higher digital literacy demonstrate greater readiness, initiative, and persistence in engaging in entrepreneurial activities, suggesting digital skills alone are insufficient without the belief in one's ability to apply them effectively in uncertain contexts.

Theoretically, this aligns with an integrated framework of Human Capital Theory and Social Cognitive Theory. Digital literacy represents a critical form of skills-based capital that enhances individuals' capacity to innovate (Becker, 1964; Laar et al., 2020). However, the translation of this capital into action depends on self-efficacy, which shapes how individuals mobilize skills when faced with challenges (Bandura, 1977). Digital literacy provides mastery experiences that reinforce self-efficacy (Chen and Liu, 2020), making individuals more willing to tolerate risk and persist through obstacles (Kuratko et al., 2021). This supports prior research arguing that digital literacy provides the technical "how-to" while self-efficacy supplies the motivational "I can do it" belief (Santos et al., 2021; Donaldson et al., 2025), explaining why individuals with similar skills may have different outcomes and highlighting self-efficacy as the key factor transforming digital competence into sustained business creation.

5. Conclusion

Based on the findings obtained in this study, several conclusions can be drawn as follows: 1. Technological Access has a positive and statistically significant effect on Self-Efficacy, as indicated by a path coefficient of 0,453 and a p-value of $0,000 < 0,05$. Therefore, H1 is accepted. 2. Digital Literacy has a positive and statistically significant effect on Self-Efficacy, as reflected by a path coefficient of 0,249 and a p-value of $0,018 < 0,05$. Therefore, H2 is accepted. 3. Technological Access has a positive and statistically significant effect on Career Aspirations, as evidenced by a path coefficient of 0.357 and a p-value of $0,000 < 0,05$. Therefore, H3 is accepted. 4. Digital Literacy has a positive and statistically significant effect on Career Aspirations, as shown by a path coefficient of 0,190 and a p-value of $0,047 < 0,05$. Therefore, H4 is accepted. 5. Technological Access has a strong and statistically significant effect on Business Creation, as indicated by a path coefficient of 0,890 and a p-value of $0,000 < 0,05$. Therefore, H5 is accepted. 6. Digital Literacy has a positive and statistically significant effect on Business Creation, as indicated by a path coefficient of 0,142 and a p-value of $0,013 < 0,05$. Therefore, H6 is accepted. 7. Self-Efficacy has a strong and statistically significant effect on Career Aspirations, as reflected by a path coefficient of 0,575 and a p-value of $0,000 < 0,05$. Therefore, H7 is accepted. 8. Self-Efficacy has a positive and statistically significant effect on Business Creation, as reflected by a path coefficient of 0,402 and a p-value of $0,004 < 0,05$. Therefore, H8 is accepted. 9. Self-Efficacy significantly mediates the relationship between Technological Access and Career Aspiration, as indicated by a mediation effect value of 0,260 with a p-value of $0,000 < 0,05$. Therefore, H9 is accepted. 10. Self-Efficacy significantly mediates the relationship between Technological Access and Business Creation, as evidenced by a mediation effect of 0,318 with a p-value of $0,000 < 0,05$. Therefore, H10 is accepted. 11. Self-Efficacy significantly mediates the relationship between Digital Literacy and Career Aspiration, as indicated by a mediation effect value of 0,143 with a p-value of $0,033 < 0,05$. Therefore, H11 is accepted. 12. Self-Efficacy significantly mediates the relationship between Digital Literacy and Business Creation, with a mediation effect of 0,110 and a p-value of $0,004 < 0,05$. Therefore, H12 is accepted.

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