

Entrepreneurial cognitive skills and entrepreneurship education: effects on student entrepreneurial mentality

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Abstrak

Dalam konteks kewirausahaan, sikap entrepreneurial mentality pada mahasiswa untuk memulai sebuah usaha masih tergolong rendah. Penelitian ini bertujuan untuk menguji pengaruh entrepreneurial cognitive skills dan pendidikan kewirausahaan terhadap entrepreneurial mentality mahasiswa secara parsial maupun simultan. Penelitian menggunakan metode kuantitatif asosiatif kausal dengan populasi seluruh mahasiswa Pendidikan Administrasi Perkantoran FKIP UNS angkatan 2022 berjumlah 96 orang yang dipilih secara sampling jenuh. Data dikumpulkan melalui kuesioner skala Likert 1–4 dan dianalisis menggunakan regresi linear berganda dengan IBM SPSS Statistics 27. Hasil menunjukkan bahwa entrepreneurial cognitive skills dan pendidikan kewirausahaan masing-masing berpengaruh positif signifikan terhadap entrepreneurial mentality. Secara simultan, kedua variabel menyumbang 84,7% varians entrepreneurial mentality. Sumbangan relatif entrepreneurial cognitive skills sebesar 63,31% dan pendidikan kewirausahaan sebesar 36,69%, menunjukkan bahwa keterampilan kognitif kewirausahaan berperan sebagai fondasi utama pola pikir dan pengambilan keputusan kewirausahaan, sedangkan pendidikan kewirausahaan berfungsi sebagai faktor pendukung yang memperkuat potensi tersebut melalui pembelajaran praktis.

Kata Kunci: keputusan kewirausahaan; mental wirausaha; pembelajaran praktis kewirausahaan; pola pikir kewirausahaan; program MBKM

Abstract

In the context of entrepreneurship, students' entrepreneurial mentality their readiness to initiate business ventures remains notably low. This study examined the effects of entrepreneurial cognitive skills and entrepreneurship education on entrepreneurial mentality, both individually and simultaneously. A quantitative associative-causal design was employed with a census sample of 96 Office Administration Education students (class of 2022) at the Faculty of Teacher Training and Education, Universitas Sebelas Maret, who participated in the MBKM Entrepreneurship Program. Data were collected using a four-point Likert-scale questionnaire and analyzed through multiple linear regression with IBM SPSS Statistics 27. The findings revealed that both

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entrepreneurial cognitive skills and entrepreneurship education exerted significant positive effects on entrepreneurial mentality. Simultaneously, the two variables accounted for 84.7% of the variance in entrepreneurial mentality. The relative contributions of entrepreneurial cognitive skills (63.31%) and entrepreneurship education (36.69%) indicate that cognitive skills serve as the primary foundation for entrepreneurial thinking and decision-making, while entrepreneurship education functions as a complementary factor that reinforces this potential through experiential learning.

Keywords: entrepreneurial decision-making; entrepreneurial mindset; entrepreneurial mentality; experiential learning; MBKM program

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Introduction

Graduate unemployment remains a persistent challenge in Indonesia. According to 2024 data from the Indonesian Central Bureau of Statistics (BPS), university graduates constitute 5.25% of the unemployed population, representing the highest proportion among all educational levels. This unemployment is driven not solely by structural labor market factors but also by attitudinal and preferential dispositions among graduates themselves. Entrepreneurship has been identified as a viable solution to this problem, as it enables individuals to create employment opportunities rather than depend on existing job markets, thereby contributing to unemployment reduction (Jamaludin & Firmansyah, 2019). However, the low interest in entrepreneurship among students is attributable to several factors, including insufficient self-confidence regarding capital acquisition, limited knowledge of business management practices, and fear of failure accompanied by anxiety about potential risks. These findings suggest that an entrepreneurial mentality defined as the psychological readiness and disposition toward entrepreneurial activity has not been adequately cultivated among university students. As Safitri (2020) noted, mental competence exerts twice the influence on progress compared to other factors.

This problem is particularly evident among students in the Office Administration Education (PAP) program at the Faculty of Teacher Training and Education (FKIP), Universitas Sebelas Maret (UNS), class of 2022. Preliminary survey data revealed that 88.5% of students preferred to be job seekers rather than job creators. Furthermore, 80.8% expressed no interest in entrepreneurship, citing unpreparedness to face the inherent risks and uncertainties of business ventures, such as the possibility of failure, capital loss, or absence of stable income. Additionally, two years after participating in the Semesta WMK program, only 3.06% of the 97 students who enrolled in the MBKM Entrepreneurship Program continued to operate their businesses.

Entrepreneurial mentality does not develop instantaneously; rather, it is shaped by the interaction of internal and external factors (Maulia & Seri, 2021). Among internal factors, entrepreneurial cognitive skills play a critical role. These skills encompass multiple cognitive dimensions, including recognition, knowledge, comprehension, analysis, synthesis, and evaluation (Virianita et al., 2022). Entrepreneurial cognitive skills serve as a foundational element that provides individuals with the confidence and self-assurance necessary to strengthen their entrepreneurial mindset. Among external factors, entrepreneurship education operationalized through the MBKM (Merdeka Belajar Kampus Merdeka) Entrepreneurship Program plays a significant role. The implementation of entrepreneurship education through structured programs involves the cultivation and application of learning content, pedagogical methods, and entrepreneurial values (Aji et al., 2018). Similarly, Sholeh and Yusuf (2020) noted that the Directorate of Research and Community Service (DRPM) established entrepreneurship programs specifically targeting university students,

with the objective of creating young entrepreneurs through integrated programs developed and managed independently by each institution through entrepreneurship education initiatives.

The present study contributes to evaluating the effectiveness of developing students' entrepreneurial competencies, aligning with the educational objectives of the PAP program. Research specifically addressing entrepreneurial mentality remains limited, as most existing studies have focused on entrepreneurial interest and intention. Moreover, prior investigations have examined the relevant variables in isolation, whereas this study simultaneously investigates the combined effects of entrepreneurial cognitive skills and entrepreneurship education on entrepreneurial mentality. The population and sample characteristics of this study also differ from those of previous research, establishing a research gap that warrants further investigation among PAP FKIP UNS students from the class of 2022.

Based on the foregoing discussion, this study addresses the following research questions: (1) Do entrepreneurial cognitive skills significantly affect the entrepreneurial mentality of PAP FKIP UNS students from the class of 2022? (2) Does entrepreneurship education significantly affect the entrepreneurial mentality of PAP FKIP UNS students from the class of 2022? (3) Do entrepreneurial cognitive skills and entrepreneurship education simultaneously exert a significant effect on the entrepreneurial mentality of PAP FKIP UNS students from the class of 2022?

This study offers both theoretical and practical contributions. Theoretically, it enriches the understanding of the relationships among entrepreneurial cognitive skills, entrepreneurship education, and entrepreneurial mentality, providing a robust conceptual foundation for future research. Practically, the findings offer guidance for students in shaping their post-graduation career paths by developing an entrepreneurial mindset informed by program participation, provide faculty members with insights for directing entrepreneurship-oriented instruction that motivates students and shifts their paradigm from employment seeking to job creation, and serve as a reference for future researchers investigating the roles of entrepreneurial cognitive skills and entrepreneurship education in fostering entrepreneurial mentality.

Based on the theoretical framework and empirical evidence, the following hypotheses were formulated: H1: Entrepreneurial cognitive skills significantly affect entrepreneurial mentality among PAP FKIP UNS students from the class of 2022. H2: Entrepreneurship education significantly affects entrepreneurial mentality among PAP FKIP UNS students from the class of 2022. H3: Entrepreneurial cognitive skills and entrepreneurship education simultaneously exert a significant effect on entrepreneurial mentality among PAP FKIP UNS students from the class of 2022.

Research Methods

This study was conducted at the Office Administration Education (PAP) program, Faculty of Teacher Training and Education (FKIP), Universitas Sebelas Maret (UNS). The research subjects were students from the class of 2022, comprising a total population of 96 students who had participated in the MBKM Entrepreneurship Program. A quantitative approach with an associative-causal method was employed to analyze the influence of the independent variables entrepreneurial cognitive skills and entrepreneurship education on the dependent variable, entrepreneurial mentality. As Sugiyono (2023) noted, quantitative data are numerical in nature or represent qualitative data that have been quantified.

A non-probability sampling technique, specifically saturation sampling (census), was employed because the population was relatively small at 96 students, and the researchers sought to include all population elements to maximize data comprehensiveness. The entrepreneurial mentality variable was measured using six indicators: strong determination, firm self-confidence, honesty and responsibility, physical and mental resilience, diligence and perseverance, and constructive thinking (Sari et al., 2021). The entrepreneurial cognitive skills variable was measured using five indicators: opportunity recognition, opportunity assessment, risk management, forward thinking, and creative problem solving (Padovez-Cualheta et al., 2020). The entrepreneurship education variable was measured using four indicators: entrepreneurship course materials, entrepreneurship assignments, active participation in entrepreneurship activities, and entrepreneurship field practice (Layoo, 2020).

Instrument validation was conducted using the product-moment correlation validity test. An instrument item was considered valid when r -calculated exceeded r -table. With a significance level of 0.05, r -table was determined to be 0.361. For the entrepreneurial mentality variable, 17 of 18 items were valid; for the entrepreneurial cognitive skills variable, 13 of 15 items were valid; and for the entrepreneurship education variable, 11 of 12 items were valid. Reliability was assessed using Cronbach's alpha with a threshold of 0.70. The entrepreneurial mentality variable yielded a coefficient of 0.815, the entrepreneurial cognitive skills variable yielded 0.829, and the entrepreneurship education variable yielded 0.824 all exceeding the 0.70 threshold and confirming instrument reliability.

Data analysis employed multiple linear regression, encompassing the following procedures: (1) data tabulation; (2) prerequisite tests, including normality, linearity, multicollinearity, and heteroscedasticity tests; and (3) hypothesis testing, comprising t -tests (partial), F -tests (simultaneous), coefficient of determination analysis, and effective and relative contribution analysis.

Results and Discussion

Research Results

Table 1

Tabel statistik deskriptif

	Statistics		
	Entrepreneurial Cognitive Skills	Entrepreneurship Education	Entrepreneurial Mentality
Mean	41,5208	35,9167	55,3646
Std. Deviation	4,75943	4,72322	6,34138
Minimum	30,00	22,00	40,00
Maximum	52,00	44,00	68,00

Source: Data processed by researchers (2026)

As presented in Table 1, the descriptive statistics for each research variable are as follows. The entrepreneurial mentality variable, derived from 17 valid questionnaire items using a 1–4 Likert scale, yielded a mean score of 55.36 (SD = 6.34), with scores ranging from 40.00 to 68.00. The entrepreneurial cognitive skills variable, comprising 13 valid items, produced a mean of 41.52 (SD = 4.76), with a range of 30.00 to 52.00. The entrepreneurship education variable, consisting of 11 valid items, showed a mean of 35.92 (SD = 4.72), with scores spanning from 22.00 to 44.00.

Table 2

Hasil Uji Normalitas

One-Sample Kolmogorov-Smirnov Test	
Unstandardized Residual	
N	96
Asymp. Sig. (2-tailed) ^c	0,196

Source: Data processed by researchers (2026)

As shown in Table 2, the Kolmogorov–Smirnov normality test yielded an Asymp. Sig. (2-tailed) value of 0.196, which exceeded the 0.05 significance threshold, confirming that the data were normally distributed. The linearity test revealed that the entrepreneurial cognitive skills variable produced a linearity significance value of 0.000 (< 0.05) and a deviation from linearity value of 1.000 (> 0.05), confirming a linear relationship with entrepreneurial mentality. Similarly, the entrepreneurship education variable yielded a linearity significance of 0.000 (< 0.05) and a deviation from linearity of 0.304 (> 0.05), also indicating a linear relationship. The heteroscedasticity test results showed significance values of 0.612 and 0.091 for entrepreneurial cognitive skills and

entrepreneurship education, respectively, both exceeding 0.05, thereby confirming the absence of heteroscedasticity.

Table 3
Hasil Uji Multikolinearitas

Model	Coefficients ^a	
	Collinearity Statistics	
	Tolerance	VIF
Entrepreneurial Cognitive Skills	0,529	1,889
Entrepreneurship Education	0,529	1,889

Source: Data processed by researchers (2026)

Table 3 presents the multicollinearity test results. Both independent variables entrepreneurial cognitive skills and entrepreneurship education yielded tolerance values of 0.529 (> 0.10) and VIF values of 1.889 (< 10), confirming the absence of multicollinearity between the predictor variables.

The partial t-test for entrepreneurial cognitive skills yielded a significance value of 0.000 (< 0.05) and a t-calculated value of 10.965, exceeding the t-table value of 1.986 ($df = 93$, $\alpha = 0.05$). These results led to the rejection of H_0 , confirming that entrepreneurial cognitive skills exert a significant partial effect on entrepreneurial mentality. Similarly, the t-test for entrepreneurship education produced a significance value of 0.000 (< 0.05) and a t-calculated value of 6.917 (> 1.986), resulting in the rejection of H_0 and confirming the significant partial effect of entrepreneurship education on entrepreneurial mentality.

Table 4
Hasil Uji F

Model	ANOVA ^a				
	Sum of Squares	df	Mean Square	F	Sig.
Regression	3235,091	2	1617,545	257,083	0.000 ^b
Residual	585,149	93	6,292		
Total	3820,240	95			

Source: Data processed by researchers (2026)

As demonstrated in Table 4, the F-test produced a significance value of 0.000 (< 0.05) and an F-calculated value of 257.083, substantially exceeding the F-table value of 3.093 ($df_1 = 2$, $df_2 = 94$). These results led to the rejection of H_0 , confirming that entrepreneurial cognitive skills and entrepreneurship education simultaneously exert a significant effect on entrepreneurial mentality.

Table 5
Hasil Uji Regresi Linear Berganda

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	2,921	2,331	
Entrepreneurial Cognitive Skills	0,815	0,074	0,612
Entrepreneurship Education	0,518	0,075	0,386

Source: Data processed by researchers (2026)

Table 5 presents the multiple linear regression results. The constant value of 2.921 represents the baseline level of entrepreneurial mentality when neither predictor variable is considered. The regression coefficient for entrepreneurial cognitive skills ($B = 0.815$) indicates that each one-unit increase in this variable corresponds to a 0.815-unit increase in entrepreneurial mentality, holding

other variables constant. Similarly, the regression coefficient for entrepreneurship education ($B = 0.518$) indicates that each one-unit increase produces a 0.518-unit increase in entrepreneurial mentality. The coefficient of determination (R^2) was 0.847, indicating that 84.7% of the variance in entrepreneurial mentality is explained by entrepreneurial cognitive skills and entrepreneurship education, with the remaining 15.3% attributable to other factors not examined in this study.

Tabel 6

Hasil perhitungan sumbangan efektif

Sumbangan Efektif	Effective Contribution	
Entrepreneurial Cognitive Skills	$0,612 \times 0,876 \times 100\%$	53,61%
Entrepreneurship Education	$0,386 \times 0,805 \times 100\%$	31,07%
Total		84,68%

Source: Data processed by researchers (2026)

As shown in Table 6, the effective contribution of entrepreneurial cognitive skills to entrepreneurial mentality was 53.61%, while the effective contribution of entrepreneurship education was 31.07%, yielding a combined effective contribution of 84.68%.

Table 7

Hasil Sumbangan Relatif X_1 dan X_2 terhadap Y

Sumbangan Relatif	Relative Contribution	
Entrepreneurial Cognitive Skills	$53,61\% / 84,68\%$	63,31%
Entrepreneurship Education	$31,07\% / 84,68\%$	36,69%
Total		100%

Source: Data processed by researchers (2026)

Table 7 reveals that the relative contribution of entrepreneurial cognitive skills to entrepreneurial mentality was 63.31%, whereas entrepreneurship education contributed 36.69%, totaling 100%.

Discussion

The Effect of Entrepreneurial Cognitive Skills on Entrepreneurial Mentality

The statistical analysis confirmed that entrepreneurial cognitive skills exert a significant positive effect on entrepreneurial mentality among PAP FKIP UNS students from the class of 2022. The t-test yielded a significance value of 0.000 (< 0.05) with a t-calculated value of 10.965 (> 1.986), leading to the rejection of H_0 and confirming hypothesis H_1 . The regression coefficient of 0.815 indicates that each one-unit increase in entrepreneurial cognitive skills corresponds to a 0.815-unit increase in entrepreneurial mentality, suggesting that students with higher cognitive skills demonstrate stronger entrepreneurial dispositions, and conversely, those with lower cognitive skills exhibit weaker entrepreneurial mentality.

These findings underscore the critical contribution of entrepreneurial cognitive skills to entrepreneurial mentality formation. These skills encompassing opportunity recognition, opportunity assessment, risk management, forward thinking, and creative problem solving are directly linked to how individuals think, evaluate, and make decisions in entrepreneurial contexts. In entrepreneurship, success requires not merely initiating a business but also possessing creativity, management capabilities, and problem-solving skills to navigate potential challenges (Manalu et al., 2024). These cognitive abilities form the foundation of an entrepreneurial mindset characterized by risk-taking courage, opportunity orientation, and a proactive disposition toward value creation. Students with well-developed entrepreneurial cognitive skills tend to interpret situations as business opportunities rather than obstacles, thereby fostering the development of a robust entrepreneurial mentality.

This finding aligns with Wijaya and Nuringsih (2024), who argued that entrepreneurial cognitive knowledge provides students with insights into leveraging profitable business opportunities, generating venture capital, and developing innovations to produce new products and services. Conversely, without adequate entrepreneurial cognitive skills, entrepreneurial knowledge tends to remain abstract and is difficult to internalize into concrete attitudes and behaviors. Furthermore, entrepreneurial cognitive skills function as a bridge between knowledge and action. As Heriyanto and Ie (2024) emphasized, entrepreneurial cognitive knowledge is not merely supplementary but constitutes the primary foundation that every entrepreneur must possess, as entrepreneurial success cannot be achieved without deep knowledge, refined skills, and a strong willingness to confront business challenges. This implies that entrepreneurial knowledge acquired through formal education becomes more effective when accompanied by adequate cognitive abilities, enabling students to implement and apply concepts rather than merely comprehend them.

The Effect of Entrepreneurship Education on Entrepreneurial Mentality

The analysis also confirmed that entrepreneurship education exerts a significant positive effect on entrepreneurial mentality. The t-test yielded a significance value of 0.000 (< 0.05) with a t-calculated value of 6.917 (> 1.986), resulting in the rejection of H_0 and confirming hypothesis H^2 . The regression coefficient of 0.518 indicates that each one-unit increase in the application of entrepreneurship education corresponds to a 0.518-unit increase in entrepreneurial mentality. Consequently, students with higher engagement in entrepreneurship education demonstrate stronger entrepreneurial mentality, while those with lower engagement exhibit weaker entrepreneurial dispositions.

These results highlight the significant contribution of MBKM-based entrepreneurship education as a contextual learning platform integrated with real-world practice. Entrepreneurship education builds entrepreneurial mentality through experiential learning, whereby students learn from authentic situations, including both successes and failures. Direct interaction with the business world, mentors, and industry practitioners enriches students' perspectives and enhances their understanding of real-world entrepreneurial challenges. Kurniawan et al. (2021) emphasized that the synergy among the MBKM program, faculties, and industry partners is essential for supporting entrepreneurship learning not as mere curricular formality but as integration into genuine business practice.

Entrepreneurship education through the MBKM program functions as a supportive environment for developing students' potential. The program provides opportunities for students to explore business ideas, test their creativity, and refine their managerial skills. Similarly, Sutanto et al. (2021) argued that competency-based education and training applied in entrepreneurship learning materials represent a solution for addressing potential unemployment, as students acquire soft skills that serve them after graduation. With sustained mentorship from faculty members and industry partners, students can expand their business networks, enhance their entrepreneurial competencies, and confront real business challenges with greater confidence (Anwar et al., 2025).

The Simultaneous Effect of Entrepreneurial Cognitive Skills and Entrepreneurship Education on Entrepreneurial Mentality

Entrepreneurial cognitive skills and entrepreneurship education jointly exerted a significant positive effect on the entrepreneurial mentality of PAP FKIP UNS students from the class of 2022. The F-test yielded a significance value of 0.000 (< 0.05) with an F-calculated value of 257.083, substantially exceeding the F-table value of 3.093, leading to the rejection of H_0 and confirming hypothesis H^3 . The coefficient of determination (R^2) of 0.847 indicates that 84.7% of the variance in entrepreneurial mentality is accounted for by the combined influence of entrepreneurial cognitive skills and entrepreneurship education, with the remaining 15.3% attributable to variables not examined in this study.

These findings confirm that entrepreneurial mentality does not develop spontaneously but is shaped by the interplay of internal and external factors. Entrepreneurial cognitive skills represent the internal factor, while entrepreneurship education constitutes the external factor, and both play complementary roles in forming students' entrepreneurial mentality. This aligns with Husna (2017),

who characterized entrepreneurial cognitive skills as a collection of knowledge components that individuals employ for assessment, evaluation, and decision-making, involving the appraisal of opportunities, venture creation, and business development. Furthermore, entrepreneurship education constitutes a learning process that develops knowledge, attitudes, character, and personal skills aligned with students' age and interests (Hude & Mansah, 2022).

The relative contribution analysis revealed that entrepreneurial cognitive skills accounted for 63.31% and entrepreneurship education for 36.69%, demonstrating that both variables contribute to shaping entrepreneurial mentality, albeit with different magnitudes of influence. Entrepreneurial cognitive skills serve as the primary factor because they form the foundation of entrepreneurial thinking and decision-making, while entrepreneurship education functions as a supporting factor that strengthens and develops this potential through hands-on entrepreneurial learning. This finding is consistent with Sun et al. (2023), who acknowledged the supportive role of psychological aspects such as cognitive knowledge and motivation in entrepreneurship education, while affirming the importance of students' subjective initiative in validating learning experiences. Accordingly, the two variables complement each other, and the development of entrepreneurial mentality is optimized when students' cognitive abilities are supported by effective entrepreneurship education.

Conclusion

This study demonstrates that entrepreneurial cognitive skills make a more dominant contribution than entrepreneurship education in shaping students' entrepreneurial mentality. This finding is attributable to the direct relationship between entrepreneurial cognitive skills and individuals' internal mental processes, including the ability to recognize opportunities, engage in creative and innovative thinking, and make decisions under conditions of uncertainty. Meanwhile, entrepreneurship education, as an external factor operating through extracurricular learning processes, plays a significant but comparatively smaller role. This occurs because the MBKM Entrepreneurship Program primarily functions as a facilitative mechanism that reinforces capabilities already inherent within students. The regression model confirms that entrepreneurial cognitive skills and entrepreneurship education jointly exert a significant effect on students' entrepreneurial mentality, reflecting a balanced integration of individual psychological strengthening through entrepreneurial cognitive mindsets and entrepreneurial perceptions cultivated through formal entrepreneurship learning. The findings carry important implications for academic programs, faculty members, and MBKM supervisors. There is a need to strengthen learning approaches that extend beyond theoretical content to encompass the development of entrepreneurial cognitive skills, including opportunity recognition, creative thinking, problem solving, decision-making, and risk management. Academic programs should integrate practice-based and experiential entrepreneurial learning activities into their curricula, while faculty members should foster learning environments that encourage critical and innovative thinking. Furthermore, MBKM supervisors should provide targeted mentorship during entrepreneurship programs and internships to ensure that the experiences gained optimally enhance students' entrepreneurial mindset, attitudes, and mentality, thereby preparing them to confront workforce challenges or independently establish their own ventures. Future researchers are encouraged to investigate additional independent variables, given that entrepreneurial cognitive skills and entrepreneurship education accounted for 84.7% of the variance in entrepreneurial mentality, leaving 15.3% attributable to unexplored factors. These findings serve as a foundational reference for expanding the investigation of factors influencing entrepreneurial mentality, and consideration of alternative variable combinations may yield more comprehensive results.

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