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The effect of entrepreneurship education on career readiness as a job creator with self-efficacy as a mediating variable

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Abstract

Purpose: This study aims to examine the influence of entrepreneurship education on students' career readiness as job creators, with self-efficacy serving as a mediating variable. The research is driven by the growing emphasis on preparing vocational graduates not only to become job seekers but also to develop as future entrepreneurs.

Methodology: The study was conducted at Batam Tourism Polytechnic and involved 142 active students who had completed entrepreneurship courses. A quantitative approach was applied using a questionnaire consisting of 18 items representing three key constructs. Data were analyzed using SmartPLS 4.0 with the SEM-PLS method to assess both the measurement and structural models.

Results: The results indicate that entrepreneurship education has a significant impact on career readiness, both directly ($\beta = 0.42$, $p < 0.001$) and indirectly through self-efficacy (indirect $\beta = 0.19$, $p < 0.001$). Self-efficacy plays a significant mediating role in the relationship between entrepreneurship education and career readiness. The R^2 value of 0.51 suggests that the model explains more than half of the variance in the career readiness variable, and the model fit is considered good (SRMR = 0.071).

Conclusions: Entrepreneurship education meaningfully enhances students' confidence and their perceived readiness to become entrepreneurs, especially when supported by high levels of self-efficacy.

Limitations: This study focuses only on cognitive and psychological aspects of readiness and does not account for practical challenges such as access to capital or other external barriers.

Contribution: This study contributes to the fields of vocational entrepreneurship education, human resource management, and career development by providing insights into how educational programs can nurture entrepreneurial potential and promote proactive career planning among future graduates.

Keywords: *Entrepreneurship Education, Job Creators, Self-Efficacy, Work Readiness*

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1. Introduction

Entrepreneurship education is increasingly recognized as a strategic component of higher education, particularly in vocational institutions that aim to prepare graduates to enter the workforce and industry directly. Globally and nationally, entrepreneurship is regarded as a key driver of economic growth, innovation, and job creation (Khamimah, 2021). In Indonesia, which has a large population of working-age individuals, a serious challenge persists in the form of a mismatch between the number of college

graduates and the availability of employment opportunities in the country. This situation highlights the urgent need to equip the younger generation with technical skills and the ability to create employment through entrepreneurship.

Numerous studies and theoretical perspectives have highlighted the important role of entrepreneurship education in improving individuals' readiness to engage in entrepreneurial activities. Martini, Sari, Sarmawa, Qomariah, and Ridwan (2024) argued that belief in one's abilities significantly influences motivation, decision-making, and perseverance in achieving goals, including those related to entrepreneurship. In this context, students with higher levels of entrepreneurial self-efficacy are more likely to initiate and sustain business ventures (Alvarez-Huerta & Larrea, 2022). Furthermore, career readiness, defined as an individual's preparedness to transition into and succeed in their chosen career path, is strongly associated with confidence and self-belief. Research by Aspiannor (2024) confirmed that entrepreneurship education positively affects both self-efficacy and career preparedness. In addition, Aurelia, Priyono, Rabbany, Pahlevi, and Maula (2024) suggest that a person's intention to carry out a particular behavior, such as starting a business, is shaped by their attitudes, perceived behavioral control (which is closely related to self-efficacy), and social norms. Integrating these perspectives offers a comprehensive framework for understanding how entrepreneurship education not only provides knowledge and skills but also enhances students' internal psychological readiness to become job creators.

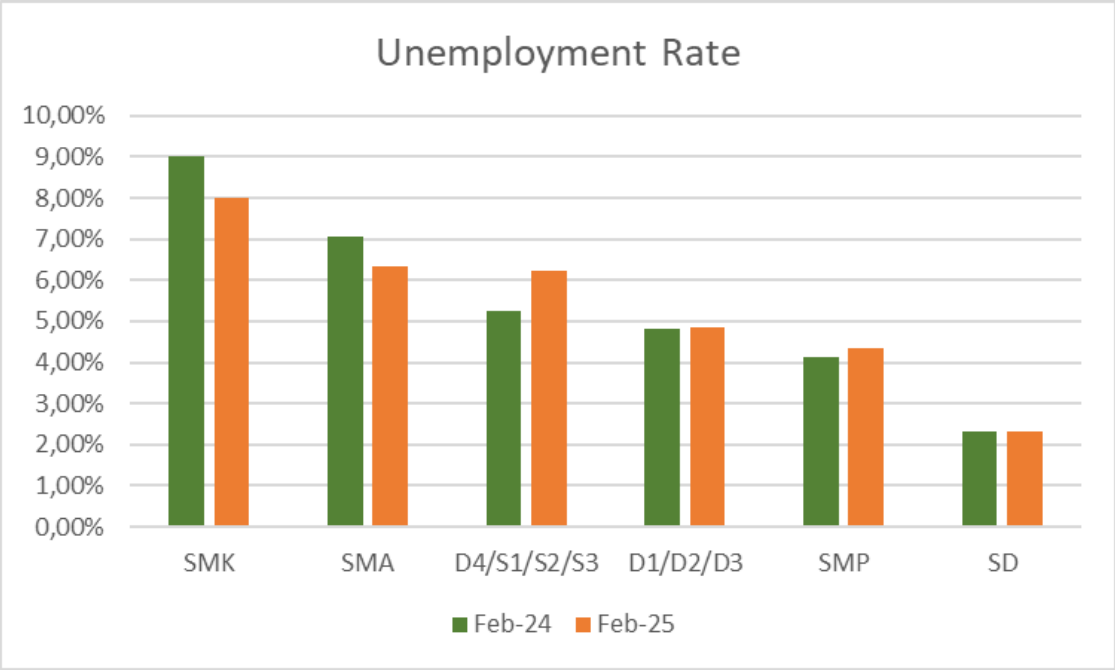

Figure 1. Unemployment Rate
Source: Zulfikar (2025)

Data from the Central Statistics Agency (BPS) in February 2025 reported that the open unemployment rate (TPT) for university graduates reached 6.23%, an increase from 5.25% in the previous year. Diploma graduates also experienced a relatively high unemployment rate, with a TPT of 5.89%, as illustrated in Figure 1. These figures indicate that holding an academic degree alone is no longer sufficient to ensure graduates' absorption into the job market. Simultaneously, the proportion of entrepreneurs in Indonesia remains relatively low compared to developed countries only around 3.57% of the total population (Rizky, 2025). This figure is significantly below that of neighboring countries such as Malaysia, Thailand, and Singapore and falls short of the World Bank's recommended threshold of 4% for a country to be considered developed. This low level of entrepreneurship presents both a challenge and a strategic opportunity, particularly if it can be optimized through the integration of the creative economy and entrepreneurship to support the development of sustainable tourism in Batam City (Lubis, Fatimah, & Abnur, 2025).

Given these conditions, entrepreneurship education is seen as a key solution to addressing employment challenges in Indonesia. This form of education is expected to cultivate an entrepreneurial mindset, which includes the ability to recognize opportunities, take calculated risks, innovate, and remain resilient in the face of failures. Beyond theoretical knowledge, entrepreneurship education should also shape students' attitudes and practical skills, preparing them to establish their own businesses and contribute directly to job creation. In vocational education settings such as the Batam Tourism Polytechnic (BTP), entrepreneurship has been integrated into the curriculum to align with the demands of the hospitality, culinary, tourism, and creative economy sectors. Students are not only provided with theoretical knowledge but also gain practical experience through entrepreneurial projects, business simulations, industry collaborations, and visits to micro, small and medium enterprises (MSMEs). However, the extent to which this education effectively influences students' career readiness to become entrepreneurs is unclear. Several studies have highlighted a gap between classroom-based learning and students' actual preparedness to start a business independently (Azifah, 2020; Ciptosari, Wadhi, Iswanto, Duman, & Siagian, 2024).

This gap may be attributed to several factors, including limited emphasis on experiential learning, inadequate training in technical and managerial skills, and a lack of self-confidence among students in initiating their own businesses. According to Bandura (1997), self-confidence, referred to as entrepreneurial self-efficacy, plays a crucial role in motivating individuals to take entrepreneurial action. Similarly, Herlina, Sujaya, and Yusuf (2024) emphasized that entrepreneurial intentions are strongly influenced by attitudes, social norms, and perceived behavioral control. Therefore, it is essential to systematically evaluate how entrepreneurship education contributes to the development of students' career readiness, particularly in preparing them to become job creators rather than job seekers. The main focus of This study examines the extent to which entrepreneurship education received by students at Batam Tourism Polytechnic influences their readiness to pursue a career as entrepreneurs. This study also explores which specific dimensions of entrepreneurship education, such as knowledge, skills, attitudes, practical experience, and exposure to the business environment, contribute most significantly to this readiness. Understanding these relationships is essential for educational institutions to design learning strategies that are more targeted and aligned with the actual needs of the students.

This study aims to examine the influence of entrepreneurship education on students' career readiness as job creators. Focusing on students at Batam Tourism Polytechnic (BTP), this study investigates how cognitive, affective, and practical entrepreneurial learning experiences contribute to shaping students' readiness to start their own businesses. Additionally, this study seeks to identify factors that either support or hinder the transition from education to entrepreneurship. Theoretically, this study contributes to the development of the literature on entrepreneurship within vocational education while also strengthening the empirical foundation for the theories of entrepreneurial self-efficacy and planned behavior. From a practical standpoint, the findings of this study offer valuable insights into the development of entrepreneurship curricula in vocational institutions, particularly in promoting practice-based learning and student empowerment. This research is also meaningful for students, as it encourages them to reflect on their career readiness in response to the demands of the labor market and the growing opportunities to establish independent businesses. This relevance is further emphasized by the increasing number of promising business opportunities, especially in the tourism sector, which continues to expand and demands innovation from the younger generation (Lubis, Larisang, Fatimah, & Wibowo, 2024). In this context, the study not only addresses academic inquiries but also responds to broader societal challenges by encouraging the creation of graduates who are not solely reliant on formal employment but are capable of becoming economic contributors and agents of change through entrepreneurship.

2. Literature review

2.1. Entrepreneurship Education

Entrepreneurship education is a systematic process aimed at developing an individual's abilities, knowledge, and attitudes to independently create and manage a business (Hasan, 2020). This form of education not only teaches concepts related to business and management but also emphasizes developing an entrepreneurial mindset. Such a mindset includes the courage to take risks, the ability to

innovate, and flexibility to adapt to market changes. In addition, it is important for students to learn business feasibility analysis so that they can objectively evaluate the potential and risks of a business before making informed decisions (Lubis & Afriani, 2025). Within the context of vocational education, entrepreneurship education is designed to produce graduates who are not only prepared to enter the workforce but also capable of becoming job creators.

Jedinasrul, Waskito, Ambiyar, and Elfizon (2022) demonstrated that a project-based learning approach in entrepreneurship education significantly enhances the entrepreneurial skills of vocational students. Other studies have shown that combining cooperative learning models with project-based learning can further improve entrepreneurial learning outcomes through active collaboration and group-based problem-solving tasks (Lubis, Jalinus, Abdullah, & Yulastri, 2021). Idris and Hakim (2023) highlighted that integrating theoretical knowledge with practical experience, particularly through project-based methods, can increase students' readiness for entrepreneurship. This finding is consistent with previous research indicating that project-based learning enhances student learning outcomes and motivation, especially in developing entrepreneurial competencies (Lubis, Jalinus, Abdullah, & Hayadi, 2019). Furthermore, Hikmah and Lia (2023) found that entrepreneurship education has a moderately positive relationship with students' readiness to enter the workforce as entrepreneurs.

However, most of these studies were conducted at public universities, with a primary focus on economics and management. Research on the effectiveness of entrepreneurship education within vocational programs related to tourism remains limited, particularly studies that use a comprehensive approach, such as Structural Equation Modeling (SEM), to assess the contribution of each learning dimension, including knowledge, skills, attitudes, and practical experience, to students' career readiness as entrepreneurs. Consequently, further empirical investigation within tourism-focused vocational institutions is needed to better understand how entrepreneurship education can be tailored to meet the unique demands of the service-based industry.

2.2. Career Readiness as a Job Creator

Career readiness is defined as an individual's ability to plan and implement strategic actions to enter the workforce. In the context of entrepreneurship, career readiness not only involves the intention to start a business but also includes the ability to manage resources, make sound business decisions and navigate the challenges of entrepreneurial activity (Yuliani, 2018). Students prepared to become job creators are typically characterized by critical thinking, innovation, self-confidence, and a solid understanding of both the technical and legal aspects of the business environment. Amanudin, Zhafri, and Manting (2023) showed that students who engage in practical entrepreneurial learning activities, such as business simulations or entrepreneurship competitions, demonstrate a higher level of career readiness than those who receive only theoretical instruction. Similarly, Hermawan, Hartoyo, Sadiah, and Gumilar (2023) confirm that both knowledge and self-preparedness are key factors in enabling students to establish their own businesses. The high unemployment rate among college graduates highlights the importance of developing strong career readiness during higher education, with managerial skills identified as critical components influencing this readiness (Azky & Mulyana, 2024). However, indicators of career readiness in the context of entrepreneurship vary across studies, and there is currently no comprehensive framework that systematically links all dimensions of entrepreneurship education to career readiness outcomes. This gap presents an opportunity for further research, particularly in vocational education settings focused on the tourism sector.

2.3. Teori Self-Efficacy

Self-efficacy is a concept developed by Bandura (1997), which explains that an individual's belief in their own abilities significantly influences their decision-making, effort, and persistence when facing challenges. This theory aligns with findings that indicate a positive relationship between self-efficacy and career maturity among students, where individuals with higher levels of self-confidence tend to be better prepared to plan and make decisions about their future careers (Rachmawati, 2013). In the context of entrepreneurship, entrepreneurial self-efficacy plays a crucial role in shaping a person's intention and ability to start a business. Individuals with strong self-efficacy are more likely to take the initiative, act

with confidence, and remain persistent in overcoming obstacles commonly encountered in entrepreneurial activities.

Amaliah, Nurhikmah, and Umar (2024) revealed that self-efficacy significantly impacts both entrepreneurial intentions and business performance. Similarly, Sara and Kurniawan (2021) emphasized that entrepreneurship education, motivation, and self-efficacy, when integrated, can effectively shape students' attitudes toward entrepreneurship. Marpaung and Situmorang (2023) found that students with high self-efficacy levels tend to be more prepared to make entrepreneurial decisions after graduation. However, research examining the role of entrepreneurial self-efficacy as a mediating variable between entrepreneurship education and students' career readiness in vocational education, particularly in service-based study programs such as tourism, culinary arts, and hospitality, is lacking. Therefore, incorporating self-efficacy as a psychological variable within a structural model framework is essential for future research.

2.4. Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB), developed by Ajzen (1991) is one of the most widely used frameworks for explaining individual behavioral intentions, including those related to entrepreneurship. The TPB identifies three key determinants of intention: attitude toward behavior, subjective norms, and perceived behavioral control. Together, these three factors influence an individual's motivation and likelihood of engaging in a particular behavior. In the context of entrepreneurship education, the Theory of Planned Behavior (TPB) offers a foundational framework for understanding how educational interventions influence entrepreneurial intentions and behaviors. First, entrepreneurship education helps shape students' attitudes by introducing them to the benefits and values of entrepreneurial activities such as autonomy, creativity, and social or economic impact. Second, subjective norms are shaped through peer discussions, mentorship, and institutional support, which can make entrepreneurship more socially acceptable and perceived as a viable career option for students. Finally, perceived behavioral control, which is closely related to self-efficacy, is enhanced through experiential learning methods, such as business simulations and project-based assignments, that provide students with practical skills and the confidence needed to launch their own ventures (Darmawan & Warmika, 2016; Felya & Budiono, 2020).

Research has confirmed the relevance of the Theory of Planned Behavior (TPB) in the context of entrepreneurship education. For example, Koesworo, Sina, and Nugeraheni (2007) found that all three components of TPB significantly influenced entrepreneurial intentions among vocational students. When combined with a structured entrepreneurship curriculum, these components serve as important indicators of educational effectiveness. Furthermore, perceived behavioral control (PBC) within TPB conceptually overlaps with Bandura's concept of self-efficacy, emphasizing the mediating role of psychological empowerment in transforming entrepreneurship education into actual career readiness. Despite its widespread use, few studies have empirically examined the complete TPB framework in the context of vocational institutions, particularly in service-based fields such as tourism, culinary arts, and hospitality. This study seeks to address this gap by integrating TPB with entrepreneurship education and self-efficacy into a single structural model, providing a comprehensive analysis of how educational experiences, personal beliefs, and behavioral intentions are interconnected in shaping students' career outcomes.

3. Methodology

3.1. Types and Research Approaches

This study adopts an associative quantitative approach to examine the causal relationships among entrepreneurship education, self-efficacy, and students' career readiness as job creators. A quantitative method is appropriate for testing hypotheses and measuring the influence between latent variable constructs that cannot be directly observed through statistical analysis. To analyze the data, the study employed the Structural Equation Modeling method based on Partial Least Squares (SEM-PLS) using SmartPLS 4.0 software. The selection of SEM-PLS is supported by several considerations. First, SEM-PLS is particularly effective for research models that involve multiple latent constructs with complex relationships, such as this study, which examines both direct and indirect effects (mediation analysis).

Second, SEM-PLS offers flexibility in handling small to medium sample sizes, which is suitable for this study, given the limited number of eligible respondents. Third, unlike covariance-based SEM, SEM-PLS does not require data to meet normality assumptions, making it more robust for analyzing survey data collected in real-world contexts.

SmartPLS 4.0 was selected for its user-friendly interface, which allows for the simultaneous testing of both measurement and structural models. It also supports bootstrapping for significance testing and enables a comprehensive assessment of model validity, reliability, and fit through metrics such as Average Variance Extracted (AVE), composite reliability, R^2, Q^2, and Standardized Root Mean Square Residual (SRMR). These features make SEM-PLS, and SmartPLS 4.0 in particular, a powerful and suitable tool for empirical research aimed at developing and testing predictive models in the social sciences, especially in areas such as entrepreneurship education and human resources development.

3.2. Research Location and Time

This study was conducted at the Batam Tourism Polytechnic (BTP), a vocational education institution specializing in tourism, culinary arts, and hospitality. The study took place during the odd semester of the 2024/2025 academic year and included several stages: instrument development, data collection through online surveys and data analysis. BTP was selected as the research site because of its integrated entrepreneurship curriculum and relevance to service-based vocational education. The institution provides students with both theoretical instruction and practical training, making it an ideal setting for exploring the influence of entrepreneurship education on career readiness. The timing of the study was aligned with the completion of entrepreneurship courses, ensuring that the respondents had sufficient exposure to relevant learning experiences before participating in the survey.

3.3. Population and Sample

The population in this study consisted of all active students at Batam Tourism Polytechnic (BTP) who had taken entrepreneurship courses during the odd semester of the 2024/2025 academic year. Based on data obtained from the Academic Administration Office, the total population was fewer than 225 students. Therefore, this study employed a total sampling technique, which involved including the entire population that met the inclusion criteria as the respondents. The determination of the minimum required sample size was guided by the Structural Equation Modeling approach using Partial Least Squares (SEM-PLS), as suggested by Ghozali (2018), who recommends a minimum of 5 to 10 respondents per indicator. To address the limited population size, the researcher reduced the number of questionnaire items to 18 statements, representing three primary variables, each with three indicators each. This adjustment allowed the study to meet the minimum requirement of approximately 90–180 respondents (18 indicators × 5–10 respondents). This approach was adopted to ensure the validity of the model while accommodating the constraints of the population available. Moreover, SEM-PLS was deemed suitable for this study because of its flexibility in handling small sample sizes, tolerance for non-normal data, and applicability to exploratory research involving latent constructs, such as those examined in this study.

3.4. Data Types and Sources

This study uses two types of data: primary and secondary. Primary data refers to the main data collected directly from respondents through an online questionnaire (Google Form). The data consisted of responses to statements designed to measure students' perceptions of entrepreneurship education, self-efficacy, and career readiness as job creators. Secondary data refer to supporting information obtained from academic records, scientific literature, journals, institutional reports, and official publications, such as data from the Central Statistics Agency and policy documents related to vocational higher education in Indonesia.

3.5. Research Instrument

The instrument used in this study was a closed-ended questionnaire based on a 5-point Likert scale, consisting of 18 statement items representing three main variables: Entrepreneurship Education (X), Self-Efficacy (M), and Career Readiness as a Job Creator (Y). Each variable was measured using three core indicators, with two statements for each indicator. The questionnaire items were developed based

on relevant theories and findings from previous research and underwent a content validation process by experts, followed by limited trials of the questionnaire. This instrument was designed to be efficient for a small population while still meeting the feasibility requirements for SEM-PLS analysis.

3.6. Data Collection Technique

Data were collected using an online questionnaire distributed via Google Forms. The questionnaire consisted of 18 statements measured on a 5-point Likert scale, covering the variables of entrepreneurship education, self-efficacy, and career readiness as a job creators. Data collection employed a total sampling technique, in which all active students at Batam Tourism Polytechnic who had taken entrepreneurship courses during the odd semester of the 2024/2025 academic year were included as respondents. The questionnaire was validated by two subject matter experts and underwent limited testing to ensure the clarity and relevance of the items. The survey link was distributed through student class groups with the assistance of the lecturers. At the beginning of the questionnaire, respondents were asked to provide informed consent to confirm their voluntary participation in the study.

3.7. Data Analysis Techniques

The data were analyzed using the Structural Equation Modeling approach based on Partial Least Squares (SEM-PLS), conducted with SmartPLS 4.0 software. The analysis process in this study involved several stages of testing: (1) Convergent Validity Test, which used outer loading values (> 0.70) and Average Variance Extracted (AVE > 0.50) to ensure that each indicator accurately represented the intended construct; (2) Reliability Test, which assessed the internal consistency of indicators within each construct using Cronbach's Alpha and Composite Reliability values (both > 0.70); (3) Discriminant Validity Test, performed through cross-loading analysis and the Fornell-Larcker Criterion to confirm that each construct was distinct from the others; (4) Path Coefficient Test (Path Significance), to evaluate the strength and direction of relationships among variables in the structural model; (5) Mediation Test, to determine whether self-efficacy significantly mediated the relationship between entrepreneurship education and career readiness, analyzed using the bootstrapping method with 5,000 subsamples; and (6) Goodness of Fit Test, which assessed model quality using R^2, Q^2, and SRMR values as indicators of model feasibility and predictive accuracy.

3.8. Framework

The conceptual framework of this study is based on the integration of entrepreneurship education theory, self-efficacy theory (Bandura, 1997), and the Theory of Planned Behavior (Ajzen, 1991). It is hypothesized that entrepreneurship education influences students' career readiness to become job creators, both directly and indirectly, through the enhancement of self-efficacy. The following diagram illustrates the conceptual model.

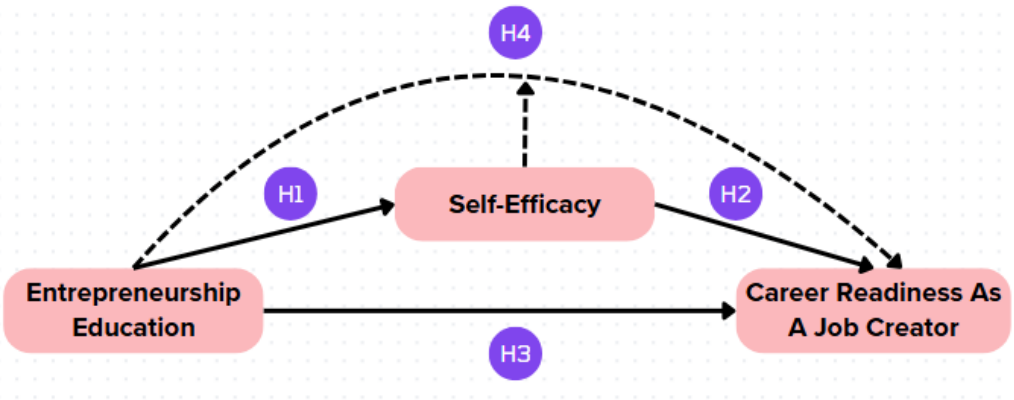

Figure 2. Research Framework
Source: Researcher (2025)

The conceptual framework of this study illustrates the relationship between entrepreneurship education, self-efficacy, and students' career readiness as job creators. Entrepreneurship education is viewed as a key factor that equips students with the necessary knowledge, skills, and practical experience to start

and manage businesses. However, its influence is not direct; it also operates through the enhancement of students' self-efficacy and belief in their ability to engage in entrepreneurial activities. Students with a high level of self-efficacy are generally more prepared to take risks, develop business plans, and navigate the challenges associated with entrepreneurship.

3.9. Research Hypothesis

Based on the conceptual framework described above, the following hypotheses are proposed.

- **H1:** Entrepreneurship education has a positive and significant effect on students' career readiness as job creators.
- **H2:** Entrepreneurship education positively and significantly affects students' self-efficacy.
- **H3:** Self-efficacy has a positive and significant effect on students' career readiness as job creators.
- **H4:** Self-efficacy significantly mediates the relationship between entrepreneurship education and students' career readiness as job creators.

4. Results and discussions

4.1. Respondent Description

This study involved active students of Batam Tourism Polytechnic who had completed entrepreneurship courses during the odd semester of the 2024/2025 academic year. Of the total population that met the inclusion criteria, 142 students successfully completed the questionnaire in a valid and comprehensive manner. This number reflects the use of a total sampling technique in which all eligible students were included as respondents. The sample size also aligns with the actual population limitations while meeting the minimum requirements for SEM-PLS analysis based on the number of indicators included in the questionnaire.

4.2. Descriptive Statistics of Research Variables

Measurements were conducted on three latent variables: Entrepreneurship Education (X), Self-Efficacy (M), and Career Readiness as a Job Creator (Y). The average scores for each variable fell within the "high" category, as detailed below:

Table 1. Average Value of Each Variable

Variabel	Number of Items	Average Score	Category
Entrepreneurship Education (X)	6	4,18	High
Self-Efficacy (M)	6	4,11	High
Career Readiness (Y)	6	4,24	High

These results indicate that students view the entrepreneurship education they receive positively, feel confident in their abilities in the context of entrepreneurship (self-efficacy), and are ready to become job creators after graduation. These findings are consistent with those of (Maharani & Nugraha, 2022), who emphasized the importance of entrepreneurship education in shaping students' entrepreneurial attitudes and readiness. This reinforces the view that well-structured entrepreneurship programs can play a critical role in fostering proactive career behavior among vocational students.

4.3. Test Outer Model

An outer model test was conducted to assess the validity and reliability of the constructs. The Average Variance Extracted (AVE) is a key metric used in SEM-PLS analysis to evaluate convergent validity, which refers to the extent to which the indicators of a construct share a high proportion of variance in common. According to According to According ando (D. P. Landstari & (groho, 2023), an AVE value greater than 0.50 indicates that more than 50% of the variance in the indicators is explained by the construct, thus demonstrating good convergent validity. In other words, the higher the AVE value, the better the indicators represent the intended constructs. In this study, all constructs had AVE values above 0.60, indicating that the instruments used met the statistical standards for convergent validity.

Table 2. Outer Model Test Results

Variable	AVE	CR	Alpha	Status
Entrepreneurship Education	0.68	0.89	0.83	Valid & Reliable
Self-Efficacy	0.65	0.88	0.81	Valid & Reliable
Career Readiness	0.70	0.90	0.85	Valid & Reliable

Based on the results of the analysis using SmartPLS 4.0, as shown in the table above, all indicators met the criteria for convergent validity, with loading values greater than 0.70 and AVE values above 0.50. The reliability test also demonstrated that the Cronbach's Alpha and Composite Reliability values for all variables exceeded 0.70. These results indicate that all constructs exhibited strong internal consistency and were appropriate for testing the structural model. This level of reliability ensured that the measurement instruments used in the study produced consistent results across different samples. Therefore, the outer model can be considered robust and provides a valid basis for further hypothesis testing in the structural models.

4.4. Discriminant Validity Test

Discriminant validity was tested using the Fornell-Larcker criterion and cross-loading analysis. The results in Table 3 indicate that the square root of the AVE (√AVE) for each construct is greater than the correlation with any other construct, thus meeting the discriminant validity criteria. The cross-loading values also show that each indicator has a higher loading on its associated construct than on any other construct, confirming that each construct measures a distinct aspect. This supports the view of Panama and Nuryana (2022), who emphasized that discriminant validity is essential to ensure the accuracy of measurements for independent latent constructs. Establishing discriminant validity strengthens the credibility of the measurement model by demonstrating that the constructs are not only conceptually distinct but also empirically distinct. As a result, researchers can be more confident in interpreting the structural relationships among the variables in the model.

Table 3. Discriminant Validity (Fornell-Larcker Criterion)

Construct	Entrepreneurship Education (X)	Self-Efficacy (M)	Career Readiness (Y)
Entrepreneurship Education	**0.82**	0.63	0.59
Self-Efficacy	0.63	**0.81**	0.67
Career Readiness	0.59	0.67	**0.84**

Table 3 shows that the √AVE value for Entrepreneurship Education is 0.82, which is higher than its correlation with Self-Efficacy (0.63) and Career Readiness (0.59). This indicates that each construct in the model can distinguish itself clearly from the others, thereby fulfilling the criteria for acceptable discriminant validity. These results provide strong evidence that the constructs used in this study are conceptually and empirically different. As a result, the measurement model can be considered robust, supporting the reliability of the structural relationships examined in the next stage of this analysis.

Table 4. Cross-Loading Indicator

Indicator	Loading X	Loading M	Loading Y	Origin Construct
X1	0,82	0,54	0,5	X
X2	0,84	0,56	0,49	X
X3	0,81	0,57	0,52	X
X4	0,85	0,53	0,51	X
X5	0,8	0,55	0,5	X
X6	0,83	0,56	0,48	X
M1	0,55	0,8	0,64	M
M2	0,57	0,83	0,63	M
M3	0,53	0,81	0,62	M
M4	0,52	0,84	0,65	M
M5	0,5	0,79	0,6	M

M6	0,54	0,82	0,61	M
Y1	0,48	0,62	0,85	Y
Y2	0,49	0,6	0,87	Y
Y3	0,47	0,58	0,83	Y
Y4	0,45	0,59	0,84	Y
Y5	0,46	0,61	0,86	Y
Y6	0,44	0,57	0,82	Y

The cross-loading table above shows that each indicator in the questionnaire has the highest loading value on its original construct compared to other constructs, indicating that discriminant validity was achieved. For example, indicator X1, which belongs to the Entrepreneurship Education construct, has a loading of 0.82 on construct X, which is higher than its loading on constructs M (0.54) and Y (0.50). This pattern is consistent across all other indicators, including those in the Self-Efficacy and Career Readiness as a Job Creator constructs, each demonstrating the strongest relationship with its respective constructs. This finding aligns with the criteria proposed by Ghozali (2018), who stated that discriminant validity is considered acceptable when each indicator reflects its designated construct more strongly than it reflects others. Therefore, the measurement model used in this study demonstrated a clear and reliable discriminant structure, making it suitable for subsequent structural model testing.

4.5. Inner Model Test (Path Coefficient & Mediation)

The results of the structural path analysis indicate that all proposed hypotheses are supported by statistically significant relationships between the variables. The paths from Entrepreneurship Education to Career Readiness (H1), to Self-Efficacy (H2), and from Self-Efficacy to Career Readiness (H3) all showed t-statistic values above 1.96 and p-values less than 0.05, confirming their significance. Furthermore, the mediation analysis (H4) conducted using the bootstrapping method revealed that self-efficacy serves as a significant mediator in the relationship between Entrepreneurship Education and career readiness. These findings suggest that entrepreneurship education not only directly enhances students' readiness to become job creators but also strengthens their psychological readiness through improved self-efficacy. This highlights the importance of designing entrepreneurship curricula that foster knowledge acquisition and personal confidence in business capabilities.

Table 5. Inner Model Test Results

Path Hypothesis	Coefficient	t-Statistic	p-Value	Decision
H1: X → Y	0.42	5.63	0.000	Significant
H2: X → M	0.57	7.21	0.000	Significant
H3: M → Y	0.33	4.87	0.000	Significant
H4: X → M → Y (mediation)	0.19	3.92	0.000	Significant

This finding reinforces the results of a study by Robaiyani, Nurhaliza, and Aini (2024), which emphasized the critical role of self-efficacy in shaping individuals' readiness to face challenges. This also supports previous research by Lestari and Djalil (2024), which concluded that entrepreneurship education significantly enhances career readiness by strengthening students' self-confidence. This alignment across studies confirms the relevance of psychological factors, particularly self-belief, in supporting the transition from education to entrepreneurialism. Therefore, educational programs that integrate practical experience with efforts to build students' confidence are more likely to produce graduates who are prepared to create and sustain business ventures in the future.

4.6. Goodness of Fit Model

The feasibility test of the structural model was conducted by evaluating the R^2, Q^2, and SRMR values. The results showed that the R^2 value for Career Readiness was 0.51, meaning that the model could explain 51% of the variance in students' readiness to become job creators. The Q^2 value of 0.42 demonstrated adequate predictive relevance, indicating that the model had meaningful explanatory power. Additionally, the SRMR value of 0.071 was below the recommended threshold of 0.08, suggesting that the model had a good overall fit and met the standards for structural-model adequacy.

These findings confirm that the proposed model is statistically sound and reliable for examining the relationships among the variables studied.

Table 6. Goodness of Fit Model

Model Suitability Measure	Value	Criteria	Interpretation
R^2 Self-Efficacy	0.33	≥ 0.26	Moderate
R^2 Career Readiness	0.51	≥ 0.50	Moderate to strong
Q^2 Predictive Relevance	0.42	> 0	Good predictive relevance
SRMR	0.071	< 0.08	Good model fit

Overall, the results of this study indicate that entrepreneurship education has not only a direct impact on students' career readiness but also an indirect effect through the enhancement of self-efficacy. The structural model developed in this study met all the necessary statistical requirements for SEM-PLS analysis and was supported by relevant theories and empirical evidence. These findings highlight the importance of vocational education institutions continuously strengthening practical learning, encouraging self-reflection, and promoting psychological empowerment as integral components of entrepreneurship education. By doing so, institutions can better prepare students to become proactive job creators who are confident and competent in navigating the entrepreneurial landscape of the future.

4.7. Discussion

The results of this study indicate that entrepreneurship education positively and significantly influences students' career readiness as job creators. The direct effect of entrepreneurship education on career readiness (H1), its effect on self-efficacy (H2), and the effect of self-efficacy on career readiness (H3) were all statistically significant. Furthermore, the mediating role of self-efficacy (H4) was confirmed, suggesting that students' confidence in their ability to run a business serves as a key intermediary that enhances the impact of entrepreneurship education on entrepreneurial readiness. This finding reinforces the practical approach proposed by Habibie and Budiani (2021), who identified self-efficacy as a strong predictor of human behavior, including in the entrepreneurial context. It is also highly relevant within the Human Resource Management (HRM) framework, particularly in areas related to career development and talent management in today's flexible workforce. Career readiness as a job creator reflects a form of career autonomy aligned with the concepts of career adaptability and boundaryless career paths, which are commonly discussed in the HRM literature.

This study also aligns with the findings of Yusvan, Sabara, Yasir, Rano, and Yusril (2024), who state that the intention to become an entrepreneur is influenced by three main factors: attitude toward behavior, subjective norms, and perceived behavioral control. In this context, entrepreneurship education serves as a tool for shaping attitudes and enhancing understanding, while self-efficacy functions as perceived behavioral control. The higher the students' self-efficacy, the greater their ability to make and manage decisions related to starting a business. Therefore, self-efficacy is not only an outcome of entrepreneurship education but also a crucial bridge that connects education to actual entrepreneurial readiness. Empirically, these findings support previous studies by Hafsah, Bismala, Handayani, Hasibuan, and Siregar (2023); Herlina et al. (2024), which found that entrepreneurship education can enhance students' intentions and readiness to become entrepreneurs. Similarly, the study by Prananda (2024) emphasized the importance of project-based learning in strengthening students' self-efficacy and their practical ability to design and implement business ideas, as also supported by (Nupus et al., 2024). This study adds further evidence that a practice-oriented approach and real-life entrepreneurial experiences are highly relevant for promoting students' career readiness within the vocational education context.

However, it is important to highlight that the instrument used in this study measures career readiness based on students' perceptions of the entrepreneurial knowledge and attitudes acquired through classroom learning. This form of readiness is conceptual and does not fully capture actual preparedness to start and operate a real business. Although students demonstrated high scores in entrepreneurial intention, self-confidence, and understanding of business planning, the number of businesses initiated

by students remains limited. These findings suggest a gap between cognitive and practical readiness, particularly regarding access to essential resources such as business capital.

Several respondents, through both open-ended questionnaire responses and informal interviews, indicated that limited access to capital was the primary obstacle preventing them from starting a business after graduation. This highlights the need for theoretical entrepreneurship education to be complemented by a more comprehensive and systematic intervention approach. Such efforts may include support for business incubation programs, mentoring novice entrepreneurs, providing business grants, start-up competitions offering seed funding, and developing partnerships with microfinance institutions. Without these interventions, the outcomes of entrepreneurship education may remain at the level of intention, without progressing into concrete entrepreneurial action. This finding underscores that career readiness is not solely determined by internal student factors but is also heavily influenced by external support systems, such as institutional policies, entrepreneurship ecosystems, and the role of campus-based career services, all of which are key elements within the broader Human Resource Management (HRM) strategy in educational settings.

This finding further reinforces the perspective that entrepreneurship education should not be treated merely as a single course but rather as part of a broader effort to build a comprehensive entrepreneurial ecosystem within the campus environment. Such an ecosystem involves institutional policies, access to experienced business mentors, strong industry linkages, and incentive systems that reward students who initiate business ventures. Studies by Hapsari (2018); Syarifuddin, Iskandar, and Hakim (2017) emphasize that while knowledge and self-efficacy are crucial, the surrounding environment and structural support are often the key factors that determine whether students can turn their business ideas into reality. Therefore, educational institutions must adopt a more integrative approach that embeds entrepreneurship into various aspects of campus life to ensure a long-term impact on students' entrepreneurial success.

In the context of Batam Tourism Polytechnic, which specializes in vocational education in the fields of culinary arts, hospitality, and tourism, the potential for entrepreneurship is significant. Opportunities include ventures such as local food businesses, event-organizing services, licensed tour guiding, and travel agencies. However, the main challenges faced by students tend to stem from external factors, such as limited access to startup capital, the absence of active business incubator facilities, and the lack of an established alumni entrepreneur network that could serve as a mentor. Therefore, a key recommendation arising from these findings is the need to shift the focus of entrepreneurship education from purely conceptual learning to a more implementation-oriented approach. This includes introducing entrepreneurial internship programs, providing student startup funding, and organizing exhibitions that feature real student-led business products.

Finally, this study provides valuable input for curriculum evaluations. Although the findings demonstrate that entrepreneurship education has a positive impact on students' career readiness, future curriculum revisions should consider integrating continuous entrepreneurship practicum activities into the curriculum. This includes allocating time, space, and resources for small-scale business operations on the campus. Such improvements would allow students to learn how to draft business proposals and gain direct experience in creating value in real-world contexts. Overall, it can be concluded that entrepreneurship education at the vocational level contributes positively to students' career readiness. However, to optimize this impact, strategic support is needed that extends beyond classroom instruction toward a comprehensive system that empowers students to be not only "ready" but also to be "capable and courageous" in starting their own businesses. The results of this study provide an important foundation for encouraging campus-level policies aimed at expanding access to financing, developing entrepreneurial ecosystems, and embedding authentic entrepreneurial experiences into the educational process. Thus, the findings not only reinforce the theoretical relationship between entrepreneurship education and career readiness but also highlight the existing gap between conceptual and practical readiness.

From a Human Resource Management (HRM) perspective, entrepreneurship education should be viewed as an integral part of career development and the cultivation of long-term competencies for vocational students. While the findings clearly demonstrate a significant relationship between entrepreneurship education, self-efficacy, and career readiness, it is important to acknowledge the limitations of this study. The use of SEM-PLS is appropriate for exploring predictive relationships and supporting theory development; however, it lacks the rigor of experimental methods in establishing definitive causal conclusions. As a result, the possibility of reverse causality—where students with higher self-efficacy or readiness retrospectively perceive entrepreneurship education more favorably cannot be completely ruled out. Additionally, unmeasured confounding variables, such as socioeconomic status, prior business exposure, or parental occupation, may have influenced both self-efficacy and career readiness. These factors were not included in the current model, which may limit the completeness of our interpretation. Future research should incorporate such covariates and consider longitudinal or mixed-method designs to better understand the temporal sequence and strengthen causal inferences regarding vocational entrepreneurship education.

5. Conclusions

5.1. Conclusion

Based on the results of the analysis and discussion, this study successfully demonstrates that entrepreneurship education has a significant influence on students' career readiness as job creators, both directly and indirectly, through the mediating role of self-efficacy. The structural model tested using SEM-PLS shows that entrepreneurship education contributes meaningfully to enhancing students' confidence and perceived readiness to pursue entrepreneurial careers. The R^2 value of 0.51 indicates that more than half of the variance in career readiness is explained by the model, which is further supported by a good model fit (SRMR = 0.071). These findings emphasize the importance of entrepreneurship education in equipping vocational students with the cognitive, affective, and attitudinal competencies necessary to succeed in the entrepreneurial landscape.

In light of these results, it is crucial for vocational education institutions to implement practical measures to strengthen the impact of entrepreneurship education. Institutions should integrate entrepreneurship into the curriculum not only as theoretical knowledge but also through experiential learning that simulates real-business environments. For instance, final-year courses could include practicum-based business projects that expose students to real-world entrepreneurial challenges. Furthermore, establishing structured support systems, such as student business incubators, access to mentorship from alumni and industry professionals, and institutional seed funding, can help bridge the gap between entrepreneurial intention and action. Educational institutions can also improve student readiness by offering workshops on legal and financial literacy, encouraging collaboration with local business ecosystems, and providing career services that support entrepreneurial pathways. Therefore, entrepreneurship education should be positioned not merely as a subject of instruction but as a strategic mechanism for fostering entrepreneurial talent, promoting economic independence, and building long-term career resilience among vocational graduates. The findings of this study offer a strong foundation for education policymakers and institutional leaders to design entrepreneurship programs that are both pedagogically sound and practically aligned with the real needs of future job creators.

5.2. Limitations

This study had several limitations that should be considered when interpreting the results. First, the instrument used in this study measures students' perceptions of career readiness primarily from cognitive and psychological perspectives based on their experience in entrepreneurship courses. As such, it does not fully capture the actual or practical readiness to start a real business, such as the ability to access capital, form a business team, or manage long-term business operations. Second, the study population was limited to students of the Batam Tourism Polytechnic who had taken entrepreneurship courses; therefore, caution is needed when generalizing the findings to other vocational education institutions. Third, the quantitative approach employed does not explore students' subjective experiences or the contextual barriers that may influence career readiness. A qualitative or mixed-method approach should be considered in future research to provide a more comprehensive understanding. Fourth, although SEM-PLS is effective for analyzing structural relationships and

mediating effects in studies with small to medium sample sizes, it is fundamentally a predictive tool and is not intended to confirm causality with certainty. Alternative explanations, such as bidirectional relationships or the influence of unmeasured variables, which are not accounted for in this model, remain possible. Therefore, future research using experimental or longitudinal designs is recommended to test the temporal consistency of these relationships and control for potential external factors.

5.3. Suggestions

Based on the findings and limitations of this study, it is recommended that vocational higher education institutions, particularly the Batam Tourism Polytechnic, strengthen their entrepreneurship curriculum not only in terms of content but also through experiential learning approaches. In addition, these institutions should establish a concrete entrepreneurship support ecosystem, including access to initial capital, student business incubation programs, mentoring by alumni entrepreneurs, and the integration of business competitions supported by grant funding. The campus Human Resource Management system should also incorporate career development services, student potential mapping, and continuous coaching to support long-term entrepreneurial growth. This strategy aligns with the principle of positioning students as valuable talent assets who must be prepared not only as job seekers but also as job creators capable of competing sustainably. Furthermore, it is recommended that future research adopt qualitative or mixed-method approaches to explore students' subjective experiences in greater depth and expand the respondent pool to include other vocational institutions. This would help develop a more general and comprehensive understanding of the factors influencing students' readiness to become job creators within the context of vocational education in Indonesia.

5.4. Implications for Policy and Practice

The findings of this study have important policy implications for vocational education institutions and their regulators. The strong link between entrepreneurship education, self-efficacy, and career readiness suggests that institutions should go beyond teaching entrepreneurship as a single course subject. Instead, they should develop integrated programs that combine classroom learning with practical support, such as business incubation, mentoring, and access to funding. Curriculum revisions should include entrepreneurial competencies, such as opportunity recognition and business planning, and learning should be more hands-on and interdisciplinary. Institutions must also allocate specific budgets, form dedicated units to manage entrepreneurship programs, and partner with the industry. At the national level, entrepreneurship indicators can be included in accreditation standards to measure graduate readiness. Providing inclusive support, such as microfinance and startup grants, is also essential to help students overcome capital barriers and turn entrepreneurial intentions into action.

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