Enhancing Entrepreneurial Intentions: The Role of Entrepreneurship Education, Entrepreneurial Skills, and Entrepreneurial Opportunity Recognition

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Abstract. This study looks at how Entrepreneurship Education (EE), Entrepreneurial Skills (ES), and Entrepreneurial Opportunity Recognition (EOR) affect Entrepreneurial Intention (EI) in Universitas Negeri Malang's undergraduate management students (class of 2020). The results demonstrate that EE strongly effects EI both directly ($\beta=0.366$, $p<.001$) and indirectly through ES ($\beta=0.114$, $p=0.005$) and EOR ($\beta=0.112$, $p=0.044$) using a cross-sectional design and the PLS-SEM approach with a sample of 140 respondents. Additionally, EE has a favorable effect on EI (ES→EI: $\beta=0.228$, $p=0.022$; EOR→EI: $\beta=0.336$, $p<.001$) via strengthening ES ($\beta=0.494$, $p<.001$) and EOR ($\beta=0.339$, $p<.001$). Of the variance in EI, 55% can be explained by the model. These results suggest that EE promotes entrepreneurial intention through significant mechanisms such as ES and EOR. This study emphasizes how practice-based learning helps students become more self-assured entrepreneurs and recognize opportunities.

Keywords: Entrepreneurial Intention, Entrepreneurship Education, Entrepreneurial Skills, Opportunity Recognition, PLS-SEM, Undergraduate Management Students.

1 Introduction

In recent years, entrepreneurial intention (EI) among Indonesian youth has drawn more attention in recent years. Many students indicate interest in entrepreneurship as a career option despite obstacles such low resources and economic instability, which reflects global trends that emphasize independence, inventiveness, and adaptability [1]. This reflects a global trend that makes becoming an entrepreneur a feasible career choice [2]. According to educators and policymakers, Entrepreneurship Education (EE) is essential for fostering entrepreneurial attitudes and promoting economic expansion.

The Kampus Merdeka program, which aims to methodically integrate entrepreneurial competencies, real-world experience, and interdisciplinary skills within higher education institutions, is one of the strategic initiatives that the Indonesian government has supported. In order to encourage the growth of entrepreneurial intentions among undergraduate students, it is crucial that entrepreneurship education be implemented in the context of higher education [3].

Even though there is a growing interest in entrepreneurship, students still frequently favor paid positions after graduation. Instead of starting their own businesses after graduating from college, they typically find formal employment in well-established companies [4]. This paradox

emphasizes how important it is to comprehend how EE can successfully convert into more robust entrepreneurial intentions.

This study explores the mediating roles of Entrepreneurial Skills (ES) and Entrepreneurial Opportunity Recognition (EOR) in the relationship between EE and EI, building on Social Cognitive Career Theory (SCCT). SCCT highlights how career intentions are shaped by the interaction of self-efficacy, outcome expectations, and personal goals. In the context of entrepreneurship, ES and EOR serve as mechanisms that improve EI by fostering outcome expectations and bolstering self-efficacy.

This study enriches the existing literature by empirically examining the relationship between EE and EI in the context of Indonesian higher education, through the mediating functions of ES and EOR. It offers theoretical both theoretical contributions and practical implications for educators and policymakers aiming to foster a more entrepreneurial generation.

2. Literature Review

2.1 Social Cognitive Career Theory

The SCCT is a theory that aims to explain three important aspects of interrelated career development [5]. The SCCT is a fundamental model that describes how components like self-efficacy, outcome expectations, and personal objectives interact to create a basis for professional growth. This model highlights how a person's career interests and behaviors are significantly shaped by the interplay between expectations of positive outcomes and self-confidence [6].

2.2 Entrepreneurial Intention

Liñán dan Chen define EI as a person's deliberate plan and willingness to start a new business in the future [7]. EI is defined by the Global Entrepreneurship Monitor as a person's intention to start a business within the next three years [2]. EI, according to Thompson, is the self-admitted conviction to launch a business [8]. The Entrepreneurial Intention Questionnaire (EIQ), created by Liñán and Chen, is used in this study to operationalize emotional intelligence. It has five items with a 5-point Likert scale (1 being strongly disagree and 5 being strongly agree). Examples include "*I will do everything in my power to launch and manage my own business*" and "*I am willing to do anything to become an entrepreneur.*"

2.3 Entrepreneurship Education

EE is defined as an effort to foster entrepreneurial knowledge, skills, and attitudes [9], [10]. EE helps people find opportunities and make entrepreneurial decisions by offering structured learning that blends experiential training with conceptual instruction. Four items on a 5-point Likert scale that were modified from Lorz are used in this study to measure EE. Example items include: "*The program taught me how to identify business opportunities*" and "*I learned how to develop a business plan.*"

2.4 Entrepreneurial Skills

ES encompass the information and abilities that allow person's to recognize opportunities, resolve issues, and successfully lead projects [11]. Liñán describes ES as a multidisciplinary construct that encompasses behavioral, affective, and cognitive characteristics [12]. A Liñán-adapted scale with six items on a 5-point Likert scale is used in this study to measure ES. Example items include: "*I can solve problems creatively in business contexts*" and "*I am able to build and maintain professional networks*."

2.5 Entrepreneurial Opportunity Recognition

Shane and Venkataraman describe EOR as the process of determining when new goods, services, or techniques can be introduced profitably [13]. Ardichvili et al. emphasize EOR as the process of analyzing trends and events to produce fresh business concepts [14]. A Kuckertz-adapted scale with two items on a 5-point Likert scale is used in this study to measure EOR [15]. Example items include: "*I often notice unmet needs in the market*" and "*I can recognize new opportunities for products or services*."
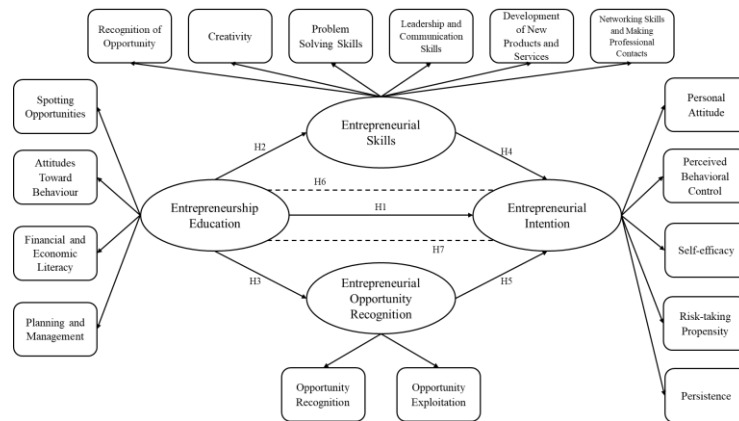

Fig. 1. Measure Model

3 Research Methods

3.1 Sample

This study employed a non-probability purposive sampling approach, focusing on undergraduate students of the Management Study Program, Faculty of Economics and Business, Universitas Negeri Malang, Class of 2020, with ages ranged from 21 to 23 years. Respondents were selected based on their prior exposure to entrepreneurship courses and participation in entrepreneurship competitions or activities. This deliberate sampling ensured that participants had sufficient familiarity with EE.

Sample size was justified according to PLS-SEM power rules rather than probability formulas. Following the "10-times rule" [16], which requires a minimum of ten times the maximum number of structural paths pointing at any latent variable, the recommended

minimum sample was 100. With 140 respondents, the study exceeded this requirement, ensuring adequate statistical power.

The study acknowledges potential selection bias: because the sample consisted only of students with prior EE exposure, ES, EOR, and EI may be inflated compared to the broader student population. This limitation is recognized, and future research is encouraged to include a control group or report prior exposure as a control variable.

3.2 Research Instruments

The data collection instrument was a structured questionnaire administered via Google Forms. All items were measured using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Each construct was operationalized with established and validated scales from prior studies, ensuring both reliability and comparability:

- Entrepreneurial Intention (EI): 5 items from Liñán & Chen (2009), e.g., "*I am ready to do anything to be an entrepreneur*."
- Entrepreneurship Education (EE): 4 items adapted from Lorz (2011), e.g., "*The program taught me how to identify business opportunities*."
- Entrepreneurial Skills (ES): 6 items from Liñán (2008), e.g., "*I can solve problems creatively in business contexts*."
- Entrepreneurial Opportunity Recognition (EOR): 2 items from Kuckertz et al. (2017), e.g., "*I often notice unmet needs in the market*."

All measurement items were translated into Bahasa Indonesia and subsequently retranslated into English through a rigorous translation and back-translation procedure to ensure semantic equivalence and linguistic accuracy.

Ethical considerations. The research protocol obtained formal approval from the university's Research Ethics Committee prior to data collection. Student participation in the survey was entirely voluntary, informed consent was explicitly secured, and strict procedures were followed to guarantee anonymity as well as the confidentiality of all individual responses. Additional measures were implemented to reassure participants that their data would only be used for academic and research purposes.

Common-Method Bias (CMB). To minimize the potential threat of CMB, items were systematically organized into distinct thematic sections using proximal separation, thereby reducing respondent tendency to answer uniformly. Furthermore, several negatively worded and reverse-coded statements were incorporated to encourage more attentive responses and to improve the overall reliability and validity of the collected data.

3.3 Data Analysis

Data analysis was conducted using SmartPLS version 3.2, applying the path weighting algorithm with a maximum of 500 iterations and a bootstrapping procedure based on 5,000 resamples with bias-corrected confidence intervals to ensure robust statistical estimation.

The analytical process comprised several key stages:

- Descriptive statistics (means, standard deviations, and frequency distributions) were computed to provide an overview of the sample profile.
- Measurement model (outer model) was assessed by examining indicator reliability, composite reliability, convergent validity through Average Variance Extracted (AVE), and discriminant validity using the Heterotrait–Monotrait (HTMT) ratio.
- Collinearity diagnostics were conducted with the Variance Inflation Factor (VIF) to identify potential multicollinearity among predictor variables.
- Model fit indices was evaluated using the Standardized Root Mean Square Residual (SRMR), which serves as a key index of overall model adequacy.
- Structural model (inner model) assessment, including estimation of path coefficients, interpretation of R^2 values, analysis of f^2 effect sizes, and examination of predictive relevance (Q^2) to evaluate explanatory and predictive power.

This systematic, multi-stage approach adheres to widely accepted methodological standards for PLS-SEM in the social sciences, as recommended by Hair et al. [16]. Adopting this methodological standard enhances the rigor, transparency, and credibility of the study's empirical findings.

4. Result and Discussion

4.1 Description of Respondent Characteristics

Table 1. Respondents by Gender

No.	Gender	Total	Percentage (%)
1	Man	64	45.7%
2	Woman	76	54.3%
	Total	**140**	**100%**

The distribution of gender table shows that out of a total of 140 respondents, as many as 64 people or 45.7% are men, while 76 people or 54.3% are women. This demographic breakdown offers a clear depiction of the gender composition within the respondent group, which exclusively comprises undergraduate management students from class of 2020.

Table 2. Respondents by Type of Activity

No.	Entrepreneurship Activities Participated in	Total	Percentage (%)
1	Entrepreneurship Week	118	84.2%
2	Entrepreneurship Competition	22	15.8%
	Total	**171**	**100%**

The data indicate that a majority of the respondents, accounting for 69.0%, actively participated in *Entrepreneurship Week*. In contrast, the remaining 31.0% were involved in *Entrepreneurship Competitions* such as Business Plan or Business Simulation.

4.2 Descriptive Statistical Analysis

Table 3. Descriptive Statistical Analysis

Variable	Grand Mean
Entrepreneurship Education	4.26
Entrepreneurial Intention	4.27
Entrepreneurial Skills	4.17
Entrepreneurial Opportunity Recognition	4.12

Based on the descriptive statistical analysis indicates that respondents agree that EE provides significant benefits for undergraduate management students of the class of 2020 — with a grand mean value of 4.26. In addition, respondents also showed agreement with the influence of EI on them — which was reflected in the grand mean value of 4.27. For the ES variable, the grand mean value obtained was 4.17 — it indicates that respondents felt quite confident in the skills they had. Although the grand mean value of the EOR variable is the lowest compared to other variables, this value still shows that respondents generally agree and feel able to identify entrepreneurial opportunities. Overall, these results also indicate that respondents believe that EI among undergraduate management students of the class of 2020 has increased.
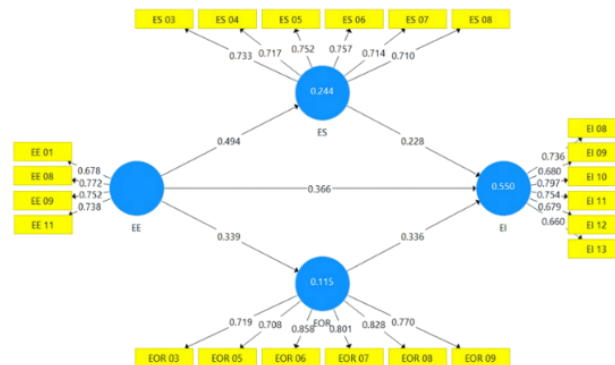
4.3 Outer Model

Fig. 2. Structural Equation Modelling Calculation

The evaluation of the measurement framework, commonly referred to as the outer model, is meant to show how well observed or manifest variables can capture the latent constructs under investigation. The validity and reliability of the research tools used for data collection are measured in order to evaluate the outer model. Additionally, the testing process for the outer model includes a number of crucial steps, such as a convergent validity analysis, a discriminant validity assessment, and a consistency or reliability analysis of the instruments. Furthermore, this evaluation serves as a crucial methodological step to guarantee that the indicators employed accurately represent the theoretical ideas being studied.

Table 4. Convergent Validity and Reliability

Variables	Cronbach's Alpha	Composite Reliability	AVE	Conclusion
Entrepreneurship Education	0.717	0.825	0.542	**Reliable**
Entrepreneurial Intention	0.812	0.865	0.517	**Reliable**
Entrepreneurial Skills	0.825	0.873	0.534	**Reliable**
Entrepreneurial Opportunity Recognition	0.873	0.904	0.612	**Reliable**

All of the measurement items meet the requirements for validity and reliability, according to the findings of the outer model analysis. In particular, the Average Variance Extracted (AVE) values were higher than 0.500 [16], indicating adequate convergent validity, and all outer loading values were higher than the suggested threshold of 0.660. Furthermore, the composite reliability and Cronbach's alpha values showed satisfactory internal consistency, both of which were above the traditional cut-off point of 0.700. When taken as a whole, these markers attest to the validity and reliability of the constructs' measurements, allowing for the confident interpretation of the structural model's subsequent findings.

Table 5. Discriminant Validity (Fornell-Larcker)

Variable	EE	EI	ES	EOR
Entrepreneurship Education (X)	0.736			
Entrepreneurial Intention (Y)	0.593	0.719		
Entrepreneurial Skills (Z1)	0.339	0.587	0.782	
Entrepreneurial Opportunity Recognition (Z2)	0.494	0.596	0.557	0.731

The discriminant validity indicates that the value of each construct variable indicator has a greater value compared to other construct variable indicators [16]. This shows that each indicator of the construct variable has good discriminant validity.

4.4 Inner Model

Table 6. R-Square

Variable	R-Square	R-Square Adjusted	Conclusion
Entrepreneurial Intention	0.550	0.540	**Moderate**
Entrepreneurial Skills	0.244	0.238	**Weak**
Entrepreneurial Opportunity Recognition	0.115	0.109	**Weak**

In the table above, it can be seen that the R-Square value for the EI variable is 0.550 or 55%. This explains that the EE, ES, and EOR variables are able to predict the EI variable by 55%, so it belongs to the moderate influence category. Meanwhile, 45% is another variable that is not discussed in this study and this value is included in the category of weak influence [16]. Furthermore, the R-Square values for the ES and EOR variables were 0.244 and 0.115 respectively — which were categorized as weak influences. This shows that the ES and EOR

variables only make a relatively small contribution to the formation of EI variables. Thus, it can be concluded that although EE, ES, and EOR play a role in influencing EI.

Table 7. F-Square

Variable	X	Y	Z1	Z2	Conclusion
Entrepreneurship Education		**0.224**	0.130	**0.322**	**Medium**
Entrepreneurial Intention					–
Entrepreneurial Skills		**0.172**			**Medium**
Entrepreneurial Opportunity Recognition		0.067			Weak

In the table above, it can be seen that the F-Square value for the EE variable on EI is 0.224 indicating a medium influence category; the EE variable on ES is 0.130, which falls into the weak influence category; the EE variable on EOR is 0.322 indicating a medium influence category. Then, the F-Square value for the ES variable to EI is 0.172 indicating a medium influence category. Finally, the F-Square value for the ES variable to EI is 0.067 which falls into the weak influence category.

From these results, it can be concluded that EE demonstrates a relatively strong contribution to EI and EOR, both of which are situated in the medium category. This finding highlights the importance of EE in shaping students' and abilities in recognizing business opportunities. In contrast, the effect of EE on ES was relatively weaker — which indicates that EE may be less effective in improving ES directly. Meanwhile, the ES variable has a medium influence on EI — which shows that the skills gained from EE and experience contribute to shaping EI for entrepreneurship. However, the EOR variable had a weaker influence on EI — it indicates that the ability to recognize opportunities did not directly strengthen students' EI.

Table 8. Estimate For Path Coefficients

Hypothesis	Original Sample (O)	T-Statistics ($\|O/STDEV\|$)	P-Values	Decision
EE -> EI	0.366	4.384	0.000	**H1 Accepted**
EE -> ES	0.494	6.813	0.000	**H2 Accepted**
EE -> EOR	0.339	3.738	0.000	**H3 Accepted**
ES-> EI	0.228	2.294	0.022	**H4 Accepted**
EOR -> EI	0.336	4.583	0.000	**H5 Accepted**
EE -> ES -> EI	0.114	2.805	0.005	**H6 Accepted**
EE -> EOR -> EI	0.112	2.012	0.044	**H7 Accepted**

F The results of the hypothesis testing indicate that all proposed hypotheses — both direct and mediated influences, have been proven to be statistically significant. This shows that EE has a positive and significant impact on student EI. In addition, ES and EOR serve as significant mediators in this relationship — reinforcing the effects of EE on EI.

4.5 Discussion

H1: The Direct Influence of Entrepreneurship Education on Entrepreneurial Intention

The results show that EE positively influences EI. Statistical analysis confirms this study the strength and robustness: Coefficient (O) = 0.366, T-statistic = 4.384 (>1.96), and P-value = 0.000 (<0.05). These findings suggest that improvements in EE directly enhance students' intentions to engage in entrepreneurial activities. From a theoretical standpoint — this outcome supports SCCT, which posits that career intentions are shaped by the interaction of self-efficacy, outcome expectations, and personal goals. EE contributes by fostering relevant knowledge and practical competencies, thereby strengthening students' confidence in handling entrepreneurial challenges and reinforcing their belief that entrepreneurship can produce desirable outcomes. In practice, the effectiveness of EE appears to stem from its experiential components—such as courses in digital business economics and applied entrepreneurship—that expose students to the complexities of real-world business contexts. These activities not only provide conceptual knowledge but also cultivate problem-solving, decision-making, and resilience, which are essential for entrepreneurial action. This finding is consistent with prior studies [10], [17], [18], which show that participation in EE strengthens EI by developing the skills, confidence, and motivation necessary to pursue entrepreneurial careers.

H2: The Direct Influence of Entrepreneurship Education on Entrepreneurial Skills
The results show that EE has a strong and statistically significant effect on the development of ES. Statistical analysis confirms this study the strength and robustness of the relationship between EE and ES: Coefficient (O) = 0.494, T-statistic = 6.813 (>1.96), P-value = 0.000 (<0.05). These findings suggest that EE effectively equips students with the technical and cognitive competencies needed to perform entrepreneurial tasks. From the perspective of SCCT, ES represents a key manifestation of self-efficacy. By combining theoretical instruction with experiential learning, EE strengthens this sense of competence and prepares students to navigate uncertainty in entrepreneurial contexts. EE fosters ES through activities such as active learning projects, mentorship opportunities, and engagement with the business community. EE fosters ES through active learning projects, mentorship opportunities, and engagement with business communities. Such experiences cultivate not only technical proficiency but also adaptive, interpersonal, and innovative capabilities — skills that are indispensable in today's highly competitive and dynamic market environment. This aligns with prior studies [11], [19], [20], that the entrepreneurial process involves not only technical aspects, but also includes the development of interpersonal and innovative skills.

H3: The Direct Influence of Entrepreneurship Education on Entrepreneurial Opportunity Recognition
The results show that EE exerts a significant positive influence on EOR. Statistical analysis confirms this study the strength and robustness of the relationship between EE and EOR: Coefficient (O) = 0.339, T-statistic = 3.378 (>1.96), P-value = 0.000 (<0.05). These results suggest that EE not only delivers fundamental business knowledge but also equips students with the ability to detect and interpret emerging opportunities in their environment. Within the framework of SCCT, this finding reflects how enriched learning contexts strengthen cognitive appraisals. In this sense, EE functions not only as a source of knowledge but also as a context that fosters self-efficacy and outcome expectations related to opportunity recognition. Exposure to experiential elements of EE allows students to refine their ability to scan, evaluate, and act upon dynamic market signals. This experiential foundation ensures that opportunity recognition skills are not abstract but directly applicable to entrepreneurial action. This aligns with prior studies, that opportunity recognition is a critical channel through which EE strengthens entrepreneurial intention [21], [22]. Moreover, research has emphasized the importance of

distinguishing between recognizing opportunities and exploiting them, a nuance that highlights the need for EE to balance cognitive discovery with the development of execution-oriented capabilities [15].

H4: The Direct Influence of Entrepreneurship Skills on Entrepreneurial Intention

The results show that ES exert a positive yet moderate influence on EI. Statistical analysis confirms: Coefficient (O) = 0.228, T-statistic = 2.294 (>1.96), P-value = 0.022 (<0.05). This suggests that entrepreneurial skills contribute meaningfully to entrepreneurial readiness, yet they should be viewed as one part of a broader constellation of factors shaping intention. Within the framework of SCCT, this pattern reflects the idea that skills alone are insufficient; they interact with outcome expectations and personal goals to generate intention. From a practical standpoint, developing such skills enhances students' self-confidence and preparedness, motivating them to take concrete entrepreneurial steps. However, these skills are most effective when combined with a mindset of innovation and willingness to take risks. This aligns with prior studies, which emphasize that entrepreneurial intention emerges not only from technical competence but also from psychological readiness, innovative drive, and risk-taking orientation [20], [23].

H5: The Direct Influence of Entrepreneurship Opportunity Recognition on Entrepreneurial Intention

The results show that EOR exerts a strong and statistically meaningful effect on EI. this study the strength and robustness of the relationship between EOR and EI: Coefficient (O) = 0.336, T-statistic = 4.583 (>1.96), and P-value = 0.000 (<0.05). These values provide compelling evidence that the ability to detect and evaluate entrepreneurial opportunities is a powerful predictor of students' willingness to pursue entrepreneurial activity. This strong relationship may be explained, in part, by the local entrepreneurial ecosystem at Universitas Negeri Malang, which offers frequent competitions, structured training programs, and personalized mentoring. Such initiatives not only expose students to the dynamics of opportunity discovery but also cultivate the confidence needed to transform recognition into intention. In SCCT terms, EOR functions as a cognitive mechanism that strengthens both self-efficacy and outcome expectations. These findings are consistent with previous research [13], [21], [24], which underscores that EOR is a core determinant of entrepreneurial intention, particularly when nurtured through entrepreneurship education. Beyond its statistical significance, EOR also contributes practical and psychological advantages.

H6: The Influence of Entrepreneurship Education on Entrepreneurial Intention Mediated by Entrepreneurial Skills

The results show that EE exerts an indirect effect on EI through ES, supporting the SCCT proposition that enhanced competencies strengthen self-efficacy and, in turn, shape intentions. Statistical analysis confirms: Coefficient (O) = 0.114, T-statistic = 2.805 (>1.96), and P-value = 0.005 (<0.05), thereby confirming the validity and significance of this mediating pathway. Although the mediation is statistically significant, the effect size is moderate rather than dominant. This suggests that while ES contributes meaningfully to the translation of education into intention, it should be regarded as one component among multiple mechanisms rather than the primary driver. From the perspective of SCCT, ES enhances self-efficacy by equipping students with a sense of mastery over entrepreneurial tasks. At the same time, skills provide a foundation for outcome expectations, as individuals with higher competence are more likely to anticipate favorable results when engaging in entrepreneurial behavior. This aligns with prior studies [10], [18], [23], which highlights that entrepreneurial skills, particularly when combined

with innovative thinking and a willingness to take calculated risks, serve as an important driver of entrepreneurial intentions.

H7: The Influence of Entrepreneurship Education on Entrepreneurial Intention Mediated by Entrepreneurial Opportunity Recognition

The results show that EOR influences both variables, between EE and EI. Statistical analysis confirms: Coefficient (O) = 0.012, T-statistic = 2.012 (>1.96), and P-value = 0.044 (<0.05), thereby confirming the presence of a significant though relatively modest mediation effect. This indicates that EE not only directly influences EI but also indirectly, by enhancing students' capacity to identify, evaluate, and interpret entrepreneurial opportunities within their environment. In the context of SCCT, EOR can be interpreted as a cognitive appraisal mechanism that links learning experiences with motivational outcomes. Practically, this finding underscores the importance of embedding opportunity discovery and evaluation activities into entrepreneurship curricula. This aligns with prior studies [10], [21], [25], which highlights that entrepreneurship education exerts its influence not only by transferring knowledge and skills but also by cultivating the ability to perceive and evaluate opportunities. At the same time, the relatively small coefficient suggests that opportunity recognition, while meaningful, interacts with other psychological factors (e.g., risk tolerance, resilience) and contextual influences (e.g., institutional support, cultural norms) in shaping entrepreneurial intention.

5 Conclusions

This study demonstrates that EE, ES, and EOR significantly influence the EI of undergraduate management students at Universitas Negeri Malang. EE strengthens students' self-efficacy and outcome expectations, ES enhances their practical competence, and EOR emerges as the strongest pathway toward entrepreneurial intention. Interpreted through SCCT, these findings highlight the interplay between learning experiences, efficacy beliefs, and contextual supports in shaping career aspirations.

For lecturers and course designers, the results underscore the need for more experiential and opportunity-focused learning. Incorporating opportunity-scanning exercises, mentor-led discovery sessions, and project-based workshops could better equip students to translate knowledge into entrepreneurial readiness. At the institutional and policy level, initiatives such as funding student competitions, establishing incubators, and fostering partnerships with local entrepreneurs may expand students' exposure to real-world opportunities and reinforce the entrepreneurial ecosystem.

Several limitations temper these conclusions. First, the sample was restricted to management students already exposed to EE, which may inflate levels of ES, EOR, and EI relative to the broader student population. Second, the cross-sectional and self-report design limits causal inference and introduces potential common method bias, despite procedural safeguards. Third, the cultural and institutional context of Universitas Negeri Malang — where entrepreneurship is actively promoted through competitions and mentoring — may amplify EE's effects, limiting generalizability to less supportive environments. Finally, unobserved traits such as proactivity, innovativeness, or risk-taking propensity may also contribute to entrepreneurial intention.

Future studies should broaden the sample to include non-EE students, employ longitudinal and mixed-method designs, and integrate dispositional and contextual variables to yield a more

multidimensional understanding of entrepreneurial intention development. By addressing these issues, future research can clarify not only how EE shapes entrepreneurial aspirations, but also when, for whom, and under what conditions these effects are most pronounced.

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