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# The Influence of Role Models on Entrepreneurial Intention: Does Individual Innovativeness Matter?\*

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## Abstract

This study aims to explore the relationship between entrepreneurial role models (ERM) and entrepreneurship education (EE) on individual entrepreneurial orientation (EO) and its consequences for entrepreneurial intention (EI). Data is obtained through a survey method on 255 management and business university students who had completed the entrepreneurship education program. To evaluate the research model, the data is processed using PLS-SEM. The results of this study indicate that the existence of entrepreneurial role models and entrepreneurship education programs for students affects the components of individual entrepreneurial orientation, namely individual innovativeness, individual proactiveness, and individual risk-taker. However, ERMs do not have a direct effect on EI. The main finding of this research appears on the influence of individual EO on EI, which indicates that only individual innovativeness impacts entrepreneurial intention. Meanwhile, personal proactiveness and risk-takers are proven to have no impact on EI. This study succeeded in filling the research gap, namely, examining the influence of ERMs on each of the components forming an individual entrepreneurial orientation (IEO) and its EI. This research model also provides a comprehensive research model on the influence of pre-entrepreneurial exposure on IEO and its consequences on EI.

**Keywords:** Individual Entrepreneurial Orientation, Entrepreneurship Education, Entrepreneurial Role Model, Entrepreneurial Intention, Innovativeness

**JEL Classification Code:** D91, L26, M13, M50

## 1. Introduction

Entrepreneurship is an option expected to drive economic growth in an uncertain industrial and recessionary world. Entrepreneurship drives economic growth through knowledge spillovers, job creation, providing innovative and diverse products and services, and increased market competition (Fayolle, 2007). Educating, mentoring, and interning tomorrow's entrepreneurs might be the key to job creation, economic growth, and building sustainable community development. Young people continue to show interest in entrepreneurship as a career option but feel they need the education and experience that will help them prepare for this challenge. Several studies have been conducted to model the growth of entrepreneurial intention (EI), and have identified numerous entrepreneurial exposures that precede EI, including entrepreneurial role models (ERM), entrepreneurship education (EE), and prior entrepreneurial events (Martins & Perez, 2020; Zapkau et al., 2017). At the

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personal level context, ERM is one of the methods used to leverage EI (Liñán & Fayolle, 2015). The existence of ERM to develop EI is not surprising because most entrepreneurs have role models before and after establishing a company (Bosma et al., 2012). The existence of ERM is one of the determinants in generating entrepreneurship interest (as a career choice) in the younger generation (Dakung et al., 2019; Moreno-Gómez et al., 2019) or build their professional abilities to pave a better road for the next generation and to encourage entrepreneurship (Zozimo et al., 2017). Quimby and Santis (2006) studied 368 female undergraduates to examine self-efficacy and role model influence as predictors of career choice across. Their findings showed role model influence added to the prediction of career choice over and above the contribution of self-efficacy.

Lafuente and Vaillant (2013) examined the differential impact of entrepreneurial role models over entrepreneurial activities at different stages of an individual's life cycle. The results indicate that for older individuals, the positive effect of role models over entrepreneurship is diluted. In contrast, younger individuals, who have been mainly exposed to a market-based economy, have a more positive societal valuation of entrepreneurial examples, which increases the positive effect that the knowledge of an entrepreneur has on their attitudes towards entrepreneurial activities. Bosma et al. (2012) argued that in the media role models are increasingly being acknowledged as an influential factor in explaining the reasons for the choice of occupation and career. They provided indications of the presence and importance of ERMs, the function of these role models, the similarity between the entrepreneur and the role model, and the strength of their relationship. They stated that entrepreneurs need higher-profile role models to support their business development.

In research involving the younger generation, it was found that while the presence of a parental role model increases the likelihood that individuals become self-employed, the influence of role models also depends on the individual's openness. Moreover, it was found not only that the presence of a parental role model increases entrepreneurial intentions but also that the effect of this influence is moderated by gender (Chlosta et al., 2012; Moreno-Gómez et al., 2019). According to Bosma et al. (2012), determining the right ERM is difficult because not every successful entrepreneur is worthy of being a role model. The empirical research carried out on university students found direct (Moreno-Gómez et al., 2019) and indirect effects (Entrialgo & Iglesias, 2017) of ERM on EI. Furthermore, Nowiński and Haddoud (2019) investigated the influence of ERMs, entrepreneurial attitudes, and entrepreneurial self-efficacies using a sample of 423 university students in Poland. Their findings showed that the three distinct combinations of the variables under study were found to be most effective for strengthening EI among

university students. ERM has a significant impact on EI in the younger generation (Lafuente & Vaillant, 2013). Parental self-employment (entrepreneurship) has been shown to have a positive influence on offspring's subsequent choice of entrepreneurship as a career. Previous studies have, however, not considered its dependence on parental performance in self-employment (entrepreneurship) and at what stage of the offspring's development (late childhood, adolescence, or young adulthood) this influence is highest. Mungai and Velamuri (2011) used social learning and career development theories in their research and argued that first, parental influence may not exist in the case of parents' economic failure in self-employment (entrepreneurship), and when it does occur, it is more pronounced when the offspring is a young adult. Conversely, ERM's existence does not always have a good influence on the desire to start entrepreneurship. Social learning theory predicts that negative role models dampen one's enthusiasm to pursue an entrepreneurial career. Chen et al. (2016) found that observing a business failure decreases one's entrepreneurial intention when the level of self-esteem is low. However, one's preference for an entrepreneurial career is increased when the level of self-esteem is high.

Several pre-entrepreneurship exposure studies that focus on using role models apply the Theory of Planned Behavior (TPB) approach to explain entrepreneurial intentions (Ajzen, 1991). Despite considerable research, the current state regarding how and in which context prior entrepreneurial exposure impacts the entrepreneurial process is unclear. Research by Zapkau et al. (2017) on the influence of ERM on EI showed mixed findings, while empirical research by Schoon and Duckworth (2012) showed that ERM does not affect EI. Austin and Nauta (2016) examined entrepreneurial role-model exposure and self-efficacy as predictors of women's entrepreneurial intentions. Among 620 female college students, self-efficacy and the number of entrepreneurial role models were both associated with stronger entrepreneurial intentions. Among the 105 women who had at least one entrepreneurial role model, the intensity of interactions with the most influential of those role models was also associated with entrepreneurial intentions

Bandura (1977) who researched on social cognitive learning theory (SLT), stated that individual self-perception as an entrepreneur could be shaped through observation and engaging the role model. Bandura's theory emphasizes the continuous reciprocal interaction between the factors of individuals' behavior (cognitive) and environmental influences in understanding the social cognitive learning process. Therefore, learning in this theory is more aimed at observational learning and the process set of the four interrelated components: attentional processes, retention processes, motor reproduction processes, and motivational processes. The fourth component is the one

used in the process of entrepreneurship learning to cultivate individuals' interest in entrepreneurship. The existence of entrepreneurial orientation (EO) is seen as a determinant of company performance. The concept of EO and its influence on *organizational performance* have received substantial attention in recent times (Gupta & Gupta, 2015). Success in running a business depends on the individual competence of the entrepreneur. Developing entrepreneurial competencies is increasingly seen as important to foster entrepreneurship. Additionally, at the individual level, EO is seen as a critical entrepreneurial competency consisting of innovation, proactiveness, and risk propensity (Bolton & Lane, 2012).

Apart from using ERM, the first exposure of individuals to entrepreneurship activities could occur through entrepreneurship education (EE) (Peterman & Kennedy, 2003). Paray and Kumar (2020) stated that EE is a systematic effort to stimulate the younger generation to have careers as entrepreneurs. It is expected to grow and strengthen EO and skills to independently improve career readiness (Galvão et al., 2020). Several empirical studies show that EE affects the emergence of entrepreneurial abilities (Marques et al., 2018). The entrepreneurial values reflected in ERM coupled with the contribution of EE in forming the abilities and competencies (i.e., IEO) are expected to create EI, which is seen as a proxy for future individual entrepreneurial behavior.

As far as is known, there is still no research that explicitly identifies the impact of entrepreneurial ability and competence on EI from ERM and EE. Therefore, based on this research gap, this study aims to model pre-entrepreneurial exposure (i.e., EE and ERM) to the formation of EI using an individual entrepreneurial orientation (IEO) approach (Bolton & Lane, 2012). Adopting the SLT approach, the role model for EI is explained through individual entrepreneurial abilities and competencies, such as innovativeness, proactiveness, and risk-taking.

The higher the level of education, the greater the absorptive capacity; therefore, ERM's role becomes increasingly important (Bosma et al., 2012). According to the research scope, this study is conducted at universities that implemented EE as a compulsory program for the undergraduate level; therefore, creating more entrepreneurs among the younger generation. This study's results are expected to comprehensively understand the vital role of ERM combined with EE in shaping and creating entrepreneurs.

## 2. Literature Review

### 2.1. Entrepreneurial Role Model (ERM)

The existence of ERM in entrepreneurship first began to gain researchers' attention three decades ago when Scherer

et al. (1989) found the role of parental role models in career preferences and it was subsequently reinforced by Entrialgo and Iglesias (2017) and Moreno-Gómez et al. (2019). Researchers have continued to develop the study of ERM concerning the identification of family role models (Chlosta et al., 2012; Laspita et al., 2012), gender (Austin & Nauta, 2016; BarNir et al., 2011), and successful entrepreneurs as ERM (Bosma et al., 2012; Dakung et al., 2019). This study also points to ERM's role in growing EI, directly or indirectly (Entrialgo & Iglesias, 2017; Moreno-Gómez et al., 2019). Based on SLT (Bandura, 1977) and social cognitive theory (Bandura, 1999), role models play a role through the social comparison process. Therefore, in line with this theory, individuals tend to identify and carry out activities similar to the role model.

In contrast to previous research that commercially used a global or whole approach to ERM (Gibson, 2004), this study identifies an ERM as a figure who positively demonstrates success and with entrepreneurial characteristics in the form of particular abilities or competencies (IEO). Chen et al. (2016) stated that proximity positively means that individuals only identify and compare the role model's good things. Furthermore, there is a tendency that individuals only engage with particular characteristics of role models (Ibarra, 1999). However, in this study, role models are not limited to specific figures; instead, they could be anyone, in either a higher or equal social hierarchy or close or distant engagement intensity. In line with this, role models are seen as individuals who specifically act as sources of inspiration and motivation, thereby increasing self-efficacy and providing support (Bosma et al., 2012). The functions of role models are derived from essential concepts in SLT (Bandura, 1977) and also emerge as sources of inspiration through cognitive processes after observing specific activities and behaviors (i.e., IEO) (Marques et al., 2018). The appropriate level of individual cognition and environmental support, such as EE in educational institutions, helps form a self-concept capable of carrying out the same activities (Gibson, 2004). Furthermore, role models also allow individuals to see real-life examples of specific entrepreneurial characteristics, specifically the abilities or competencies that determine success as an entrepreneur. According to Hamilton (2011), individuals could use critical entrepreneurial skills in practice to carry out entrepreneurial activities.

Promoting entrepreneurship to stimulate economic development and employment generation is increasingly important. In this sense, EE is considered a key instrument to increase entrepreneurial intentions. Entrepreneurial support is created through interaction, either in an active or passive form, for the individual. In an educational environment, role models could provide active support through embedded mentoring programs with EE (Nauta &

Kokaly, 2001). San-Martín et al. (2019) explored teachers of EE as ERMs. In particular, from two focus groups with students and teachers, they investigated the effects that teachers of EE have on students and the attributes they should have to achieve those effects. Both groups agreed that teachers considered as ERMs increase EI and improve several attitudes and competences of students. However, the attributes teachers need to have to become a role model differ from one group to another. Furthermore, while students defend that a teacher of EE should have previously started a business, teachers believe that having the characteristics of an entrepreneur is enough to be considered a role model and increase EI.

Gibson (2004) provided a revised definition of ERM, depicting role models as cognitive constructions based on an individual's needs, wants, and ambitions. Drawing on recent advances in social comparison and self-concept theories, a dimensional approach to role models integrates current theory and research, suggesting that role models should be construed along two cognitive dimensions (positive/negative, global/specific), and two structural dimensions (close/distant, up/across-down). Empirical research shows the importance of IEO in shaping IE (Frunzaru & Cismaru, 2018; Martins & Perez, 2020; Sahoo & Panda, 2019). In contrast to EO in the organizational scope, IEO is based more on individual ability to perform specific competencies, including innovativeness, proactiveness, and risk-taking (Bolton & Lane, 2012). The presence of ERM helps individuals obtain the ideal entrepreneurial conception through specific observations on essential competencies, such as creating innovative solutions, being pro-active in completing tasks, and the courage to take measured risks.

## **2.2. Entrepreneurial Role Model (ERM), Individual Entrepreneurial Orientation (IEO) and Entrepreneurial Intention (EI)**

EO in an organization is a strategic pillar that directs companies to behave entrepreneurially and several studies have proven this strategy to be the differentiator between a stagnant and a growing or developing company. Several important pillars in EO that have been consistently researched are innovativeness, proactiveness, and risk-taking (Dai et al., 2009). As a driving force for organizations, EO has also started to gain the attention of researchers at the individual level (Bolton & Lane, 2012; Kraus et al., 2019), with several studies focused on the impact of competencies and critical individual characteristics on post-entrepreneurial activity (Al Issa, 2020; Kumar et al., 2020). However, pre-entrepreneurial exposure studies that encourage the emergence of IEO have not received much attention.

According to the role model's competencies, the existence of ERM helps individuals form self-conceptions and determine the ideal form of an entrepreneur, inspires individuals on entrepreneurial competency, and increases their confidence in mastering their abilities. It also makes it easier for individuals to apply competencies practically and allows access to support. However, ERM's existence in supporting IEO has not received much attention. Within the limited research on IEO, the majority of studies undertaken examined the relationship between IEO and firm performance or IEO and entrepreneurial intentions. Therefore, this study aims to close the gap in studies in this field from the perspective of innovativeness, proactiveness, and risk-taking. It is essential to understand the creative process that leads to innovative solutions by learning from role models; understanding the innovation process and examples of innovative solutions help to increase individual self-efficacy.

### *H1: ERM positively affects individual innovativeness*

The existence of ERM helps individuals realize the importance of the planning process and the care required to determine potential business opportunities. Active role models could be used as living examples to enhance initiatives and accelerate similar attitudes and abilities.

### *H2: ERM has a positive effect on individual proactiveness*

ERM's courage in taking measured risks could change an individual's perspective on the risk occurrence. Furthermore, the support and consideration of role models also help measure and mitigate potential risks before starting a business.

### *H3: ERM has a positive effect on individual risk-taking*

According to Bandura (1977), following the SLT theory, individuals who observe a role model's behavior and characteristics find it easier to form their perceptions as a reflection of the role model. Several studies have revealed that the existence of role models is an essential explanation or determinant that encourages individuals to carry out entrepreneurial activities (Efrata et al., 2016; Moreno-Gómez et al., 2019). From the concept and research results, ERM could have an impact on EI in two ways. First, through role models, a positive image is created in individuals regarding a particular profession and the desire to have a career in the same field (Gibson, 2004). Second, role models could also help create a positive image of entrepreneurial activities (Krueger & Brazeal, 1994).

### *H4: ERM has a positive effect on entrepreneurial intention.*



### 2.3. Entrepreneurial Education (EE), Individual Entrepreneurial Orientation (IEO) and Entrepreneurial Intention (EI)

EE is believed to be the most effective way to create entrepreneurs by providing entrepreneurial knowledge and skills (Fayolle et al., 2006) as well as raising awareness and EI (Liñán & Chen, 2009; Mamun et al., 2017). However, there are still many disagreements regarding the ideal form of entrepreneurship learning due to the diverse demographics and specific needs of groups or individuals. Furthermore, several studies have identified the mindset and competencies required to equip individuals to carry out entrepreneurial activities including new product development, creativity, opportunity identification, and entrepreneurial leadership (Marques et al., 2018).

Through EE, an entrepreneur could learn and improve their entrepreneurial skill (Oosterbeek et al., 2010). EE provides training that prioritizes entrepreneurial skills and raises a desire to start a business (Bae et al., 2014; Paray & Kumar, 2020). In higher education, as part of formal education, it could increase knowledge to identify opportunities or manage a business (Hassan et al., 2020). Through such knowledge and skills, it is expected that entrepreneurial competence can be increased (Sánchez, 2013). Furthermore, introducing EE as part of a university

subject could raise awareness of a self-employed career (Jena, 2020; Kubberød & Pettersen, 2017). It also creates an entrepreneurial mindset and culture that could change entrepreneurship perceptions (Fenton & Barry, 2014).

Besides focusing on knowledge and skills, EE is also aimed to increase awareness and the desire to establish a new business or have an independent career. Through EE, essential entrepreneurial abilities and competencies are fostered, namely innovativeness, proactiveness, and risk-taking. Research on the business community in Portugal has shown that the EE program affects IEO (Galvão et al., 2020), while the empirical study on students by Marques et al. (2018) showed that EE affects innovation and proactiveness. Other studies conducted on students using experimental methods have found differences in the level of proactiveness and risk-taking between pre-education and post-education (Sánchez, 2013). For example, an increase in tolerance toward risk after following EE was found in individuals in the US (Fairlie & Holleran, 2012), while empirical research by Sánchez (2011) also indicated an increased acceptance of risk-taking among university students in Spain after participating in EE.

An increase in entrepreneurial knowledge leads to an increase in the ability to view problems from multiple perspectives, thus increasing the ability to generate creative ideas. Thus:

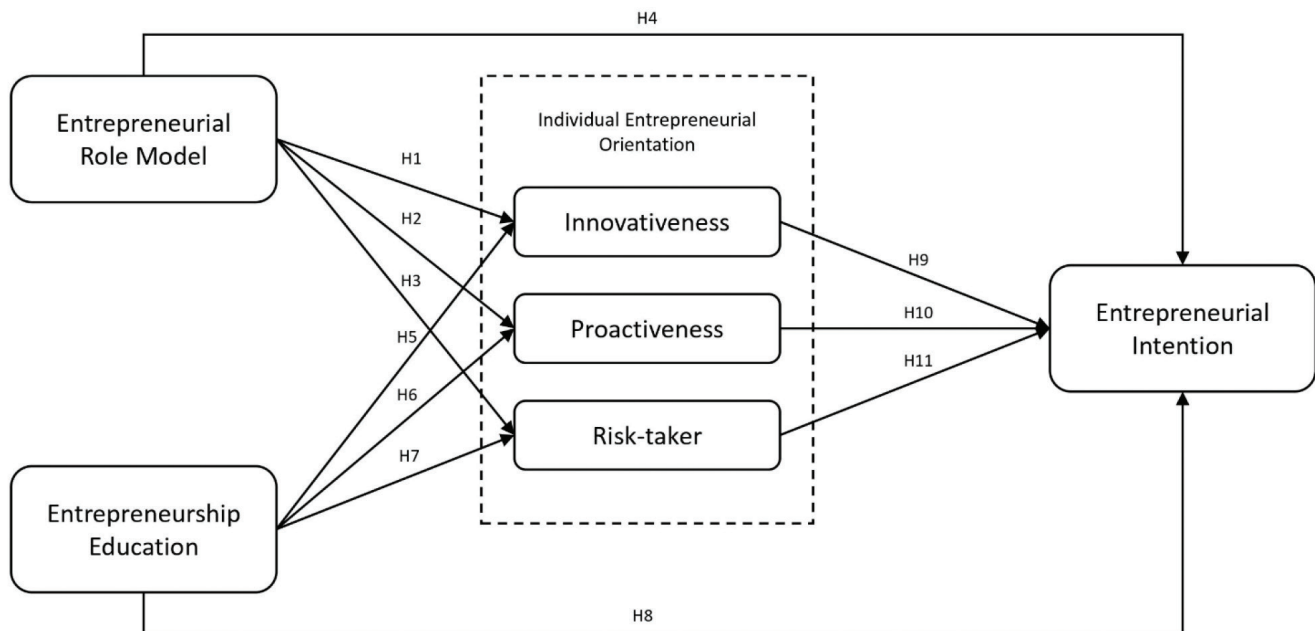


Figure 1: The Research Model

**H5:** *EE has a positive effect on individual innovativeness.*

Entrepreneurial skills help individuals solve entrepreneurial problems quickly and accurately. Furthermore, jobs could be more planned and anticipative toward potential issues that arise. Thus:

**H6:** *EE has a positive effect on individual proactiveness.*

Through EE, individuals acquire an entrepreneurial mindset and culture and are expected to have a more positive and risk-tolerant perspective. Thus:

**H7:** *EE has a positive effect on individual risk-taking.*

Pre-entrepreneurial exposure has been shown to impact the emergence of a desire to become entrepreneurs (Akhter et al., 2020; Schoon & Duckworth, 2012). Entrepreneurship development is a complex process and takes a long time; hence, through EE, individuals have the opportunity to acquire entrepreneurial exposure in a more effective and structured manner (Lee et al., 2006). EE increases perceived desirability and feasibility, thereby leading to an increase in the desire to pursue entrepreneurial activity (Bui et al., 2020; Efrata et al., 2016; Ha et al., 2020). An empirical study by Paray and Kumar (2020) on college students in India found a direct relationship between EE and EI. Furthermore, a meta-analysis study carried out by Bae et al. (2014) found a direct relationship between them. This research is in line with the concepts and results of previous research, which stated that EE could grow EI in two ways: by accelerating individual entrepreneurial development by forming a positive attitude and by creating desirability for an entrepreneurial career. Moreover, through EE, there is an increase in entrepreneurial skills and knowledge. This competency fosters self-efficacy and perceived desirability, thereby increasing EI. Thus:

**H8:** *EE has a positive effect on EI*

## 2.4. Individual Entrepreneurial Orientation (IEO) and Entrepreneurial Intention (EI)

EI is a predictor that precedes the occurrence of entrepreneurial behavior. It is used in studies examining EE success because educational outcomes that lead to entrepreneurial careers require a long process. Several studies have attempted to model EI from a contextual perspective of factors in entrepreneurship (Robinson et al., 1991); however, the meaning of EI has not been explicitly explained (Jena, 2020). Therefore, this study uses individual entrepreneurial abilities and competencies to predict EI. Liñán and Chen (2009) stated that EI indicates an entrepreneur's readiness, seriousness, effort, determination, and career goals. This

concept has been widely used in several studies, such as those carried out by Esfandiar et al. (2019) and Meoli et al. (2020).

According to Kraus et al. (2019), innovativeness, proactiveness, and risk-taking are the main entrepreneurial competencies that could support entrepreneurship. The career choice to become an entrepreneur needs preparation in entrepreneurial abilities and skills. Ozaralli and Rivenburgh (2016) and Syed et al. (2020) stated that innovativeness is one of the leading entrepreneurship elements, while meta-analysis research findings show that innovativeness is also closely related to start-up businesses (Rauch et al., 2009). Furthermore, the ability to create innovative products opens up opportunities for business exploitation. Sánchez's (2013) research on secondary students shows a relation between proactiveness and EI. According to Bateman and Crant (1993), proactiveness is evidenced through the activeness and initiative of individuals in completing tasks or finding solutions, such that behavior as a proactive individual helps entrepreneurs to determine solutions to problems. Ferreira et al. (2017) found high risk-taking propensity impacted the high level of EI among university students in Brazil. According to Kolvereid (1996), individuals with a low-risk tolerance prefer to work in an established work environment, rather than starting a company with high uncertainty, while research conducted by Caliendo et al. (2010) found that a positive perspective on entrepreneurship increases the desire to continue self-employment. Potential innovative individuals have more opportunities to determine opportunities to be exploited and, as such, the profession as an entrepreneur opens up opportunities for the optimal exploitation of innovation. Thus:

**H9:** *Individual innovativeness has a positive effect on EI.*

The ability to proactively plan, capture, execute and exploit business opportunities is needed for individuals to have careers as entrepreneurs. Thus:

**H10:** *Individual proactiveness has a positive effect on EI.*

A positive attitude in taking risks is closely related to career choices. Therefore, considering the risk and return

**Table 1:** Demographic Profiles of Respondents (N=255)

Demographic Profile		Count	Percentage
Gender	Male	130	51.0
	Female	125	49.0
Parents	Entrepreneur	202	79.2
	Non-entrepreneur	53	20.8

obtained, individuals with a high-risk tolerance choose to become entrepreneurs. Thus:

*H11: Individual risk-taker has a positive effect on EI.*

### 3. Method

Survey research is used to examine the relationship between variables in the research model because it seeks to obtain opinions, perceptions, and preferences from individuals (Galvão et al., 2020). Data is obtained by distributing questionnaires online due to restrictions on movement based on government regulations during the research. The subjects are students of business and management study programs from private universities studying EE in Indonesia. In EI research, subjects are obtained from those with the vision of becoming entrepreneurs and who chose a career in the professional sector after graduation (Ozaralli & Rivenburgh, 2016). The subjects' selection is carried out using purposive and random sampling (Hair et al., 2017).

The questionnaire distributed is divided into two parts. The first contains questions related to indicators with variables, while the second contains demographic data from respondents. The questionnaire is adopted or modified from instruments used in previous research. The ERM variable and EE indicator are adopted from Bosma et al. (2012) and Mamun et al. (2017), while the indicators of innovativeness, proactiveness, and risk-taking propensity are adopted from Bolton and Lane (2012), and the variable indicator EI is from Liñán and Chen (2009). The response is measured using a scale using the anchoring technique introduced by Nunnally and Bernstein (1994). The respondents' responses in the questionnaire are ranked from 'strongly disagree' to "strongly agree", with their perceptions represented by grades 1-10.

To test the research model, data is analyzed using PLS-SEM to maximize the dependent variables' variance (Hair et al., 2017). Tests are also carried out to determine the relationship between variables in the model and their suitability. The calculation and analysis processes are processed using the SmartPLS application.

### 4. Result

Data analysis is carried out in stages. First, the descriptive statistics of 255 respondents used as subjects of this study is determined. Second, an assessment is carried out on the outer or measurement model and the inner or structural model (Hair et al., 2014). For the reflective variable measurement model, the criteria according to Hair et al. (2017) were

determined through (i) indicator reliability, the loading factor value to test the reliability indicator (ii) convergent validity, measured from the AVE value (iii) internal consistency reliability measured by the composite reliability value (iv) discriminant validity using the square root of the AVE value. The calculated latent construct value is higher than others and, based on Fornell and Larcker (1981) criteria, the loading indicator needs to be higher than the cross-loading. The characteristics of the respondents are shown in Table 1, which indicates gender balance. Interestingly, 79.2 percent of the respondents came from family backgrounds of entrepreneurs.

#### 4.1. Model Measurement

Factor loading is the correlation coefficient for the variable and factor. Factor loading shows the variance explained by the variable on that particular factor. In the SEM approach, as a rule of thumb, 0.7 or higher factor loading represents that the factor extracts sufficient variance from that variable. This reliability is investigated by measuring each indicator's loading factor associated with its latent construct on the same variable. Therefore, the loading factor's allowable threshold value should not be more than 0.7 (Hair et al., 2017). Table 2 shows that the loading factor of each indicator is above the threshold value.

Convergent validity refers to how closely the new scale is related to other variables and other measures of the same construct. Not only should the construct correlate with related variables but it should not correlate with dissimilar, unrelated ones. The average variance extracted (AVE) is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error. The threshold AVE value is 0.5, which means that the latent variable needs to explain at least half of the variance indicator (Hair et al., 2017). Table 2 shows that the AVE value for all variables is greater than the threshold. Composite reliability (CR) is a measure of internal consistency in scale items. The internal consistency of the latent construct is taken from the CR value. According to Hair et al. (2017), internal consistency is included in the criteria when the CR value is bigger than 0.70. Table 2 shows that the overall CR value is greater than the threshold. Convergent validity and discriminant validity are both considered subcategories or subtypes of construct validity. To establish discriminant validity, you need to show that measures that should *not* be related. *Discriminant Validity* determines whether the constructs in the model are highly correlated among them or not. The AVE's square root needs to be greater than the other constructs' coefficient value, as shown in Table 3.

**Table 2:** Cronbach's Alpha, CR, AVE, and Factor Loadings of the Constructs and Indicators (N = 255)

Construct/ Item	Cronbach's Alpha	Composite Reliability	AVE	Factor Loadings
Entrepreneurship Education (EE)	0.951	0.960	0.722	
Component				
EE1				0.855
EE2				0.886
EE3				0.842
EE4				0.815
Role Model (ERM)	0.838	0.891	0.672	
Component				
ERM1				0.769
ERM2				0.835
ERM3				0.894
ERM4				0.774
Innovativeness (INNO)	0.836	0.891	0.671	
Component				
INNO1				0.801
INNO2				0.865
INNO3				0.833
INNO4				0.774
Pro-activeness (PRO)	0.805	0.885	0.719	
Component				
PRO1				0.860
PRO2				0.854
PRO3				0.829
Risk Taking (RISK)	0.807	0.886	0.722	
Component				
RISK1				0.900
RISK2				0.839
RISK3				0.808
Entrepreneurial Intention (EI)	0.951	0.960	0.802	
Component				
EI1				0.891
EI2				0.891
EI3				0.933
EI4				0.888
EI5				0.911
EI6				0.858



**Table 3:** Discriminant Validity (N=255)

Variable	EI	EE	INNO	PRO	RISK	ERM
EI	0.896					
EE	0.616	0.850				
INNO	0.574	0.590	0.819			
PRO	0.533	0.600	0.641	0.848		
RISK	0.487	0.418	0.446	0.516	0.850	
ERM	0.526	0.606	0.476	0.520	0.480	0.819

**Table 4:** Bootstrap Validation Outcomes (N = 255)

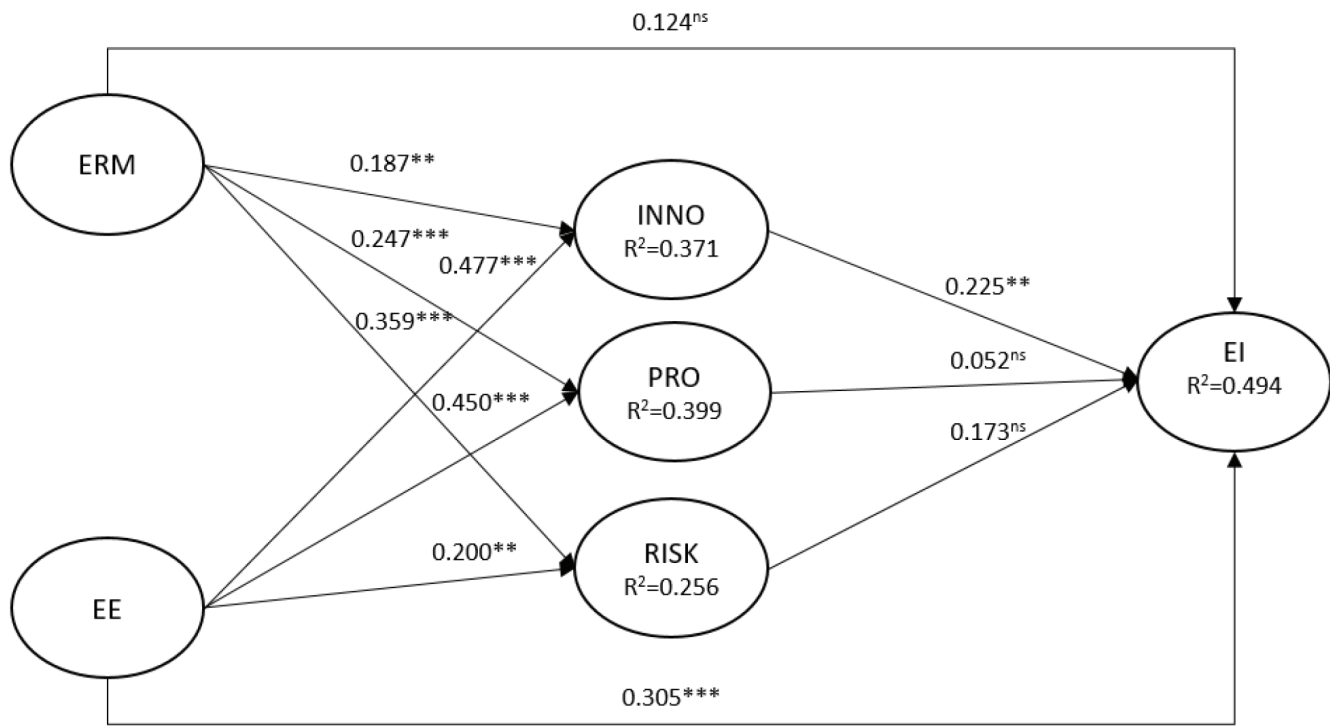
Hypothesis	Direction	Coefficient	t-statistics	p-value	Note
H1	ERM → INNO	0.187	2.807	0.005**	Accepted
H2	ERM → PRO	0.247	3.755	0.000***	Accepted
H3	ERM → RISK	0.359	5.069	0.000***	Accepted
H4	ERM → EI	0.124	1.631	0.103	Rejected
H5	EE → INNO	0.477	7.384	0.000***	Accepted
H6	EE → PRO	0.450	7.052	0.000***	Accepted
H7	EE → RISK	0.200	2.642	0.008**	Accepted
H8	EE → EI	0.305	3.875	0.000***	Accepted
H9	INNO → EI	0.225	3.155	0.002**	Accepted
H10	PRO → EI	0.052	0.662	0.508	Rejected
H11	RISK → EI	0.173	1.820	0.069	Rejected

Note: \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05.

## 4.2. Structural model

According to Hair et al. (2011), the structural model measurement is used to check the relationship's coefficient of determination of  $R^2$  (explained variance) for each endogenous latent variable. The coefficient of determination,  $R^2$ , is used to analyze how differences in one variable can be explained by a difference in a second variable. Figure 2 shows that the path model's highest coefficient value is EE innovativeness at 0.477, while the lowest and highest coefficient determination values are 0.256 and 0.494, respectively. Hair et al. (2011) stated that the respective model constructs moderately explained endogenous variables' variance. Another critical test is to ensure that there is no collinearity in the structural model. Variance inflation factor (VIF) is a measure of the amount of multicollinearity in a set of multiple regression variables. The results showed that the model's inner VIF value is between 1.50 and 2.14, which means that the overall value is below 5. When the value is below the threshold, it can be concluded that there is no collinearity in the structural model.

The bootstrapping method is used to measure the significance level of the relationship between variables. The number of iterations is set 5000 times to get a more accurate p-value (Hair et al., 2017). In statistics, the p-value is the probability of obtaining results at least as extreme as the observed results of a statistical hypothesis test, assuming that the null hypothesis is correct. A smaller p-value means that there is stronger evidence in favor of the alternative hypothesis. Table 4 shows that the t-statistics and p-value for each path have a threshold significance of 0.05, except for the path RM → EI, PRO → EI, and RISK → EI. Furthermore, it is necessary to ensure that exogenous constructs are sufficiently predictive to explain the endogenous as measured by Stone-Geisser's  $Q^2$ . According to Hair et al. (2017), the  $Q^2$  value is in the form of cross-validated redundancy for all the respective endogenous variables between 0.176 and 0.381, which is greater than the threshold of 0. This value indicates that each respective model's construct has predictive relevance ability.



Note: \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05; <sup>ns</sup> not significant

Figure 2: Structural Model

### 4.3. Hypothesis test

Hypothesis testing is performed after the measurement and structural models are validated. Table 4 shows that all hypotheses proposed in this study are accepted, except H4, H10, and H11. For all hypotheses accepted, this level of significance is quite convincing and below 0.01. The rejected hypotheses occur at H4, H10, and H11 with p-values above 0.05.

### 5. Discussion

This study provides empirical evidence on how EE and ERM interact with IEO components through innovation, proactivity, and risk-taking to increase the desire for a career as an entrepreneur. Out of the 11 proposed hypotheses, eight are accepted, and three are rejected. The data analysis results showed that H1, H2, and H3 are accepted. It means that the existence of ERM in students encourages innovativeness, proactive spirit, and risk tolerance. Furthermore, the results fill the existing research gaps by explicitly examining the relationship between the ERM and IEO variables. In contrast to the research carried out by Moreno-Gómez et al. (2019) and Kong et al. (2020), the ERM in this study does not have a direct

effect on EI, which means that H4 is rejected. When explained through the social learning theory approach, this difference in results suggests that individuals need an object of identification in the form of abilities or competencies in role models to reflect on their abilities. EE’s effect on IEO in this study is summarized in H5, H6, and H7. Data analysis shows that the EE program in higher education is confirmed to increase individual innovation, proactivity, and risk-taking. This is in line with the previous studies, which also used students as subjects (Galvão et al., 2020; Marques et al., 2018; Sánchez, 2013). The EE program in higher education is considered appropriate because, at this level of education, students have sufficient awareness and competitive ability to filter and absorb the knowledge and skills needed to build a career after graduation. In connection with the acceptance of H8, EE in students also directly impacts increasing EI. The results of this study are in line with the empirical findings of Galvão et al. (2020) and Vuong et al. (2020). The EE program in higher education shows students that business opportunities and potential benefits are there to be exploited once they are able to take advantage of business innovations, thereby raising their desire to do business.

Furthermore, from the IEO examination results of EI, only H 9 is accepted, while H10 and H11 are rejected. The research model indicates that only individual innovativeness

has an impact on EI. The findings of this study are in line with the research carried out by Bell (2019) and Syed et al. (2020), who stated that individual proactiveness and risk-taking had no impact on IE. These are also in line with the research conducted by Ferreira et al. (2017) and Bandera et al. (2018) which stated that individual proactiveness and tolerance for risk had no impact on EI.

In general, this study succeeded in filling the empirical research gap that examines the effect of ERM on IEO. This study also shows that ERM increases EI by providing inspiration and guidance to individuals through the characteristics of a role model, identified as a person with the ability to innovate. Furthermore, the results confirm that EE in higher education increases EI by building students' innovation abilities and competencies. For this reason, the pre-entrepreneurial exposure program aimed at building entrepreneurship needs to emphasize fostering innovation abilities and competencies.

## 6. Conclusion

The existence of ERM and EE programs could support development entrepreneurship, especially in increasing EI. However, how ERM and EE interact in increasing EI has received little attention from researchers. Therefore, this study argues that pre-entrepreneurial exposure needs to be used to foster entrepreneurial abilities and competencies at the individual level through innovativeness, proactiveness, and risk-taking. This study's findings reveal that, in fact, among the three offered entrepreneurial abilities and competencies, only individual innovativeness plays a role in growing EI. The implication of this study's results is expected to help policy-makers in entrepreneurship to determine the correct strategy in building entrepreneurship. Due to the massive investment resources and time required to grow EI, consistency and focus need to be more dedicated to fostering individual innovativeness. Furthermore, this research contributes to theoretical implications, especially in filling research gaps, by examining ERM and IEO's relationship through a social learning theory approach. This research model could be a reference for further research, especially for studies that comprehensively examine the conceptual linkages between ERM, EE, IEO, and EI.

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