



A Conceptual Model of Entrepreneurial Orientation (EO) and Entrepreneurial Career Intentions (ECI) among Female Undergraduates

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Abstract. Entrepreneurship is a critical pillar in elevating Malaysia to a high-income nation. Hence, considerable effort has been directed toward encouraging entrepreneurship. Despite numerous initiatives and resources to encourage entrepreneurship, uptake among Malaysians, particularly women, remains low. In fact, female entrepreneurship may pave the way to ending graduate unemployment and underemployment. Therefore, it is deemed vital to examine the entrepreneurial orientation (EO) of undergraduates, which leads to entrepreneurial career intention (ECI). Thus, the purpose of this study is to discover the roles of individual entrepreneurial orientation (IEO) (innovativeness, risk-taking propensity, proactiveness) and two emerging dimensions, perseverance, and entrepreneurial passion, in shaping ECI via the mediating role of entrepreneurial self-efficacy (ESE). The study contributes to the entrepreneurial orientation body of knowledge by examining the multidimensional conceptualization of IEO. It also adds to the IEO literature by recognizing two new dimensions, namely perseverance and entrepreneurial passion, embedded into the IEO construct. The study's findings are expected to foster an understanding of the phenomena of ECI among female undergraduates, which would lay the foundation for boosting women's participation in entrepreneurship.

Keywords: Entrepreneurial career intention (ECI); Female undergraduates; Individual entrepreneurial orientation (IEO)

1. Introduction

Entrepreneurship has been recognized as the driving force in enhancing a nation's economic growth, prosperity, and social well-being (Bosma et al., 2020). Recognizing the numerous benefits of entrepreneurship, governments in almost every country have the enormous task of creating a conducive environment, an ecosystem for entrepreneurs to innovate and prosper their businesses (Sarachuk & Mißler-Behr, 2020). In Malaysia, entrepreneurship is considered to be an important driver of socio-economic development and the achievement of the country's long-term goal of becoming a high-income country by 2030. In accordance with the aim, the Malaysian government proposed the National Entrepreneurship Policy (NEP) 2030, to intensify entrepreneurship research, innovation, and commercialization. The NEP 2030 is Malaysia's first long-term strategic policy to guide and propel the country's entrepreneurial development. The ultimate goal of NEP is to promote entrepreneurship as a promising career among graduates, women, and Bumiputras to create a cultured and competitive entrepreneurial-minded Malaysian

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society (Ministry of Entrepreneur Development and Cooperatives, 2020).

Consistent with the aim to boost entrepreneurship among graduates, the Ministry of Higher Education (Shariff, 2021), developed the Malaysian Education Blueprint (MEB) (Higher Education) 2015-2025, proposing a significant shift in Malaysia's higher education system. New priorities emphasizing entrepreneurship, such as technical and vocational education and training (TVET), were added. The main goal is to produce holistic, entrepreneurial, and skilled graduates capable of creating employment rather than simply seeking employment (Ministry of Education Malaysia, 2015). Various initiatives, such as business incubators, industrial secondments, and green lane policies for student-owned enterprises, are provided for undergraduates to attain entrepreneurial skills and start their businesses (Hanid et al., 2019).

Despite its best efforts, the Malaysian government's goal of producing graduates with the drive to create jobs did not achieve the desired results. According to a Graduate Tracers study by the Ministry of Higher Education Malaysia, only 7.1% of the total graduates were involved in self-employment, and the rest were engaged with the public and private sectors (Shariff, 2021). This has revealed that self-employment is still less popular than salaried service as a career choice among graduates. On the other hand, the issue of graduate unemployment and underemployment in Malaysia has always been on the rise in the past years and worsened by the current economic climate (DOSM, 2021). Moreover, the issue of graduate unemployment and lower participation in entrepreneurship is more prevalent among female graduates as compared to male graduates. Hence, given the high unemployment and underemployment rate among graduates, the Malaysian government is obliged to assist in developing career plans and improving employability. In this context, it is crucial to identify ECI among graduates, particularly female graduates. Therefore, the research aims to develop an ECI framework based on IEO. Consequently, the following research questions will be investigated:

RQ 1. What is the influence of innovativeness, risk-taking propensity, proactiveness, perseverance, and entrepreneurial passion on entrepreneurial career intention?

RQ 2. Does entrepreneurial self-efficacy influence career intention by mediating innovativeness, risk-taking propensity, proactiveness, perseverance, and entrepreneurial passion?

2. Review of Literature and Hypothesis Development

Entrepreneurship has been regarded as a complex and challenging process that evolves over time. It is a behavioral process that consists of two major stages; the development of entrepreneurial intention and the execution of entrepreneurial behavior (Liguori et al., 2020). The process of entrepreneurial intention (EI) is an important element in better understanding why specific individuals engage in entrepreneurial activity. It explains "why" individuals respond to a set of behavior or "what" factors drive the intention (Iakovleva & Kolvereid, 2009).

The concept of ECI reflects an individual's precise, voluntary and conscious decision to consider venturing into business as a promising career option (Abuzuhri, 2019). Because career choices are cognitive, previous research has suggested that entrepreneurship is a viable career option for both youths and graduates (Asante & Affum-Osei, 2019; Elnadi & Gheith, 2021). Furthermore, ECI precedes a person's behavior and draws attention to an entrepreneurial career objective, such as forming new businesses (Abuzuhri, 2019).

While there has been significant research on EI, most studies have focused on entrepreneurship as an outcome (Asante & Affum-Osei, 2019). Entrepreneurship as a possible career option assists students in making better career decisions (Hassan et al., 2021). Hence, understanding entrepreneurship as a career choice is crucial because

entrepreneurial orientation shapes one's preference and competencies for an entrepreneurial career.

2.1. Individual Entrepreneurial Orientation (IEO) and Entrepreneurial Intention (EI)

Entrepreneurial Orientation (EO) is conceptualized as "the processes, practices and decision-making activities that lead to new products, service or entry to a new market" (Lumpkin & Pidduck, 2021). There is a substantial and growing body of literature in which EO is considered a firm-level variable to have positive relationships in terms of contribution to increased earnings, product innovation, and organization survival. More recently, researchers have extended the relevance of comprehending EO's characteristics as an individual entrepreneurial orientation (IEO) (Covin et al., 2020; Kumar et al., 2020; Martins & Perez, 2020). IEO was conceptualized by Covin and Lumpkin (2011) as "an individual's inner competencies required to accept and deal with challenges from environments which drives EI." EO plays a significant role in exploring a person's desire, willingness, and disposition toward the intention to become self-employed as a behavioral and attitudinal aspect (Kumar et al., 2020).

Even though many studies have been done in scrutinizing the role of EO at the firm level, studies at the individual level remain sparse (Hassan et al., 2021; Martins & Perez, 2020). Specifically, EO dimensions such as innovativeness, risk-taking, and proactiveness as entrepreneurial competencies have not been thoroughly investigated in studies related to individual-level EI (Kumar et al., 2020). Furthermore, most IEO intention studies have typically focused on an aggregated IEO scale, which may not reflect the actual IEO dimension (Covin et al., 2020; Saha et al., 2021). Therefore, the output of this study is expected to add to the limited empirical research on IEO by adopting the multidimensional approach.

According to previous research, IEO dimensions, such as innovativeness, risk-taking propensity, and proactiveness, reveal characteristics that reflect an individual's ability and desirability towards self-employment (Martins & Perez, 2020). Moreover, due to the intense competition and challenges in the labor market, it is critical to develop and maintain EO by continuously improving one's skills. In the case of undergraduates, disposition toward entrepreneurship is presented with attributes such as innovativeness, proactive personality, and the tendency for risk-taking (Martins & Perez, 2020). Hence, the IEO measure has been adapted to assess students' motivation and competencies regarding future intentions to pursue entrepreneurship as a career option (Bolton & Lane, 2012).

2.2. Innovativeness and Entrepreneurial Intention (EI)

The experimental behavior tendency of an individual to create or adapt, implement, enhance value creation, or explore something novel and unexplored is referred to as innovativeness (Lumpkin & Pidduck, 2021). Innovativeness is one of the most important factors in entrepreneurship that stimulates the generation of new ideas and the development of new products, services, and technological processes. Future and potential entrepreneurs must prioritize innovation to explore new enterprise options and create new values to develop a sustainable advantage (Bell, 2019; Gozali et al., 2020). Thus, the core of entrepreneurship lies in those entrepreneurs constantly innovating.

Innovativeness has been empirically proven to impact entrepreneurial behavior, such as new business establishment, which includes EI. In a meta-analysis conducted by Rauch & Frese (2006), innovativeness was positively associated with business creation ($r=0.235$) and business success ($r=0.220$). Wathanakom's (2020) findings follow the same perspective that innovativeness has a significant link with EI among Thai undergraduates attending public universities. Accordingly, Salhieh and Al-Abdallat (2021) research on engineering

undergraduates in Jordan found that innovative students are more likely to establish technology-based firms, whereas [Sharahiley \(2020\)](#) found that innovativeness is the best predictor of EI leading to new venture creation. On the contrary, [Al-Mamary et al. \(2020\)](#) found no evidence of a relationship between innovativeness and EI in their study of 261 undergraduates at the University of Hail in Saudi Arabia. According to the study, the contradictory results were caused by a lack of students' preference for trying new activities ([Al-Mamary et al., 2020](#)).

Researchers have also highlighted the importance of understanding and recognizing students' innovativeness when evaluating their interest in entrepreneurship as a potential future career path ([Bell, 2019](#); [Tu et al., 2021](#)). Students' creativity and innovativeness are crucial in predicting the intention to become entrepreneurs ([Tu et al., 2021](#)). Therefore, it can be firmly argued that examining innovativeness among female undergraduates is critical to understanding their inclination towards entrepreneurial activities. Thus, the study proposed the following hypothesis:

H1: Individual innovativeness has a significant influence on ECI

2.3. Risk-Taking Propensity and Entrepreneurial Intention (EI)

In the context of IEO, the risk-taking propensity is associated with individuals' proclivity to be involved in bold and risky events rather than cautious actions when confronted with difficult situations ([Lumpkin & Pidduck, 2021](#)). Likewise, researchers suggest that entrepreneurs do not necessarily consider themselves risk-takers but rather positively accept difficult circumstances ([Bandera et al., 2018](#); [Mujahid et al., 2020](#)). For successful entrepreneurship, future and potential entrepreneurs must be willing to take risks when introducing new products or services to the market ([Al-Mamary et al., 2020](#)).

Previous research on risk-taking propensity and EI yielded inconsistent results. For example, [Al-Mamary et al. \(2020\)](#) and [Mujahid et al. \(2020\)](#) have bolstered the view that risk-taking propensity positively impacts and predicts [Embi et al. \(2019\)](#) used a sample of 257 undergraduates majoring in economics and management science to validate the positive influence of risk-taking propensity on the intention to initiate entrepreneurial activities. In contrast to the positive and significant findings between the two variables, [Koe \(2016\)](#) discovered no significant relationship between risk-taking proclivity and EI among Malaysian undergraduates. Previous research has also revealed that risk-taking propensity differs by gender ([Gurel et al., 2021](#)). Thus, although the relationship between risk-taking propensity and intentions to entrepreneurship has been extensively investigated, a research gap exists since the findings are inconsistent and gender differences in risk-taking proclivity appear significant. Hence, there is a need to explore the impact of risk-taking propensity on female undergraduates' ECI. Based on the discussion above, the following hypothesis is proposed.:

H2: Individual risk-taking propensity has a significant influence on ECI

2.4. Proactiveness and Entrepreneurial Intention (EI)

According to [Lumpkin and Pidduck \(2021\)](#), proactiveness means anticipating future needs, issues, and changes. It is the proclivity to foresee and take appropriate steps rather than reacting to events after they have occurred. Entrepreneurs are expected to be proactive in identifying and developing new opportunities. ([Adu et al., 2020](#)). Yet, entrepreneurs with a strong sense of initiative will constantly seek opportunities for transformation by introducing new business models, products, services, and technologies. As a result, they are unwilling to retain the existing status quo and instead strive to become the industry's 'leader' ([Kumar et al., 2020](#)).

Previous studies have provided empirical evidence on the importance of proactiveness as a critical element in leading the intention to become an entrepreneur (Bell, 2019; Koe, 2016; Li et al., 2020). Li et al. (2020) studied the direct and moderating effect of proactive personality on business formation in 346 undergraduates from Jiangsu province, China. According to the findings, students with proactive personalities are more likely to start their businesses. Furthermore, it was discovered that a proactive character strengthens the association between EI and entrepreneurial behavior, successfully turning intention into action. Hence, proactive students can quickly identify opportunities and endure until the right outcome occurs to launch their business. Moreover, in the context of entrepreneurial ambition, proactiveness not only stimulates the initial start-up but also encourages subsequent "behaviors where the goal is to survive, succeed and avoid failure" in their entrepreneurial endeavors (Corrêa et al., 2021). Thus, the following hypothesis is predicted:

H3: Individual proactiveness has a significant influence on ECI

2.5. Perseverance and Entrepreneurial Intention (EI)

Perseverance research is gaining popularity and has been proposed as a fundamental component of a multidimensional EO (Santos et al., 2020). Perseverance is a behavioral pattern that refers to staying focused and committed to a chosen course of action in the face of obstacles or other available options (Botha & Taljaard, 2019). In venture creation, perseverance is conceptualized as an individual's core competency to carry out entrepreneurial ventures continuously despite adversity and impediments that obstruct the effort (Santos et al., 2020).

Researchers have identified perseverance as a critical factor in determining entrepreneurial intent, success, and bricolage mindset (Al-Issa, 2020; Mohammadi, 2021). Few studies have identified that the persistence of effort significantly impacts entrepreneurial career success. (Al Issa, 2020; Atiya & Osman, 2021). Atiya and Osman (2021) found perseverance to significantly affect university students' formation of EI in Sudan and Oman. Evidence of a significant association between EI and perseverance is also supported by Botha and Taljaard (2019) by establishing perseverance as an entrepreneurial competency required to form an intent to develop a business. A study by Salisu et al. (2020) concluded that entrepreneurs must be persistent in overcoming adversity and emerge stronger than before to achieve sustainable success. This implies perseverance as a core competency that leads to resilience and the establishment of a successful entrepreneurial career. Therefore, the present study proposes the following hypothesis:

H4: Individual perseverance has a significant influence on student's ECI

2.6. Entrepreneurial Passion (EP) and Entrepreneurial Intention (EI)

EP is one of the most observed phenomena of the entrepreneurial processes, creating continuous positive emotions that motivate individuals to overcome challenges and sustain their businesses (Santos et al., 2020). EP is "intense positive emotions and attachment for venture-related activities" (Cardon et al., 2017), such as a passion for inventing and discovering new activities and establishing and developing products and services.

Scholars suggest that an individual's passion will strengthen the commitment and provide motivation to pursue the commitment (Cardon et al., 2017; Syed et al., 2020). In addition, EP encourages individuals to explore creative and innovative opportunities and motivates the intention to commercialize new inventions. As such, researchers have identified EP as having the potential to boost confidence and influence EI in individuals, particularly those on the verge of deciding on an entrepreneurial career (Cardon et al., 2017; Neneh, 2020). Previous studies (Cardon et al., 2017; Neneh, 2020) has shown that EP can boost confidence and impact EI, particularly in budding entrepreneurs. Therefore, considering the preceding discussion, it appears that EP is crucial in developing one's ECI. Thus, the hypothesis below is proposed:

H5: Entrepreneurial passion has a significant influence on student's ECI

2.7. The Mediating Role of Entrepreneurial Self-Efficacy (ESE)

Even though numerous studies have ascertained the direct influence of ESE on the intention to build enterprises, nevertheless, research on the mediating role of ESE is generally under-researched (Udayanan, 2019). Scholars demonstrated that ESE has an indirect effect on EI, where it undertakes an intervening role in the relationship between constructs (Hoang et al., 2020; Maheshwari & Kha, 2021; Zhao et al., 2005). Zhao et al. (2005) were the first to examine ESE's mediating role in forming ECI among university undergraduates at five universities in the United States. The study recommended strengthening students' self-efficacy since it significantly impacts an entrepreneurial venture's early and prelaunch stage (Zhao et al., 2005). Hoang et al. (2020) demonstrated that entrepreneurship education positively influences students' intention to launch a new company, which is mediated by self-efficacy. The same was echoed by Adu et al. (2020) on the role of ESE as the mediating variable between entrepreneurship education and the EI relationship. On the other hand, a study conducted on 401 university students in Vietnam by Maheshwari and Kha (2021) discovered that, while entrepreneurship education has no direct influence on EI, it does have an indirect impact through ESE. In this case, even though entrepreneurship education programs did not directly influence students to pursue an entrepreneurial career, it indirectly stimulates the spirit of students toward venture creation (Maheshwari & Kha, 2021).

In addition to entrepreneurship education, factors such as entrepreneurial passion, creativity, proactive personality, entrepreneurial mindset, and role model have been proven to influence EI through the intervening mechanism of ESE. According to Jiatong et al. (2021), ESE successfully mediates the impact between entrepreneurial mindset and EI. Similarly, (Neneh, 2020) validated the view that EP inspires EI through the intervening influence of ESE. Therefore, considering the pertinent role of ESE in explaining the mediating effect in the formation of venture creation intention, this study suggests ESE mediates the relationship between innovativeness, risk-taking propensity, proactiveness, perseverance, and EP. In consequence, mediating hypotheses, H6-H10, are developed.

3. Methodology

This conceptual study synthesizes the argument to establish a new conceptual model in examining the role of IEO in the formation of ECI. An extensive literature review of previous studies was conducted in order to identify important and emerging trends pertaining to entrepreneurship. This will be the precursor to a full-fledged quantitative analysis using variance-based structural equation modelling in the following phase.

3.1 Developing a Conceptual Framework

This study utilizes the Bolton and Lane (2012) IEO modification scale consisting of innovativeness, risk-taking propensity, and proactiveness as the determinants of ECI and further proposes two additional dimensions, namely perseverance and entrepreneurial passion, as part of the IEO construct. In addition, entrepreneurial self-efficacy (ESE) is incorporated as the mediator to ascertain ECI among female undergraduates. Figure 1 depicts a conceptual framework comprising individual entrepreneurial orientation model (IEO), entrepreneurial passion, and perseverance followed by ESE as the mediator that would accelerate the relationship in ECI.

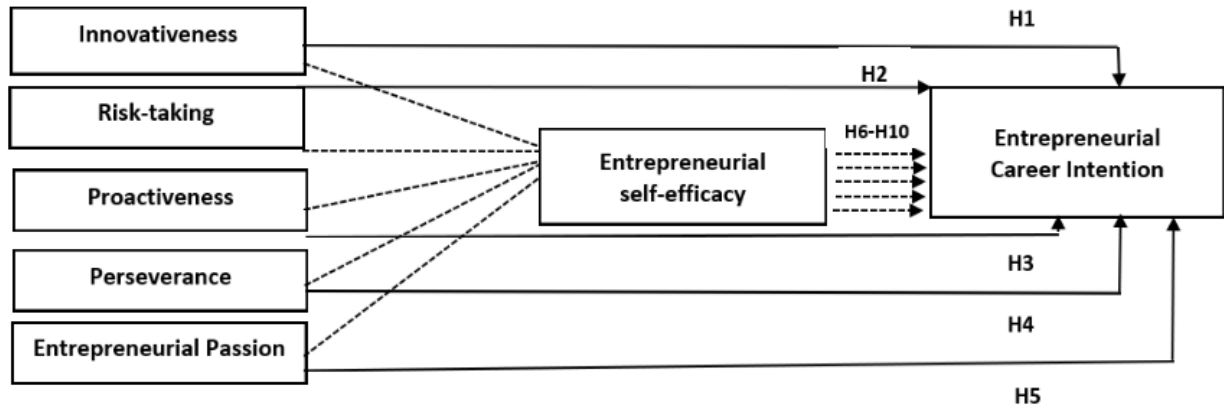


Figure 1 Conceptual Framework. *Note* ---- represents the mediating relationship

4. Results and Discussion

The prime objective of this study is to propose a new conceptual model that emphasizes innovativeness, risk-taking propensity, proactiveness, perseverance, entrepreneurial passion, and entrepreneurial self-efficacy as determinants of entrepreneurial career intention among female undergraduates. This research will enhance ECI's body of knowledge by including two new dimensions, entrepreneurial passion, and perseverance, as part of the Individual Entrepreneurial Orientation (IEO) construct. Thus, the present study will enrich the IEO literature (Innovativeness, risk-taking, and proactiveness) by including the scarcely explored factor, entrepreneurial passion, and perseverance. Secondly, this study holistically provides a preamble towards understanding the IEO and ECI by proposing entrepreneurial self-efficacy as a mediator.

5. Conclusions and Future Research

Women's entrepreneurship is expected to play a pivotal role in socio-economic development of a nation. In this context, the Malaysian government has consistently upheld the principle of women's empowerment, and therefore continues to be an important national agenda. Thus, this study is expected to foster an understanding of the phenomena of ECI among female undergraduates hence providing insights towards boosting women's participation in entrepreneurship and women empowerment in the quest to achieve the United Nation's Sustainable Development Goals: Number 8 (Decent work and economic growth) and Number 10 (Reduce inequality) which is also enshrined in the 12th Malaysia Plan, towards achieving a prosperous, inclusive, sustainable Malaysia.

While this paper is based on a conceptual approach, it functions as the preamble for future empirical research to examine the application of IEO towards ECI among female undergraduates. The model itself paves the way for future expansion. This study would also pave the way for future research enhancements by incorporating the effect of entrepreneurship education and university entrepreneurship programs on developing IEO while augmenting other factors, namely institutional and entrepreneurial ecosystem impact on ECI among higher education students.

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