

Antecedents of Entrepreneurial Intention: The Role of Entrepreneurial Self-Efficacy and Metacognitive Knowledge

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Abstract

Even though various factors have been explored to understand their influence on entrepreneurial intentions, the impact of higher-order cognitive factors, specifically metacognitive knowledge, on entrepreneurial intention has received little attention. This study aims to examine the moderating role of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intention, whilst considering formal learning perceptions and entrepreneurial experience as antecedents to entrepreneurial intention. Accordingly, data were collected from 365 graduating students pursuing entrepreneurship in Sri Lanka via a paper-based questionnaire. The results proved that metacognitive knowledge moderates the relationship between entrepreneurial self-efficacy and intention, and entrepreneurial self-efficacy partially mediates the positive associations between the considered antecedent factors and entrepreneurial intention. In fact, this study enhances the explanatory power of self-efficacy theory powered by the metacognitive theory and provides a more comprehensive understanding of factors contributing to individuals' self-efficacy.

Keywords: Entrepreneurial Experience, Entrepreneurial Intention, Entrepreneurial Self-Efficacy, Formal Learning, Metacognitive Knowledge

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Introduction

Scholars commonly identify entrepreneurial intention as a cognitive state that predominantly influences individuals to actively engage in entrepreneurial endeavors (Hoang et al., 2020). According to the Department of Labour (2018), more than 70% of unemployed young people in Sri Lanka desire paid employment, while 5.8% aspire to start their own businesses. Merely 3% of graduates in Sri Lanka, often aged between 20 and 26, express an aspiration to pursue entrepreneurship, while the remaining 97% do not (University Grants Commission, 2020). In addition, it highlights the lack of entrepreneurial drive among young people in Sri Lanka. Although there are negative indications regarding the intention of young people to engage in entrepreneurship in Sri Lanka, the importance of youth entrepreneurship for the growth of the country has been emphasized (Sri Lanka Export Development Board, 2019). Indeed, there has been a widespread endorsement of utilizing all possible strategies to enhance the aspirations of Sri Lankan youth in entrepreneurship and shape their inclination towards becoming entrepreneurs (United States Agency for International Development, 2020). The lack of entrepreneurial aspirations among the youth in Sri Lanka has emerged as a notable concern in recent years (Department of Labour, 2018). Despite the extensive literature on entrepreneurship, there has been limited research on the relationship between higher-order cognitive factors, such as metacognitive knowledge (the ability to reflect on one's own thinking), and entrepreneurial intention. Furthermore, even in the hypothetical context of a link between metacognitive knowledge and entrepreneurial intentions, existing empirical studies are still quite limited and inconclusive. Previous research on metacognitive aspects in the context of entrepreneurial behavior indicates that metacognitive knowledge can be of considerable importance; nevertheless, other metacognitive aspects have not been adequately researched (Urban, 2012). Moreover, studies specifically on these relationships are few in number, and findings obtained have often been disappointing, highlighting the necessity for more extensive research (Urban, 2012b). Similarly, Cho and Jung (2014) state that although metacognition provides the conceptual foundation for the entrepreneurial mindset, specific mechanisms by which the mindset influences entrepreneurial intentions are yet to be well studied. The justification for extensive empirical studies in this context is the highlighted necessity for further research to clarify the role of metacognitive knowledge in entrepreneurial intention formation. Therefore, the present study intends to examine the moderating role of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intention, whilst considering perceptions of formal learning and entrepreneurial experience as antecedent factors to entrepreneurial intention. Based on this research objective, this study focuses on three research questions: RQ1, "What is the moderating role of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intention?", RQ2, "What is the impact of perceptions of formal learning and entrepreneurial experience on the entrepreneurial intention?" and RQ3, "Does entrepreneurial self-efficacy of an individual affect the relationship between perceptions of formal learning, entrepreneurial experience, and entrepreneurial intentions?". This study has significant theoretical and practical ramifications. First, the present study addresses a lacking area in entrepreneurial literature by investigating metacognitive knowledge and its effect on entrepreneurial self-efficacy and intention. Second, by adding metacognitive knowledge from the metacognitive theory, the study enriches the Theory of Self-Efficacy's explanation of self-efficacy. Thirdly, this shows how the factors considered can be used to promote positive

entrepreneurial intentions among a country's citizens, which is useful for governing bodies, policymakers, and educational system regulators, in a practical sense.

Literature Review and Hypothesis Development

Theory of Self-Efficacy

Self-efficacy has been defined as an individual's beliefs in their capability to organize and implement the series of actions required to manage prospective situations (Bandura, 1977). The theory of self-efficacy, derived from the social cognitive theory, asserts that an individual's belief in their ability to achieve desired performance levels in a specific outcome leads to corresponding intentions and subsequent behaviors (Bandura, 1977). It expresses several determinants of self-efficacy: *performance experiences*, *vicarious experiences*, *verbal persuasion*, and *physiological states* (Bandura, 1977). Performance experiences refer to past successes or failures in task performance. Vicarious experiences involve observing and learning from successful individuals or groups. Verbal persuasion entails receiving feedback and encouragement to build confidence. Physiological states also play a role in determining self-efficacy, as individuals consider their physical condition when assessing their ability to meet intended tasks (Feltz *et al.*, 2008). Pedagogical practices in formal entrepreneurship-based courses in providing entrepreneurship education relate to all four self-efficacy sources (Stumpf *et al.*, 1991; Zhao *et al.*, 2005). Entrepreneurial experience connects to enactive mastery and vicarious experiences as a contributing source toward entrepreneurial self-efficacy (Zhao *et al.*, 2005). Therefore, the present study argues that perceptions of formal learning and entrepreneurial experiences serve as antecedents to entrepreneurial self-efficacy, aligning with the theory of self-efficacy.

Metacognitive Theory

The Metacognitive knowledge consists of knowledge about oneself as a learner and the factors that may affect performance, knowledge about strategies, along with the knowledge about when and why to use strategies (Lai, 2011). According to the metacognitive theory, individuals who possess the ability to actively monitor and comprehend their own cognitive processes (metacognitive knowledge) gain a better understanding of themselves (Flavell, 1987). This metacognitive knowledge involves self-awareness regarding cognitive processes that influence decision-making and action implementation concerning people, tasks, and strategies (Flavell, 1979, 1987). Notably, metacognitive knowledge is closely linked to self-efficacy, as an individual's understanding of their cognitive patterns (metacognitive knowledge) influences their level of self-confidence in performing tasks successfully. Previous literature has identified the capacity of metacognitive knowledge to shape individuals' entrepreneurial intentions by enhancing their cognitive adaptability and enabling them to navigate turbulent, dynamic, and complex entrepreneurial contexts (Urban, 2012). Since these theories denote a plausible association, it is argued that a person, who has a comprehensive awareness of how his or her thought patterns work and how tasks, people, and strategic aspects of the thought patterns related to contexts operate, tends to understand oneself better, subsequently enabling the person to hold a better level of self-confidence and thereby influence a person's intentions.

Perceptions of Formal Learning and Entrepreneurial Intention

The perceptions of individuals in holding beliefs about formal entrepreneurial education are defined as perceptions of formal learning (Zhao et al., 2005). Formal learning is conveyed through various modes, including traditional classroom learning (Mocker and Spear, 1982) as well as online learning platforms (Rowold and Kauffeld, 2009). It can be argued that the belief in formal learning in the development of entrepreneurial competencies and knowledge contributes to motivational and aspirational development on the part of the individual to pursue new entrepreneurial ventures (Ezeh et al., 2020; Hai Ming et al., 2022; Quan, 2012). In fact, entrepreneurial education entailing an experiential educational component tends to empower individuals to foster the skills and capabilities required to initiate a business on their own (Rajapakse and Vidanlaga, 2023). Accordingly, the first hypothesis of this study is formulated as follows.

H₁: Perceptions of formal learning impact entrepreneurial intention

In addition to perceptions held by individuals about formal entrepreneurial learning, direct work experiences, and indirect entrepreneurial experiences also play a role in shaping intentions (Khuong and An, 2016). Indirect entrepreneurial experiences include internships, participation in business pitch competitions, engagement in business idea competitions, and exposure to business exhibitions and incubation centers (Drost and McGuire, 2011). Furthermore, working in newly established firms through internships also offers entrepreneurial exposure to individuals. In addition, research shows that people with previous exposure to entrepreneurship, either through business ownership or family involvement, show significantly higher entrepreneurial intentions. This indicates that confidence in one's entrepreneurial ability is increased through experiential learning. As such, both direct and indirect entrepreneurial experiences have been found to enhance individuals' predicted intentions towards entrepreneurship (Rukundo, 2025; Zhao et al., 2005). Accordingly, the second hypothesis of the study is established.

H₂: Entrepreneurial experience impacts entrepreneurial intention.

Perceptions of Formal Learning, Entrepreneurial Experience, and Entrepreneurial Self-Efficacy

In the world of entrepreneurship, entrepreneurial self-efficacy involves the perceptions of individuals regarding the ability to perform the array of jobs and responsibilities linked with entrepreneurial activity (Amani et al., 2024; Boyd and Vozikis, 1994). It has often emerged that entrepreneurial education in institutions has a direct link with increased levels of self-assurance in individuals regarding the abilities and skills that are relevant to entrepreneurial activity; and hence, acts as one of the most important factors for enhancing the entrepreneurial self-efficacy of individuals (Otache et al., 2024; Zhao et al., 2005). Moreover, previous entrepreneurial experiences, which involve enactive mastery and role modeling aspects aligned with the theory of self-efficacy, also contribute to elevating individuals' levels of entrepreneurial self-efficacy (Bachmann et al., 2024; Zhao et al., 2005). Further, some studies stated that the entrepreneurial experience derived from training uplifts entrepreneurial self-efficacy (Caliendo et al., 2023). Thus, an individual's belief in their ability to perform a given task at the expected level, specifically in the entrepreneurial context (referred to as

entrepreneurial self-efficacy), is influenced by their perceptions of their formal entrepreneurship education or learning and their direct and indirect entrepreneurship experiences. Accordingly, the third and fourth hypotheses were formulated as follows:

H₃: Perceptions of formal learning impact entrepreneurial self-efficacy.

H₄: Entrepreneurial experience impacts entrepreneurial self-efficacy.

Entrepreneurial Self-Efficacy and Entrepreneurial Intention

According to the facts derived through social cognitive theory, it is assumed that individuals with higher levels of self-efficacy are more likely to be motivated to pursue risky career paths, such as starting their own business ventures (Brockhaus *et al.*, 1986). In addition, as has been theorized by McGee *et al.* (2009) and Zhao *et al.* (2005), the ability of one person to evaluate their skills and the confidence in performing a wide range of things have a serious impact on the aspirations of individuals regarding the future careers they wish to adopt. As such, entrepreneurial self-efficacy can be considered a key factor in the determination of entrepreneurial intentions (Boyd and Vozikis, 1994; Linan and Chen, 2009; Renko *et al.*, 2021; Segal *et al.*, 2005; Alferaih, 2017). Accordingly, the fifth hypothesis of the present study is presented below:

H₅: Entrepreneurial self-efficacy impacts entrepreneurial intentions.

Perceptions of Formal Learning and Entrepreneurial Intentions Mediated by Entrepreneurial Self-Efficacy

Exposure to formal entrepreneurship education through educational institutions and universities, which includes expert-led lectures, insights from real entrepreneurs, case study analysis, and entrepreneurial discussions, has been shown to positively affect an individual's intention to become an entrepreneur (Zhao *et al.*, 2005). Thus, the hypothesis suggests that the link can be explained by the increased confidence that people have in being able to pursue entrepreneurial activities, which is a result of the learning they gain through formal learning institutions. Consequently, entrepreneurial self-efficacy has been recognized as a critical factor in the relationship between entrepreneurial education and entrepreneurial intentions (Chen and He, 2011; Kassean *et al.*, 2015; Loo and Choy, 2013). Accordingly, the sixth hypothesis of the present study is established.

H₆: Entrepreneurial self-efficacy mediates the relationship between perceptions of formal learning and entrepreneurial intentions.

Entrepreneurial Experience and Entrepreneurial Intentions Mediated by Entrepreneurial Self-Efficacy

Entrepreneurship is strongly influenced by direct and indirect work experiences (Drost and McGuire, 2011). Since entrepreneurial settings enhance confidence and self-belief, people who have experienced them are more likely to become entrepreneurs. In addition, entrepreneurial experiences boost self-efficacy, which further increases entrepreneurial intentions (Liang and Chen, 2021). Past entrepreneurial experiences are most important in creating both self-efficacy and entrepreneurial intentions (Fu *et al.*, 2010; Zhao *et al.*, 2005). Therefore, the seventh hypothesis in relation to the current study is developed.

H₇: Entrepreneurial self-efficacy mediates the relationship between entrepreneurial experience and entrepreneurial intentions.

Entrepreneurial Self-Efficacy and Entrepreneurial Intention Moderated by Metacognitive Knowledge

Metacognitive knowledge, as the ability to control and direct one's own cognitive processes, is essential in the development of intentions and in the performance of actions (Moore et al., 2006). Performance and behavior are brought into dynamic interplay by performance assessment, which guides future behavioral response (Nelson and Narens, 1996), and so becomes central to entrepreneurs. Haynie et al. (2010) state that understanding and controlling one's cognitive processes allows one to examine alternative ways for more effective information processing, which boosts self-confidence. According to Bandura (1997), self-efficacy influences behavior, intention, and performance. Metcalfe et al. (1993) suggest that metacognitive knowledge is a proclamation of confidence or self-understanding that affects intentions and behavior. Accordingly, the present study presents its eighth hypothesis:

H₈: The impact of entrepreneurial self-efficacy on entrepreneurial intention is moderated by metacognitive knowledge.

The conceptual framework of this study, which elaborates the hypotheses, the constructs, and relationships, is depicted in Figure 1.

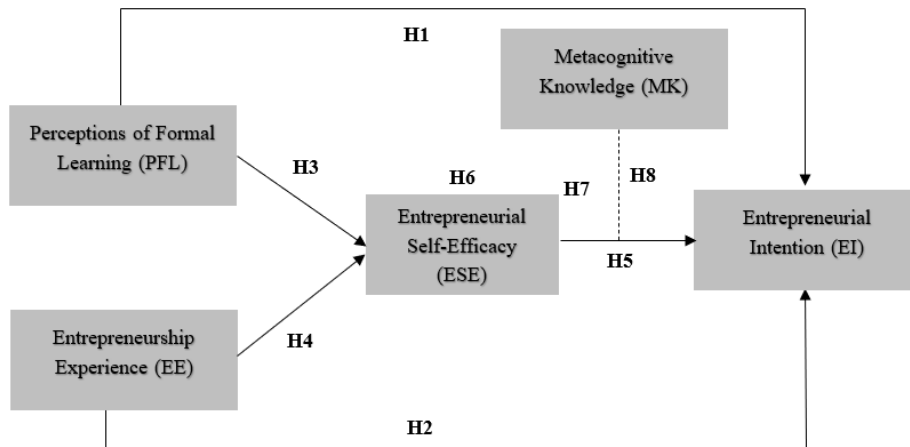


Figure 1: Conceptual Framework

Methodology

The current research follows a deductive approach and maintains a positivist philosophical stance. The research design is of the mono-method quantitative kind, employing a survey research strategy with a structured questionnaire as the sole research tool. Based on the reason that the research will proceed within a given timeframe, it aligns with a cross-sectional time

horizon. Moreover, the population for the current research includes final-year undergraduates pursuing degree courses in state universities in Sri Lanka. The said population is considered appropriate for this study because they are the most relevant youth group facing the problem of deciding on careers (Olugbola, 2017) based on personal ambitions. Data related to this study were collected from a sample of 365 respondents drawn from the population of final-year undergraduates across five state universities of Sri Lanka based on the stratified convenience sampling method, specially looking at the number of students registered for disciplines like Art, Management and Commerce, Agriculture, Science, Information Technology, Engineering and Architecture (Canziani & Welsh, 2021). However, the faculties of Law, Allied Health Sciences, Medicine, and Education have not been considered to form the population, for they pursue such fields with a clear intention as to what their careers ought to be, which indicates the career choice for them is clear and definite since the time of entering university for higher studies. The author collected data using a structured survey questionnaire. Out of the 368 responses collected, 3 were incomplete and, as such, were disregarded. Therefore, only 365 responses were considered as the analytical sample, which capped the effective response rate at 86.9%. After identifying the measurement indicators from the existing literature for the variables outlined in the conceptual framework, the operationalization of variables is presented in Table 1.

Table 1: Operationalization of Variables

Variable	Indicator/Item	Source
Metacognitive Knowledge	I think of several ways to solve a problem and choose the best one	Haynie et al., (2010)
	I challenge my own assumptions about a task before I begin.	
	I think about how others may react to my actions.	
	I find myself automatically employing strategies that have worked in the past.	
	I perform best when I already have knowledge of the task.	
	I create my own examples to make information more meaningful.	
	I try to use strategies that have worked in the past.	
	I ask myself questions about the task before I begin.	
	I try to translate new information into my own words.	
	I try to break problems down into smaller components.	
	I focus on the meaning and significance of new information.	
Perceptions of Formal Learning	During your education, how much have you learned about "starting a business"	Zhao et al., (2005)

	During your education, how much have you learned about "business opportunity recognition"	
	During your education, how much have you learned about "business opportunity evaluation"	
	During your education, how much have you learned about "corporate entrepreneurship"	
Entrepreneurial Experience	How much experience have you had in new venture start-ups	Zhao et al., (2005)
	How much experience have you had in entering new markets.	
	How much experience have you had in new product development.	
Entrepreneurial Self-Efficacy	What is your degree of confidence related to "Identification of new business opportunities"	Zhao et al., (2005)
	What is your degree of confidence related to "creating new products"	
	What is your degree of confidence related to "thinking creatively"	
	What is your degree of confidence related to "commercializing an idea or a new development"	
Entrepreneurial Intention	I want to start a business within the next five years	Zapkau et al., (2005)
	I intend to start a business within the next five years.	
	I will start a business within the next five years.	
	How likely is it for me to start a business within the next five years	

Data Analysis

The present study utilized Partial Least Squares structural equation modeling (PLS-SEM) as the analytical technique, as it was employed in recent scholarly research related to survey data sets and the testing of hypothesized relationships consistent with established theories. The use of PLS-SEM seemed suitable given the research aims of theory authentication and forecasting (Hair et al., 2010). The two-phase approach by research methodology began with the testing of the measurement model, followed by the testing of the structural model (Chin, 1998).

Measurement Model Assessment

In the measurement model, reliability, discriminant validity, and convergent validity were assessed. Firstly, Cronbach's alpha reliability and composite reliability were assessed, and the respective results are denoted in Table 2. The measurement model is deemed reliable if Cronbach's alpha and composite reliability values are above 0.7 for all latent variables (Hair *et al.*, 2010; Henseler *et al.*, 2016). Secondly, convergent validity was tested to confirm that the items used to measure the latent variables were closely related to each other, that is, the respective items measured the same concept collectively. The threshold value for convergent validity conformance was to confirm the average variance explained (AVE) value of each

latent variable to be above 0.5 (Henseler *et al.*, 2016). The respective AVE outcomes are indicated in Table 3. Thirdly, discriminant validity was assessed based on cross-loading values, where the respective items were to be loaded highest to their respective construct (Hair *et al.*, 2010), Fornell and Larcker (1981) criterion; where the square root of the AVE values for each construct was to be greater than its highest correlation with other constructs, Heterotrait-Monotrait (HTMT) ratio; where the HTMT values were to be less than 0.9 for each construct (Henseler *et al.*, 2015). The results indicated in Tables 4, 5, and 6 confirm that all criteria related to discriminant validity were assured. Furthermore, multi-collinearity was tested to determine if there was a high correlation between two or more independent variables (Sekaran and Bougie, 2010). The absence of multi-collinearity is deemed if the variance inflation factor (VIF) values stand below 3 (Hair *et al.*, 2010). Since the VIF values related to the present study were below the recommended threshold, the absence of multi-collinearity issues was confirmed.

Table 2: Reliability Measures

Variable	Cronbach's Alpha	Composite Reliability
Entrepreneurial Experience (EE)	0.714	0.835
Entrepreneurial Intention (EI)	0.901	0.921
Perceptions of Formal Learning (PFL)	0.941	0.940
Metacognitive Knowledge (MK)	0.875	0.914
Entrepreneurial Self-Efficacy (ESE)	0.883	0.920

Source: Survey Data, 2023

Table 2 shows the reliability scores for five constructs: EE, PFL, MK, ESE, and EI using Cronbach's Alpha and Composite Reliability. All values are above 0.70, indicating acceptable to excellent internal consistency. This means the items used to measure each variable are consistent and reliable. High reliability supports the validity of the study's results.

Table 3: Validity Measures - Convergent Validity

Variable	Average variance extracted (AVE)
Entrepreneurial Experience (EE)	0.634
Entrepreneurial Intention (EI)	0.741
Perceptions of Formal Learning (PFL)	0.746
Metacognitive Knowledge (MK)	0.629
Entrepreneurial Self-Efficacy (ESE)	0.727

Source: Survey Data, 2023

Table 3 portrays the convergent validity of five different constructs: EE, EI, PFL, MK, and ESE, which are estimated via Average Variance Extracted (AVE). AVE measures the proportion of a construct's variance that is explained by its indicators compared with the variance that is due to measurement error. A value of 0.50 or higher is evidence of strong convergent validity. Each of the variables in question meets this threshold, which means their items do measure their respective constructs.

Table 4: Validity Measures – Discriminant Validity – Fornell-Larcker Criterion

Variable	Entre_Exp_	Entre_Int_	Form_Learn_	Meta_Know_	Self_Effi_
EE	0.796				
EI	0.585	0.861			
FL	-0.082	0.114	0.864		
MK	0.574	0.548	-0.135	0.793	
SE	0.685	0.611	0.139	0.541	0.853

Source: Survey Data, 2023

Table 4 shows the discriminant validity of the EE, EI, FL, MK, and SE constructs through a measure based on the Fornell-Larcker criterion. Discriminant validity measures how different or distinct each measurement is from the others. According to the Fornell-Larcker criterion, the square root of the average variance extracted (AVE), marked in bold along the diagonal, should be higher than all other constructs. Each construct shown in this table satisfies this condition, which means that the items are better at measuring their respective concepts than at showing high correlations with other alternative variables. These results support the statistical independence of the constructs and further establish the validity of the measurement model.

Table 5: Validity Measures – Discriminant Validity - Cross Loadings

Variable	Entre_Exp_	Entre_Int_	Form_Learn_	Meta_Know_	Self_Effi_
EE1	0.608	0.218	-0.005	0.307	0.365
EE2	0.863	0.525	-0.158	0.498	0.527
EE3	0.888	0.567	-0.021	0.528	0.686
EI1	0.606	0.892	0.042	0.437	0.509
EI2	0.599	0.903	0.025	0.458	0.536
EI3	0.404	0.820	0.158	0.490	0.535
EI4	0.389	0.827	0.178	0.507	0.526
FL1	-0.136	0.045	0.802	-0.23	0.001
FL2	-0.158	0.017	0.831	-0.215	0.086
FL3	-0.058	0.102	0.897	-0.099	0.153
FL4	-0.043	0.143	0.921	-0.086	0.130
MK1	0.295	0.525	-0.084	0.808	0.452
MK10	0.249	0.231	-0.040	0.770	0.280
MK11	0.373	0.438	0.016	0.813	0.505
MK2	0.629	0.549	-0.259	0.798	0.406
MK3	0.507	0.449	-0.268	0.711	0.357
MK4	0.431	0.353	-0.175	0.854	0.279
MK5	0.521	0.436	-0.101	0.863	0.463
MK6	0.447	0.337	-0.018	0.772	0.498
MK7	0.603	0.527	-0.156	0.752	0.443
MK8	0.436	0.375	0.000	0.832	0.521
MK9	0.332	0.312	0.053	0.739	0.456
SE1	0.606	0.527	0.125	0.409	0.847

SE2	0.675	0.575	0.111	0.529	0.884
SE3	0.390	0.450	0.206	0.420	0.784
SE4	0.622	0.518	0.056	0.481	0.892

Source: Survey Data, 2023

Table 5 displays cross-loadings, a method used to further assess discriminant validity among the constructs EE, EI, FL, MK, and SE. In a well-fitting model, each measurement item should load highest on its corresponding construct compared to all other constructs. These loadings reflect the strength of the relationship between each item and each construct.

Table 6: Validity Measures – Discriminant Validity – HTMT Ratio

Variable	EE	EI	PFL	MK	ESE
EE					
EI	0.685				
PFL	0.136	0.123			
MK	0.657	0.572	0.198		
ESE	0.818	0.692	0.145	0.586	

Source: Survey Data 2023

Table 6 presents discriminant validity using the HTMT (Heterotrait-Monotrait) Ratio, a modern and more stringent criterion. For good discriminant validity, HTMT values should generally be below 0.85 (or 0.90 in more lenient cases). All values in the table are below 0.85, confirming that each construct is sufficiently distinct from the others. Therefore, the model satisfies discriminant validity based on the HTMT criterion.

Structural Model Assessment

The structural model was assessed upon verifying the adequacy of the measurement model, and the respective figures are mentioned in Table 7. Accordingly, as hypothesis 1 stated, PFL impacts EI. The derived results denoted that this hypothesized relationship between PFL and EI was positive and significant ($\beta = 0.135$, $p < 0.05$), as such, they supported H1. Hypothesis 2 expressed EE's impact on EI. As per the results, EE positively and significantly impacted EI ($\beta = 0.276$, $p < 0.05$), whilst supporting H2. Hypothesis 3, which hypothesized that PFL impacts ESE, was supported, confirming a significant positive relationship ($\beta = 0.197$, $p < 0.05$). Hypothesis 4 expressed that EE impacts ESE. The results testified to the existence of a significant positive relationship ($\beta = 0.701$, $p < 0.05$) between EE and ESE, supporting H4. Hypothesis 5, which hypothesized that ESE impacts EI, was supported by a significant positive relationship ($\beta = 0.313$, $p < 0.05$). As such, all hypothesized direct relationships were supported.

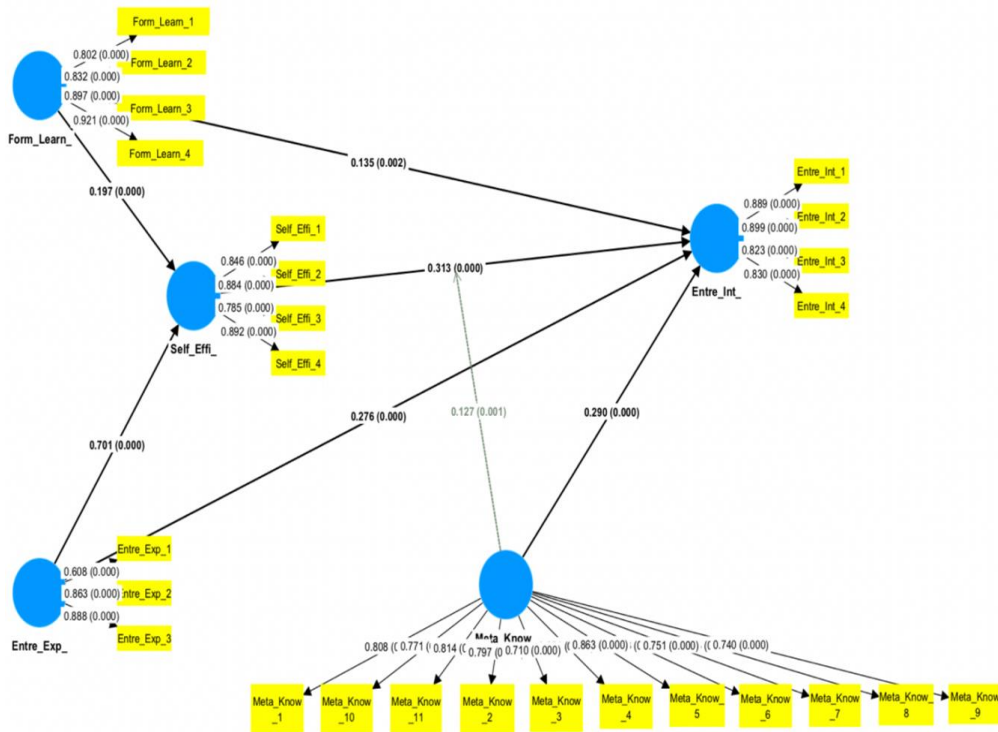


Figure 2. Structural Model Analysis

Hypothesis 6 and Hypothesis 7 tested for a mediating impact; as such, H6 argued that ESE mediates the relationship between PFL and EI, and H7 argued that ESE mediates the relationship between EE and EI. For a mediation to be existent, as the initial step, the associated direct relationships should be tested for significance, upon which the indirect relationship's significance will be tested (Hair *et al.*, 2014). As such, the direct impact for H6 ($p = 0.001$; $p < 0.05$) and H7 ($p = 0.001$; $p < 0.05$) is significant. Thereafter, the indirect impact was tested for H6 and H7, which indicated that these relationships were significant (H6: $p = 0.000$ and H7: $p = 0.000$), supporting mediation. The strength of the mediation was assessed based on the VIF value derivation. H6 indicated a VIF value of 44% and H7 indicated a VIF value of 41%. A partial mediation was supported since VIF values were between 20% and 80% (Hair *et al.*, 2014).

Hypothesis 8 was tested for moderating impact. It is hypothesized that MK moderates the relationship between ESE and EI. The testing for the moderating impact of the hypothesis calls for an initial verification of a significant direct relationship, upon which the indirect relationship is tested. H8 claimed a direct relationship that was significant ($p < 0.05$); subsequently, the significance of the indirect relationship was tested. The indirect relationship marked a path coefficient of 0.127, indicating a p-value of 0.000, which is significant; hence, the hypothesized moderation was supported.

Furthermore, the present study indicated a coefficient of determination (R^2), which illuminated that the model accounted for 51% of the variance in entrepreneurial intention (Koppus, 2011).

Moreover, the effect size (Cohen's f^2) and predictive relevance (Q^2) of the model were tested. The f^2 effect size reflects the change in R^2 value when an exogenous variable available in the model is removed from the model. According to Cohen (1998), the effect size of f^2 has been established as f^2 value ≥ 0.02 to denote a small effect size, f^2 value ≥ 0.15 to denote a medium effect size, and f^2 value ≥ 0.35 to denote a large effect size. The Q^2 denotes the predictive relevance of the endogenous constructs in the model (EI and ESE). The Q^2 value above 0 indicates that the model has predictive relevance. According to Hair *et al.* (2010), Q^2 values up to 0.02, 0.15, and 0.35 indicate weak, moderate, and strong degrees of predictive relevance. The Q^2 values related to the present study are indicated in Table 7.

Table 7: Predictive Relevance and Coefficient of Determination

Endogenous Variables	Q^2 predict	R^2
Entrepreneurial Intention	0.427	0.501
Entrepreneurial Self-Efficacy	0.496	0.508

Source: Survey Data 2023

Note: Q^2 predict: Predictive relevance; R^2 : Coefficient of determination

The author has formulated eight hypotheses for the current study to depict the relationship between variables in the conceptual framework. The development of these hypotheses was aimed at fulfilling the research objectives of the current study and addressing the primary research issues. The author has employed path analysis to examine the hypotheses. Table 8 presents a summary of the hypothesis testing.

Table 8: Hypotheses testing

Hypothesis	Path	Path Coefficient	P Values	Decision
H1	PFL -> EI	0.135	0.002	<i>Supported</i>
H2	EE -> EI	0.276	0.000	<i>Supported</i>
H3	PFL -> ESE	0.197	0.000	<i>Supported</i>
H4	EE -> ESE	0.701	0.000	<i>Supported</i>
H5	ESE -> EI	0.313	0.000	<i>Supported</i>
H6	PFL -> ESE -> EI	0.070	0.000	<i>Supported</i>
H7	EE -> ESE -> EI	0.250	0.000	<i>Supported</i>
H8	MK * ESE -> EI	0.127	0.001	<i>Supported</i>

Source: Survey Data 2023

Results and Discussion

This study's overall purpose was to examine the role of metacognitive knowledge in the relationship between entrepreneurial self-efficacy and entrepreneurial intention, whilst considering perceptions of formal learning and entrepreneurial experience as antecedent factors towards entrepreneurial intention. As such, the study intended to answer three research questions. The first was to question whether the metacognitive knowledge of an individual moderates the relationship between entrepreneurial self-efficacy and entrepreneurial intention, which was based on hypothesis 8 (H8). The current study's findings confirm the presence of a

moderating effect of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intentions, which is an aspect that has not been extensively examined or validated in previous empirical research. While a limited number of prior studies have explored the connection between metacognitive knowledge and intentions towards entrepreneurship (Liang *et al.*, 2015), very few have attempted to investigate the potential moderating impact of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intentions.

Secondly, the study questioned how perceptions of formal learning and entrepreneurial experience impact entrepreneurial intention as antecedent factors based on the 1st and 2nd hypotheses. Several previous studies have denoted that the relationship between perceptions of formal learning and entrepreneurial intention was either not significant or did not exist (Arranz *et al.*, 2017; Frago *et al.*, 2020). Even though limited contradicting results are to be seen in a few previous studies, many studies tend to support the findings of the present study (Ezeh *et al.*, 2020; Hoang *et al.*, 2020; Setiawan and Lestari, 2021), confirming perceptions of formal learning to have a positive and significant relationship with entrepreneurial intention. Thus, previous research has presented mixed outcomes regarding the connections between perceptions of formal learning, entrepreneurial experience, and entrepreneurial intention (Miralles *et al.*, 2015; Ngoc and Huu, 2016).

Thirdly, it examined the mediating impact of entrepreneurial self-efficacy on the relationships between perceptions of formal learning, entrepreneurial experience, and entrepreneurial intentions, based on hypotheses H3, H4, H5, H6, and H7. The findings of the study, which indicated a partial mediation (by entrepreneurial self-efficacy) to be existent in the relationships tested between perceptions of formal learning and entrepreneurial intention were complemented by several other empirical studies (Hoang *et al.*, 2020; Setiawan and Lestari, 2021), whilst few studies have denoted a full mediation, leaving the overall related results to remain mixed in nature. Additionally, the presence of partial mediation by entrepreneurial self-efficacy in the relationship between entrepreneurial experience and entrepreneurial intention aligns with the findings of recent studies (Austin and Nauta, 2015).

This study indicated that entrepreneurial experiences and formal entrepreneurship education nurture entrepreneurial inclinations. When self-confidence in entrepreneurial skills rises, entrepreneurial intentions grow. Entrepreneurial self-efficacy regulates the relationship between formal learning perceptions, entrepreneurial intention, and entrepreneurial experience. This study also shows that metacognitive knowledge connects self-efficacy to entrepreneurial ambitions, increasing them. To address this gap in self-efficacy theory, this study explores the role of metacognitive knowledge in self-efficacy and intentions. Self-efficacy reveals how confidence influences behavior, but metacognitive knowledge does not. Studies use metacognitive theory, which emphasizes self-awareness. Metacognitive knowledge boosts self-awareness and self-confidence, supporting self-efficacy theory. Filling this theoretical gap, the study examines self-efficacy and how people build it. It also provides a sound theoretical foundation for future metacognitive knowledge-entrepreneurial goal research.

Conclusions

Overall, this study has made a substantial contribution to comprehending the complex interactions of entrepreneurial self-efficacy, metacognitive knowledge, and entrepreneurial intention. It specifically examines the components that lead the formal learning perceptions and entrepreneurial experience. The results validate the influence of metacognitive knowledge on the relationship between entrepreneurial self-efficacy and entrepreneurial intentions, shedding light on a topic that has not been thoroughly investigated in previous studies. This study confirms that the way people perceive formal learning has a favorable impact on their intention to become entrepreneurs, even if previous studies have produced conflicting findings. Furthermore, the study demonstrates that entrepreneurial self-efficacy plays a role in connecting perceptions of formal learning, entrepreneurial experience, and entrepreneurial goals. This finding supports and expands upon existing research in the field. This study provides a theoretical contribution by broadening the entrepreneurial self-efficacy theory with the addition of metacognitive knowledge to show that entrepreneurial intention is shaped by more than just self-confidence, it is also shaped by knowledge of the processes of the mind, such as the capacity to recognize one's strengths and weaknesses, the ability to recognize how and when to utilize particular strategies, and adapting to challenges. In so doing, this combination provides a more sophisticated account of how reflective thought combines with self-efficacy to influence entrepreneurial intent, thus filling an important gap in the literature and paving the way for future research on thinking as a precursor to entrepreneurship. Practically, the findings emphasize the need for entrepreneurship education and training programs that move beyond the simple acquisition of technical skills to develop reflective awareness and confidence, thus enabling graduates to develop their resilience and self-efficacy in uncertain business environments. For universities, this indicates a requirement to incorporate metacognitive training in entrepreneurship programs, whereas for policymakers and professionals, it presents an even greater onus of designing support systems, mentorship, and learning-by-doing opportunities that develop the ability to adapt and gain self-confidence. Together, these findings have both conceptual insights and practical strategies that improve entrepreneurial intentions and reduce the failures of start-ups among graduates.

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