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ENTREPRENEURIAL INTENTION IN HIGHER EDUCATION: EVIDENCE OF A SINGLE-FACTOR STRUCTURE

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Abstract: *Entrepreneurial Intention (EI) is a critical precursor to entrepreneurial behavior, particularly among university students. This study aims to examine the dimensional structure of an adapted EI questionnaire and assess its validity through Exploratory Factor Analysis (EFA). Data were collected from a sample of undergraduate students using a structured EI instrument comprising eight items. A survey with an interval scale between 1 and 10. Preliminary analyses, including the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity, confirmed the suitability of the dataset for EFA. Principal Axis Factoring (PAF) was employed to extract the underlying factor structure. The results revealed a single dominant factor with an eigenvalue greater than 1.0, accounting for 93.8% of the total variance. All items loaded strongly onto this factor, with loadings above 0.9. The internal consistency of the scale was excellent (Cronbach's alpha = 0.977), confirming the reliability of the unidimensional EI construct in this context. Unlike previous studies that often report multidimensional EI structures, this study confirms the robustness of a unidimensional construct within a homogenous student sample, contributing to the simplification and refinement of EI measurement in similar contexts.*

Keywords: *Entrepreneurial Intention, Exploratory Factor Analysis, Undergraduate University Students, Malaysia*

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Introduction

Entrepreneurial Intention (EI) refers to an individual's conscious plan and commitment to initiate a new business venture (Krueger et al., 2000). As entrepreneurship continues to drive economic development, job creation, and innovation globally, understanding the formation of entrepreneurial intentions has become a key research priority (Liñán & Fayolle, 2015). While EI is traditionally considered a multidimensional construct based on cognitive models such as the Theory of Planned Behavior (Ajzen, 1991), recent studies have observed that, particularly among relatively homogeneous populations such as university students, Entrepreneurial Intention may manifest as a unidimensional structure (Liñán & Chen, 2009).

Accurate measurement of EI is crucial for both academic research and the design of effective entrepreneurship education programs. Exploratory Factor Analysis (EFA) serves as an essential technique for uncovering the underlying structure of measurement instruments and ensuring their validity and reliability in specific contexts (Costello & Osborne, 2005). However, empirical investigations applying EFA to Entrepreneurial Intention scales among student populations remain limited, particularly in emerging economies.

The present study addresses this gap by examining the factor structure of an adapted Entrepreneurial Intention questionnaire administered to undergraduate students. Specifically, the study aims to determine whether the instrument exhibits a unidimensional or multidimensional structure in this context. The results revealed a dominant single factor, confirming the unidimensionality of the EI construct within the sampled population and contributing to the refinement of entrepreneurial intention measurement tools for educational research and practice.

Although Entrepreneurial Intention has been widely studied, limited research has specifically applied EFA to confirm whether EI manifests as a unidimensional construct among Malaysian undergraduates. Most previous studies have either assumed the multidimensionality of EI or relied on confirmatory techniques without first testing the exploratory structure within local contexts. Given the importance of reliable measurement for theory-building and practical application, there is a clear need to conduct an EFA to validate the structure of adapted EI scales among Malaysian university students.

Literature Review

Entrepreneurship is an important strategic management paradigm that promotes economic growth in specific regions and countries (Hassan *et al.*, 2020a). Entrepreneurial intention (EI) refers to the self-acknowledged conviction by an individual to establish a new business venture at some point in the future (Kruegeret al., 2000). Entrepreneurial intention briefly brings up a thought that directs individual actions to undertake or create new, creative, and unique businesses through exploiting business opportunities and taking risks (Linan et al., 2011). An action or starting a business that begins with the intention will have better readiness and progress in the business being carried out than someone without the intention to start a business. Kolvereid and Isaksen (2006) reveal that entrepreneurial intention is measured by indicators: involvement in entrepreneurship programs on campus, starting self-employment after graduation, working with partners.

EI also refers to an individual's inclination towards pursuing entrepreneurship as a career path and their readiness to take action (Al-Jubari et al., 2019; Ajzen, 1991). Intentions are considered

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to embody the motivating aspects that influence behaviour, and they reflect the level of effort individuals are willing to exert (Ajzen, 1991). Although it has been acknowledged that not all intentions translate into actual behaviours, there is consensus that having EIs is a crucial stage in the initiation of entrepreneurial behaviours and, therefore, should be regarded as a driver of actual entrepreneurial activity (Al-Jubari et al., 2019; Ajzen, 1991). Individuals who possess EIs to start their businesses are often prepared to face any challenges and risks that may arise. According to researchers such as Faghih et al. (2021), entrepreneurs can learn from failure, but major failures can potentially demotivate them due to their financial and psychological consequences as well as the concomitant negative societal perception.

Research over the past two decades has emphasized the role of intention as a key predictor of entrepreneurial behavior, with studies grounded predominantly in Ajzen's (1991) Theory of Planned Behavior (TPB). TPB posits that entrepreneurial intention is influenced by three antecedents: attitude toward entrepreneurship, subjective norms, and perceived behavioral control. Within this framework, EI has been widely recognized as a critical construct to understand the entrepreneurial process (Liñán & Fayolle, 2015). The TPB relies on three conceptual paradigms: attitudes, social norm perception and perceived behavioural control. Social norms influence an individual's behaviour through the impact of their social environment, and their intention is linked to the level of effort they are willing to exert for their plans, endeavours and desires to take action (Ajzen, 1991, 2020). Perceived behavioural control refers to the ease or difficulty experienced when executing a particular behaviour (Ip et al., 2021). EI is likely to evolve based on the attitudes and behaviours of specific individuals (Jena, 2020). Therefore, from the perspective of the TPB, entrepreneurship is considered a deliberate activity anticipated by EI. This study is relevant, as it aims to investigate the EIs of young people

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was conducted first before proceeding to subsequent analysis which is Confirmatory Factor Analysis (CFA) (Nasir et al., 2020). EFA has been one of the most widely used in statistical procedure especially in social science research. Research suggests that the EFA system provides a more accurate result when each common factor is represented by multiple measured variables that are exogenous constructor endogenous constructs in the analysis (MacCallum et al., 1999). In conducting EFA, the investigator has no expectations of the number or nature of the variables and as the title suggests, is exploratory. That is, it allows the researcher to explore the main dimensions to generate a theory or model from a relatively large set of latent constructs often represented by a set of items. EFA consists of principal component analysis (PCA) used for data reduction and did not differentiate between common and unique variance (Bentler and Kano, 1990). Once the EFA procedure is applied, the author suppresses the value at the threshold of 0.60 or above as recommended by Hair et al. (2011). High factor loading shown an important indicator. Moreover, EFA suggested the factor loading into the same component besides reducing the number of variables involved in this study. Indicators composed in the same component connoted that this outer loading has a similar intention to reflect the measurement model. Once the authors execute the EFA procedure, this component will be employed in structural equation modeling (SEM). In this context, SEM has two models namely measurement model (for CFA approach) and structural model (for path estimate).

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Moreover, the context of emerging economies, where entrepreneurship ecosystems are still developing, necessitates local validation of existing EI scales (Nowiński & Haddoud, 2019). Without proper validation, the risk of measurement errors increases, potentially leading to flawed theoretical conclusions and ineffective educational interventions.

Methodology

The study was conducted among undergraduate students enrolled at Universiti Teknologi MARA in 3 states namely Kelantan, Terengganu and Pahang in Malaysia. A total of 100 students participated, selected through simple random sampling. Participation was voluntary, and informed consent was obtained from all respondents. Instruments were adapted from Zaremohzzabieh et al. 2016. The adapted instrument consisted of 8 items measured on a ten-point Likert scale, ranging from 1 ("Strongly disagree") to 10 ("Strongly agree"). Minor modifications were made to ensure the items were culturally relevant to the local university context while preserving the original theoretical meaning. Higher scores indicated stronger entrepreneurial intention.

Prior to conducting Exploratory Factor Analysis (EFA), preliminary data screening was performed to ensure no significant violations of normality, missing values, or outliers. The suitability of the dataset for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. EFA was performed using Principal Axis Factoring (PAF) with varimax rotation, although the emergence of a unidimensional structure ultimately made rotation unnecessary. Factors were extracted based on the eigenvalue-greater-than-one rule and scree plot inspection. Item retention was guided by factor loadings greater than 0.60, and cross-loadings lower than 0.60. Internal consistency reliability was assessed using Cronbach's alpha coefficient. All statistical analyses were conducted using SPSS Version 25.0.

Finding and Discussion

This study applied the interval scale between 1 (strongly disagree) and 10 (strongly agree) with the given element statement to measure this construct with its 8 elements in the instrument (Majid et al., 2019) Measurement of every element in EI is shown in the descriptive statistical Table 1 and is presenting the mean and standard deviation score for every element.

Table 1: Descriptive Analysis for EI construct

	Item Statement	Mean	Std Deviation
EI 1	I am serious about being a successful entrepreneur	6.53	2.20
EI 2	I am ready to do whatever it needs to be an entrepreneur	6.44	2.23
EI 3	Being an entrepreneur would be my ultimate goal	5.90	2.52
EI 4	I will try to run my own business.	6.35	2.24
EI 5	I aim to create a future business	6.50	2.37
EI 6	I am seriously thinking of starting a business	6.23	2.51
EI 7	I hold the intention to initiate a business one day	6.56	2.45
EI 8	I am aim to create a future business	6.59	2.45

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The descriptive statistics for the Entrepreneurial Intention (EI) items show generally high mean scores across all eight statements, indicating a strong inclination toward entrepreneurship among the respondents.

The **mean scores** range from **5.90** to **6.59** on a scale likely from 1 to 10 suggesting that students generally agree or strongly agree with statements related to their entrepreneurial aspirations. The item "*I hold the intention to initiate a business one day" (EI7)* recorded the highest mean (M = 6.5647), implying that many respondents have a clear and strong future intention to start a business.

Similarly, *"I am serious about being a successful entrepreneur" (EI1)* and "I aim to create a future business" (EI8) also achieved high mean scores (M = 6.5268 and M = 6.5899, respectively), indicating a serious long-term commitment to entrepreneurial activities.

The lowest mean was observed for "Being an entrepreneur would be my ultimate goal" (EI3, M = 5.8833). Although still relatively high, this slightly lower score may reflect that, for some students, entrepreneurship is a strong career interest but not necessarily the ultimate life goal. The standard deviations range from approximately **2.19** to **2.51**, suggesting moderate variability in responses. These descriptive findings complement the **EFA results** indicating a **strong unidimensional structure**, where all items cohesively reflect a single latent construct: entrepreneurial intention.

Reliability Analysis

The reliability of the scale is determined by computing the coefficient alpha. So, the traditional method specifically of Cronbach alpha was conducted to determine the reliability of the items included in the study. Based on Nunally's (1978) suggestions, the better coefficient alpha is above 0.70 and this has also been admitted by Sekaran and Bougie (2010). He states that the Cronbach alpha is a consistent coefficient which indicates that the relationships, among the items set, are proportionally correlated to each other. Besides, he contemplated that the reliability below 0.60 is considered a weak model.

Table 2: Reliability Analysis

Cronbach's Alpha	N of items
.977	8

Table 2 represents the reliability analysis of the entrepreneurial intention (EI) construct. Cronbach's alpha value is 0.977 for 8 items in the questionnaire shows the construct items are acceptable and reliable in measuring the response.

Bartlett Test & Kaiser Meyer Olkin Measure (KMO)

The pilot study data has been analyzed for EFA procedure using IBM-SPSS 25.0. The extraction method used was Principal Component Analysis (PCA) and the rotation method used was Varimax (Variation Maximization). As can be seen in Table 3, the factor analysis results of the independent variables show that the KMO achieves 0.938 > 0.6 (Hoque et al., 2018) and the Bartlett's test has a significance (sig) <0.001 < 0.005, indicating that the observed variables are linearly correlated with the representative factor and the data is suitable for EFA analysis.

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Table 3: KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.938
Bartlett's Test of Sphericity	Approx. Chi-Square	3814.810
	df	28
	Sig.	<.001

Scree Plot

The EFA procedure also determined the number of components (or theme) that emerged for the items. The procedure would group items measuring a similar theme. The graph in Figure 1 indicates only one (1) component that emerge from 8 measuring items for EI.

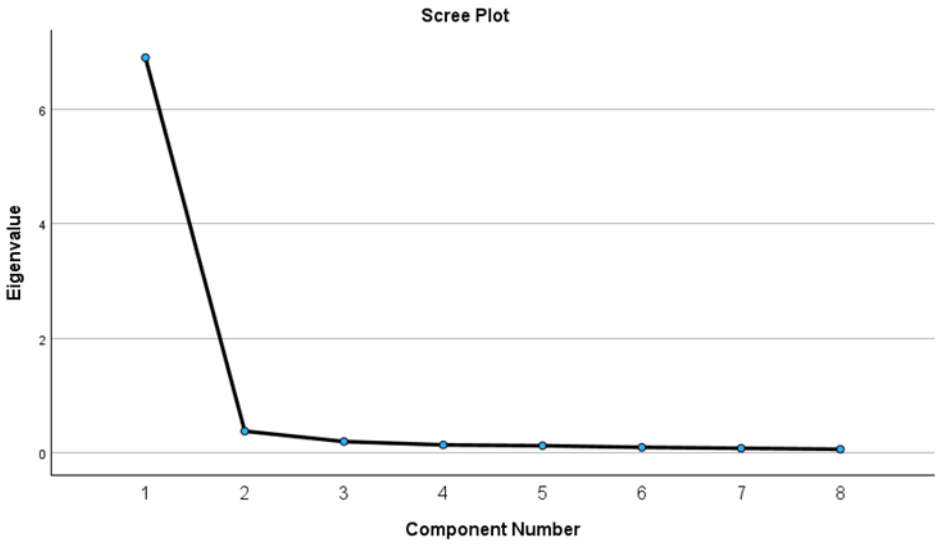

Figure 1: Scree Plot of EI construct

Total Variance Explained

Table 4 presented one component that emerged with the eigenvalue 6.905 and the cumulative eigenvalue is 86.31%. The eigenvalue for each component should be greater than 1.0 and the cumulative variance explained should be greater than 60% (Shkeer & Awang, 2019). This mean that 86.31% of the variation in the factors is explained by the observed variables.

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Table 4: Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.905	86.311	86.311	6.905	86.311	86.311
2	.381	4.767	91.078			
3	.199	2.493	93.571			
4	.141	1.761	95.331			
5	.127	1.586	96.917			
6	.099	1.236	98.153			
7	.083	1.032	99.185			
8	.065	.815	100.000			

Extraction Method: Principal Component Analysis.

Rotated Component

Table 5 demonstrates the factor loading for EI construct. In order to retain any item, the factor loading for each element should be more than 0.6 (Bahkia et al., 2019). The finding indicates all items are above 0.9 which accepted.

	Items	Component 1
EI 1	I am serious about being a successful entrepreneur	.912
EI 2	I am ready to do whatever it needs to be an entrepreneur	.919
EI 3	Being an entrepreneur would be my ultimate goal	.924
EI 4	I will try to run my own business.	.928
EI 5	I aim to create a future business	.928
EI 6	I am seriously thinking of starting a business	.953
EI 7	I hold the intention to initiate a business one day	.934
EI 8	I am aim to create a future business	.936

Extraction Method: Principal Component Analysis

a. 1 components extracted

Conclusion and Recommendations

The findings of the present study provide strong empirical support for the unidimensionality of the Entrepreneurial Intention (EI) construct among undergraduate students. The Exploratory Factor Analysis (EFA) results indicated that all eight items loaded significantly onto a single factor, accounting for 86.31% of the total variance, with factor loadings exceeding the recommended threshold of 0.65. The high Kaiser-Meyer-Olkin (KMO) value and significant Bartlett's test further confirmed the adequacy of the data for factor analysis. Moreover, the internal consistency reliability, as evidenced by a Cronbach's alpha of 0.977, demonstrates the robustness of the adapted scale in capturing a coherent and internally homogeneous construct. In conclusion, the current study enriches the entrepreneurial intention literature by validating a concise, reliable, and unidimensional measurement instrument suitable for student populations. It provides a solid foundation for future research aimed at understanding the antecedents and consequences of entrepreneurial intentions in broader, more diverse samples.

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