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## Development of Schoolpreneur Model for Malaysian Secondary School: A Confirmatory Factor Analysis Approach

**Saiful Adzlan Saifuddin**   
Universiti Pendidikan Sultan Idris,  
MALAYSIA

**Sharul Effendy Janudin**   
Universiti Pendidikan Sultan Idris,  
MALAYSIA

**Mad Ithnin Salleh**   
Universiti Pendidikan Sultan Idris,  
MALAYSIA

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**Abstract:** This study aims to develop a schoolpreneur model appropriate for Malaysia's secondary school environment. The current study surveyed students participating in the Program Tunas Commerce (PROTUNE) and the Young Entrepreneurs Association (PUM) in the states of Perak, Selangor, and Negeri Sembilan to accomplish these purposes. A survey-based technique was used to collect data, and 400 students participated. With a cross-sectional research design, this research uses a quantitative research methodology. This research employed exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) for statistical analysis. The study's findings show that six highlighted factors can be incorporated to develop a schoolpreneur model. These factors all significantly affect the schoolpreneur model. A significant correlation of the schoolpreneur model of more than 60% indicates the significance of talent skills, mentors, incubators, individual personality, role models, and family background in the development of the schoolpreneur model. As a result, secondary schools can conduct entrepreneurial activities better due to the development of the schoolpreneur model.

**Keywords:** *Entrepreneurial activities, schoolpreneur model, secondary school, structural equation modeling.*

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### Introduction

Gross domestic product (GDP) per capita is a typical metric of economic prosperity. This is the total value of all commodities and services a country produces in a current year divided by its population. A recession means fewer jobs and more social tensions. Consistent with these economic concepts, several analyzes have been conducted to identify factors that promote economic prosperity and mitigate recession (Al-Qudah et al., 2022). Based on discussions led by the World Bank, small and medium-sized enterprises (SMEs) account for over 90% of global business, making significant contributions to job creation and inclusive economic development. They estimate that about 600 million jobs will be needed by 2030 to absorb the world's growing workforce. This makes SME development a priority for most governments worldwide (World Bank, 2020).

The importance of small and medium-sized firms (SMEs) to the growth of the Malaysian economy is no longer arguable, given that SMEs accounted for 98.5% of business startups and generated up to 38.9% of the gross domestic product (GDP) in 2019, totaling 907,065 enterprises. In 2019, SMEs accounted for 48.4% of the nation's total employment (National Entrepreneur and SME Development Council, 2021). SME GDP growth in 2019 grew at a modest rate of 5.8% compared to 6.2% a year earlier, in line with the slowdown in the Malaysian economy in 2019 due to the challenging global economic environment and domestic supply disruptions. However, SME growth remained higher than overall and non-SME GDP, which registered a growth of 4.3% and 3.4%, respectively, as shown in Figure 1.

\* **Corresponding author:**

Sharul Effendy Janudin, Faculty of Management and Economics, Universiti Pendidikan Sultan Idris, Perak, Malaysia. ✉ [sharul@fpe.upsi.edu.my](mailto:sharul@fpe.upsi.edu.my)

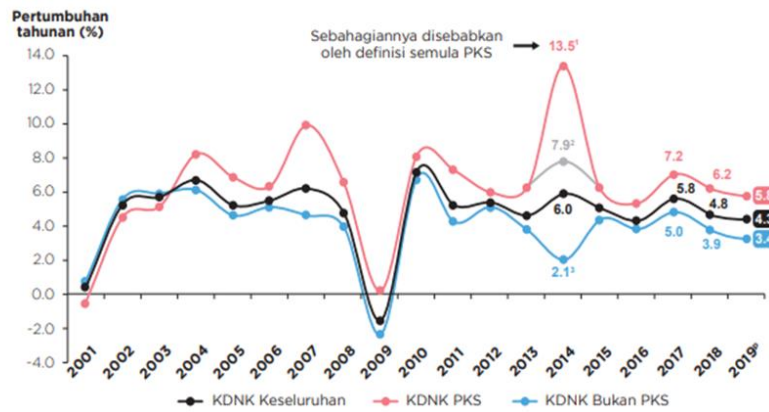


Figure 1. The Growth of GDP in SMEs Companies and Non-SMEs Companies from 2001-2019

Statistics from the Department of Statistics Malaysia and SME Corp. Malaysia prove that Malaysia's economic development also depends on the long-term success of medium-sized companies. Therefore, entrepreneurship is essential for creating new businesses and promoting the country's economic development. According to Jang et al. (2019), entrepreneurship was the engine of every nation's economic progress and played a crucial role in creating new businesses and a country's economic development.

In addition, entrepreneurship can be a solution for unemployed young people and recent graduates, significantly when the economic downturn limits employment opportunities. More and more governments believe in the positive effects of entrepreneurship (Looi, 2019). Graduate unemployment is a significant problem in Malaysia due to its many higher education institutions. To solve this problem, the Malaysian government has promoted employment through entrepreneurship by offering entrepreneurship education at nearly every tertiary institution in the country (Samydevan et al., 2021). Later, the Malaysian government also launched the Malaysia Education Development Plan 2015-2025 (Higher Education) to transform the higher education system. The program's first initiative is to equip students and faculty with entrepreneurial skills.

However, entrepreneurship must be honed and fostered from an early age. Entrepreneurship combines action, initiative, tenacity, commitment, organization, and creativity in implementing productive activities. Therefore, additional research is required to develop entrepreneurship learning in secondary schools. It is significant because it can enhance the success of socio-economic development and promote sustainable growth. Several studies recommend that entrepreneurship development should start at an early age to instill in learners an entrepreneurial attitude, provide basic entrepreneurial knowledge and skills, and develop learners' appreciation for opportunities for self-employment (Du Toit & Gaotlhogwe, 2018). Based on Azizi and Mahmoudi (2019), entrepreneurship education has a more significant impact on students' lives at a young age and should start in the early stages of school.

Next, Shahin et al. (2021) highlight the significance of secondary schools in developing entrepreneurship. They believe youth and teenagers are ideal for developing entrepreneurial skills and intentions. Then, according to Rosique-Blasco et al. (2016), it is crucial to introduce entrepreneurial skills early on in school. Thus, the idea arose to research the formation of a schoolpreneur model that can be used as a guide for implementing comprehensive entrepreneurship in a secondary school in Malaysia.

Ensuring the success of this entrepreneurial development will require a significant investment of national resources and time, involving diverse stakeholders such as teachers, educational institutions, policymakers, non-profit organizations, and financiers (Nungsari et al., 2021). Then, it is crucial to understand the mechanisms and things that can influence teenagers or young people to become quality entrepreneurs while effectively maximizing the returns of this development. Research on the development of student-centered entrepreneurship still needs to be completed. It makes it harder to analyze the components and procedures needed for the growth of entrepreneurial students. This also stems from the belief that secondary school students are less business-ready than entrepreneurs or college students (Kurniawan et al., 2019).

In light of this, this study aims to identify the factors necessary to create a comprehensive model at the secondary school within its environment. The researcher discovered seven factors that may construct this schoolpreneur model from the literature review on the entrepreneurship ecosystem model by Isenberg (2010), Feld (2012), and Spigel (2017). A seven-point Likert scale questionnaire instrument was developed to assess factors that could shape the schoolpreneur model. Exploratory factor analysis (EFA) was used to examine the usefulness of items measuring factors. Next, we developed a confirmatory factor analysis (CFA) to test for causal relationships between factors. The originality of this paper lies in examining factors related to the shape of the school management model. We propose a second-order confirmatory factor analysis (CFA) model to examine the determinants corresponding to the secondary school.

## Literature Review

### *Individual Personality*

Personality refers to the inherent general reflection of the factors that influence a person's emotions, actions, thoughts, and actions. It is an interpersonal process that reflects a person's consistent behavioral patterns (Hossain et al., 2021). Personality also played a decisive role in entrepreneurial behavior and was discussed in detail. There has long been interested in the literature on predicting entrepreneurial development using specific personality traits (Tian, 2021). Furthermore, Matos and Hall (2020) identified individual personality as necessary in explaining the formation of new businesses. These include knowledge of entrepreneurial opportunities and the ability to see connections others may not be aware of, self-efficacy and experience, education, training, and a desire to grow. Many studies have provided different models to explain the human personality, such as the HEXACO model, Ashton and Lee (2008), or the five-factor model (Costa & McCrae, 2008). The five-factor model is arguably the most widely used taxonomy for constructing personality in the context of human development. Although not without its limitations, it is the most widely accepted taxonomy and is based on extensive empirical research demonstrating its reliability and effectiveness in various fields, including entrepreneurship (Şahin et al., 2019). In a meta-analysis study, Zhao et al. (2009) found that the five-factor model showed positive results through the factor of openness, followed by conscientiousness, emotional stability, and extraversion against entrepreneurial intentions. This study is consistent with Hossain et al.'s (2021) examination of the five personality trait factors significantly related to social entrepreneurship intentions. Thus, we proposed this hypothesis:

H1: Individual personality is a construct in the form of schoolpreneur model

### *Culture*

A standard definition of culture comes from Hofstede (2003), who understands culture as the collective programming of the mind. In this sense, entrepreneurial culture is the co-programming of minds towards entrepreneurial values and norms, such as initiative, willingness to take risks, acceptance of mistakes, openness to new things, individualism, independence, and performance (Stuetzer et al., 2017). There are three main perspectives to understanding cultural entrepreneurship: creating culture, deploying culture, and cultural creation (Ratten, 2022). Creating culture refers to the processes via which culture is created in response to social trends. Then, deploying culture refers to how culture legitimizes a new business concept. Last, cultural creation refers to the cultural process, including how things are created in society. Kreiser et al. (2010) show a relationship between national culture and entrepreneurial activities and that culture influences entrepreneurial behavior. This implies that cultural values affect the values and beliefs of people, which in turn shape the conduct of individuals (Strauß et al., 2021). The Global Leadership and Organizational Behavior Effectiveness (GLOBE) study analyses the link between students' entrepreneurial inclinations and cultural factors. They discovered that accomplishment and gender equality were the most potent aspects of students' mental processes, impacting both arguments for and against entrepreneurial activity (Valencia-Arias et al., 2022). Thus, we proposed this hypothesis:

H2: Culture is a construct in the form of schoolpreneur model

### *Incubator*

Typically, an incubator is a collaborative process whose objective is to encourage individuals to launch new businesses and provide seed funding for developing new products and services (Ahmed et al., 2020). Hackett and Dilts (2004) recognized three primary aspects of incubation: infrastructure, business support services, and network access. Literature indicates that the relative relevance of each of these components has evolved from an early emphasis on shared infrastructure to a more recent emphasis on the significance of business support services and network access (Caetano et al., 2019). Mukul and Saini (2021) agree that the increasing involvement of incubation centers, colleges, and other educational institutions as a new generation of entrepreneurial ecosystem providers is a vital component of the entrepreneurial support system. Several studies have explored and discovered evidence of the favorable influence of participation in business incubation programs on the development of businesses (Harima et al., 2019). For instance, Hassan (2020) emphasizes that business incubators play a crucial role in firms' formation, activation, and growth by fostering employment and producing money for the local community. In addition, Shahzad et al. (2012) state that incubators are crucial to the growth of entrepreneurship among individuals because they help in various areas, including business assistance, commercialization of innovative innovations, creation of employment opportunities, and profit growth. Gorączkowska (2020) believes that a favorable perception of incubators is reflected in the efficiency of entrepreneurs and that the effectiveness of entrepreneurs has a positive impact on the functioning of incubators. Thus, we proposed this hypothesis:

H3: Incubator is a construct in the form of schoolpreneur model

*Role Model*

In the 1970s, social learning theory Bandura (1978) claimed that within a person's many psychological mechanisms, witnessing and identifying with the activities of others allows the individual to learn, and these actions add to his motivation and acceptance of his behavior. Originating in psychology, this analysis aspect, known as the role model hypothesis, emerges primarily to explain human motivation. The concept of a role model refers to the process through which an individual identifies with the behavior of others in order to develop a personality, get motivated, and direct their behaviors (Moreno-Gómez et al., 2020). Entrepreneurship research has proposed the role model as an explanatory and determining driver of entrepreneurial activity (Gómez-Araujo & Bayon, 2017). Thus, Karimi et al. (2014) clarified the role model as a factor in the intention to start a business or consider entrepreneurship a career path. Indeed, prior research indicates that young people exposed to entrepreneurial role models regard entrepreneurship as an attractive career option (Wannamakok & Chang, 2020). Corporate is more acceptable and attractive than full-time employment due to the charisma and success of entrepreneurial role models (Byrne et al., 2019). According to Simmons et al. (2019), the success stories of entrepreneurs who have served as role models imply a rise in entrepreneurial self-efficacy and lead to optimistic expectations among new entrepreneurs. Thus, we decided to propose this hypothesis:

H<sub>4</sub>: Role Model is a construct in the form of schoolpreneur model

*Talent Skills*

Skills are described as the direct or observable application of knowledge to fulfill a task or overcome a problem due to human capital investment in education or experience. They can be enhanced through training, practicing, and development (Mamabolo et al., 2017). Various sets of talents have been identified as essential for entrepreneurial success through research. According to Mamabolo and Myres (2020), there are a variety of entrepreneurial startup skills involving identifying and exploiting business prospects. Then, according to Rosique-Blasco et al. (2016) the essential business skills required to acknowledge and capitalize on the opportunity include managerial skills for project planning, budget preparation, performance evaluation, and strategy implementation, as well as technical skills associated with the use of operating systems. Following this, Muskat et al. (2019) claimed that a successful entrepreneur's management skills are characterized by acting based on opportunities, having the capacity to learn from failure, being willing to manage risk, and fostering constant innovation. According to Wan Mohd Zaifurin et al. (2016), individuals with solid entrepreneurial knowledge and skills are likelier to become entrepreneurs. Cause after receiving knowledge, individuals are highly capable of comprehending and participating in entrepreneurial activity. Thus, we proposed that:

H<sub>5</sub>: Talent skills is a construct in the form of schoolpreneur model

*Mentor*

Mentoring has been described in various ways. However, most academics agree on the fundamental idea that mentoring takes place between two individuals (a mentor and a mentee), with the mentor offering support, guidance, and encouragement to the mentee in order to help them attain a specific set of goals (Babatunde & El-Gohary, 2019). Mentoring is a long-term learning process, including exchanging skills and talents, knowledge, and expertise. According to Ahsan et al. (2018), a mentor offers students the chance to interact with and learn from other successful and experienced entrepreneurs. In addition to offering mentoring support, mentors provide prospective entrepreneurs with a platform to seek, locate, investigate and manage the resources required to realize their goals. Along the same line, St-Jean and Mathieu (2015) view mentoring as a beneficial relationship between the mentee, an aspiring entrepreneur lacking experience, and the mentor, an experienced entrepreneur. Therefore, mentoring entails active, informal learning and conversation over an extended time between a mentor and mentee. Consequently, numerous explanations of mentorship and its significance in entrepreneurial activities have been provided. For instance, Eesley and Wang (2017) evaluated the impact of mentoring on the entrepreneurial possibilities of university students. The research revealed mentoring's ability to influence student entrepreneurship positively. Next, based on previous research St-Jean et al. (2017), external business mentors positively impact identifying and exploiting the individual potential in entrepreneurship. Furthermore, Abbasianchavari and Moritz (2021) discovered that exposure to mentors influences students' entrepreneurial goals and practices. The study revealed that incorporating mentorship into the curriculum and co-curriculum can enhance entrepreneurial aspirations and actions. Thus, we conclude proposed this hypothesis:

H<sub>6</sub>: Mentor is a construct in the form of schoolpreneur model

*Family Background*

Regarding family entrepreneurial background, Katundu and Gabagambi (2016) found that parents' educational background and professional status have a beneficial effect on the entrepreneurial participation of students. This indicates that graduates from educated families are more likely than their colleagues to express entrepreneurial

attributes such as increased self-control, high motivation, high self-esteem, and risk-taking. In addition, Shukla et al. (2021) discovered that children whose parents are entrepreneurs are more likely to pursue an independent profession. Developing entrepreneurship with a broad family knowledge background in business is ideal for creating new businesses and entering the entrepreneurial field. This concept illustrates the likely influence of a student's familial background on his or her interest in entrepreneurship. Next, Ferrando-Latorre et al. (2019) find that parents are more likely to pass on their entrepreneurial skills and knowledge to their children, increasing their chances of business success. Furthermore, a family entrepreneurial background denotes a specific framework in which entrepreneurial intentions are formed. According to the existing literature, a family's entrepreneurial background significantly impacts their children's entrepreneurial aspirations. Ayodele et al. (2021) concur that children whose parents operate a business are most likely to possess entrepreneurial attitudes. In addition, the family's entrepreneurial background indicates a particular setting within which entrepreneurial intentions are achieved. Consequently, the family background may positively predict children's entrepreneurial orientation (Kaya et al., 2019). Thus, we proposed this hypothesis:

H7: Family Background is a construct in the form of schoolpreneur model

## Methodology

### Research Model

This study develops a research model to investigate the following hypotheses based on previous research hypotheses. As indicated in Figure 2, this model links seven factors that can construct the schoolpreneur model appropriate to secondary school.

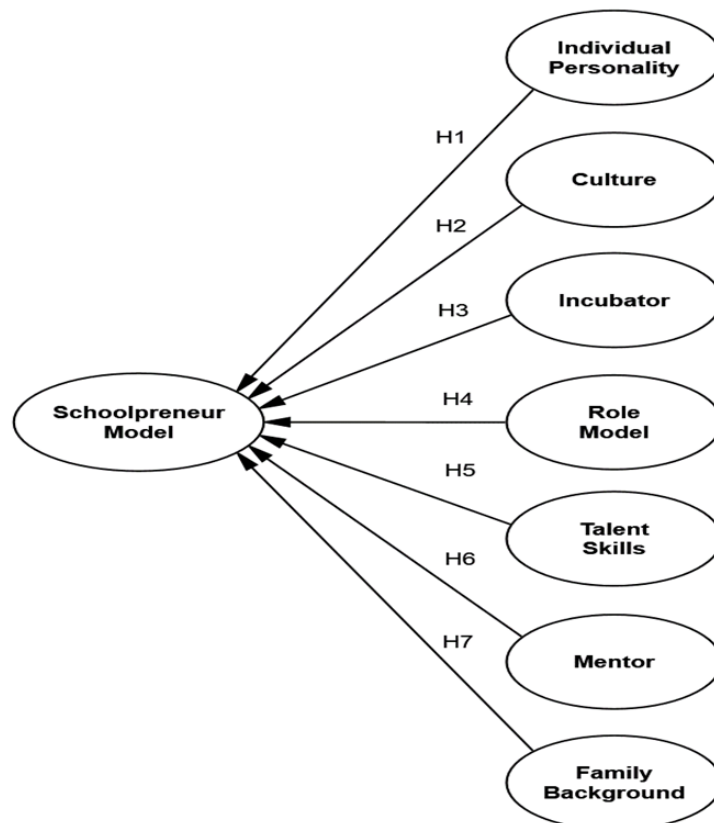


Figure 2. The Proposed Research Model

### Research Design and Survey Measures

This study used a quantitative methodology by distributing questionnaires to secondary school respondents in Perak, Selangor, and Negeri Sembilan. In the initial phase, an exploratory analysis test (EFA) was performed on the responses to reduce the number of items and find the significant secondary school-related factors. In the second phase, using a first-order model analysis, Amos software was used to test the association between components. Finally, a second-order model was developed to ensure that the schoolpreneur model's factors were suitable.

A survey-based technique, including a general five-item questionnaire on personal information, was utilized to examine the essential factors that may construct the schoolpreneur model in this study. All questions were assessed on a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Six items for individual personality, five for

role models, and four for family background were adapted from the study (Abdullah et al., 2015; Keat et al., 2011; Nasrul Hakim, 2015). Then, researchers used the five items for culture, six for talent skills, and five for mentors from past literature (Dissanayake & Dissanayake, 2014; Liñán, 2008; Shamsul Huda, 2014; Yoo et al., 2011). Lastly, Four components for the incubator were taken from previous research (Al-Mubarak & Schrödl, 2011; Gozali et al., 2018). For this research, thirty-five items have been employed. The survey was conducted in mid-2022 and administered face-to-face and online using Google Meet and Forms. Several actions were taken to improve the response rate (Shurrah et al., 2019).

#### *Sample Selection and Data Collection*

This study's target group consisted of students participating in the Program Tunas Commerce (PROTUNE) and members of the Young Entrepreneurs Association (PUM) in national secondary schools (SMK) under the Malaysian Ministry of Education (MOE) and MARA Junior Sciences College (MRSM) created by Majlis Amanah Rakyat (MARA), a Malaysian government agency. A basic random sample is used for sampling purposes. According to Krejcie and Morgan (1970), a sample size of 382 respondents is required when the population reaches 75,000. In this study's sample, there were 74,043 high school students. To ensure the issue of complete questionnaires affecting the study, the researcher selected 500 people to test for this investigation. Then, 500 questionnaires were delivered in schools and online throughout data collection. Based on the fact that only 423 questionnaires were returned, the calculated response rate was 84.6%. There was a total of 423 replies through online and face-to-face distribution. Incompleteness necessitated the deletion of 23 responses, leaving 400 for data analysis.

#### *Data Analysis Procedure*

The data was generated by SPSS version 26. Various statistical approaches were used to refine the data, including identifying missing values, outliers, normality, linearity, homoscedasticity, and multicollinearity. The data were statistically analyzed by structural equation modeling (SEM) with AMOS 28 software after confirming that the multivariate analysis assumptions were met. The researcher has released nine responses in this study, and only 391 out of 400 will be employed in the subsequent analysis phase.

### **Findings / Results**

#### *Demographics*

According to demographic data, 246 women (62.9%) and 145 males (37.1%) were among the participants. The bulk of responding pupils, 387 (99%), belonged to the Malay ethnic group, while only one student represented the Chinese and Indian ethnic groups. Meanwhile, two more individuals of different ethnicities were present. 191 students attend daily secondary school (48.8%), Malaysian Ministry of Education boarding schools (22%), and MARA Science Junior College (MRSM) (29.0%), according to the school type statistics. 109 schools are in urban areas (27.9%), while 282 are in rural regions (72.1%). Next, student engagement and entrepreneurial experiences are shared. There were 216 students with less than one year of experience (55.2%), 109 students with one to two years of experience (27.9%), 41 students with two to three years of experience (10.5%), 15 students with three to four years of experience (3.8%), and 10 students with over five years of experience (2.6%). The demographic information is provided in Table 1.

*Table 1. Respondents Profile*

No	Demographic Characteristics	Total	
		Frequency	%
	<i>Gender</i>		
1.	Male	145	37.1
	Female	246	62.9
	<i>Ethnicity</i>		
2.	Malay	387	99.0
	Chinese	1	.3
	Indian	1	.3
	Others	2	.4
	<i>School Type</i>		
3.	Daily Secondary School	191	48.8
	Boarding School	86	22.0
	MRSM	114	29.2
	<i>School Area</i>		
4.	Urban Area	109	27.9
	Rural Area	282	72.1

Table 1. Continued

No	Demographic Characteristics	Total	
		Frequency	%
	<u>Experiences</u>		
	<1 Years	216	55.2
5.	1-2 Years	109	27.9
	2-3 Years	41	10.5
	3-4 Years	15	3.8
	>5 Years	10	2.6

*Exploratory Factor Analysis (EFA)*

As a first step in validating the construct, exploratory factor analysis was used to investigate and evaluate the relevance of items measuring the construct Baistaman et al. (2020), identify the factor structure, and define the dimensionality of the construct (Mohd Yusoff & Tengku Ariffin, 2021). To operate the EFA, the researchers first performed the presupposed test of sample adequacy and obtained the Kaiser-Meyer-Olkin (KMO) score. The correlation matrix demonstrates significant enough correlations between the variables and satisfies the requirement for the Bartlett test of sphericity. To yield uncorrelated extracted components with eigenvalues larger than 1.0, Principal Component Analysis (PCA) and Varimax (Variation Maximization) were employed as extraction and rotation methods, respectively. The EFA result in Table 2 indicated that Bartlett's test value is significant ( $p = .000$ ;  $df = 378$ , approximate chi-square = 5871.44) and the measure of sampling adequacy value, namely, the Kaiser-Meyer-Olkin (KMO) is .91, which is above the minimum value of .60 (Baistaman et al., 2020; Hair et al., 2017; Mohd Yusoff & Tengku Ariffin, 2021).

Table 2. KMO and Bartlett's test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.911
Bartlett's Test of Sphericity	Approx. Chi-Square	5.871.443
	df	378
	Sig.	.000

Seven factors were identified after establishing the validity of the data collected: talent skills, mentor, incubator, individual personality, family background, role model, and culture. These factors were compatible with a theoretical hypothesis and accounted for 68.14% of the variation, as shown in Table 3. Additionally, the results showed that items PI3 and ID5 loaded with values less than 0.4 were considered weak (Hair et al., 2017; Mohd Yusoff & Tengku Ariffin, 2021). Then, regarding their factors with the remaining items, items B2 and ID2 were not synchronous. Additionally, three elements (B3, PI2, and ID2) that were roughly equal were cross-loaded into two factors. The researcher would remove seven items after carefully considering the relevance and significance of the seven factors.

Table 3. Result From a Factor Analysis of the 35-items of Questionnaire

Items		Factor						
		1	2	3	4	5	6	7
<u>Factor 1 (Talent Skills)</u>								
BK1	I am a person with good leadership and communication skills.	.828						
BK2	I am a person who is able to think about my own beliefs and assumptions every time I face a difficult situation.	.798						
BK3	I am a person who is able to create opportunities and find my own profit.	.751						
BK4	I am a person who can form good relationships with teachers, friends and people around.	.682						
BK5	I am a problem-solving and creative person.	.668						
BK6	I am a person who dares to look for opportunities, and do whatever it takes to get on with life.	.666						
<u>Factor 2 (Mentor)</u>								
M3	Mentor helped me build my own self-image and increase my self-confidence in business.		.804					
M4	Mentor has confidence in me to succeed as an entrepreneur.		.775					

Table 3. Continued

Items	Factor						
	1	2	3	4	5	6	7
M5	Mentor always gives me suggestions and insights while running a business.	.719					
M1	Mentors helped me connect with people they knew in entrepreneurship.	.666					
M2	Mentors always share information about their successes and failures to me in becoming an entrepreneur.	.641					
<i>Factor 3 (Incubator)</i>							
IN3	The implementation of incubators in schools helps students get guidance and entrepreneurial advice from teachers and mentors.		.753				
IN4	The implementation of the incubator gives students the ability to create business opportunities and develop business ideas.		.745				
IN1	The school provides access to business incubator facilities for students who want to venture into the field of entrepreneurship.		.745				
IN2	Incubators are able to have an impact on the entrepreneurial climate at the school level.		.629				
<i>Factor 4 (Individual Personality)</i>							
PI6	I have ambitions to open a business one day.			.831			
PI5	I am determined to become a successful entrepreneur one day.			.785			
PI1	I feel entrepreneurship is my chosen career in the future.			.730			
PI4	I always try to solve a problem through new ideas.			.402			
<i>Factor 5 (Family Background)</i>							
LBK2	I got into entrepreneurship when I saw the success of family members in business.				.746		
LBK4	Family members gave me advice by telling me what to expect through the business activities carried out.				.701		
LBK1	I got encouragement and support from family members to venture into entrepreneurship.				.648		
LBK3	I chose the field of entrepreneurship because I saw the difficulty of family members obtaining jobs in the government sector.				.555		
<i>Factor 6 (Culture)</i>							
B4	Entrepreneurship is a job that can be performed better by men than women.					.895	
B5	Men need to have professional careers more than women.					.885	
<i>Factor 7 (Role Models)</i>							
ID1	I tend to venture into entrepreneurship because many of my friends are involved in entrepreneurship.						.831
ID3	I consider teachers to be a source of inspiration for me to get involved in entrepreneurship.						.590
ID4	I am curious about the teacher's opinion about my work in the future.						.561

Note.  $N = 391$ . Extraction method was principal component analysis (Varimax with Kaiser Normalization) rotation.

#### Confirmatory Factor Analysis (CFA)

In addition to the previous exploratory factor analysis, a CFA was conducted to evaluate and create a measurement model. This was done to describe the degree to which the measured variables function as composites of factors. After CFA, six variables identified during the exploratory factor analysis were kept. However, one factor, culture, was removed from the analysis alongside some other detected items. This is because the initial model did not satisfy the model fit requirements throughout this study. This is also possible that some of the mistakes were covariate since the measurement variables linked to correlated error terms will share a characteristic. Hence, model enhancement utilizing modification indices was started.



Consequently, some items were eliminated (Che Embi et al., 2019). The model indices comparative fit index (CFI), the ratio of degrees of freedom to 2 (Chisq/df), root mean square error of approximation (RMSEA), and Tucker-Lewis Index (TLI) imply that model fit conditions are met after the model enhancement (Baistaman et al., 2020; Hair et al., 2017; Shurrab et al., 2019). Table 4 and Figure 3 shows that the measurement model possesses good fit indices. Additionally, the reliability results are shown in Table 5, demonstrating the reliability of the study's data.

Table 4. Model Fit Measures

Measure	Estimate	Threshold	Decision
Chisq	519.301	-	-
DF	215	-	-
Chisq/df	2.415	< 3.0	Accepted
RMSEA	.060	< .08	Accepted
CFI	.931	> .90	Accepted
TLI	.919	> .90	Accepted

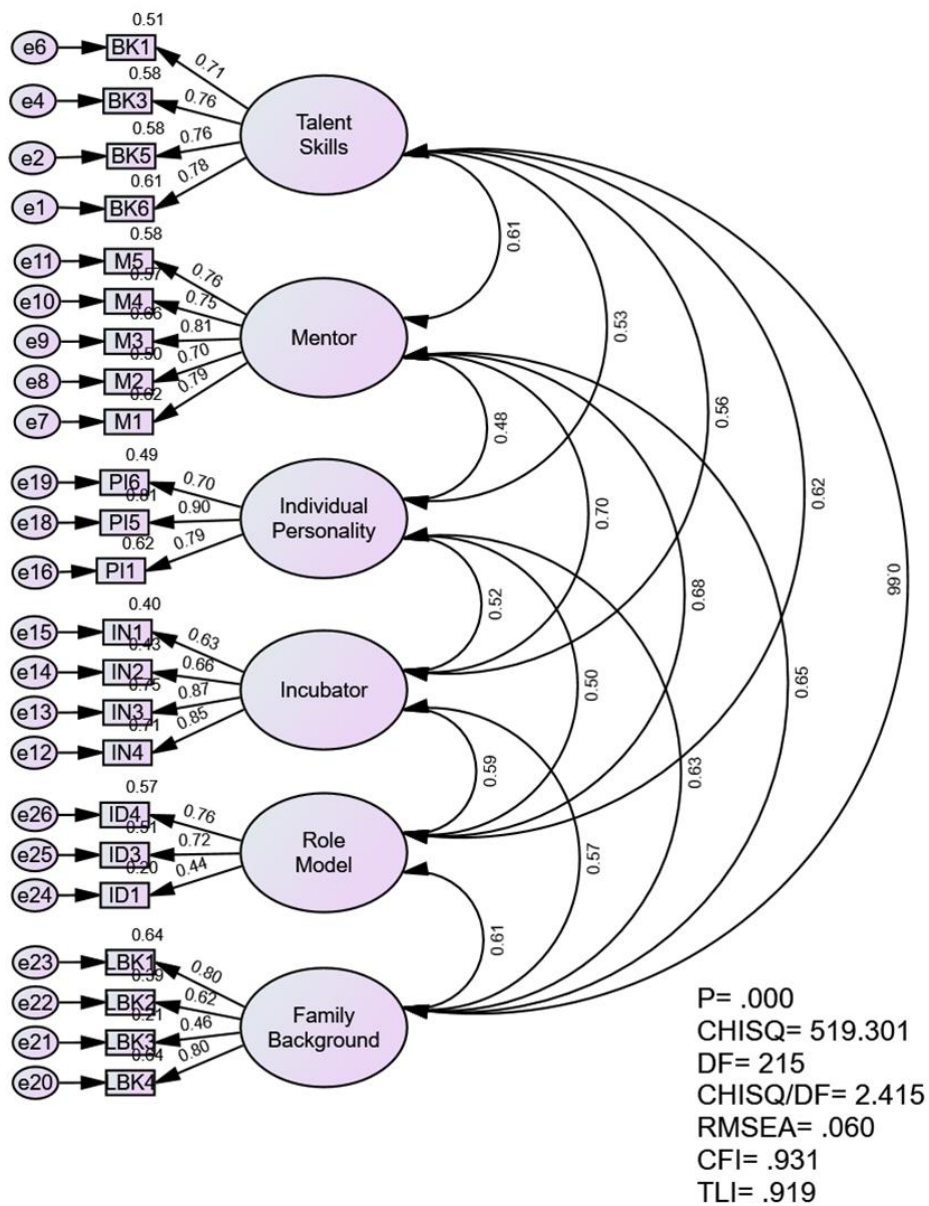


Figure 3. Confirmatory Factor Analysis First Order

Table 5. Reliability Statistics

Component	Number of Items	Cronbach's Alpha ( $\alpha$ )
Talent Skills	4	.840
Mentor	5	.875
Incubator	4	.833
Individual Personality	3	.832
Family Background	4	.754
Role Model	3	.660

*Second Order Confirmatory Factor Analysis (CFA)*

Second order CFA is used to determine the relationships between talent skills, mentor, incubator, individual personality, family background and role model with schoolpreneur model. This ensures that the schoolpreneur model formed was appropriate and relevant to use as model entrepreneurship in secondary schools (Che Embi et al., 2019). As shown in Table 6 and Figure 4, talent skills ( $\beta = .762, p < .05$ ), mentor ( $\beta = .741, p < .05$ ), incubator ( $\beta = .674, p < .05$ ), individual personality ( $\beta = .640, p < .05$ ), family background ( $\beta = .918, p < .05$ ), and role model ( $\beta = .559, p < .05$ ) are positively and significantly related to the schoolpreneur model. In order to make sense of these findings, these results suggest that conducting entrepreneurial activities in a secondary school setting requires assessing the factors of talent skills, mentors, incubators, individual personality, family background, and role models as a basis for implementation. This model also acceptably fit: CFI= .926, TLI= .917, RMSEA= .061 and Chisq/df= 2.449.

Table 6. Regression Weight

Construct	Model	Estimate	S.E.	C.R.	<i>p</i>
Talent Skills	← Schoolpreneur Model	.762	.058	13.032	***
Mentor	← Schoolpreneur Model	.741	.052	14.305	***
Individual Personality	← Schoolpreneur Model	.640	.057	11.155	***
Incubator	← Schoolpreneur Model	.674	.048	13.986	***
Role Model	← Schoolpreneur Model	.559	.074	7.533	***
Family Background	← Schoolpreneur Model	.918	.067	13.742	***

Notes: \*\*\* $p < .001$

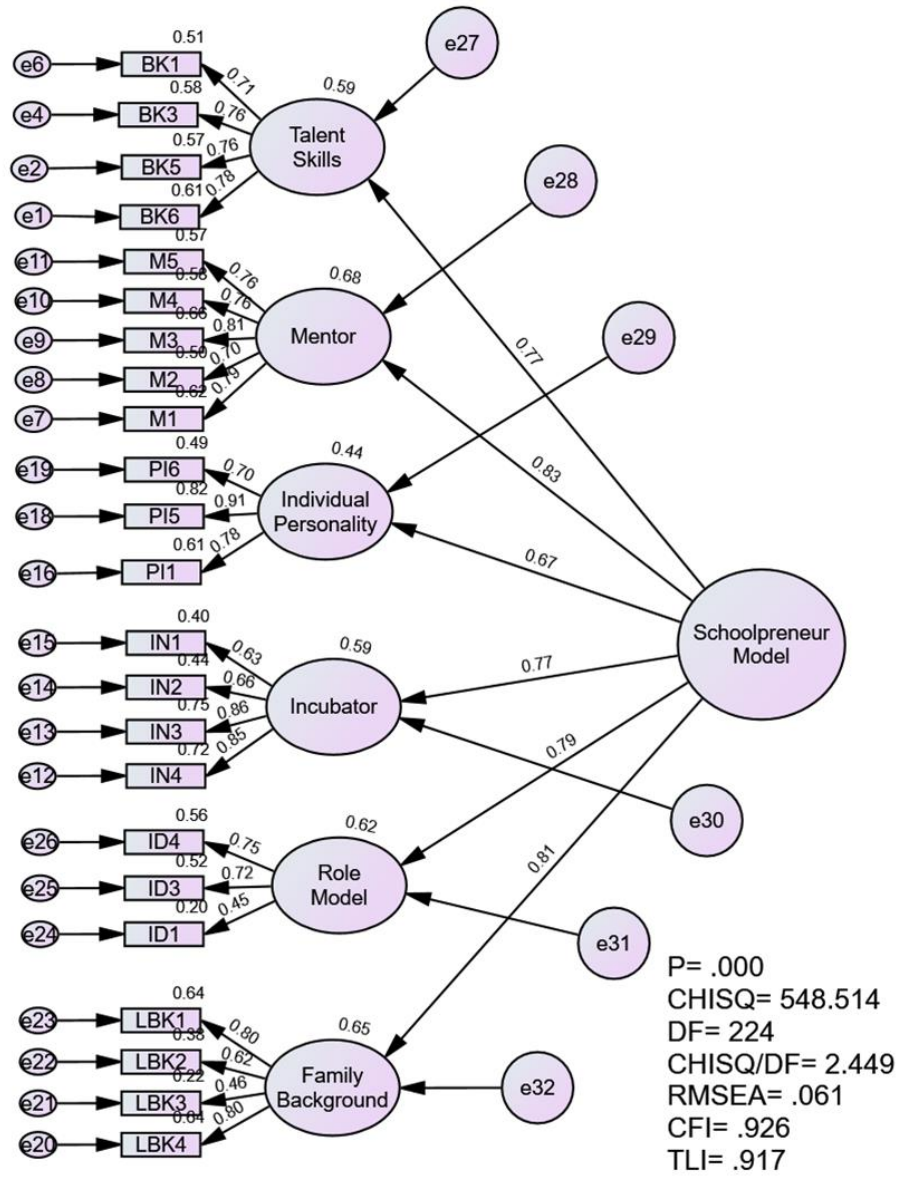


Figure 4. Confirmatory Factor Analysis Second Order

## Discussion

A comprehensive and adaptable model of the entrepreneurial environment in secondary schools was developed in this study. This model's development can be used as a benchmark for carrying out entrepreneurial activities. This research reviewed the literature on the influencing factors to be considered to achieve the goal. We investigated how the schoolpreneur model is shaped by aspects such as talent skills, mentors, incubators, individual personalities, role models, family background, and culture. The study then gathered information from 400 secondary school students engaged in entrepreneurial activities at their schools to contribute to developing schoolpreneur models suitable for their environments. Subsequently, this study's conceptual framework was developed to show the relationship between the factors and the schoolpreneur model. The model is shown in Figure 2.

Moving further, EFA is used to find the appropriate determining factors and confirm that six of the seven highlighted factors require attention in implementing school entrepreneurship activities. CFA first and second order were used to validate the collected data and investigate the relationship between the determining factors and the construction of the schoolpreneur model. Both models are appropriate and fitting. The first-order model concluded that the identified factor of talent skills, mentor, incubator, individual personality, role model, and family background have a high correlation, more than 60 percent, which indicates that these factors are essential for the construct of the schoolpreneur model (Figure 3). The second-order model reveals a significant relationship between the six factors and the schoolpreneur model, and the expected construction of this model can impact entrepreneurship activities (Figure 4). This finding conveys a clear signal to those involved in school management they should consider this factor in every implementation of entrepreneurial activities.

This finding is important because it demonstrates the necessity for school management to emphasize talent skills, mentors, incubators, individual personalities, role models, and family background before effectively implementing entrepreneurial activities in secondary schools. Many arguments have discussed these factors for successfully implementing suitable entrepreneurial activities. Ndoro and van Niekerk (2019) demonstrated personality traits and characteristics such as a need for achievement, propensity for risk-taking, innovativeness, internal locus of control, and self-efficacy. Predisposing specific individuals to engage successfully in entrepreneurial activities. Next, the research of Alias and Rahman (2019) showed a statistically significant relationship between Big Five model personality traits and entrepreneurial characteristics. Consistent with the researcher's findings, the outcomes of this study have demonstrated and supported that an individual's personality will foster entrepreneurial behavior. In addition, Zunaini and Norasmah (2019) study of secondary school students discovered a significant correlation between individual personality traits and an intention to pursue a career in entrepreneurship, even though the correlation was moderate. Therefore, it is essential to concentrate on the growth and development of entrepreneurial attitudes among students with individual personalities. Indirectly able to develop entrepreneurial characteristics in students in secondary school.

Then, new entrepreneurs require a mentor or entrepreneurial community to learn about entrepreneurship through informal discussions or in-depth interactions with mentors. Mentors are mostly more experienced entrepreneurs who pass on their knowledge and experience to new entrepreneurs because this needs to be done in the entrepreneurial community (Scheidgen, 2021). According to a previous study by Nabi et al. (2019), the role of a mentor motivates students to choose an entrepreneurial career. Because a mentor not only instructs a young entrepreneur on how to complete a task but also instills in them the confidence to pursue entrepreneurship. Thus, mentoring can play a vital role in developing individual entrepreneurial self-confidence. Moreover, Ting et al. (2017) have demonstrated that the relationship between mentor and mentee significantly impacts mentoring in entrepreneurship. Their effective communication and intimacy evidence this. Consequently, ensuring that the mentorship system is implemented in entrepreneurship is essential. Then, relevant regulations should be enacted to enhance this nation's management of mentors and mentees.

Incubators may guide opportunities to be successful entrepreneurs by offering good access to resources. According to Khokhawala and Iyer (2021), incubators provide information and knowledge that can be easily accessible and learned for business development in a growing global economy. Thus, the provision of a well-organized incubator can impact the implementation of entrepreneurship for new entrepreneurs to remain in the entrepreneurial community (Skytt-Larsen et al., 2022). Additionally, the presence of business incubators reveals a significant level of involvement in the value added of Pakistan women entrepreneurs (Shahzad et al., 2012). The commercialization of innovative innovations, the creation of job possibilities, and boosting earnings are a few of the incubator approaches can help new entrepreneurs. Therefore, the insertion of incubators into entrepreneurial activities at the secondary school gives students early exposure to gather experience and grow their business ideas as though becoming entrepreneurs at a professional level.

Next, involvement in entrepreneurial activities through family background also has shown significant evidence when children with entrepreneurial parents are more influenced to venture into entrepreneurship more deeply (Fragoso et al., 2020). The research of Nadiatul Naqiah and Noor Aslinda (2020) has reportedly supported these findings by proving that family background significantly affects an individual propensity to become an entrepreneur. Contrary to these findings, a study by Nuradibah (2018) reveals no relationship between family background and the tendency to be

an entrepreneur. This is because most families who participated in her research were not involved in entrepreneurship. Nonetheless, researchers are optimistic that family members' entrepreneurship experiences affect students' pursuit of entrepreneurship.

The study result from Badawi et al. (2019) demonstrates that talent skills are essential to reflect a positive perception of the individual's skills in starting a new business, such as risk-taking skills, critical thinking, and problem-solving. According to Wan Mohd Zaifurin et al. (2016), the aspect of talent skills and the tendency of students to engage in the field of entrepreneurship has a significant relationship, albeit at a moderate level. Furthermore, Nuradibah (2018) discovered a significant relationship between talent skills and entrepreneurial intention among vocational college students. As a result, the ability to execute this competence may bring an entrepreneur open-minded regarding the business to be conducted, as well as risk-taking and thinking critically.

Besides that, Adesola et al. (2019) argue that role models can motivate student entrepreneurial involvement. This is substantiated by the findings of Marks (2021), who found that the real-life story of an entrepreneur (role model) is an effective strategy for teaching individuals new to entrepreneurship about entrepreneurship. Next, Bosma et al. (2012) demonstrated a significant positive relationship between role models and entrepreneurship, as role models serve as "icons" for startup entrepreneurs, motivating, inspiring, and supporting their entrepreneurial pursuits. Consequently, using entrepreneurial role models is an effective method for making entrepreneurial learning more accessible and relevant, and it encourages engagement between organizations and educational institutions. Thus, it is undeniable that all these factors do influence the implementation of efficient and well-planned entrepreneurial activity. The development of the schoolpreneur model in this study is expected to be used as a guide in implementing secondary school activities to further understand the development of school entrepreneurship.

### Conclusion

This paper discusses the factors essential for the success of school entrepreneurship development. These factors have been integrated to develop a comprehensive and flexible model that will be implemented at secondary schools in Malaysia. This initiative focuses on what considerations stakeholders, especially school management, need to ensure the implementation of entrepreneurial activities is managed well. The survey-based approach revealed six variables that need to be taken into consideration in order to make sure that the implementation of the school's entrepreneurial activities works smoothly and is managed: talent skills, mentor, incubator, individual personality, role model, and family background. However, if the school management does not lend this schoolpreneur model full support when carrying out the school's entrepreneurial activities, it cannot be a better benchmark. Therefore, the competence of the school management in ensuring that this schoolpreneur model is implemented as best as practicable would positively impact the effectiveness of the school's entrepreneurial activities. This also can lead to increased entrepreneurship and educational support for entrepreneurship education providers.

In addition, the government can use this schoolpreneur model as a policy guideline to enhance the implementation of entrepreneurial activities in secondary schools. Cooperation from professional agencies such as MARA, SME Corporation, National Institute of Entrepreneurship (INSKEN), and others can ensure that this model serves as a springboard for entrepreneurship development at the secondary school. In addition, human capital development necessitates community engagement, especially among school-aged teens. This schoolpreneur model promotes the community's responsibility to ensure that teenagers and students, especially secondary school students, develop an entrepreneurial inclination. This role allows the community to support initiatives by certain parties, primarily the school management.

This study has implications for how well secondary schools in Malaysia will improve their entrepreneurial activities in the future. As a result, there is a critical need to evaluate several factors that require the attention of all relevant stakeholders. With this model in existence, the government could consider it a benchmark of entrepreneurial implementation for secondary schools in Malaysia. Researchers also proposed that the six highlighted components can benefit school teachers more effectively in school entrepreneurship activities across the year. Focusing on entrepreneurship development in secondary school can ensure that the government is prepared to produce human capital with entrepreneurial knowledge and qualities to lead the country in the future. Related to the desired vision of the nation that aspires to become an entrepreneurial country by the year 2030, the implementation of entrepreneurship in secondary schools should be strengthened.

### Recommendations

This study provides evidence of a strong correlation between talent skills, mentors, incubators, individual personality, role models, and family background in forming a schoolpreneur model. It recommended that an implementer of entrepreneurial activities in secondary school adopt this model so that those activities can be handled and carried out more efficiently. A suggestion for future research is to examine the relationship between the success of entrepreneurship in secondary schools and the efficiency of the schoolpreneur model. Following that, we support an additional study that could confirm and further develop other variables that can be considered when conducting

entrepreneurial activities. Future studies that look at how the demographics of the student community affect how this model is implemented in secondary schools might produce findings that differ from those found in this study.

### Limitations

This study proposes to develop a specific and flexible implementation model for entrepreneurial activities in secondary schools. In order to produce high-quality human capital in the field of entrepreneurship at an early stage. However, changes may occur with disseminating of study findings on the factors driving the implementation of entrepreneurial activities. Consequently, the emergence of new factors may be ideal for implementing school entrepreneurship activities. Next, the methodology of this study primarily focuses on the findings from the survey of students engaged in entrepreneurial activity. A qualitative research methodology, such as organized interviews, could provide a different viewpoint on the study's findings. Due to scheduling constraints, this study only included students involved in entrepreneurship activities from the Malaysian states of Perak, Selangor, and Negeri Sembilan.

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### Authorship Contribution Statement

Saifuddin: Conceptualization, Data Collection, Data Analysis, Writing. Janudin: Conceptualization, Editing/ Reviewing, Supervision. Salleh: Editing/ Reviewing, Supervision.

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