

**DETERMINE INFLUENCING FACTORS TOWARD
ENTREPRENEURSHIP ACTIVITIES IN MALAYSIA
USING BAYESIAN MODEL AVERAGING**

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APPROVAL

I/We * hereby to declare that I/we had read through this thesis and in my/our opinion that this thesis is acceptable in terms of scope and quality which fulfill the requirements for the award of Bachelor of Techonopreneurship with Honours

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DETERMINE INFLUENCING FACTOR TOWARDS ENTREPRENEURSHIP
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The report submitted in partial fulfillment of the requirements of the Bachelor of
Technopreneurship with (Honour)

FACULTY OF TECHNOLOGY MANAGEMENT AND TECHNOPRENEURSHIP
BACHELOR DEGREE IN TECHNOPRENEURSHIP WITH HONORS (BTEC)

JUNE 2018

DECLARATION

I declare that the work I am submitting for assessment contains no section copied in whole or in part from any other source unless explicitly identified in quotation marks and with detailed, complete and accurate referencing.

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DEDICATION

I would like to dedicate this thesis to both of my parent who has been my income resources and spiritual supporter who has supported and invested in the journey of preparing this thesis report. During the preparation of this thesis has consume few investments which mainly obtain from my parent's income support. Thus, they have the main contribution to allow me to complete my thesis and education journey. I would like this opportunity to send my gratitude and thousands of thanks for the sacrifices

ACKNOWLEDGEMENT

In this section, I would like to take the opportunity in regressing by gratitude and appreciation to my final year project (FYP) supervisor Dr. Fam Soo Fen as the senior lecture of University Teknikal Malaysia Melaka (UTeM). Dr. Fam has provided me tons of advice and guidance throughout my time period in preparation to the complete of this research.

Secondly, to Pn. Mislina binti Atan@Mohd Salleh as my panel supervisor of this research in providing second opinion and suggestion in the process of preparing the final year project.

Thirdly, to those researchers who have uploaded their articles, journal, books and research study which has been very much useful throughout my journey in preparing the final year project. I am very grateful for their kindness and generosity in sharing their finding and knowledge in assisting student as me to prepare and support our findings.

Lastly, to my friends and family for their moral support and opinion in assisting me during my obstacles and during my downtime of my journey in preparing this final year project. I am grateful to having all them throughout this journey.

ABSTRACT

This research examines the adaption of Bayesian Model Averaging (BMA) to determine the model uncertainty and the significance of the potential factor found to be influencing entrepreneurship activities. The aim of the research to identify the best model factors and the significant relation in between the potential key factors that may drive entrepreneurship activity. Many researchers argue in lacking literature documented on this research which may lead to model uncertainty (SME Corp. Malaysia, 2015, Arin et. al., 2015) where influencing determine what factors to selected among number of potential factor found to conduct the research study. Thus, Bayesian Model Averaging (BMA) is selected based on recent literature by highlighting the benefits of BMA is overcome the model uncertainty issues. In addition, BMA analysis able to identify the variables' importance and significance influence against the dependent variable. At the end of the research result able to identify and determine the important factor that may bring influence on the entrepreneurship activity.

Keywords: BMA analysis, Entrepreneurship activity, Potential Key Factors

ABSTRAK

Kajian ini meneliti penggunaan Bayesian Model Averaging (BMA) untuk menentukan model ketidakpastian dan kepentingan faktor yang berpotensi yang didapati boleh mempengaruhi aktiviti keusahawanan Tujuan penyelidikan ini untuk mengenal pasti faktor model terbaik dan hubungan ketara antara faktor utama yang berpotensi dalam mendorong aktiviti keusahawanan. Ramai penyelidik berhujah dengan kekurangan sastera yang didokumentasikan dalam kajian ini yang boleh menyebabkan ketidakpastian model di mana mempengaruhi menentukan apakah faktor-faktor yang harus dipilih di antara bilangan faktor yang berpotensi untuk menjalankan kajian penyelidikan. Oleh itu, Bayesian Model Averaging (BMA) dipilih berdasarkan kesusasteraan yang terkini dengan menonjolkan manfaat BMA mengatasi masalah ketidakpastian model. Di samping itu, analisis BMA dapat mengenalpasti hubungkait mengenai kepentingan antara faktor pemboleh ubah besas and pemboleh ubah bergantung. Pada akhir hasil penyelidikan in dapat mengenal pasti dan menentukan faktor penting yang mungkin menjadi asas pengaruhas kepada keusahawanan.

Kata Kunci: BMA analysis, Keusahawanan, Faktor Keushawanan

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CHAPTER 1

INTRODUCTION

1.0 Introduction

In past few decades, establishment of entrepreneurship has been strongly recommended and promote by every nation especially developing nations such as Malaysia. As entrepreneurship process is a that lead to SMEs creations this is owner or manager of the firms so called as the entrepreneurs (Lucky, 2012). Entrepreneurs used their knowledge and skills in establishing a business and to sustain in the market. Thus, entrepreneurship activities can be evaluated by the formation of small and medium enterprises (SMEs).

Entrepreneurship development and SMEs establishment is highly promoted by government as SMEs contributions has been proven that as one of the Malaysia main Gross Domestic Product (GDP) contributor for the pass decades. SMEs has contributed 36.6% to the GDP in 2016 with increment of 0.3% compared to year 2015 (DOSM, 2017) which has been recorded in economic census 2017. Therefore, entrepreneurial activity is a very important to economic growth of a nations.

According to Malaysia 10th Plan (10MP) a total of RM11.4 billion has been allocated under SME Masterplan 2010-2015 to promote entrepreneurship involvement and assist SMEs in early financial stages. (SME Corp. Malaysia, 2016) annual report a total of 920,624 SMEs has been established compared to annual report (SME Corp. Malaysia, 2011) with 662,939 establishment which showing incremental of 38.87%.

Various factors have influence in driving entrepreneur involving in SMEs which bring various of benefits and advantages to nation's development.

Many potential factors play role directly and indirectly in influencing entrepreneurship activities remain. A study conducted by Arin *et al.*, (2015) in Dubai and Thai and Turkina, (2014) in Canada. Both of the reseacher conducted the research in showing unclear and appearance of model uncertainty in studying the factors. Thus, to overcome model uncertainty in determining the potential factor that influence entrepreneurship activities, Bayesian Averaging Model has been widely used as the tool to identifying the model uncertainty such as Błażejowski and Kwiatkowski, (2015) and Ward E.Sanford, Gerolamo Casile, (2015). BłaZejewski and Kwiatkowski (2015) mentioned that BMA worth to be explored as it able to produce more confidence during model selection and increasing predictive reliability.

Bayesian Model Averaging (BMA) analysis widely used as a tool to determine model uncertainty in macrolevel potential variable influence towards economic growth, entrepreneurship and weather. For example, Faust *et al.*, (2013) used BMA to forecasting indicators of economic activity while (Berge, 2015) apply BMA in the research to evaluate predictive recessions using leading macrolevel indicators over business cycle.

Therefore, the result outcome of this research may help government to overcome model uncertainty to conduct further research in understanding and identifying the most influencing factors among the potential factors affecting the entrepreneurial activities. Thus, government able to use the factor being identify as the key references to focus in building more entrepreneurial activity to increase nation growth.

1.1 Problem Statement

According to Gomez, (2017) 90% of entrepreneurship in Malaysia unable to survive and additional information from SME Corp highlight report 2015/16 reporting nearly 50% of the start-up failed within 5 years' time. Based on a newspaper article published in MalayMail by Perera, (2016) share some factor of entrepreneur's failure which highlights on entrepreneurial attitude such as lack of focus, fear of failure, lack of persistence, inadequate capital, lack of integrity and insecurity. Mostly, entrepreneurial attitude has been taking account towards the failure

Thus, factor affecting the entrepreneurial activities can be define from another angle influencing macrolevel. As SME Corp. Malaysia, (2015) mention that many researches have conduct studies in between entrepreneurship and potential key determinants. In addition, Arin *et al.*, (2015) supported by mentioning on lack of journalize documentation or articles on this research. A few research has been conducted by looking into macrolevel determinant's affect towards entrepreneurial activities such as in Dubai by Arin *et al.*, (2015) and Thai and Turkina, (2014) in Canada.

Therefore, this research has been conducted by looking into potential macrolevel detereminant affect towards driving entrepreneurial activity in Malaysia and using Bayesian Model Averaging (BMA) method to identify the significant potential macrolevel determinant in Malaysia.

1.2 Purpose of the Study

The main purpose of this study is to identify key factors that drive entrepreneurial activity. Arin *et al.*, (2015) says that an entrepreneurship activity is influences by large number of uncertain factors. Further (Bylund and McCaffrey, 2017) mentioned that studies on uncertainty is important for entrepreneurship evaluations.

Therefore, the identify the significant potential macrolevel factor that may influence in entrepreneurial activity. Firstly, identifying the potential macrolevel factor that drive entrepreneurship activity.

Secondly, to measure entrepreneurship activity (TEA) in Malaysia using Bayesian Model Averaging (BMA) method.

Finally, to study how significant does the potential macrolevel factors affect the entrepreneurship activity. Due to uncertainty bring effect towards entrepreneur's decision making whereby unknown result awaits them after the decision action they haven't done. This may bring huge rewards or lose for the entrepreneurship. (Bylund and McCaffrey, 2017) said that uncertainty affect an entrepreneur's decision making in abide, evade, alter or exit on their entrepreneurship activity.

1.3 Research Questions

There are three research question to be study in this study which are;

1. What are key factors model that drive entrepreneurships?
2. How to measure factor influences of entrepreneurship activities (TEA)?
3. How far does the key factor significant to drive entrepreneurship?

1.4 Research Objective

There are three research objective which is aims to be achieve through the end of this research study;

1. To identify key factors model that drive entrepreneurship.
2. To develop empirical method (BMA) to evaluate factor influence towards entrepreneurship activities (TEA) .
3. To determine the significance of the key factors in drive entrepreneurship.

1.5 Significant of study

According to ('Summary SME Masterplan 2012-2020 Catalysing Growth and Income', 2012) government is promoting more SME establishment where government act as catalyst in creating environment and ecosystem for SMEs which encourages more entrepreneurs, innovation and investment by year 2020. Thus, outcome of this research study able to identify the potential influencing macrolevel factors toward entrepreneurship activities and acting a key reference to concern in making future budget and policies in boosting more entrepreneurship activities. Thus, enable government can act as super catalyst agent more effectively and with direct impact towards achieving objective target on year 2020.

1.6 Scope and Limitation

This study conduct studies on identifying the model of uncertainty that may potentially affect in driving entrepreneurship activities and studying the significance of the potential factor in driving entrepreneurship activity. This study is conduct based on open source secondary data of based on selection of few developed and developing Asia Pacific countries in time-period of 4 years has been selected. Six Asia Pacific is selected Japan, Thailand, India, Indonesia, Malaysia and China.

Limitation of this study is where by research is mainly focusing on these 3 potential macrolevel determinant which as human capital, level of development and institution as time constraint in data collection has various potential may bring influences directly and indirectly towards entrepreneurship activities (Arin *et al.*, 2015).

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this section talks about the literature of the variable selected to conduct the research in between the dependent variables entrepreneurship rate and 3 potential macrolevel determinant which might affect the entrepreneurship. Three categories of macrolevel determinant consisting a total of twelve independent variables which act as the independent variables to test the potential impact towards dependent variable which is entrepreneurship activities. These twelve potential variables have been categorized under three macrolevel determinant namely human capital, level of development and institution. Further decision is made in below for deep understanding of the potential factors towards dependent variables

2.1 Importance of entrepreneurship to country's economic growth

A lot of studies has been carried out to show the importance of entrepreneurship which acts as the major player and contributor to a country's economic (World Bank, 2015). Entrepreneurship contribute average of 40% to a country's income (GDP). This has been proven from the data release by Department of Statistic Malaysia (DOSM) stating in year 2016 SMEs has contributed 36.6% to the Malaysia GDP. Therefore, most of the developing countries encourage establishment

of entrepreneurship which allow the nation's GDP growth, investment stimulator and generating employment (SME Corp, 2016). Thus, policy-maker encourage more entrepreneur to be establish and play the major role in the nation's economic (Ghani, Kerr and O'Connell, 2014).

2.2 Entrepreneurship success/failure

Hundreds of scholars have conducted multiple studies, researches and experiments on the entrepreneur's survival with various macrolevel factors such as Augusto Felício, Couto and Caiado, (2014) on human capital, level of development (Liñán and Fernandez-Serrano, 2014; Arin et al., 2015).and Aparicio, Urbano and Audretsch, (2016) on institution factors. Entrepreneur undergoes different challenges to survive at different stage of the business cycle. Which this stage cycle is classified into five stages Existence, Staying Alive/Survival, Success, Grow, Sustain (Churchill and L. Lewis, 1983; Gomez, 2017).

Gomez, (2017) even mention that 90% of entrepreneurs unable to survive through start-up or existence stages which directly or indirectly effect towards country economic growth. SME Corp highlight in the 2015/16 report that nearly 50% of start-up failed within first five years. SME Corp, (2016) mostly highlighting on entrepreneurs' attitudes. In this study, we highlight and concentrate on the macrolevel factors that effects entrepreneurs through start-up phase. Thus, to determine the uncertain factors by empirical calculation and identifying significant relationship in between the entrepreneur activity and potential independent variables.

2.3 Total Entrepreneurial Activity (TEA)

Total Entrepreneurship rate is a rate of measurement measuring the percentage of working age individual of both male and female population who tend to involved in starting a business or has own a business which is active for less than 3 years and a

half. (Wong, Ho and Autio, 2005). Levie and Hart, (2011) mentions that GEM measures TEA based on an entrepreneurs' intention to exit. TEA index is combination of first two stage of the business which are nascent entrepreneur stage and new business owner-manager stage.

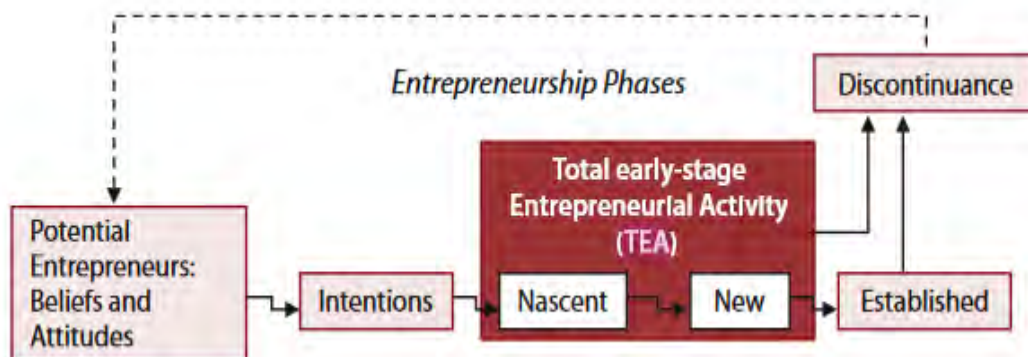


Figure 1: The Entrepreneurial phase and TEA definition

(Source: Bosma et al., 2012, p.10)

2.4 Human Capital, Level of Development and Institutions

Entrepreneurial activities have been frequently promoted in developing country by playing major role in boosting economic growth (Baumgartner, Pütz and Seidl, 2013; Huggins, Prokop and Thompson, 2017) such as employment, business opportunity, share market and investment (Unger et al., 2011). As a lot of entrepreneurs unable to sustain until they able to contribute back to country cause nations economic growths up and downs. This is also due to a lot uncertain factors that affect entrepreneurial activities. Thus, to more deeply understand and identify the uncertain factors uncertainty model has been selected to conduct the study. In this research, three categories of factors have been selected to study the aggregate level of entrepreneurial activity in a country to understand uncertain factor affect between human capital, level of development and institutions towards entrepreneurial activities.

2.4.1 Human Capital

Martin, McNally and Kay, (2013) say that an individual or group who acquire high level human capital consist of knowledge, skills, and other factors has greater result of performance outcome compare to those acquire low level of human capital. This statement is further supported by Augusto Felício, Couto and Caiado, (2014) state that human capital is a critical factor that affect an entrepreneurs success by looking on their performance in the entrepreneurial activities. Many research mentioned human capital attributed consisting of formal education, employment & owner experiences, skills, training and knowledge which entrepreneur transfers the human capital into business by explore business opportunities. (Unger et al., 2011; Scott Shane, 2012)

Arin et al., (2015) and Huggins, Prokop and Thompson, (2017) also say that element consist in human capital allow entrepreneurs to foresee and grab the opportunities in earning huge amount of profits. Therefore, in this research study 2 aspect of human capital is selected among the various human capital aspect to study the relationship between entrepreneurial activities and human capital. Thus, population, and unemployment variables are selected as the aspect to study the relationship.

2.4.1.1 Population

Population is said to be nature baseline for active economic activity Ghani, Kerr and O'Connell, (2014) where number of population and growth cause the demand and supply of goods and services to occur in a location says Arin et al., (2015). This is because population growth and changes creates new business opportunities and emerge of entrepreneurship to fulfill the demands of the populations where Delfmann et al., (2014) mention that population growth allow the stimulation establishment of new firms which lead to new economic activities as the needs and wants of population in goods and services vary as by times varies. Delfmann et al., (2014) even say large population size and population growth in a location can become a pull factor for entrepreneur establishment whereby increase in demand for goods and services.

Other than that, population relates to labor force for entrepreneurial activities where increase in population offers sufficient labor force for a firm operation process. Whereby, increase in population put force on salaries where they need job to survive thus lower entrepreneur's opportunity cost in establishing new firms or business opportunities. As many studies and research shows positive relationship between population growth and entrepreneurial start-up such as Bosma and Sternberg, (2014); Freire-Gibb and Nielsen, (2014); Ghani, Kerr and O'Connell, (2014).

Delfmann et al., (2014) stated another different opinion as declining population bring affect towards level of support in terms of financial, emotional and additional support thus causing on adapting towards demographics changes thus triggering self-employment for survival. Necessity driven entrepreneurship are likely to be higher in lower population region due to limited employment chances. (Williams and Williams, 2014). As motivation in being entrepreneurship is from the source of intention, motivation and necessity of the certain individual in a region.

2.4.1.2 Unemployment

Unemployment has been selected as factor from macro-economic level to study the relationship towards factors in driving entrepreneurship. Unemployment may promote to entrepreneurship due to insufficient job opportunity in market which lead an individual to self-employment out of choice. (Arin et al., 2015; Audretsch, Dohse and Niebuhr, 2015) Audretsch, Dohse and Niebuhr, (2015) also says that higher the level of unemployment higher the entrepreneurial intentions which is obtained from the labor economics literature. Thus, unemployed individual choose self-employment which is usually refers to entrepreneurship become the choice to survive and to prevent unemployment in long terms. (Huggins, Prokop and Thompson, 2017)

Other than unemployment cause individual to have entrepreneurial intention, lower opportunity cost in forming a firm boost their entrepreneurial intention in being self-employed. Forming or starting a firm with lower opportunity cost allow

entrepreneurs to reduce the risk of obtaining a goal by giving up another. Thus, this higher unemployment rate attracts more entrepreneurial entry by unemployed individual. Fritsch, Kritikos and Pijnenburg, (2015) say that a firm start-up is relatively low during the period of low unemployment rate due to the job opportunities for employment is readily available. This statement is support by many researches that probability for unemployed individual to become entrepreneur is higher compared to employed individual. In addition, unemployed individual may foresee the market availability in creating new business ideas or providing new good and services to market.

On the other side, according to Audretsch, Dohse and Niebuhr, (2015) the true relationship between unemployment and entrepreneurship has been stayed complex to one another and cause researcher to be clueless for decades. This is where some empirical studies and research show mix and ambiguous result on the relationship between unemployment and entrepreneurship. This is due to unemployment of an individual can be cause by many other external factors which might not lead to change in status quo to self-employment. Thus, the true relationship in between unemployment and entrepreneurship remain unclear therefore, this study intends to use empirical way to determine the significant of unemployment towards entrepreneurship.

2.4.2 Level of Development

Level of development is select as second category to evaluate as the factor to drive entrepreneurship activity. To determine the relationship between level of development towards entrepreneurship activity and how significant does this factor affect the dependent variable in this study. Number of research against the relationship between level of development and entrepreneurship shows a positive result that level of development creates business opportunities for entrepreneur to establish new form of goods and service sectors Arin et al., (2015) due to development and change in market needs.