THE ROLE OF SUPPORT MECHANISMS ON PRODUCT DEVELOPMENT PERFORMANCE AMONG TECH START-UPS IN MALAYSIA

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STUDENT DECLARATION

I declare that this project paper entitled '**The Role Of Support Mechanisms On Product Development Performance Among Tech Start-Ups In Malaysia**' is the result of my own research except as cited in the references. The project paper has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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SUPERVISOR'S VERIFICATION

"I hereby declared that I have read this thesis and in my opinion this thesis is sufficient in terms of scope and quality for the award of Bachelor of Technopreneurship (Honour)"

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DEDICATION

This thesis is dedicated to my beloved parents Azman Bin Mohd and Zaleha Binti Hj. Yahya, who taught me the value of education and always supported me through ups and down. Besides, my supervisor and panel who have been guided me throughout the research. Lastly, to my friends who assisted me through the journey of the research.

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ABSTRACT

Entrepreneurship and innovation are important in all business area, thus give a huge contribution to our country economic growth. Innovation is related with creation of product development process. For entrepreneurial start-up, building a product is quite challenge as they are newly created company that lack of resources. Hence, Malaysian government and other agencies have launched several programs and schemes to boost new business activities especially for start-ups. This research aims to study the role of support mechanisms on product development among tech start-ups in Malaysia. Specifically, the study analyses the relationship of mentoring, infrastructure support services and financial assistance with the product development performance of tech start-ups in Malaysia. The research adopts a quantitative approach whereby questionnaire surveys were used to gather data. The researcher had distributed survey questionnaires to 128 respondents and the data anayzed using SPSS software. The results were showed that there is positive relationship between mentoring, infrastructure support services and financial assistance on product development performance. Lastly, further research can be conducted for this research in order to get deep insights and give contribute to the industry and government.

Keywords: *product development performance, tech start-ups, mentoring, infrastructure support services, financial assistance*

ABSTRAK

Keusahawanan dan inovasi adalah penting dalam semua bidang perniagaan, selain itu dapat memberi sumbangan besar kepada pertumbuhan ekonomi negara kita. Inovasi ialah perkara yang berkaitan dengan penciptaan proses pembangunan produk. Untuk usahawanan baharu, pembinaan produk agak mencabar kerana mereka adalah dalam kalangan syarikat yang baru diwujudkan dan kekurangan sumber. Justeru, kerajaan Malaysia dan agensi-agensi lain telah melancarkan beberapa program dan skim untuk meningkatkan aktiviti perniagaan baru terutama untuk mereka yang memulakan perniagaan. Kajian ini bertujuan untuk mengkaji peranan mekanisme sokongan terhadap pembangunan produk di kalangan teknologi usahawan baru di Malaysia. Khususnya, kajian itu menganalisis hubungan khidmat mentor, perkhidmatan sokongan infrastruktur dan bantuan kewangan terhadap prestasi pembangunan produk dalam kalangan teknologi usahawan baru di Malaysia. Penyelidikan menggunakan pendekatan kuantitatif di mana tinjauan kaji selidik digunakan untuk mengumpul data. Penyelidik telah mengagihkan soal selidik soal selidik kepada 128 responden dan data yang diperoleh menggunakan perisian SPSS. Hasilnya menunjukkan terdapat hubungan yang positif antara khidmat mentor, perkhidmatan sokongan infrastruktur dan bantuan kewangan terhadap prestasi pembangunan produk. Akhir sekali, kajian lanjut boleh dilakukan untuk penyelidikan ini untuk mendapatkan pandangan mendalam dan memberi sumbangan kepada industri dan kerajaan.

Kata kunci: prestasi pembangunan produk, teknologi usahawan baru, khidmat mentor, perkhidmatan sokongan infrastruktur, bantuan kewangan.

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LIST OF ABBREVIATIONS

UTeM	Universiti Teknikal Malaysia Melaka
TEA	Total Early-Stage Entrepreneurial Activity
GEM	Global Entrepreneurship Monitor
R&D	Research and Development
SME	Small and Medium Enterprise
MARA	Majlis Amanah Rakyat
MAGIC	Malaysian Global Innovation & Creativity Centre
MDEC	Malaysia Digital Economy Corporation
TEGAS	Tabung Ekonomi Gagasan Anak Bumiputera Sarawak
TERAJU	Unit Peneraju Agenda Bumiputera
GDP	Gross Domestic Product
MTDC	Malaysian Technology Development Corporation
TPM	Technology Park Malaysia
SPSS	Statistical Package for Social Science
ANOVA	Analysis of Variance
UPUK	Unit Pembangunan Usahawan Kedah
FAMA	Federal Agricultural Marketing Authority
MARDI	Malaysian Agriculture Research and Development Institute
MOA	Ministry of Agriculture and Agro-based Industry
MOSTI	Ministry of Science, Techology and Innovation
ICT	Information and Communication Technologies
MSC	Multimedia Super Corridor

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The title of this research is the role of support mechanisms on product development among tech start-ups in Malaysia. In this chapter, the title of the research will be introduced briefly. Besides, this chapter will be included the background of study, research problem, research questions, research objectives, scope, limitations and significance of this research.

1.2 BACKGROUND OF THE STUDY

Basically, innovation and entrepreneurship are connected with each other. According to Global Entrepreneurship Monitor (GEM) Global Report 2017/2018, it mentioned that entrepreneurs can create dynamic market by introducing new product and launch into a market. The great product development performance can satisfy the consumer needs and the product can achieve higher competitive advantages than the

competitor. Table 1.2 below shows the Malaysia innovation level for Total Early-stage Entrepreneurial Activity (TEA) by region.

Table 1.2: Malaysia Innovation Level For Total Early-Stage Entrepreneurial Activity (TEA) by Region

Region	Economy	Innovation (product is new to all or some customers and few/no businesses offer the same product)	
		Score	Rank/54
Asia	Malaysia	29.3	15

Source: Global Entrepreneurship Monitor (GEM) Global Report 2017/2018

Based on the table above, Malaysia ranked on 15th out of 54 countries in the innovation level in total early-stage entrepreneurial activity (TEA). TEA can be defined as the percentage of adult population that ages between 18 to 64 years who are getting involve in business start-up or already started a business which less than 42 months old. From the above information, we can deduce that the achievement of Malaysia for innovation level among TEA still consider as good performance.

Product development is a set of activities starting with the perception of market opportunity (idea) and ending with the sale of the product (launch). Entrepreneurship and product development play a vital role in the economic growth in Malaysia. Both business managers and marketing agree that one of the important elements of an organization's long-term survival is a success in new product development. This has been agreed by A. Orcik., P. Vrgovic & Z. Tekic (2014), which in order for an organization to stay competitive in a long term and can face to the changing environment, they need to provide quality, variety, novelty and functionality of products for their customers. Therefore, this requires continuous improvement of existing products, as well as faster development of new ones.

Furthermore, A. Salamzadeh & K. H. Kamaworita (2015) found that the product development actively held during the seed stage of start-ups lifecycle. The

initial capitals are used to develop the product or services. This stage is also a starting point where start-ups seeking for support mechanisms to help them to grow. Support mechanisms play a significant role in the product development of start-ups. These support mechanisms include, angel investors, business incubators, science and technology parks, accelerators, small business development centres, venture capitals, and so on. However, the role of support mechanisms that only will be highlighted in this research are accelerators, incubators and government.

This research is focused on the level of product development performance among tech start-ups in Malaysia that has been participated in program or incentive from the support mechanisms (accelerators / incubators / government). The Schumpeter's Theory has been reviewed in order to provide the understanding of idea and concept about entrepreneur and innovation. Meanwhile, Triple Helix Model will be explained in order to gain understanding of the role of support mechanisms around the world of entrepreneur ecosystem which drive them to innovate. It is widely known that these support mechanisms are important as one of determinant to improve the product development performance among new firms especially for technology-based start-ups.

1.3 PROBLEM STATEMENT

In Malaysia, there are many available growing start-ups companies. It has clearly shown by GEM Global Report 2017/2018 in Table 1.2, which the activities of new product development that offers to customers from entrepreneurs who just started their new businesses are in a good level. As a result, to build a successful company in the longer term, is a much tougher challenge because of many competitors from other companies are existing.

However, we cannot deny that start-ups lead to high rate of failure. A. Salamzadeh & K. H. Kawamorita (2015) stated that majority of the start-ups failed at early stages and less than one third of them successfully turned into companies. In

Official Website of Bernama News (2017), it is reported that the rate of failure of businesses among local entrepreneurs is still high and at an unsatisfactory level. From 100 companies that have registered with Companies Commissions of Malaysia, only 18 companies are successful in within 5 years period. It also stated that, one of the reasons of the failure is because the entrepreneur's attitude who not really serious, lack of knowledge and counselling, fewer networking and not performing any market research before.

Moreover, N. Tripathi, P. Seppänen, G. Boominathan, M. Oivo & K. Liukkunen (2017) defined a start-up as a company with limited experience, working with inadequate resource, and influenced by several factors, such as investors, customers, competitors, and the use of dynamic product technologies. J.C. Picken (2017) also stated that the start-ups have informal organization, loosely structured and fluid. In the start-up stage, the focus is narrow, the commitment of time and resources is limited and the economic risks are modest. This can be proved by GEM Global Report 2017/2018 in table 1.3 below.

Table 1.3: Malaysia Score and Rank of Self Entrepreneurial Perceived Capabilities, Nasent Entrepreneurship Rate and Discontinuation of Businesses by Region.

Region	Economy	Perceived Capabilities		Nascent Entrepreneurship rate		Discontinuation of Businesses	
		Score	**Rank/54**	**Score**	**Rank/54**	**Score**	**Rank/54**
Asia	Malaysia	46.1	33	15.4	3	8.3	6

Source: GEM Global Report 2017/2018

Perceived capabilities can be defined as the entrepreneurs believe which they have required skills and knowledge to start a business. Unfortunately, Malaysia's rank for the perceived capabilities was at 33rd. The rank itself have been portrayed

that start-ups in Malaysia felt worried to start a business due to insufficient of knowledge and skills.

Next aspect is nascent entrepreneurship rate, it means the population of entrepreneurs that already started their businesses less than 4 months old and has not paid salaries or wages. Malaysia was at the highest rank which is on 3rd, thus it clearly showed that majority start-ups companies are facing with this serious issues.

The discontinuation of businesses defined as the population of entrepreneurs that have discontinued their businesses in the past 12 months by selling, closed down or discontinued the relationship with the business. Irony, Malaysia ranked on the 6th place. This resulted as, there are many companies in Malaysia including start-ups that have discontinued their businesses, thus it shown that the failure rate is high.

On product development context, L. Rehnberg (2015) stated that majority of the start-ups fail and most of the product that has been developed was not successful because the product development cycles are longer and costly. M. Hafezi & H. Zolfagharinia (2018) found that one of the highest challenges that prevent firms from developing products is the high research and development cost found specifically in the technical industry. X. Wang, H. Edison, S. S. Bajwa, C. Giardino & P. Abrahamsson (2016) also deduced that building a right product is implied as higher challenges during product development stage which is at concept stage, in development and working prototype stages. The creation of concept idea into product requires a lot of strategies and aspects that need to be seen.

According to Official Website of Utusan Online (2017), it has been reported that one of the factors of start-ups in Malaysia have failed is because they tend to rush in building their own product and brand. We can see in our country, there are a lot of brands and products are marketed such as Raja Afiq (Rad.Kl), Shaick Saifullah (Ombak Printing) and many more. These have been resulted to majority of start-ups chase to launch their product faster without doing any research. In fact, business needs to start from scratch and plan carefully. Without sufficient knowledge about product development, start-ups will face the difficulty with each of the process.

Other than building a product, the highest challenges at the each product development stage are customer acquisition and funding. Funding is important at the

early stages of product development, especially at the development and prototyping stages. This is because start-ups have no products to sell therefore they need funding to sustain the product development (X. Wang., et al, 2016). This argument also agreed by M. V. D. Braak, J. M. J. Becker and M. V. P. Pessoa (2018) start-ups always insufficient of resources, budget and knowledge.

Based on the statement above, we can conclude that start-ups always tend to face in lack of resources, financial and knowledge as they get involve in product development process. M. O. Oduola and A. M. Yakubu (2017) mentioned that most entrepreneurs have innovative idea but they do not acquire enough resources for product development and commercialization. The transition of creative idea into real product that can be marketed is the hardest process if each stage are not properly funded.

In resources context, according to A. Hussain & W. Nurul (2017), the researchers stated that innovation is everywhere but existing materialized and testable research that provides accurate measurements is a bit scarce, especially in developing countries like Malaysia. This mean, start-ups always can generate great innovative ideas. However, they always have the tendency of insufficient resources include technology, skilled workers and infrastructure for research and development.

According to O. F. Yew (2014), the authors stated that new product development is important element for every company to survive. However, the author claimed that the success rate of new products is still low. New product development is complex and large activity whose outcome remains largely unpredictable. The importance of product development among every company also has been mentioned by M. V. D. Braak, J. M. J. Becker & M. V. P. Pessoa (2018). The dynamic of the market increasing resulted in many companies to become intense in building a new product that have quality value and complete in a short time. To stay survive in this competitive market, product development has become crucial at this moment.

1.4 RESEARCH QUESTIONS

After identify the problem statement, these are few questions that have been made to solve the issue:

1) To what extend do support mechanisms contribute towards product development performance among tech start-ups in Malaysia?
2) What is the relationship between the role of support mechanisms and product development performance among tech start-ups in Malaysia?
3) What is the most influential role of support mechanisms that give impact on product development performance among tech start-ups in Malaysia?

1.5 RESEARCH OBJECTIVES

The purpose of this research is to study the role of support mechanisms on product development among tech start-ups in Malaysia. The objectives of this research are formulated as follow:

1) To study the support mechanisms contribution towards product development performance among tech start-ups in Malaysia.
2) To examine the relationship between the role of support mechanisms and product development performance among tech start-ups in Malaysia.
3) To identify the most influential role of support mechanisms on product development performance among tech start-ups in Malaysia.

1.6 SCOPE OF STUDY

This research was to analyze the contributions of support mechanisms in helping the tech start-ups on product development. The scope of the research will be only focused in the role of support mechanisms that were from government or other agencies that provide programme for product development activities for tech start-ups. For the independent variable, the role of support mechanisms that only be studied in this research are mentoring, infrastructure support services and financial assistance. Meanwhile the dependent variable will be product development performance.

The respondent for the research will be targeted from new companies or start-ups who performs a technology-based business. The range of company operation will be less than 0 to 10 years and from manufacturing and services sectors. Besides that, in order to strengthening the research, the companies that were chosen must have been participated in any programme from government or other agencies. Through that, they can portray the answer in questionnaire according to their past background business.

1.7 SIGNIFICANCE OF STUDY

This research is significance for students to gain in-depth information about the function of support mechanisms that are available in Malaysia which can help entrepreneurs to be actively involved in product development activities in their business. Besides, this research gives new or existed companies in Malaysia a motivation or intention to be innovative by constructing their business idea and develop it into a new product. They can seek to variety support mechanisms in Malaysia to help them in developing product or services. Lastly, through this research, the results of product development performance among new companies in Malaysia will be gained. The results from the surveys are valuable for the