

AN EVALUATION OF THE BUSINESS SUPPORT SERVICES RENDERED BY
UNIVERSITY-BASED INCUBATOR

NUR AZRI BINTI MAHMUD

A thesis submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Management (Technology).

Faculty of Management
Universiti Teknologi Malaysia

JULY 2015

To my parents

Mr. Mahmud Hj. Edan & Mrs. Hasinah Hamid

For their endless love, continues support and courage

And

To My Little Brothers

Mohd. Ismat & Mohd Ikmal

They have been my inspiration and my soul mates.

This humble work is a sign of my love to you!

ACKNOWLEDGEMENT

Alhamdulillah for all His blessings that made this journey possible. Completing this thesis is one of the major achievements of my life, and there are many who should be acknowledged for the role that they have played.

First, it is with immense gratitude that I acknowledge the invaluable supervision of my supervisor, Dr. Md. Razib Bin Arshad. He has been dedicated in guiding me with unwavering support throughout this academic journey. His immense knowledge, optimism, patience, and encouragement have been my source of motivation throughout this journey. I am truly honored and humbled to have had such a dedicated supervisor.

I express my sincere thanks to Dr. Ahmad Jusoh for the statistical analysis aspect of this thesis, and other member of Faculty of Management for their invaluable help in preparing this thesis.

I am deeply indebted to Muhammad Haikal Bin Ab Rahim who has supported me over the last five years. His keen support and encouragement were a great help throughout the course of this research work.

Finally, I would like to thank my friends whose acquaintance I cherish. Special thanks to Fiza, Wani, Qurattu, Aini, Ira, Tasha and Amir. Thank you for listening, offering me advice, and supporting me through this entire process. I look forward to continuing our relationships.

ABSTRACT

Business incubation program has been established in Malaysia to help new businesses for almost two decades. Many developing countries including Malaysia advocates that business incubation with present of comprehensive support services will contribute to the economic growth of the country. However, appropriate support services that should be rendered by the incubator to their incubatees remain unclear especially in Malaysia. This raises a big problem when the expectations of the incubatees did not concomitant with the services provided by the incubator. Therefore, this research aims to examine more preferred support services, which the incubatees find useful and can contribute to the their success. Apart form that, researcher aims to critically examine the expectation gap between incubatee's perceptions of importance of support services listed with the existence availability/quality of the support services that have been provided by incubator. Four main types of support services were examined to be most common support services which are resources provision, training program, consultancy and management services and network mediation. In order to answer the objective of this research, the result has been analyzed in detail by descriptive statistics, paired t-test, and gap index formula. Findings reveal that networking mediation holds a huge gap in between incubatee's expectation and the services availability while training program, consultancy and management services and resources provision was recorded to have a smaller expectation gap. Researcher has suggested few recommendations at the end of this study and it is hoped that, general guidelines for the future incubator in formulating their business strategy could be proposed.

ABSTRAK

Program inkubasi perniagaan telah ditubuhkan di Malaysia bertujuan untuk membantu perniagaan baru dan telah dilaksanakan selama hampir dua dekad. Banyak negara-negara membangun termasuk Malaysia berpendapat bahawa inkubasi perniagaan dengan adanya perkhidmatan sokongan yang komprehensif akan menyumbang kepada pertumbuhan ekonomi negara. Walau bagaimanapun, perkhidmatan sokongan yang sesuai yang perlu diberikan oleh inkubator untuk penyewa mereka masih tidak jelas terutamanya di Malaysia. Ini menimbulkan satu masalah besar apabila jangkaan ahli-ahli penyewa tidak seiring dengan perkhidmatan yang disediakan oleh pihak inkubator. Oleh itu, kajian ini bertujuan untuk mengkaji perkhidmatan sokongan yang menjadi pilihan, di mana ahli-ahli penyewa mendapati ianya berguna dan boleh menyumbang kepada kejayaan mereka. Selain daripada itu, penyelidikan ini bertujuan untuk mengenal pasti jurang jangkaan antara persepsi penyewa terhadap kepentingan perkhidmatan sokongan yang disenaraikan dengan ketersediaan perkhidmatan sokongan yang telah disediakan oleh inkubator. Empat jenis perkhidmatan sokongan telah disenaraikan untuk menjadi perkhidmatan sokongan yang paling penting antaranya peruntukan sumber, program latihan, khidmat rundingan dan pengurusan dan rangkaian. Dalam usaha untuk menjawab objektif kajian ini, keputusan penyelidikan telah dianalisis secara terperinci menggunakan statistik deskriptif, ujian-t berpasangan, dan formula indeks jurang. Keputusan penyelidikan menunjukkan bahawa rangkaian memperoleh jurang yang paling besar di antara persepsi penyewa terhadap kepentingan perkhidmatan sokongan dengan ketersediaan perkhidmatan sokongan manakala program latihan, perundingan dan pengurusan peruntukan dicatatkan mempunyai jurang jangkaan yang lebih kecil. Penyelidik telah mencadangkan beberapa cadangan di akhir kajian ini dan adalah diharapkan, garis panduan umum untuk inkubator masa depan dalam merangka strategi perniagaan mereka boleh dicadangkan.

TABLE OF CONTENTS

	TITTLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLE	xi
	LIST OF FIGURE	xiv
	LIST OF ACRONYMS	xv
	LIST OF APPENDICES	xvi
CHAPTER 1	INTRODUCTION	
	1.1 Background of Study	1
	1.2 Problem Statement	5
	1.3 Research Objective	7
	1.4 Research Question	7
	1.5 Scope of Study	8
	1.6 Importance of Study	9
	1.7 Summary	10
CHAPTER 2	LITERATURE REVIEW	
	2.1 Introduction	11
	2.2 History and Development of incubator	11
	2.3 Definition	15
	2.3.1 Incubation	15

2.3.2	Incubatee	18
2.3.3	Incubator	18
2.4	The Importance of Incubator in Malaysia	20
2.5	The Characteristic of Incubator	22
2.6	Type of Incubator	28
2.7	Theoretical Framework	31
2.7.1	Resource Provision	33
2.7.1.1	Resource Availability	34
2.7.1.2	Resource Quality	35
2.7.2	Training Program	36
2.7.2.1	Training Availability	36
2.7.2.2	Training Assistance	36
2.7.3	Consultancy & Management Service	37
2.7.3.1	Marketing & Promotion Management	38
2.7.3.2	Financial Management	38
2.7.3.3	Staff & Personnel Management	39
2.7.3.4	Strategic Management	39
2.7.4	Network Mediation	40
2.7.4.1	Access to network	40
2.7.5	Business Performance	42
2.8	Conclusion	43
CHAPTER 3	RESEARCH METHODOLOGY	
3.1	Introduction	44
3.2	Research Design	44
3.3	Research Approach	46
3.4	The Survey Questionnaire	47
3.5	Measurement of Constructs	48
3.5.1	Independent Variables	49
3.5.2	Dependent Variables	53
3.6	Data Collection Procedures	54
3.6.1	Primary Data Sources	54
3.6.2	Secondary Data Sources	55

3.7	Population and Sampling	56
3.8	Reliability and Validity	59
3.9	Data Analysis Procedures	62
3.9.1	Descriptive Statistic	62
3.9.2	t-test and ANOVA	63
3.9.3	Gap Index Formula	64
3.10	Conclusion	66

CHAPTER 4 DATA ANALYSIS AND FINDING OF THE RESEARCH

4.1	Introduction	68
4.2	Participants Characteristics	68
4.3	Research Objective 1	70
4.3.1	Importance - Resources Provision	71
4.3.2	Importance - Training Program	72
4.3.3	Importance - Consultancy and Mngt service	74
4.3.4	Importance - Networking Mediation	76
4.3.5	Overall Construct of Importance	77
4.4	Research Objective 2	79
4.4.1	Availability - Resources Provision	80
4.4.2	Availability - Training Program	81
4.4.3	Availability - Consultancy and Mngt service	83
4.4.4	Availability – Networking Mediation	85
4.4.5	Overall Construct of Availability	86
4.5	Research Objective 3	88
4.6	Research Objective 4	98
4.5	Summary	101

CHAPTER 5 DISCUSSION AND CONCLUSION

5.1	Introduction	104
5.2	Discussion of the Research	104
5.2.1	Research Objective 1	105
5.2.2	Research Objective 2	107
5.2.3	Research Objective 3	108

5.2.4	Research Objective 4	115
5.3	Implication	116
5.4	Limitations and Future Research	118
5.5	Concluding Remarks	119
REFERENCES		121
APPENDICES		

LIST OF TABLE

TABLE NO.	TITTLE	PAGE
Table 2.1	Failure rate of startups	14
Table 2.2	Evolution stage of Business Support Services for Incubation.	24
Table 2.3	Types of Support Services offered by Incubator	25
Table 2.4	Services offered by incubator (vonZedtwitz, 2006).	26
Table 2.5	Type of incubator by Rustam (2011)	28
Table 2.6	Classification of incubators by Champbell and Temali (1984)	29
Table 2.7	Comparison of availability of support services between university-based incubator and non-university incubator. (Yongning, 2012)	29
Table 2.8	List of Supported Propositions	41
Table 2.9	List of main proposition	42
Table 3.1	Resource allocation items	49
Table 3.2	Training program items	50
Table 3.3	Consultancy & management services items	51
Table 3.4	Network mediation items	52
Table 3.5	Business performance items	53
Table 3.6	List of incubators in Malaysia.	56
Table 3.7	List of Public University based incubator.	57
Table 3.8	Sampling criteria	58
Table 3.9	Simple random sampling processes	59
Table 3.10	Alpha Cronbach reliability range	60
Table 3.11	Cronbach's alphas values for all compenents	61
Table 3.12	The mean range	63

Table 3.13	The expectation gap range	64
Table 3.14	Gap index formula	65
Table 3.15	Gap index indicator	65
Table 3.16	Example of adaptation of gap index formula	65
Table 3.17	Analysis methods	67
Table 4.1	Percentage of respondent rate	69
Table 4.2	Characteristics of participating incubatees	69
Table 4.3	Descriptive analysis on resources provision construct.	71
Table 4.4	Descriptive analysis on training program construct.	72
Table 4.5	Descriptive analysis on Consultancy and Management service construct.	74
Table 4.6	Descriptive analysis on networking mediation construct.	77
Table 4.7	Mean and rank for the importance of support services.	78
Table 4.8	The 5 highest mean value among the items.	78
Table 4.9	The 5 lowest mean value among the items.	79
Table 4.10	Descriptive analysis on resources provision construct.	80
Table 4.11	Descriptive analysis on training program construct.	81
Table 4.12	Descriptive analysis on Consultancy & Management service construct.	83
Table 4.13	Descriptive analysis on networking mediation construct.	85
Table 4.14	Mean and rank for the availability of support services.	86
Table 4.15	The most 5 highest mean value among the items.	87
Table 4.16	The most 5 lowest mean value among the items.	87
Table 4.17	Paired Samples Test	89
Table 4.18	Paired t-test sample statistics on the importance of services that an incubator can provide and availability services received from an incubator.	89
Table 4.19	Gap different under resource provision construct.	90
Table 4.20	Gap different under training program construct.	91
Table 4.21	Gap different for consultancy and management services construct.	93
Table 4.22	Gap different for network mediation services construct.	95
Table 4.23	Gap and rating scores for the importance of services that	96

	an incubator can provide and availability services received from an incubator.	
Table 4.24	The most 5 smallest gaps among the items.	96
Table 4.25	The most 5 hugest gaps among the items.	97
Table 4.26	Descriptive analysis on business performance elements.	98
Table 4.27	Respondent rate by person for business performance construct.	99
Table 4.28	Gap index for four support services based on number of respondents.	100
Table 4.29	Research analysis summary based on the research objective.	103

TABLE OF FIGURES

FIGURE NO.	TITTLE	PAGE
Figure 2.1	Lalkaka incubator development model	17
Figure 2.2	Job creation by the ICT industry, 2003–2007	20
Figure 2.3	Evolution stage of Business Support Services for Incubation	23
Figure 2.4	Proposed research framework	32
Figure 3.1:	List of Independent and Dependent Variables.	48
Figure 5.1	Spider web for expectation gap	109
Figure 5.2	Spider web for every item in this research	110
Figure 5.3	Spider web for network mediation construct	111
Figure 5.4	Spider web for training program construct	112
Figure 5.5	Spider web for resource provision construct	113
Figure 5.6	Spider web for consultancy and management construct	114

LIST OF ACRONYMS

AUD	:	Australian Dollar
GDP	:	Gross Domestic Product
ICT	:	Information and communication technologies
MARA	:	Majlis Amanah Rakyat
MARDI	:	Malaysian Agricultural Research and Development Institute
MdeC	:	Multimedia Development Corporation
MdeC-TDF	:	Multimedia Development Corporation–Technopreneur Development Flagship
NBIA	:	National Business Incubation Association
NINA	:	National Incubation Network Association
RBV	:	Resource Based View
RM	:	Ringgit Malaysia
SPSS	:	Statistical Package for the Social Sciences
USA	:	United State of America

LIST OF APPENDICES

Appendix A	:	Letter of support from the faculty
Appendix B	:	Questionnaire
Appendix C	:	Sample of online survey
Appendix D	:	Sample of respondent response
Appendix E	:	SPSS Output – Reliability Analysis
Appendix F	:	SPSS Output – Descriptive Analysis
Appendix G	:	SPSS Output – Paired t-test Analysis
Appendix H	:	SPSS Output – Gap Different Analysis

CHAPTER 1

INTRODUCTION

1.1 Background of Study

In the 21st century, the core of economic development of any countries depends indirectly on the development of entrepreneurs and creation of new enterprises (Studdard, 2006). Udell, 1990 stated that by focusing on the development of entrepreneur, enterprises are capable in driving innovation, create job opportunities and generate high gross domestic product (GDP). Such can also be reinforced where more attention has been granted to the development of new enterprises and how new enterprises can make effective use of innovation, integrate information and knowledge in order to constantly create value for their business (Khalid, 2009).

Today, in this challenging world, society and consumers become more diversified, and require changes in every aspect especially in terms of new products and services. Consumers demand for changes and they prefer to have innovative and creative environment around them (Anna, 2007). In order to comply with the consumers demand, the industry and market need to take action on this insistence and indirectly existing enterprises and newly developed enterprise need to blend with market new needs (Abetti, 2004). Thus, both developed and developing countries put forth their plans to develop their economy and create employment opportunities by focusing on the creation of innovative and creative enterprises (Robin, 2009). Therefore, innovation becomes a drive to stimulate the development and create value for enterprises.

Due to that, innovative cultures are recommended to be implemented in every enterprise. For existing enterprises, they may not face a big problem to implement such changes relatively because they are already relatively equipped with the resources including financial sources, experience and management skills. On the other hand, for the newly developed enterprises, they merely face a major problem to suit the market need with their business process and they are more vulnerable to failure. According to Hamdani (2006) new enterprises tend to fail in higher proportions than mature businesses. Research shows that new enterprises only managed to survive in their first five years after establishment (Kanagarajah, 2006). This is due to lack of management knowledge, skills and funding sources.

To overcome the failure rate problem, various initiatives have been introduced by the government to enhance the survival rates of new enterprises such as providing subsidies, controlling the inflow of foreign products, provision of business soft loans from government, lowering interest rates charged on loans, business personal training in entrepreneurship skill and establishment of business incubation (Sudi, 2013). Sudi also mentioned that out of several approaches that have been listed above, business incubation proved to be more compatible to overcome the business failure. This fact is in line with the statement stated by Andrew (1998) in a recent research which indicates that the platform of entrepreneurship and incubation has been identified to be the most important policy for governments in order to assist new enterprise in technology innovation, entrepreneurial information diffusion and operation fund access. Building from that idea, incubation is believed to be one of the most effective alternatives for assisting entrepreneurs in starting a new business and helping them survive during the start-up period (Antal, 2006).

In order to understand the function of incubation, various definition of incubation been discussed. Bergek & Norrman (2008) defined incubation as a platform designed to help start-up companies to improve survival rates, growth potential and competencies of the firms they serve. While, Brooks (1986) explained

that incubation is a process through which an attitude of encouragement and support for start-up companies is fostered within the community. Hackett and Dilts (2004) reinforced the fact that incubation can be referred as a shared office-space facility that seeks to provide incubatees with strategic, value-adding intervention system of monitoring and business assistance. Business incubators constitute an environment especially designed to hatch enterprises. They provide their tenant companies with several facilities, from office space and capital to management support and knowledge. This allows the start-up to concentrate on its business plan and raises its success rate. (Aerts, 2008).

Despite various views on the definition of business incubator, most researchers seem to associate incubation with co-location & shared services, business support service & advice, and internal & external network provision (Bollingtoft, 2005). By providing various support services, incubation can be considered as one of the comprehensive platform for entrepreneurs to enable them to focus on their products/services compared to focusing on the company management (Fararishah, 2012). New enterprises believed incubation is able to create conducive environment and provide them with integrated business support services to their enterprises. Based on that particular reason, new enterprises prefer choosing the incubation program as their alternatives to strengthen their business during start-up stage. Due to the benefits of incubation program, there is a growing demand for incubation program. It has been estimated that there are 3,500 incubation programs worldwide where 1,500 are in developing countries including Malaysia (Lalkaka, 2002).

Malaysia also acquaints itself with techniques adopted by countries that have already reaped the benefits of business incubation in the initiatives to develop their new enterprise (Mohd. Yunos, 2001). Hänninen, (2012) observed that, incubators have been used as a part of strategies to achieve rapid economic growth in Malaysia to drive innovations and create job opportunities. Entrepreneurs rising from these areas are becoming more prominent and recognized as new engines of growth for Malaysia's economy (Malaysia Plan, 2011). The existence of incubators itself is an evidence to support this effort. Based on a source from the National Incubation

Network Association (NINA), there are 106 incubators throughout Malaysia. These incubators consist of NINA Members (Tech-based Incubators), Banks, Handicraft Incubators, Universities, MARDI (Agro-based), MECD and MARA (Indigenous/Bumiputera).

Although the main purpose of incubation is assisting new enterprise, on the other hand, incubator also needs to focus on generating income for its investors or stakeholders. Stakeholders have their own objectives and goals above leading support to incubator and effectiveness of incubator relates to the fulfillment of the respective objectives of stakeholder. Stakeholders consist of various parties, which include banks, universities, government sector, and most important is the incubatees/new tenants itself. Thus, its profitability and business sustainability become the central concern for operating an incubator (Lalkaka, 2002).

However, there are several incubation programs that failed to fulfill the main purpose of their existence. For instance, some incubator fail to give comprehensive support services to support the incubatees for their survival and growth rate. Based on research conducted by Shane (2000) there is approximately only one-third of all new incubatees which are only able to survive more than three years after their establishment or their startup date and this can be classified as failure because the ideal or maximum period of tenancy is between two to three years. As reported by one of World Bank Group, Information Development (infoDev) (2010) claimed that incubation program have failure rates as high as 60 percent in the first five years and some evidence shows in developing country would even suggest it might reach up to 80%. Economists have theorized several possible reasons for this high failure rate, including a lack of legitimacy and competitive advantage, low levels of institutional support, internal lack of coordination and irrelevant business services (Tsfatsion, 2006).

Based on the high rate of failure, this also indicates that, managing incubation program is quite complicated and has to deal with high risk when deciding the type of support services that should be provided. The types of business supports services

provided by the incubator are changed over time and this also depends on the stakeholder's capability in terms of finance, management skills and knowledge. There are no standard models or benchmark for all situations to follow in order to achieve the main purpose of incubation program.

Although many of the services offered are typically alike, only some of the services are found to be crucial to the success of the tenant. Thus, it is important for the incubator to provide useful and relevant business support services to ensure the improvement in the survival and growth prospects of new enterprises under their supervision can be improved. This research highlight on the relevant business support services, which are more crucial and compatible that can contribute to the improvement of business performances and this is an interesting topic to be explored by the researcher. This topic, which discusses issues of determining the relevant support services, has also led to an interest among policy makers and industry leaders in identifying best practices in support services of incubators (Link, 2003).

1.2 Problem Statement

As stated above, there are various opinions and views regarding the perception towards 'incubation'. This raises a big problem when the expectations of the tenants are not concomitant with the services provided by the incubator (Link and Scott, 2003). Unfortunately, some incubatees have failed to fulfil the requirement of the program. It is believed that one of the reasons for incubatees to fail in the incubation program might be related to the role played by the incubator itself.

One aspect that illustrates the problem is probably due to the existence of the expectation gap between incubatee versus incubator towards incubator. For example, incubatee may have expected incubator to provide them with comprehensive support services while the incubators provides limited support and services. Therefore, incubation program is likely to face failure when both sides (incubatee and incubator) have different views or expectations towards their respective roles. In order to play the role as an incubator successfully, it is important for the incubator to provide useful business support services to ensure the improvement in the survival and growth prospects of start-ups and small firms at an early stage of development (Voisey, 2006).

Khuram (2012) has identified the following support services that can contribute to the failure of the incubation program. When they are lacking, incubator can be considered fail in fulfilling the incubatee's needs because those support services listed can be classified as fundamental or common support services.

1. Lack of networking mediation,
2. Lack of training program,
3. Insufficient resources provision,
4. And incompetence consultancy & management services

Based on the research done by Khuram, she concludes that the finding shows positive results and indicates the new enterprises are well aware of the contemporary challenge. The listed roles of incubator are the major business support services needed by new enterprises and they are also very important for the success of their businesses. However, Khuram's research carries few limitations, which are only focused on the women's perspective for entrepreneurial development and this research was conducted in Pakistan's perspective. Therefore, for the purpose of this research, the researcher decided to explore the role listed in detail, as the preferred support services remain unclear especially in Malaysia environment.

In this study, the main purpose is to highlight the more preferred support services that the incubatees find useful and can contribute to their success. It is hoped that general guidelines for the future incubator in formulating their business strategy could be proposed. The preferred support services for Malaysia's incubation are unknown and need to be explored and understood.

1.3 Research Objectives

Based on above explanation, the researcher came out with research objectives as follows:

1. To critically examine the crucial support services that considered as important from the incubatee's perspective.
2. To critically examine the availability/quality of support services that has been rendered by the incubator based on the incubatee's perspective.
3. To critically examine the gap between incubatee's perceptions of importance of support services listed with the existence availability/quality of the support services that have been provided by incubator.
4. To examine either business performance of the incubatee can be associated by the existence gap or wise.

1.4 Research Questions

In order to achieve the objective of this study, the following research questions were addressed:

1. What are the significant of networking mediation, training program, infrastructures facilities, and consultancy services as perceived by the incubatees?
2. How was the availability/quality of the support services that have been rendered by the incubator based on the incubatee's perspective?
3. What is the gap between incubatees perceptions of importance of support services listed to with the existence availability/quality of the support services that have been provided by incubator?
4. How does the gap associate with the business performance of the incubatees?

1.5 Scope of Study

The result obtained been taken from the perspective of incubatee. In terms of the unit analysis, this research focused on incubatees listed in National Incubation Network Association (NINA). The reason behind the researcher's choice in choosing incubatees listed in NINA is because NINA is able to provide knowledge sharing on incubation or business acceleration among all incubators in Malaysia and Malaysia has been a member of NBIA since 1998. NINA's collaboration with a designated technopreneurship agency, Multimedia Development Corporation–Technopreneur Development Flagship (MDeC-TDF) division has facilitated in the development of technopreneurs and the growth of new enterprises into world-class companies (NINA, 2011). As mentioned by NINA, there are around 106 incubators centers in Malaysia. Each of the companies has different functions, carry out different activities and offer different services. They also come from different levels of maturity in the incubation program.

The study only discussed on the more preferred support services, which the incubatees find compatible and useful which can contribute to the success of tenants during their start-up stage. More practically, this topic has also led to an interest among policymakers and industry leaders in identifying best practices support

services of incubators (Link and Scott, 2003). However, this study only covered regarding incubator and did not touch on the impact of these roles towards the shareholders' (Ex: government, supplier, vendor and etc.) expectation.

1.6 Importance of the Study

As described in the previous section, there is a problem related to the expectation of the tenants that is not concomitant with the services provided by the incubator. Therefore, the importance of the research is to determine the most effective solution for the problem in terms of incubation, specifically for Malaysia settings. This is to improve and develop Malaysia's new enterprise to become competitive and is able to compete in worldwide economy. Moreover, it is hoped that this research able to assist the government to reduce the risk in their initiatives to help the new enterprises by providing proper guidelines in terms of preferred support services for incubator to manage their incubation program.

At the end of this study, the incubator's support services listed might gives an impact towards the business performance and the results can be a guide to help new incubators in providing comprehensive services to their tenants. The Department of Trade and Industry and Science and Technology will gain a lot as the result of this research has explored new finding. Meanwhile for academician, they also gain benefit from this study by increasing number of documented paperwork regarding Malaysia incubation. Besides, researcher has chosen to explored university based incubator and this would benefit new researcher that would like to involve in university based incubator issues.

1.7 Summary

Incubation considered as the vital element for economy and in economy downturn business incubation plays an important role to sustain its momentum. Therefore, it is important for the researcher to identify the importance and effectiveness of incubator services for the development of entrepreneur in the context of Malaysia.

REFERENCES

- Abetti, P. A., 2004. Government-supported incubator in the Helsinki Region, Finland: Infrastructure, results and best practices.. *Journal of Technology Transfer*, 29(1), pp. 19-40.
- Abratt, R. & D. P., 2006. The influence of retailer reputation on store patronage.. *Journal of Retailing and Consumer Services*, 13(3), pp. 221-230.
- Aernoudt, R., 2004. Incubators: Tool for Entrepreneurship?. *Small Business Economics*, 23(2), pp. 127-135.
- Aerts, K., 2007. Critical Role and Screening Practices of European Business incubators. *Technovation*, 27(5), pp. 254-267.
- Allen, D. & M. R., 1990. Structure, Policy, service and performance in the business incubator industry. *Journal of Entrepreneurship Theory and Practice*, 23(3), pp. 12-23.
- Andrew, D., 1998. *Best Practices in Business Incubator Management*, Western Australia: AUSTEP Strategic Partnering Pty Ltd.
- Anna, B., 2007. Incubator Best Practice: A Framework. *Technovation*, pp. 20-28.
- Antal, S., 2006. *Business Incubation as Element of Business Service Institution and SME Development Infrastructure for Creation of New Enterprises in CITs.*, Budapest: ERENET.

Barney, J., 1991. Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), pp. 99-120.

Barrow, C., 2001. *Incubators - A realist's guide to the world's new business accelerators*. Chichester, UK: John Wiley and Sons Ltd..

Bauerschmidt, A. & H. C., 1998. The determinants of New Venture Performance. *Entrepreneurship Theory and Practice*, 23(1), pp. 5-29.

Bearse, P., 1998. A question of evaluation: NBIA's impact assesment of business incubators. *Economic Development Quarterly*, 12(4), pp. 322-334.

Bergek, A. N. C., 2008. Incubator best practices: a framework. *Technovation*, 28(2), pp. 20-28.

Bohringer, A., 2006. *Knowledge specialization and transfer: A knowledge based framework for business incubation*. Denmark, DRUID Summer Conference.

Bollingtoft, A., 2005. The networked business incubator-leveraging entrepreneurial agency?. *Journal of Business Venturing*, 20(2), pp. 265-290.

Brooks, O. J., 1986. Economic development through entrepreneurship: Incubators and the incubation process. *Economic Development Review*, 4(2), pp. 24-29.

Campbell, C., 1985. Stalking the latent entrepreneur: business incubators and economic development. *Economic Development Review*, 3(2), pp. 43-48.

Chan, K. & L. T., 2005. Assessing technolgy incubator programs in the science parl: the good, the bad and the ugly. *Technovation*, 25(10), pp. 1215-1228.

Chen, C., 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers. *Journal of Business Venturing*, 13(4), pp. 295-316.

Chinsomboon, O., 2000. Incubators in the new economy.

Chrisman, J. J., 1989. Strategic, administrative, and operating assistance: the Value of outside consulting to pre-venture entrepreneurs. *Journal of Business Venturing*, 4(6), pp. 401-418.

Clarysse, B., 2005. Spinning out new ventures: A typology of incubation strategies from European research institutions. *Journal of Business Venturing*, 20(2), pp. 183-216.

Colombo, M. G., 2002. How effective are technology incubators?. *Research Policy*, 31(7), pp. 1103-1123.

Duff, A., 2004. Best Practice in Business Incubator Management.

Fararishah, A. K., 2012. Investigating the underlying components in business incubation process in Malaysia ICT incubators.. *Asian Journal of Social Science and Humanities*, 1(1), pp. 88-102.

Fry, F., 1987. The role of incubators in small business planning. *American Journal of Small Business*, 12(1), pp. 51-61.

Fuaad, M., 2012. Incubators and government policy for developing IT industry and region in emerging economies. *Asian Academy of Management Journal*, 17(1), pp. 65-96.

Hackett, S. M. & D. D. M., 2004. A real options-driven theory of business incubation. *Journal of Technology Transfer*, 29(1), pp. 55-82.

Hair, J., Bush, R. & Ortinau, D., 2006. *Marketing Research: Within a Changing Environment*. 3rd ed. New York: McGraw-Hill/Irwin.

Hallam, C. & DeVora, N., 2009. *Technology-based business incubation: A study of the differences and similarities between Private, University and Government Incubation..* Oregon, PICMET.

Hamdani, D., 2006. *Conceptualizing and measuring business incubation..* Canada: Innovation and Electronics Information Division Science.

Hanninen, S., 2012. Incubators and Government Policy for Developing it industry and region in emerging economies.. *Asian Academy of Management Journal*, 17(1), pp. 65-96.

Hannon, P., 2004. A qualitative sense-making classification of business incubation environments. *Qualitative Market Research: International Journal*, 7(4), p. 274.

Hansen, M., 2000. Networked Incubators. *Harvard Business Review*, 78(5), pp. 74-88.

InfoDev, 2010. *Global Good practice in incubation policy development and implementation*, Malaysia: InfoDev.

Jackson, S., 2009. *Research Methods and Statistics: A critical thinking approach*. 3 ed. Wadsworth: Belmont.

Joseph, P., 2009. Business incubation as strategy. *business strategic series*, 10(3), pp. 156-166.

Jusoh, A., 2006. Incubators as catalyst in developing high technology businesses; Malaysia's experience. *African Technology Development Forum*, 3(1), pp. 25-29.

Kamarulzaman, A., 2010. *University Research, Development & Commercialisation Management: A Malaysian Best Practice Case Study*, Cyberjaya: Multimedia University.

Kanagarajah, S., 2006. *Business Dynamic in Canada*, Canada: Statistic Canada.

Khalid, A. D., 2009. The role of business incubator in developing entrepreneurship and creating new business start-up in Gaza strip. *International Journal of Management*, 28(2), pp. 36-41.

Khota, L. & P. L., 2008. Embedded innovation - Strategic management incubators for knowledge hegemony. *South African Journal of Industrial Engineering* , 19(1), pp. 105-118.

Khuram, S., 2012. Role of incubation in women entrepreneurship development in Pakistan. *Asian Journal of Business Management*, 4(2), pp. 200-208.

Kmetz, J., 2000. Business incubators for central and eastern europe. *Journal of Business Venturing*, 20(1), pp. 217-239.

Krejcie, R. & M. D., 1970. Determining sample size for research. *Educational and psychological measurement*, 30(1), pp. 607-610.

Kuang, C. F., 2003. Development of a new self-sufficient Model for University Incubator. *Internationa Journal of Innovation and Incubation*, 1(1), pp. 33-50.

Lalkaka, R., 2002. Technology business incubator to help to built an innovation-based economy. *Journal of Change Mangement*, 2(3), pp. 167-176.

Lee, W. & Y. T., 2000. The cradle of Taiwan high technology industry development. *Technovation*, 20(1), pp. 55-59.

Lenka, U., 2009. Service Quality, Custtomer Satisfaction, and Customer Loyalty in Indian Commercial Banks. *The Journal of Entrepreneurship*, 18(1), pp. 47-64.

Lerner, J., 2005. The University and the Start-up: Lessons from the Past Two Decades. *Journal of Transfer Technology*, 1-2(30), pp. 49 - 56.

Link, A. S. J., 2003. Science park and the generation of university-based knowledge. *International Journal of Ind Organization*, 21(9), pp. 1323-1356.

Malaysia Plan, 2006. *Ninth Malaysia Plan 2006-2010*, Kuala Lumpur: PM.s Department.

Malaysia Plan, 2011-2015. *Tenth Malaysia Plan*, Kuala Lumpur: PM.s Department.

McAdam, M., 2007. A preliminary investigation into networking activities within the university incubator. *International Journal of Entrepreneurial Behaviour & Research Policy*, 14(4), pp. 219-241.

Mian, S., 1997. Assessing the value-added contribution of university technology business incubators to tenants firm. *Journal of Business Venturing*, 12(4), pp. 251-285.

Minshall, T. & Wicksteed, B., 2005. *University Spin-Out Companies: Starting to Fill the Evidence Gap*, London: St. John's Innovation Center.

Mohd Fuaad, S., 2012. Incubators and government policy for developing IT industry and region in emerging economies. *Asian Academy of Management Journal*, 17(1), pp. 65 - 96.

Mohd Saffar, A., 2007. *Innovation and entrepreneurship policy framework: The Malaysian experience in building sustainable incubation industry (movement)*, s.l.: s.n.

National Business Incubation Association (NBIA), 2003. *State of the business incubatio industry*, s.l.: NBIA Publication.

O'Neal, T., 2005. Evolving a successful university-based incubator. *Engineering Management Journal*, 17(3), pp. 11-25.

Pallant, J., 2007. *SPSS Survival Manual - A step by step guide to Data Analysis using SPSS for Windows*. 3rd ed. New York: McGraw-Hill.

Parasuraman , A., 1988. SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Reatiling*, 64(1), pp. 50 - 62.

Patton, D., 2009. Elements that underpin high-tech business incubation processes. *Journal of Technology Transfer*, 34(6), pp. 621-636.

Patton, D. & Warren, L., 2009. Intangible elements that underpin high-tech business incubation processes. *Journal of Transfer Technology*, Issue 34, pp. 621 - 636.

Peng, X., 2006. *University spins-offs: Oppurtunity or challenge?*. [Online] Available at: <http://www.nature.com> [Accessed October 2014].

Peter, L. S., 2004. The role of incubators in the entrepreneurial process. *Journal of technology Transfer*, 29(1), pp. 83-91.

Reimann, M., 2008. uncertainty Avoidance as a Moderator of the relationship between perceived service quality and customer satifcation. *Journal of Service Research*, 11(1), pp. 63 - 73.

Rice, M. & M. J., 1995. Do venture capitalists' impact theories on new business success/failure have empirical validity?. *International Small Business journal*, 20(4), pp. 395-420.

Rice, M. P., 2002. Co-production of business assistance in business incubators: An Exporatory Study. *Journal of Business Venturing*, 17(1), pp. 163-187.

Robin, B., 2009. Effects of business incubation on knowledge acquisition of incubatees and incubatee performance. pp. 8-20.

Rustam, L., 2001. *'Best Practice' in Business Incubation: Lesson Learned*. Brussels, European Union.

Scaramuzzi, E., 2002. *Incubators in Developing Countries: Status and Development Perspectives*. [Online] Available at:<http://www-wds.worldbank.org> [Accessed 16 July 2014].

Scarborough, N. & Zimmerer, T., 2000. *Effective Small Business Management: An Entrepreneurial Approach*. 6th ed. Upper Saddle River, NJ: Prentice-Hall.

Schmidt, K., 2003. Convertible securities and venture capital finance. *Journal of Finance*, 58(3), pp. 1139-1166.

Schwartz, M., 2008. Beyond Incubation: An analysis of firm survival and exit dynamics in the post-graduation period. *Journal of Technology Transfer*, 34(4), pp. 403-421.

Scilitoe, J., 2010. The role of incubator interactions in assisting new ventures.. *Technovation*, 30(1), pp. 155-167.

Shane, S., 2000. The promise of entrepreneurship as a field of reserach. *Academy of Management Review*, 25(1), pp. 217-226.

Sherman, H. & C. D., 1998. Methodological challenges in evaluating business incubator outcomes. *Economic Development Quarterly*, 12(4), pp. 313-321.

Smilor, R. W., 1987. Commercializing Technology Through New Business Incubators. *Research Management*, 30(5), pp. 36-41.

Smith, J., 2001. the role of SMEs in Commercialising University Research & Development; the Asia-Pasific Experience. *Small Business Economics*, 16(2), pp. 141-148.

Stevens, C. & Schulze, W., 2005. *Do business incubators work? Perspectives on incubated firm success*. Babson College, Frontiers of Entrepreneurship Research.

Studdard, N. L., 2006. The effectiveness of entrepreneurial firm's knowledge acquisition from a business incubator. *International Entrepreneurship Management Journal*, 2(2), pp. 211-225.

Sudi, N., 2013. Towards Enhancing Business Survival and Growth Rate in LDCs: An exploratory Study of the Drivers of Business Failure among SMEs in Kampala-Uganda. *International Journal of Humanities and Social Science*, 3(8), pp. 284-291.

Tamasy, C., 2007. Rethinking technology-oriented business incubators: Development a robust policy instrument for entrepreneurship, innovation, regional development?. *Growth and Change*, 3(38), pp. 460 - 4773.

Tangen, S., 2004. Performance Measurement: From Philosophy of Practice. *International Journal of Productivity and Performance Management*, 53(8), pp. 726-737.

Temali, M. & Campbell, C., 1984. *Business incubator profiles: A national survey*, Minneapolis: Hubert Humphrey Institute of Public Affairs.

Tesfatsion, L., 2006. Agent-based computational economics: A constructive Approach to Economic Theory. *Journal of Economic Dynamic and Control*, 2(2), pp. 831-880.

Udell, G. G., 1990. Are business incubators really creating new jobs by creating new business and new products. *Journal of Product Innovation Management*, 7(2), pp. 108-122.

Vasily, R., 2012. *Entrepreneurship, business incubation, business models and strategy*. [Online] Available at: <http://worldbusinessincubation.wordpress.com> [Accessed 16 July 2014].

Vedovello, C. & G. M., 2003. Business incubators as a technological infrastructure for supporting small innovative firms' activities. *International Journal of Entrepreneurship and Innovation Management*, 3(2), pp. 4-21.

Voisey, P., 2006. The measurement of success in a business incubation project. *Journal of Small Business and Enterprise Development*, 13(3), pp. 454-468.

vonZedtwitz, M., 2006. Are service profiles incubator-specific?. *Journal of Technology Transfer*, 31(4), pp. 459-468.

Xu, L., 2009. Business Incubation in China: Effectiveness and perceived contributions to tenant enterprises. *Management Research*, 33(1), pp. 90-99.

Yasin , S., 2013. The impact of business incubation on firm performance during post-graduation period - Turkey example. *British Journal of Arts and Social Science*, 12(1), pp. 171-190.

Yongning, W., 2012. The Comparative Analysis of University Incubators and Non-University Incubators. *Journal of Convergence Information Technology (JCIT)*, 7(3), pp. 18 - 26.

Youtie, J. & Shaphira , P., 2008. Buiding an innovation hub: a case study of the transformation of university roles in a regional technological and economic development.. *Research Policy*, Issue 37, pp. 1188 - 1204.

Yunos, M., 2001. Building an innovation-based economy: The Malaysian technology business incubator experience. *Journal of Change Management*, 3(2), pp. 177-188.

Zikmund, T., 1997. *Business Research Model*. 5th ed. Texas: The Dryden Press.