UNIVERSITY BUSINESS INCUBATORS BEST PRACTICE: FACTORS AFFECTING THAILAND UBI PERFORMANCE

Sunchai Yamockul, Technopreneurship and Innovation Management Program, Graduate School, Chulalongkorn University
Rath Pichyangkura, Technopreneurship and Innovation Management Program, Graduate School, Chulalongkorn University
Achara Chandrachai, Technopreneurship and Innovation Management Program, Graduate School, Chulalongkorn University

ABSTRACT

This research aims to investigate the best practice components affecting Thailand university business incubators' performance. From the literature review, four main components were identified as having the correlations and influences on the performance of university business incubators: 1) Best practice in management and administration of the incubators, 2) Best practice in supporting services provided to incubatees, 3) Best practice in augmented services for technopreneur incubation and 4) Best practice in the selection of potential incubatees.

The population of this study was the sixty-three Thai University Business Incubators (UBI) that were under the supervision of Thailand Office of the Higher Education Commission. The conceptual model and questionnaire were designed and developed in accordance with the literature review. The study employed purposive sampling, and questionnaires were distributed to the management of UBI across Thailand. Descriptive statistics were used to analyze the UBI demographic data; Pearson Product Moment Correlation was used to analyze the correlation, and multiple linear regression analysis was used to find the influence among the independent and dependent variables.

The results showed that there were positive correlation and influence among the four factors: management and administration of incubators, supporting services provided to incubatees, augmented services for technopreneur incubation and selection criteria of potential incubatees, to the performance of UBI. The findings also suggest that UBI lacked the capabilities in some of the best practice components; specifically, obtaining venture capital for the clients and a well-defined selection criteria. The findings can be used to develop and enhance the mentioned criteria in order to raise Thailand UBI's performance to the highest level of best practice.

Keywords: University Business Incubator Best Practice, University Business Incubator Performance, UBI Thailand.

INTRODUCTION

The Organization for Economic Co-operation and Development indicated that, on average, one in three start-ups in Europe went out of business at the beginning of their second

year of operations (OECD, 1997). To increase the prospects of becoming successful start-ups, business incubators provide supports such as office space, basic infrastructures, facilities, equipment, business coaching, advices on marketing, accounting, law, finance, business matching and seeking out funding from the government and private sectors; as well as, network creation among investors, financial institutions, universities and within the incubatees' community. Furthermore, technology business incubators must be able to provide expert advice, specialized laboratory and equipment, intellectual property, patent and technology licensing for technopreneurs.

The principle objectives of a business incubator are job creation, entrepreneurship stimulation, technology innovation, and economic development (Anderson & Al-Mubaraki, 2012; Caiazza, 2014). Business incubators must provide tangible and intangible resources; provide collaborations and synergies for their clients with the ultimate goal of incubatees' self-sustainability and success which in turn leads to the success of the incubators (Hackett & Dilts, 2004; Thebtaranoth, 2007). Business incubation researchers and experts have identified 3 key factors affecting the incubatees' success: 1) management and administration of incubators, 2) supporting services provided to incubatees and 3) augmented services for technopreneur incubation. Other essential components in the success of incubation are potential candidate selection, infrastructure, business support, mediation and graduation (Duff, 1994; Gerl, 2004; Hackett & Dilts, 2004; Lewis et al., 2011). The elements used in measuring the success of incubators are as follows: the increase in assets, sales, profits, number of spin offs, incubatees' survival rates, employees, technology licensing, patents, regional economic growth, and incubator's financial sustainability (Chandler & Hanks, 1993; Lalkaka, 2003).

This research aims to identify best practice components of university business incubators that affect UBI performance; as well as, to investigate their deficiencies in order for them to improve their practices and develop a more efficient incubation program. The sections to follow begin with the literature review which examines the background of Thailand university business incubators, best practice components and university business incubators' performance; follows by the formulation of the research framework and methodology; then the findings are discussed in details. Finally, the results are reflected upon and recommendations regarding the improvements on the components are proposed.

LITERATURE REVIEW

Thailand University Business Incubator

At the time of this research, Thai University Business Incubators (UBI) were divided into 9 networks which consisted of 63 UBI. Thai UBI are supported and subsidized by the Thai Government through the Office of Higher Education Commission. The establishment and operation of Thai university business incubators began in 2003, and it was directed at business assistance to universities' students and Small and Medium Enterprise (SME). The aim was to create sustainable Small and Medium Enterprise and foster innovations in the products and services of the students, professors, personnel and new entrepreneurs in private sectors with the intention of generating developments in-line with the needs of Thailand economic and social development (Office of the Higher Education Commission, 2014).

The chronicle of Thailand UBI can be divided into three periods. The first phase, the trial and error period, was during the year 2004 to 2006 when hardly anyone knew how to develop, operate or manage an incubator. Pioneers conducted researches and experimentations to identify

operation models that were suitable for each diverse university business incubator type. As a result, during this first phase, one could detect diverse manners in UBI operation and management. The second period was from year 2006 to 2007; it was the period of knowledge sharing in which UBI management shared their knowledge, experiences and opinions with each other; UBI assisted their incubatees by utilizing mentor approach in training and advising. Incubatees were encouraged to apply and integrate the research and technologies of their universities to develop and/or improve their products and/or services. The third period began in 2008 which was the era of integrating resources and networking among university business incubators to truly support their incubatees. UBI networks that are robust would share their expertise and resources with the weaker UBI such as consultants, experts and laboratories. This concept has been used since then, and has created strong bonds among incubators (Ayawongs, 2011).

Thai University business incubator provides supports to nascent entrepreneurs in various industries such as software, information technology, Nano technology, biomaterials, alternative energy, polymer technology, tourism, agribusiness, foods, food processing, health care, herbal medicine, cosmetics, jewelry and so on. UBI encourage the use of higher educational institutions researches and technologies and transforms them into innovative, value added products and/or services. Furthermore, technopreneurs are assisted with specialized equipment, patent requisition, intellectual property management, technology licensing and commercialization. Each Thai University business incubator has its own unique capabilities, resources, body of knowledge and expertise. UBI would select and arrange supports of their new entrepreneurs based on their own resources and capabilities. Nevertheless, when a UBI lacks an expertise in a specific area; UBI within the network can provide support that they need. Thai University business incubators have successfully minimized risks of failure in new businesses, and have nurtured nascent entrepreneurs from start-up until they can sustain themselves, and spin-off their businesses (UBI Report: Steps to Success of Entrepreneurs, 2014).

Best Practice Components Affecting Business Incubator Performance

Best practice can be describe as "*the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people*." By using best practice strategy, organizations can reduce waste, improve quality of the firm's product/service, reduce costs, respond and adapt more quickly to changes, become more efficient which leads to better organization performance (Morrison, 2007). The following sections discuss each of the university business incubators best practice components in more details.

Best Practice in Management and Administration of Business Incubators

The criteria for becoming best practice in management and administration of a business incubator include: a well-defined vision, mission, strategies, objectives and goal; precise criteria for incubatees' selection before commencing each incubation project; and precise details of the incubation program and incubator's supporting activities. Furthermore, in order for any business incubator to perform well, the management of the business incubator must establish precise measurements on the incubatees and incubators' performances; continuously assess the incubatees' progress, and perform feasibility analysis of each incubation project (Hackett &

Dilts, 2004). Additionally, business incubator must have the ability to generate revenues to cover their own expenses; have precise timeframe and specific person in-charge for each project; continuously evaluate their own performance and the incubatees' satisfaction and continuously enhance the skills of incubator managements (CSES, 2002; Bergek & Norrman, 2008).

Best Practice in the Supporting Services Provided to Incubatees

Supporting services that business incubators provide to their tenants are vital to the performance and success of incubatees; hence, the incubators (Lalkaka, 2003; Thebtaranoth, 2007). Business incubators must provide basic infrastructures, trainings, coaching and mentoring to the incubatees-business operation, accounting, finance product/service research and development, marketing, e-commerce, international market, and business etiquette and presentation (Lee & Osteryoung, 2004; Gerl, 2004). Additionally, business incubators must create environment for incubatees to network with other entrepreneurs and other businesses within and outside the business community, and foster incubatees' relationships with higher education institutions. Business matching and networking; assisting with grants, funding from financial institutions, venture capitalist and business angels; obtaining supports and promotions from both the public and private sectors in which all are critical to the success of incubatees (Lin et al., 2012). Moreover, business incubators must be able to provide incubatees with qualified personnel and experts that meet the technical needs of the incubatees, provide staffing services to the incubatees and provide support and assistance to the entrepreneurs after completion of the incubation project (Duff, 1994; Lewis et al., 2011).

Best Practice in the Technopreneur Support

Technopreneurs play a vital role in creating innovation; hence, business incubators must provide the following supports to their incubatees: intellectual property management such as patent registration, technology licensing, technology transfer and commercialization (Mian, 1996; Isabelle, 2013). They must also provide specialized equipment, laboratories and experts in accordance with their incubatees' specialized needs (Colombo et al., 2002; Ni Wen-bin, 2006; Robberts, 2012).

Best Practice in the Selection of Potential Incubatees

The selection process cannot guarantee one hundred percent success rate; however, a careful selection of potential candidates will increase the likelihood that candidates will succeed which directly affects the success of the business incubator (Merrifield, 1987). Business incubator must set stringent criteria for candidate's selection. The selection process of prospective candidate irrefutably determines the success of the incubator (Bizzotto, 2003). In his research, he affirmed that the number of incubatees that has graduated from business incubation was correlated to the quality of the screening process. Successful incubation programs possessed the following selection criteria: the candidate's age, education, skills, past experience, initial investment and financial resources; the candidate's technical expertise; target market of the candidate's products; candidate's business plan and product attributes; the prospect of the business profitability and the candidate's intention on licensing the technology from the incubators (Lumpkin & Ireland, 1988; Aerts et al., 2007).

Business Incubator Performance and Success

The three criteria in evaluating the performance and success of an incubator were identified as: 1) Impact, 2) Efficiency and 3) Sustainability (Lalkaka, 2003). The measurements for the mentioned criteria include the number of business and employment growth, asset growth of incubatee's enterprises, turnover rate of sales, the increase of income tax paid to the government, survival rate of the enterprises in the incubator, revenue from licensing of patents and technology and commercialization, number of incubator's graduates and the increase in performance of incubatees when compared to other enterprises that do not participate in incubation program (Voisey et al., 2006; Zhang & Sonobe, 2011).

Business incubator performance are identified as follows: the creation of new businesses, growth of new business, impacts that incubatee's enterprises have on the economy, incubatee's return on investment, number of incubatees successfully graduate from the incubation process, revenue from incubatees' operations and the survival rate of the graduated enterprises (Lewis et al., 2011).

Kasetsart University Business Incubator, a prominent university in Thailand, measures the success of its incubator's New Entrepreneurs Creation Program (NEC) by the following criteria: the increase in number of incubatees' employees, the improvement of incubatees' earnings after the incubation process, the expansion of the incubatees' enterprises, the increase in value of investment compared, the registration of incubtees' businesses with the government, the innovativeness of the incubatees' operation, products and/or services (Kasetsart UBI, New Entrepreneurs Creation: NEC report, 2011)

RESEARCH DESIGN AND METHODOLOGY

The objective of this research was to identify best practice components affecting University Business Incubators (UBI) performance; together with their performance deficiencies in order for them to improve their practices and develop a more efficient incubation program.

From the literature review, university business incubators must have the following 4 main criteria in order to achieve their highest performance: 1) best practice in the management and administration of the business incubator, 2) best practice in the supporting services provided to incubatees, 3) best practice in augmented services for technopreneur incubation and 4) best practice in the selection of potential incubatees. Hence, the research framework has been devised as follows:

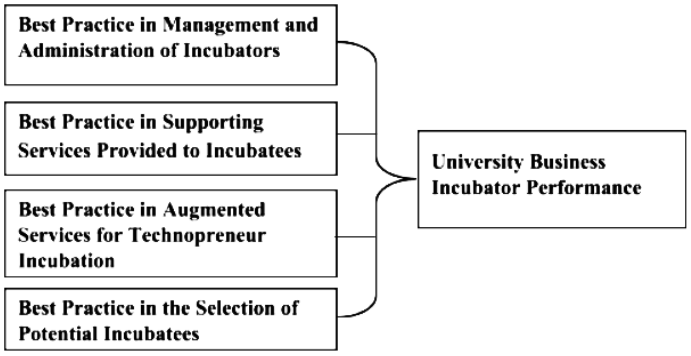

FIGURE 1
RESEARCH FRAMEWORK: THAILAND UNIVERSITY BUSINESS INCUBATOR BEST PRACTICE AND PERFORMANCE

Questionnaire was designed and constructed in accordance with the literature review and was tested and revised. The questionnaire consisted of 6 parts. The first part was to seek demographic data from Thai university business incubators. The second part consisted of questions seeking best practice components in UBI management and administration. Part 3 consisted of questions inquiring about best practice components in UBI supporting services provided to their incubatees. The questions in part 4 were to seek information regarding best practice in augmented services for Technopreneur incubation. The fifth part enquired best practice in the selection criteria of potential Incubatees and the last part was to seek the data on university business incubator performance.

The populations of the research were Thai university business incubators across the country. The Office of the Higher Education Commission determined that there were 63 university business incubators under its supervision. (UBI: Steps to Success of Entrepreneurs, 2014). Purposive sampling method was employed. Researcher distributed questionnaires to the management of 6 UBI networks across Thailand during the Office of the Higher Education Commission business incubation evaluation periods during. Questionnaire link was e-mailed to the management of the 6 UBI networks. The management of 37 Thai university business incubators responded.

Descriptive statistics, Mean, Mode, Median and Standard Deviation, were employed to analyze the UBI demographic data. Pearson Product Moment Correlation was used to analyze the correlation of the independent and dependent variables. Multiple linear regression analysis was used to find the influence of the independent and dependent variables.

RESULTS

The results are summarized and presented as follows: demographic data of Thailand university business incubators, overall findings of best practice components and performance of UBI, findings on best Practice components: UBI management and administration, findings on best Practice components: UBI supporting services, findings on best practice components: UBI augmented services for Technopreneur, Findings on best practice components: UBI selection criteria of potential incubatees, findings on UBI performance, findings on the correlations of the best practice components to the UBI performance and findings on the influences of the best practice components to the UBI performance.

Demographic Data of Thailand University Business Incubators

91.9 percent of Thai university business incubators were non-profit organizations with only 8.1 percent affiliated with the private sector. 88.6 percent of the UBI indicated that they have received main funding from governmental organizations; the rest of the funding sources were from the universities, private sectors and incubation fees. Most UBI were technology and innovation based incubators. The median number of full-time and part-time employee was 3 and 2 respectively. 97.3 of the UBIs reported that they provided supports in documentation and facilitations. 91.9 percent reported that they provided supports in financial management, accounting, marketing and package design. Only 37.8 percent of the UBIs indicated that they provided supports in business law, intellectual property management and specialized equipment. 51.4 percent indicated that their revenue was proportionate to their expense while 45.9 percent reported that their revenue was higher than their expense; only 2.7 percent had more expense

than revenue. 10.8 percent reported that they had won awards for their operations and management.

The Overall Findings of UBI Best Practice Components and Performance

The findings of the UBI overall best practice components and performance were at high levels as shown in Table 1.

Table 1
MEAN, STANDARD DEVIATION AND LEVEL OF THE OVERALL UBI BEST PRACTICE COMPONENTS

UBI Best Practice Components	$\overline{X}$	Standard Deviation	Meaning of Score
1. UBI management and administration.	4.19	0.43	High level
2. UBI supporting services.	3.88	0.45	High level
3. UBI augmented services for Technopreneur.	3.86	0.76	High level
4. UBI selection criteria of potential incubatees.	3.54	0.45	High level
5. UBI performance.	3.60	0.47	High level
Total	**3.81**	**0.40**	**High level**

Findings on Best Practice Components: UBI Management and Administration

University Business Incubators reported that they had attained high to highest level of best practice in the management and administration components as shown in Table 2.

Table 2
MEAN, STANDARD DEVIATION AND LEVEL OF UBI BEST PRACTICE: MANAGEMENT AND ADMINISTRATION COMPONENTS

UBI Best Practice Components: UBI management and administration	$\overline{X}$	Standard Deviation	Meaning of Score
1. Well-defined vision, mission, strategies, objectives and goal.	4.51	0.69	Highest level
2. Precise criteria for incubatees' selection before commencing each incubation project.	4.43	0.65	Highest level
3. Precise details of incubation program & incubator supporting activities.	4.35	0.75	Highest level
4. Continuous assessments of the incubatees' progress.	4.30	0.78	Highest level
5. Precise measurements on the incubatees and incubators' performance.	4.27	0.69	Highest level
6. Estimations on the feasibility and cost of each incubation project.	4.19	0.74	High level
7. Precise timeframe and person in-charge for each project.	4.19	0.66	High level
8. Continuous development of incubator managements' skills.	4.05	0.69	High level
9. Ability to generate revenues to cover the expenses.	3.95	0.81	High level
10. Continuously evaluate the incubatees' satisfaction.	3.86	0.89	High level
11. Continuously evaluate incubator's own performance.	3.76	0.88	High level
Total	**4.17**	**0.43**	**High level**

Findings on Best Practice Components: UBI Supporting Services

The levels of best practice in the management and administration components are shown in Table 3.

Table 3 MEAN, STANDARD DEVIATION AND LEVEL OF UBI BEST PRACTICE: SUPPORTING SERVICES COMPONENTS			
UBI Best Practice Components: UBI Supporting Services	$\overline{X}$	Standard Deviation	Meaning of Score
1. Training in basic business operation.	4.49	0.61	Highest level
2. Training in marketing.	4.43	0.65	Highest level
3. Provide coaching and mentoring.	4.32	0.71	Highest level
4. Training in accounting and finance.	4.19	0.70	High level
5. Help build incubatees' relationships with higher education institutions & facilitate the use of the institutions' equipment & laboratories.	4.19	0.81	High level
6. Create environment for incubatees to network with other entrepreneurs and other businesses within and outside the business community.	4.16	0.73	High level
7. Provide incubatees with qualified personnel and experts that meet the needs of the incubatees.	4.16	0.79	High level
8. Training in product/service research and development.	4.08	0.81	High level
9. Obtain support and promotion from both the public and private sectors for incubatees.	3.95	0.78	High level
10. Provide support and assistance to the entrepreneurs after completion of the incubation project.	3.95	0.71	High level
11. Training in e-commerce.	3.70	0.81	High level
12. Business matching and networking.	3.62	0.83	High level
13. Find source of funding from financial institutions.	3.57	0.77	High level
14. Provide in legal services.	3.57	0.84	High level
15. Assist incubatees with entering international markets.	3.30	0.85	Medium Level
16. Training in Business etiquette and presentation.	3.27	0.90	Medium Level
17. Find sources of funding from venture capital and business angel.	3.27	1.09	Medium Level
18. Provide staffing services to the incubatees businesses.	3.22	1.13	Medium Level
Total	**3.86**	**0.45**	**High level**

Findings on Best Practice Components: UBI Augmented Services for Techno Entrepreneur

University Business Incubators reported that all of their criteria in the augmented services for Technopreneur were at a high level of best practice as shown in Table 4.

Table 4 Mean, Standard Deviation and Level of UBI Best Practice: Augmented services for Technopreneur Components			
UBI Best Practice Components: UBI Augmented Services for Technopreneur	$\overline{X}$	Standard Deviation	Meaning of Score
1. Incubators' personnel have the specialized skills that incubatees needed.	4.08	1.04	High level
2. Access to experts from higher education institutions and other research organizations in the field as needed by the incubatees.	4.05	0.78	High level
3. Support of intellectual property registration.	3.78	1.21	High level
4. Technology licensing and commercialization.	3.73	1.28	High level
5. Access to technologies for the production and process of incubatees' products and/or services.	3.68	0.97	High level
6. Access to specialized equipment, laboratories, and research facilities.	3.65	1.09	High level
Total	**3.83**	**0.76**	**High level**

Findings on Best Practice Components: UBI Selection Criteria of Potential Incubatees

The levels of Best Practice in the selection criteria of potential incubatees are shown in Table 5.

Table 5
MEAN, STANDARD DEVIATION AND LEVEL OF UBI BEST PRACTICE: SELECTION CRITERIA OF POTENTIAL INCUBATEES COMPONENTS

UBI Best Practice Components: Selection Criteria of Potential Incubatees Components	$\overline{X}$	Standard Deviation	Meaning of Score
1. Candidate's commitment and enthusiasm towards the business.	4.38	0.68	Highest level
2. Attributes and innovativeness of candidate's product/service.	4.14	0.67	High level
3. Feasibility of candidate's business idea/business plan.	4.08	0.80	High level
4. Candidate's needs are in consistent with the vision, mission and technical supports of the incubator.	3.96	0.82	High level
5. Incubator's resources can create competitive advantage for candidate's product/service.	3.78	0.71	High level
6. Candidate has the Intellectual property rights over his/her product or process.	3.68	0.88	High level
7. Candidate has the technological capabilities in manufacturing his/her product/service.	3.65	0.92	High level
8. Candidate's business has the potential to attract capital and investment.	3.54	0.87	High level
9. Candidate's needs are in consistent with the incubator's management capabilities.	3.54	0.93	High level
10. Size and age of the candidate's business.	3.46	0.87	High level
11. Candidate commercializes and remunerates university incubator's inventions.	3.38	1.16	Medium level
12. Management skills of the Candidate's team.	3.32	0.82	Medium level
13. Candidate's initial investments, ability to obtain credit line and financial liquidity.	3.19	0.99	Medium level
14. Candidate's age.	3.14	0.98	Medium level
15. Candidate's education level.	2.97	1.09	Medium level
Total	**3.61**	**0.45**	**High level**

University Business Incubators reported that the selection of potential incubatees from the candidates' motivation and commitment was practiced at the highest level; while candidates' business ideas, business plans, target market, profitability prospect, candidates' past experience and technical expertise, prospects of candidates' business in attracting investors, and the strategic fits between candidates' needs and the resources of UBI were used as selection criteria at a high level. UBIs stated that candidates' age, education level, financial status, availability of candidates' investment and funding were used moderately as a selection criteria.

Findings on University Business Incubator Performance

The highest number of university business incubators reported that the profit of their incubated businesses had increased; followed by a high number of reports in the growth of incubatees' business and employment, asset, turnover rate together with the increase of income tax paid to the government, incubatees' contribution to economic growth, survival rate of the incubatees, revenue from the licensing of patents and technology and commercialization and the number of incubator's graduates. UBIs indicated a moderate increase in the number of intellectual property registration, revenues from the commercialization of their patents, and their financial self- sustainability as shown in Table 6.

Table 6
MEAN, STANDARD DEVIATION AND LEVEL OF UNIVERSITY BUSINESS INCUBATOR PERFORMANCE

University Business Incubator Performance	$\overline{X}$	Standard Deviation	Meaning of Score
1. Increase in incubatee's business profitability.	4.27	0.65	Highest level
2. Increase in the sales of incubatee's product/service.	4.19	0.74	High level
3. Increase in incubatee's employees/hiring.	4.00	0.75	High level
4. Increase in the survival rate of the incubated business.	3.97	0.79	High level
5. Increase in the Spin-off of incubatee's business.	3.92	0.83	High level
6. Increase in the value incubatee's assets.	3.68	0.88	High level
7. Incubatee's business has high impact on the economy growth.	3.59	0.76	High level
8. Increase in Number of Incubator's intellectual property rights.	3.22	1.00	Medium level
9. Increase in Incubatees' intellectual property rights application.	3.03	1.12	Medium level
10. Increase in UBI's revenue from technology licensing fee.	2.89	1.43	Medium level
11. Incubator can financially sustain itself.	2.84	1.34	Medium level
Total	**3.60**	**0.47**	**High level**

Findings on the Correlations of the Best Practice Components to the UBI Performance

The correlation coefficient between UBI management and administration, supporting services, augmented services for Technopreneur, selection criteria of potential incubatees, and UBI performance are shown in Table 7.

Table 7
CORRELATIONS OF THE BEST PRACTICE COMPONENTS TO THE UBI PERFORMANCE

(R : P-value)

	UBI management & administration	UBI supporting services	UBI augmented services for Technopreneur	UBI selection criteria	UBI performance
UBI management & administration	1				
UBI supporting services	0.552** (0.00)	1			

Table 7
CORRELATIONS OF THE BEST PRACTICE COMPONENTS TO THE UBI PERFORMANCE

UBI augmented services for Technopreneur	0.588** (0.00)	0.676** (0.00)	1		
UBI selection criteria	0.612** (0.00)	0.598** (0.00)	0.647** (0.00)	1	
UBI performance	0.716** (0.00)	0.763** (0.00)	0.808** (0.00)	0.822** (0.00)	1

Note: *p<0.05, **p<0.01

The results indicated that all four best practice components positively correlated with the performance of the university business incubators at the significant level of 0.05–the increase in the four best practice components will have positive effects on the UBI performance. The highest correlation was between the UBI selection criteria of potential incubatees and UBI performance at 82.2 percent. The correlations of UBI augmented services for Technopreneur, UBI supporting services and UBI management and administration were at 80.8, 76.3 and 76.1 percent respectively.

Findings on the Influences of the Best Practice Components to the UBI Performance

The influence of UBI management and administration, UBI supporting services, UBI augmented services for Technopreneur and UBI selection criteria on the UBI performance are shown in Table 8.

Table 8
THE INFLUENCES OF THE BEST PRACTICE COMPONENTS TO THE UBI PERFORMANCE

	Coefficients				
	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**P-Value**
Model	**B**	**Std. Error**	**Beta**		
(Constant)	-0.470	0.324	-	-1.453	156
UBI management and administration	0.286	0.091	0.261	3.156	0.003*
UBI supporting services	0.233	0.092	0.221	2.520	0.017
UBI augmented services for Technopreneur	0.173	0.058	0.279	2.997	0.005*
UBI selection criteria	0.367	0.093	0.350	3.966	0.000**
R	0.938				
R Square	0.881				
SE	0.172				
F	59.101				
P–value	0.000				

Note: *p<0.05, **p<0.01.

The four Best Practice components: UBI management and administration, UBI supporting services, UBI augmented services for Technopreneur and UBI selection criteria had the influence on UBI performance at the significant level of 0.05. The four Best Practice components can explain the variation of the UBI performance at statistical significance F=

59.101 and P=0.000. Furthermore, the four independent variables showed a positive linear relationship to the UBI performance at 93.8 percent, and could explain the variance at 88.1 percent.

The comparisons between correlation analysis and multiple regression analysis indicated that all four Best Practice components had the influence on the UBI performance. Beta showed that the most influential variable to UBI performance was Best Practice component: UBI candidate selection criteria at 0.350; followed by Best Practice: UBI augmented services for Technopreneur at 0.279, and the least influential variable to UBI performance was best practice component: UBI supporting services at 0.221.

DISCUSSION AND RECOMMENDATIONS

The findings indicated that there were numerous high levels of best practice of all the components; however, university business incubators could make improvement on some of the mediocre criteria which will positively have impact on the performance of the incubators.

The major issues of both the incubators and incubatees were the lack of funding which corresponded to the research findings of Chandra and Fealey (2009) and Munkongsujarit (2016) indicated that the major barriers to business incubators' performances were the lack of funding and government intervention in the form of high corporate taxes. Thailand possesses limited financial support systems to the incubatees from both the public and private sectors, particularly in terms of inadequate funding of capital to start-ups. The numbers of business angel and venture capital investors were minimal; furthermore, applying for a new business loan from a financial institution was difficult and a complicated task (Munkongsujarit, 2016).

To alleviate the above issues, it is recommended that government steps up and encourages business angel and venture capital to invest in the nascent entrepreneurs' businesses by offering them tax reductions or exemption on the earnings from start-ups investments; together with a reduced corporate income tax rate. UBI could also participate in the investments of high potential start-ups in the form of joint ventures; which will motivate UBI in providing their full and comprehensive supports to their incubatees. Furthermore, financial institutions should adjust their loan policies; reduce the time and procedures on the loan application process.

The findings on the component of incubatees' selection criteria showed that UBI greatly emphasized on the candidate's commitment and enthusiasm towards the business; the attributes and innovativeness of candidate's product and/or service; the feasibility of candidate's business idea and business plan; and UBI's resources that can create competitive advantage for the candidate's product and/or service.

It is recommended that UBI should place more importance on to the education level of the candidates as there was strong evidence supporting the relationship between levels of general education and entrepreneurial success (Dickson et al., 2008). Furthermore, when selecting a candidate, UBI should emphasize on the candidates' initial investments and their financial capabilities as these can also indicate the candidates' commitment to their business. Lastly, UBI should seek out the nascent entrepreneurs who have the demands for the usage of university's researches and technologies and give priority to those who have the intentions of licensing and commercializing the university inventions in which the earnings from the licensing fee can contribute to the financial sustainability of the UBI.

This research contributed to the knowledge of Thailand university business incubators landscape; however, it was limited to the views of the UBI managements which were

quantitatively surveyed. For future researches, it would give deeper insights to the UBI best practices if qualitative researches were to be conducted on both the managements and the incubatees.

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