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INCUBATING SUCCESS TOWARDS GULF COOPERATION COUNCIL (GCC)

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Abstract: *Purpose*: This paper aims to identify and assess critical dimension of business incubation with focus on the Gulf Cooperation Council, which are suitable to measure the effectiveness of business incubation to support startup and entrepreneurial businesses by providing a number of services and resources to the clients.
Design/methodology/approach: The study is a multi-method approach combined of desk-research, interviews, a multi-case study of five incubator organizations in the Gulf Cooperation Council (GCC) member states and a case study in an international context.
Findings: Firstly, a model for measuring the effectiveness of business incubation in a standardized way is developed and secondly, this model is evaluated by a multi-case study and its implications are discussed in the context of an international background.
Research limitations/implications: There is little academic research presenting the characteristics of business incubation in the Gulf Cooperation Council (GCC).
Originality/value: This model helps practitioners and government parties for future implementation of incubators program. Furthermore, it adds new knowledge for academic literature incubators and economic development to a commonly agreed model for effectiveness measurement of business incubators.

Keywords: *Economic Development; Incubators; Entrepreneurship; Gulf Cooperation Council State; Innovation.*

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INTRODUCTION

Although business incubators have been originated in the United States in the late 1950s, the industry did not begin to grow rapidly until approximately 1980. Since that time, business incubation has gained popularity around the world, and was briefly popular in the media around 1999 (NBIA, 2009b). According to the National Business Incubator Association, headquartered in Ohio, United States, a business incubator is defined as follows: "Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its network of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. Critical to the definition of an incubator is the provision of management guidance, technical assistance and consulting tailored to young growing companies" (NBIA, 2009a). The types of assistance and resources provided by business incubators varies widely, but often includes office space, legal support, networking assistance, and marketing assistance.

This paper will focus on business incubators from 1980 to 2009. The growth of the business incubation industry peaked in the late 1990s (Eshun, 2004), and many business incubators in existence today are well-established. Nevertheless, the industry continues to grow rapidly, particularly in developing countries outside the United States. Studying the effectiveness of business incubators over time is, therefore, a promising way to discover whether the industry works and how it can be improved and incubation programs effectively instituted for the economic growth of communities. The need for standard metrics by which to measure incubator effectiveness

has long been understood within the industry: "The power of measuring incubator impacts can only be realized if there is widespread, standardized performance benchmarking in the industry. Although there is some utility in an individual incubator's collecting evaluation data, it is much more useful to an individual manager to know how his or her program is doing relative to 20, 50, or 100 other programs with similar missions" (Molnar et al., 1997).

This paper aims to address this gap in knowledge by addressing three main research questions:

Q1: Which are commonly agreed critical dimensions in measuring effectiveness of business incubators?

Q2: Can these critical dimensions be identified in GCC perspective?

Q3: How are these critical factors related to an international context?

The effectiveness of business incubators has been discussed at length in the relevant literature, and many theories about how to measure business incubation success or effectiveness have been proposed. The need for standardized assessment criteria has long been understood; according to Molnar et al. (1997), "Developing and utilizing a common set of metrics and measures should be an industry priority...". To achieve this, "... everyone who is collecting data must ask the same core set of questions and ask them exactly the same way".

LITERATURE REVIEW OF BUSINESS INCUBATION

Business incubators and the NBIA have an interest in promoting the business incubation industry. As such, there is a

potential bias in data regarding the success of individual businesses. While information on successful incubator clients serves to promote incubation and is therefore easily accessible, information on unsuccessful clients is more difficult to obtain. According to Eshun (2004), "The failure of business incubation research to investigate 'less successful' or closed business incubators implies that potential knowledge that could be gained to advance our theoretical understanding--lessons that could be learned--of the failures has been ignored". Furthermore, data on the successes and failures of comparable non-incubated businesses, both individually and aggregated, is not routinely collected and is thus hard to find (Bearse, 1998).

Despite the existence of commonly-used dimensions for evaluating incubator effectiveness, data on selected dimensions has not been regularly collected and aggregated. Although the surveys being conducted by the NBIA provide one useful source of aggregated data, these surveys have not been uniform with regard to the information they queried. Additionally, independent research on incubator outcomes has largely been focused on exploring the appropriateness of measures and performance indicators. As a result, there are very few studies that use the same measures, making it difficult to compare the results across studies.

A few examples are available to demonstrate the effectiveness of business incubation along selected dimensions, for example the number of jobs created by the incubated businesses over time. As the incubation industry has grown, so has the success rate of incubators. Table 1 shows an increase in the number of jobs created by business incubators over time. The data is taken from the 1991, 1998, and 2002 NBIA reports on the business incubation industry, as well as a 1997 study on the impact of incubator investments (Linder, 2003; McKinnon & Hayhow, 1998; Molnar et al., 1997; NBIA, 1992).

This indicates that, over time, the number of jobs created by incubated businesses on average has increased. Assuming that job creation can be used as a measure of incubator success, this indicates increased success of the industry as a whole. More recently, a study conducted by Eshun (2004) indicated that a typical incubator in New York, New Jersey, and Pennsylvania stimulated the creation of 374 jobs. In addition, Eshun found a positive correlation between the age of an incubator and the number of jobs it created.

Table 1: Job Creation by Incubated Businesses Over Time

	1991	1997/1998	2002
Full-time employees of graduated incubator client companies	85 (mean) 35 (median)	251 (mean) 80 (median)	No data
Full-time employees of current incubator clients	No data	79 (mean) 29 (median)	86 (mean) 43 (median)

In general, individual incubators become more effective with time, attracting more clients and graduating more businesses the longer they are in operation (Eshun, 2004). According to Al-Mubaraki and Busler (2010), "many business indicators are very well-established, and it can be inferred from this that they are likely to be contributing value to the economies and communities in which they are based" (p. 10).

In a survey of business incubators internationally, Al-Mubaraki and Busler (2010) found that the vast majority of incubators surveyed used graduation of clients as the primary factor in measuring their own success. Independently of funding issues, incubator managers look for graduation criteria as an indication that their clients are successful and the incubators' operations are yielding results. This indicates that clearly defining the goals and terms for graduation could contribute to the effectiveness of incubators, and that many incubators are already measuring the data necessary to conduct research on their effectiveness.

The following sections of this paper will discuss and attempt to justify four dimensions along which incubator effectiveness can be demonstrated: number of businesses graduated over a period of time, number of businesses still in business over a period of time, jobs created by incubator clients, and salaries paid by incubator clients. By studying the effectiveness of business incubators along these four dimensions, further research on incubator effectiveness can meaningfully examine the benefits of the incubation industry.

RESEARCH METHODOLOGY

The research methodology that has been used in this research study is a multi-method approach combined of desk-research, expert interviews and a multiple case study of five incubator organizations in the Gulf Cooperation Council (GCC) member states. For an overview on the research design see figure 1 (appendix I). The combination of the survey methods and the case studies work as complementary research elements, where the survey methods provides lacking information from the case studies and vice versa (Gable, 1994). A broad literature study in leading journals and conferences on the topic of business incubation was conducted to identify dimensions and measures used to make a statement about the success and the effectiveness of business incubators. From the results of the literature research, a model for measuring business incubation effectiveness was developed. This model consists of the most significant dimensions for effectiveness measuring of business incubators. The model was evaluated by a multiple case study on business incubators in GCC and by discussing the results with leading experts in the field of business incubation. At least, to put the regional findings in an international context, the proposed model was discussed in relation to the Hackett-Dilts-model (2004a) to identify compliance and deviation.

MEASURING BUSINESS INCUBATION EFFECTIVENESS – A FOUR-DIMENSIONAL MODEL

Desk-research in leading journals and further publication assets for business incubation has lead to the identification of several factors which are used to describe the effectiveness of business incubators in theory and practice. The identified factors have drawn attention to four dimensions which were identified as significant factors to describe the effectiveness of business incubators: graduation of businesses incubated, success of business incubated, number of jobs created by incubation and salaries paid by incubator clients. These four dimensions lead to an effectiveness measurement model to measure the effectiveness of business incubators as depicted in figure 2 (appendix II).

Following are the detailed explanations of these four dimensions:

Graduation of Businesses Incubated

Companies participating in business incubation programs can graduate from those programs for a number of different reasons. The most common reasons for graduation include outgrowing available incubator space, spending the maximum allowable time in the program, and achieving mutually agreed-upon milestones (Al-Mubaraki & Busler, 2010). An incubator's effectiveness can be measured in terms of the number of businesses that have graduated from its programs over a specified period of time. This is one of ten metrics that the NBIA recommends business incubators track as a measure of their own success (NBIA, 2007).

If incubation programs communicate and agree upon well-defined goals for graduation with their client businesses,

graduation rates can be a useful tool for tracking incubator success. Graduation can indicate that a business has made use of the resources available at the incubator and has achieved a level of success and self-sufficiency that allows it to prosper on its own. Graduated businesses qualify as established rather than nascent ventures and have therefore outgrown the need of incubation. An incubator can be seen as successful to the degree to which it helps its clients achieve this goal.

It should be noted, however, that statistics on graduation from incubators is meaningful only if clear goals have been determined and criteria for graduation standardized. An incubator that "graduates" businesses that, for example, have found other sources of funding cannot contribute to data on incubator success, because such a criterion for graduation does not reflect the successful operation of the incubator.

Success of Businesses Incubated

In addition to graduating a significant number of businesses in proportion to its total number of clients, a successful business incubator should be able to demonstrate the continued success of graduated businesses over a specified period of time. The NBIA's recommendation to new incubators states: "Graduate firms that remain in operation demonstrate your program's ability to produce successful companies that survive. Additionally, mergers and acquisitions are successful business outcomes; therefore, graduate firms that have executed these exit strategies should be tracked and included in your tallies of successful graduates" (NBIA, 2007).

Additionally, Hackett and Dilts (2004) proposed five outcome states by which incubated businesses could be classified and their success measured:

1. The incubator client is surviving and growing profitably.
2. The incubator client is surviving and growing and is on a path toward profitability.
3. The incubator client is surviving but is not growing and is not profitable or is only marginally profitable.
4. The incubator client operations were terminated while still in the incubator, but losses were minimized.
5. The incubator client operations were terminated while still in the incubator, and the losses were large.

Outcomes one, two, and three are taken to indicate the success of an incubated business. Although Hacket and Dilts intended these outcomes to be assessed immediately upon graduation from the incubation process, they could also be used some time after graduation to measure continued success. It should be noted, however, that termination of operations prior to graduation from an incubator could reflect market forces rather than incubator ineffectiveness.

This measure of effectiveness is amenable to qualitative analysis of incubator clients, which may be more useful than the collections of statistics that are commonly used to evaluate incubators (Voisey, Gornall, Jones, & Thomas, 2006). In addition to financial data related to financial growth, profits, and losses, broader measures of a business's success after incubation can be used to identify the success of incubation. More research is necessary to determine which qualitative measures would be the most effective in this area, but several researchers (e.g. Wiggens & Gibson, 2003) have made proposals to this effect.

Jobs Created by Incubation

One of the most important goals of business incubators, particularly non-profit incubators, is enhancing the local economy. Over 90 percent of surveyed incubators listed creating jobs in the local economy as a high or very high priority (Al-Mubaraki & Busler, 2009). Therefore, assessing the degree to which incubators have achieved this goal is a crucial part of measuring their effectiveness. Additionally, regularly measuring the number of people employed full-time and part-time by incubator clients can provide incubators with evidence of their clients' growth (NBIA, 2007).

When considering the number of jobs created by incubation, it should be kept in mind that incubators do not directly create jobs. Instead, they provide entrepreneurial businesses with resources and services that allow them to survive and grow, thereby creating jobs. As a result, a high number of jobs provided by client businesses can be taken as only an indirect measure of the effectiveness of an incubator and should be paired with other measures in order to become meaningful.

Salaries Paid by Incubator Clients

Measuring the total payroll of incubator clients, both current and graduated, is another way of assessing their effectiveness. Within individual firms, changes in maximum, medium, and mean salaries over time can be used as an indication of the firm's overall financial progress. Incubator client salaries are, along with jobs created, an indication that incubators are achieving their goals of helping grow new ventures. Because approximately 84% of incubator clients remain in the community after graduation (Al-Mubaraki, 2008), these measures indicate economic growth within that community rather than outside of it.

By pairing data on salaries and wages of client and graduate businesses with data on the number of people employed by the same businesses, researchers can obtain information on average salaries and wages paid. This data is often requested by sources of incubator funding in order to assess the incubators (NBIA, 2007). Additionally, by comparing the resulting averages with overall averages for the surrounding community, researchers and stakeholders can determine whether an incubator is effective in terms of its impact on the local economy and quality of life is positive overall.

Recently the publication of NBIA (2010) the full time CEO salary increased to 30% ($100,000) in 2009, 19% in 2005. The majority of incubators executives earned between $60,000 and $100,000 of these 37% in the range $60,000 to $79,000, 19% earned between $80,000 and $100,000.

BUSINESS INCUBATION IN GCC– A MULTIPLE CASE STUDY

Case studies are an accepted research method to gain knowledge in a natural setting. Aim of case studies is to generate theories from observations in practice (Yin, 2002, 2004, 2009). It is a suitable way to understand phenomena and the complexity of observation objects (Benbast, Goldstein and Mead, 1987). Case studies are a valuable method to research in an area where only few other studies have been conducted (Lee, 1989; Yin, 2002, 2004, 2009). There are different types of case studies leading to different insights to new knowledge. In this paper a case study is used to validate a conceptual model. This is a suitable way to achieve validity of new theories (Yin, 2002, 2004, 2009).

Interviews were conducted with senior executives of five incubators organizations across the GCC members of states.

From the interviews it was identified that currently there are 21 incubators across five business incubation centers in the GCC including Kuwait. Also it has been noted that in developing countries including Kuwait and other GCC member states, business incubators could be particularly valuable in contributing to the development of the local economy, promote technology transfer, creates new enterprises and impacts on job creation.

These information were supplemented by factors mentioned in interviews with responsible persons from leading business incubators.

Case Studies Overview

Case Study 1: Manama, Kingdom of Bahrain

In the GCC member states, the efforts to support entrepreneurship through business incubators and similar facilities are increasing. For example, in 2003, Manama in the Kingdom of Bahrain, through the Bahrain Development Bank and United Nation Industrial Development Organisation (UNIDO) has established business incubation centre as the first GCC member state who implemented this program. The reason behind this centre is to support new business formation in the Kingdom of Bahrain and in cooperation with commercial and the ministry of industrial affairs. The main objectives are to impact policy making, commercialise research, establish companies that export revenues, create jobs, develop profitable enterprises and raise awareness of potential entrepreneurs. The category of the incubation centers is of mixed-use and governmental non-profit business type. The number of client companies on site is 35 with 265 employees in client firms. The total graduation firms are 15 with 66 employees in graduated firms (Al-Mubaraki, 2008). The listing of relevant figures can be taken from table 2.

		Manama, Kingdom of Bahrain		BADIR-ICT, Kingdom of Saudi Arabia		Science and Technology Park, Qatar		Dubai Business Incubation Center, United Arab Emirates		Knowledge Oasis Muscat, Oman	
Space	Number of buildings	2		1		n.a.		n.a.		n.a.	
	sq.m. available in total	5200		5800		12301		n.a.		n.a.	
	sq.m used for incubator services/admin	200		1400		n.a.		n.a.		n.a.	
	sq.m. rented by client firms	4100		4400		3043		n.a.		n.a.	
Clients		On-Site	Off-Site	On-Site	Off-Site	On-Site	Off-Site	On-Site	Off-Site	On-Site	Off-Site
	Number of client firms	35	0	10	2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Number of employees in client firms	265	0	20	2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Dimensions		Last Year	Total*	Last Year	Total*	Last Year	Total*	Last Year	Total*	Last Year	Total*
	Number of graduated firms	15	15	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Number of employees in graduated firms	66	66	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Companies still in operation 3 years after graduation	15	15	0	0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
		*since beginning of incubator operation		*since beginning of incubator operation		*since beginning of incubator operation		*since beginning of incubator operation		*since beginning of incubator operation	
		Note: Does not keep track of the companies				**Note:** no more data available		**Note:** no more data available		**Note:** no more data available	
		Note: Does do not use a graduation model for									
		Note: Is in regular contact with (most of)									

Legend:	On-Site: Clients which have their office in the building of the incubator
	Off-Site: Clients which have their office outside of the building of the incubator,

Table 2:
Facts Overview of The Case Studies

Case Study 2: BADIR-ICT, Kingdom of Saudi Arabia

In the Kingdom of Saudi Arabia, BADIR-ICT is first ICT technology incubator to be established in Saudi Arabia. The BADIR initiative was launched in January 2008 and it is the first operational incubator program in the Kingdom. It accepted its first tenants and affiliates in November 2008. This centre is part of the National Badir technology incubator initiative of Saudi Arabia's national research institute of King Abdul-Aziz City for Science and Technology (KACST). Badir focuses on ICT and ICT related enterprises supporting both technology and services companies with flexible services suite each segment. Badir's ICT currently operates as a unit of KACST under a supervisory committee chaired by the (KACST) Vice President HH Prince Dr. Turki Al-Saud. Other committee members consist of one representative of major stakeholders including Saudi Telecom Company (STC), Saudi credit and savings bank, Mowhiba, ministry of commerce, Saudi Arabian Government investment Authority (SAGiA). The key strategy is focused on the best practice incubation

finance and sustainability could offer; quality clients and investor relations. The BADIR–ICT facility based in Riyadh which comprises of 30 suites with over 100 rooms and up to 30 incubator business tenants. The statistics inferences of the BADIR's ICT technology incubator are, total space of 5,800 square meters available and 4,400 square meters rented by client firms. The total number of client firms on the site is 10 and the number of employees in client firms is 20. The listing of relevant figures can be taken from table 2.

Case Study 3: Science and Technology Park, Qatar

Another initiative is based in Qatar Science and Technology Park which was established in 2008. The main objectives of being commercialise research, creating companies that deal in export and create jobs. It manages to develop profitable enterprises and raise the awareness of potential entrepreneurs to promote applied research technology development and commercialisation in Qatar. Also, to support the diversify economy of Qatar through applications of technology which accelerates the formation and growth of start-up technology companies by creating high–value employment opportunities, in particular for the graduates of Qatar University. The model of the program is governmental not-for profit, information and communication technologies sectors. The space of business incubator is 12,301 square meters and 3,043 square-meters rented by client firms.

Case Study 4: Dubai Business Incubation Center, United Arab Emirates

Recently, the United Arab Emirates (UAE) has established the Dubai Business incubation center to foster the development of technology venture involving the internet, information technology and other related technology sectors. DEC

is a full service business incubation and provides a supportive, physical and intellectual environment for new business ventures. Advantages of using the services of the Dubai Enterprise Centre include one point of contact for set up, operations and consultation, physical infrastructure and business set up, access to qualified mentoring, setting goals, milestones, business plan, evaluations, marketing, funding, and support in understanding legal jargon, and ongoing networking and training. DEC is open to all industries and to both Emiratis and expatriates. The physical infrastructure includes a state of the art facility; access to a conference room, training room and other admin services. The entrepreneur is provided full support in almost all areas of business. There is an assigned mentor for the entrepreneur to help him or her move the venture forward smoothly. DEC is located at Dubai Airport Free Zone.

Case Study 5: Knowledge Oasis Muscat, Oman

Oman, through the "Knowledge Oasis Muscat" (KOM) establishes business incubation programs as joint venture with the U.K. technology park programs. The main services are business information finance and incubation development with technology transfer. The program is a non-profit governmental model. For start-up companies that require a total support package, KOM created The Knowledge Mine (TKM) a business incubator program that offers tenants a combination of subsidized offices and utilities in addition to a variety of business support program services. The Knowledge Mine provides a working environment that makes it possible for companies and entrepreneurs to devote more of their capital to R&D, testing and the production of future goods and services. Moreover, with access to a multi-disciplined Business Mentor Programme, the Knowledge Mine provides start-up residents with experienced advice and support. Facilities such

as meeting and conference rooms, photocopier, audio-visual equipment and reception will also be available to residents.

REFLECTIONS AND THE INTERNATIONAL CONTEXT

There have been a handful of surveys and studies conducted to demonstrate the effectiveness of business incubation in general, primarily by the National Business Incubation Association (NBIA), and, beginning more recently, by independent researchers (e.g. Abetti & Rancourt, 2006; Eshun, 2004). The four dimensions Graduation of Businesses Incubated, Success of Businesses Incubated, Jobs Created by Incubation and Salaries Paid by Incubator Clients are commonly used by incubators themselves in annual incubator performance reports intended to justify continued funding. Due to the wide range of quality and scope in these reports, future research should be committed to cooperation between independent researchers and practitioners in order to yield meaningful results and analysis. By utilizing data already collected by incubators for their own purposes, researchers who do not have an investment in the funding of incubators can objectively examine incubator successes.

A primary factor standing in the way of the continued development of business incubation is disagreement about their effectiveness. The difficulty of determining whether businesses would have succeeded without the assistance of incubators has been well-documented, and this is the basis for many arguments against incubation (e.g. Bearse, 1998). Nevertheless, as Eshun noted, incubators demonstrably produce several outcomes that can be considered desirable for a community: "They stimulate the recruitment and retention of entrepreneurial businesses, support their job creation efforts and in so doing promote the creation of fiscal revenues. In addition, they provide access to scientific, technical, and professional

experts whose competence and know-how inform and guide entrepreneurs in the creation of intellectual property–that is further developed into marketable products, technologies, and services" (Eshun, 2004).

To enhance the relevance of the proposed model toward an understanding of a commonly applicable model for measuring success in business incubation we put the model in the context of the Hackett-Dilts model (2004). This gives an international context to the consideration due to the fact that the Hackett-Dilts model is based on observations in the US market which can be regarded as international standard in business incubation. The Hackett-Dilts model is display in figure 3 (appendix III):

This model is accepted as model for the incubation process itself. Measuring success of business incubation is a subpart of the incubation process. Therefore, the proposed measurement model (see figure 2) should fit into the Hackett-Dilts model. To elaborate on this, an alignment of the two models has been investigated. The result of the investigation is displayed in figure 4 (appendix IV).

As it can be seen in figure 4, the proposed measurement model fits into the Hackett-Dilts model by assigning the characteristics of the measurement model to the dimensions of the Hackett-Dilts model. To elaborate more on this alignment it can be seen, that two of the every dimension of the Hackett-Dilts model is represented in the measurement model. On the other hand, this alignment does not show how sufficient the characteristics of the measurement model are concerning the international context. This investigation should be part of future work on a commonly accepted measurement model for business incubation success.

The existence of this alignment underscores the need for further research and data collection with regard to the effectiveness of business incubators. But to draw attention to the conclusion whether business incubation is effective or not, it is necessary to identify relevant factors and to propose them in a model which can be applied to every business incubation for measurement effectiveness.

CONCLUSION

Aim of this paper was to elaborate on a commonly applicable model for measuring the success of business incubators. For this, focus was set on the business incubation in GCC and the results were reflected in an international context.

Our research question Q3 from section 1, we have shown that the proposed measurement model is aligned to the general Hackett-Dilts model and that the characteristics of the measurement model are representing all of the dimensions of the Hackett-Dilts model. Therefore, the proposed measurement model suits in an international context in general. To what extend will be part of future work. While the proposed model was derived from a Gulf Cooperation Council Perspective, the authors believe that this model may also be suitable in higher developed economic regions. This question is subject to be discussed in further research on this topic.

There are many characteristics in the measurement model are useful in determining the effectiveness of business incubators individually and as an industry. In addition to the merits of the measures presented above, many incubators already collect data on these dimensions or parts of these dimensions for their own uses and to monitor their own progress. It is therefore recommended that:

- Extension research in this area should focus on the four dimensions discussed in this paper: the number of businesses graduated over a length of tendency, jobs created by incubator clients, and survival rate for graduate and client companies.

- From industry point view, the economy's growth based on the new and existing incubators worldwide should obtaining data related to the best practice of incubators.

By following the above recommendations, practitioners, stakeholders, researchers, and governments can help to develop business incubation guidelines for best practice in GCC, which leads the economic development worldwide and GCC.

BIOGRAPHY

Dr. Hanadi Mubarak AL-Mubaraki is an Assistant Professor in Kuwait University. She teaches undergraduate and graduate courses in project management and civil engineering. Furthermore, she teaches undergraduate courses in business schools such as management. She has been published in different academic journals, book and has presented his research in many countries. In addition, she prepares feasibility studies of many projects and formulates the aspects of research and development proposals for improving costs, monitoring projects and assuring quality developments in Kuwait University. Dr. Al-Mubaraki worked as financial analyst and project engineer in MPW Turner International, Kuwait. Finally, she earned intensive training program in Gleeds international UK as junior engineer. She earned her doctorate from Washington International University.

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REFERENCES

Abetti, P. A., and Rancourt, C. F. (2006). "University incubators as agents for technology transfer and economic growth: Case studies in USA, Ukraine, and Finland". *International Journal of Technology Transfer & Commercialisation, 5*(4), 308-337.

Al-Mubaraki, H. (2008). Procurement of international business incubation – Quantitative and Qualitative approaches. Melrose Books, United Kingdom, www.melrosebooks.com

Al-Mubaraki, H., Busler, M. (2009). "Business incubators: findings from worldwide survey and guidance for the G.C.C states". *World Sustainable Development Outlook*, 83- 91.

Al-Mubaraki, H., Busler, M. (2010). "Business incubators: Findings from worldwide survey, and guidance for the G.C.C states". *Global Business Review*, Vol.11(1), January-April 2010.

Al-Mubaraki, H., (2010). "Business incubation in the G.C.C states". *Economic focus*, Vol.5(2), Autumn 2010.

Bearse, P. (1998). "A Question of Evaluation: NBIA's Impact Assessment of Business Incubators," *Economic Development Quarterly*, 12 (4), 322-333.

Benbast, I., Goldstein, D.K., Mead, M. (1987). "The case research strategy in studies of information systems" MIS Quarterly 11(3), p. 369-386.

Eshun, J. P., Jr. (2004). Where do business incubators come from? The origins, evolution, and institutionalization of business incubators: Evaluating performance and assessing outcome (Doctoral dissertation, Columbia University, 2004). *Dissertation Abstracts International, 65*A(04), 1559.

Gable, G. (1994). "Integrating case study and survey research methods: an example in Information Systems". *European Foundation of Information Systems* 3(2), p.112-126

Hackett, S.M. and Dilts, D.M. (2004). "A Systematic Review of Business Incubation Research", *Journal of Technology Transfer* 29 (1): 55-82.

Hackett, S. M., & Dilts, D. M. (2004a). "A real options-driven theory of business incubation", *Journal of Technology Transfer*, 29(1), 41–54.

Lee, A. S. (1989). "A scientific methodology for MIS case studies" *MIS Quarterly* 13(1), p.32-50.

Linder, S. (2003). "2002 State of the Business Incubation Industry". Athens, OH: NBIA.

McKinnon, S., & Hayhow, S. (1998). "1998 State of the Business Incubation Industry". Athens, OH: NBIA.

Molnar LD, Adkins B, Yolanda D, Grimes H, Sherman L, Tornatzky L. (1997). "Business Incubation Works". Athens, Ohio: NBIA Publications.

National Business Incubation Association (NBIA), (1992). "The State of the Business Incubation Industry 1991". Athens, OH: Author.

National Business Incubation Association (NBIA), (2007). "Suggested Metrics." *NBIA: A Toolkit*. < http://www.nbia.org/impact/suggested_metrics.php >. Accessed on June 9, 2009.

National Business Incubation Association (NBIA), (2009a). "What is Business Incubation?" < http://www.nbia.org/resource_library/what_is/index.php >. Accessed June 9, 2009.

National Business Incubation Association (NBIA), (2009b). "Business Incubation FAQ." < http://www.nbia.org/resource_library/faq/index.php >. Accessed on June 9, 2009.

Voisey, P., Gornall, L., Jones, P., & Thomas, B. (2006). The measurement of success in a business incubation project. *Journal of Small Business and Enterprise Development, 13*(3), 454.

Wiggens, J., & Gibson, D. V. (2003). "Overview of US incubators and the case of the Austen Technology Incubator". *International Journal of Entrepreneurship and Innovation Management*, *3*(1/2), 56.

Yin, R.K. (2002). "Case study research methods", 3rd edition, *Sage publications Inc.,* US.

Yin, R.K. (2004). The case study anthology. 1st ed. *Sage publications Inc.,* US.

Yin, R.K. (2009). 'Case study research: Design and methods'. 4th ed. *Sage publications Inc.*, US.

APPENDIX I

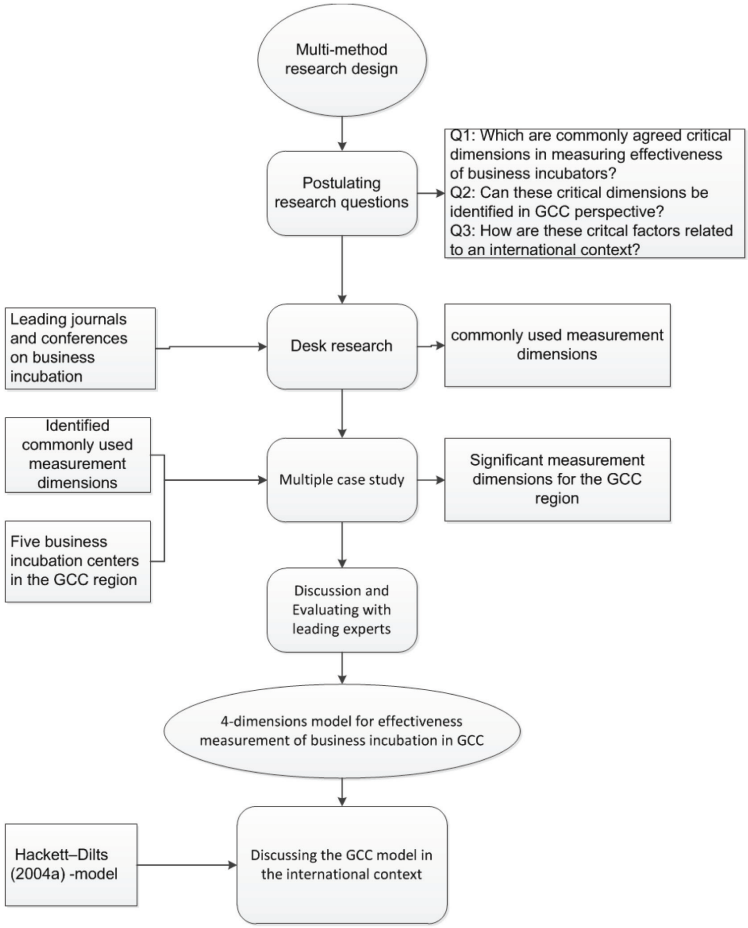

Figure 1: Research Design

APPENDIX II

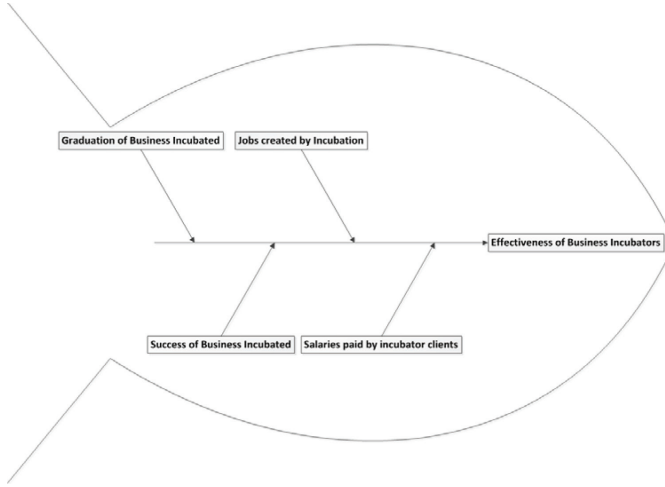

Figure 2:
Business Incubator Effectiveness Measurement Model

APPENDIX III

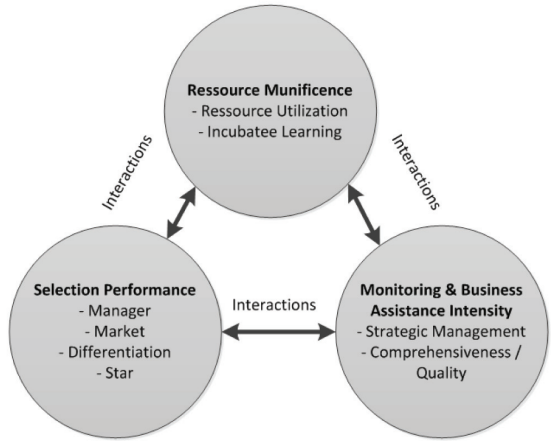

Figure 3:
Hackett-Dilts Model According to Hackett (2004a)

APPENDIX IV

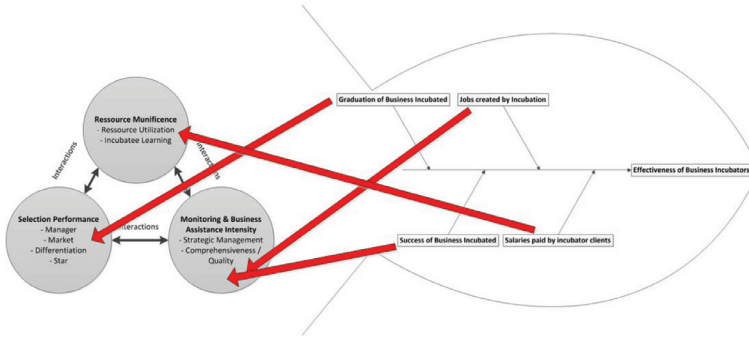

Figure 4: Alignment of the Hackett-Dilts Model and the Proposed Measurement Model