

## Business Incubators and its Effect on Success of Incubated Firms in Jordan

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**Abstract:** Business incubators have been playing a vital role in generating economic development and promoting new business creation. Business incubator offers a range of business support services and resources. This study examines the effect of business incubators (strategic incubation services and support incubation services) on success of incubated firms. The methodology used consists in application of a questionnaire, where the managers of 31 incubated firms in four business incubators in Jordan (King Hussein Business Park Incubator, Amman Arab University Incubator, Philadelphia University Incubator and Yarmouk University Incubator) responded. The study indicates that there is a statistical effect of strategic incubation services on success of incubated firms. While there is no statistical effect of support incubation services on success of incubated firms. The study recommends that managers of researched business incubators in Jordan should pay more attention to sustain strategic incubation services in their business incubators in order to contribute in promoting success of incubated firms.

**Key words:** Business incubators, success of incubated firms, strategic incubation services, support incubation services, Jordan

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### INTRODUCTION

The first business incubator was launched in 1959 as the Batavia Industrial Center, in New York (Adkins, 2009). The 25 year later, there were twelve business incubators established in USA. In the early 1970s, The United Kingdom adopted the same small business nurturing strategy. In the early 1990s, China had approximately 85 business incubators actively operating (Dubihlela and Schaikwyk, 2014). Since, the 1997 establishment of the first incubator, Taiwan has the highest density of incubators in the world by launching Business Incubation Network which is a collaborative nation-wide community of resource facilities and business experts dedicated to promoting the success of early stage entrepreneurial firms (Yuan and Lin, 2009). In Jordan, first business incubator was established in 1997 (Saket, 2005).

The evolution of business incubator can be described as a community inside the community that generates critical sources of restrictions and opportunities across a network of support where the accessibility, availability, shared resources and supply of services facilitates the beginning, acceleration, development and business survival of an entrepreneur-oriented to commercialize new technological services and products (Perdomo *et al.*, 2014). Policy makers began exploring a

collection of policy options to promote business growth and survival. One of these important options is a business incubator which is created to enhance new business development. Incubators offer a shared facility for start-up firms (Markley and McNamara, 1994).

Entrepreneurs and small business firms face several challenges that include financial challenges, lack of managerial skills, lack of access to markets, lack of credit, low production, inadequate institutional support and lack of interest by employees. Business incubators offer a good platform for supporting knowledge-based firms, by creating better conditions for entrepreneurship (Dubihlela and Schaikwyk, 2014). Business incubator is considered an environment that collaborates to the creation and development of firms, basically the ones which provide innovation and an intellectual content (Pinto *et al.*, 2008).

The main aim of incubator is achieving success for incubated firms during the first critics' years and increasing the period of survival. Statistics show that 80% of the incubated firms in Brazil have survived the incubation period while in Germany, its rate is reaching 90% (Moraru and Rusei, 2012).

Several scholarly works (Obaji *et al.*, 2016; Somsuk and Laosirihongthong, 2014; Mubaraki *et al.*, 2014; Kumar and Ravindran, 2012; Verma, 2004) have been

conducted on the success factors of incubated firms. The results of scholarly works include; business support services, shared services, incubator governance, locations and facilities, funding and support, networking and mentoring, tie to university, tenant entry and exit and community support. Therefore, This study came to examine the effect of business incubators (strategic and incubation services and support and incubation services) on success of incubated firms.

**Literatur review:** Many studies have been conducted to evaluate business incubators performance or its impact. The primary aim of business incubators is to help new businesses thrive and survive. Business incubators have been playing a critical role in generating economic development and promoting new business creation. Business incubation provide a range of business support services and resources. Therefore, a nurturing environment where small businesses start-ups and entrepreneurs can commercially transform their concepts and new ideas into viable products and services. Business incubators, consequently, has been increasingly recognized as a sustainable approach for enhancing new business formation and accelerating new business growth (Cheng and Schaeffer, 2011).

Azzam and Musa (2010)'s study investigated the role of business incubators in the development and support of entrepreneurial firms success in Jordan and its contribution to economic growth. The study findings indicated that there was a significant impact of the administrative and technical services on entrepreneurial firms success in terms of income, creating jobs and growth. And there was a significant impact of the strategic factors (strategic vision, strategic leadership and incubation strategy) on entrepreneurial firms success in terms of income, creating jobs and growth.

Kharabsheh *et al.* (2011) explored the obstacles of technology parks success in Jordan. They identified the following four obstacles: absence of entrepreneurial culture, lack of independence and autonomy from government bureaucrats and university officials, lack of a shared vision among parks' stakeholders and lack of synergies among firms within parks. Hanadi and Busler (2012) have reviewed literature on business incubator in the Middle East and Europe. They concluded that the total number of graduate firms that have emerged from incubators in the Middle East (43) and Europe (832). incubators objectives focus on jobs creation, fostering entrepreneurship and technology commercialization. incubators services are stronger in Europe than in Middle East. the total number of incubators client firms in the Middle East is 68 whereas in Europe is 391. They attributed this result to the differences in dates which incubators were founded.

Lopes and Sassi (2012)'s study analyzed the role of technology-based incubators in the development of incubated firms. It was indicated that the resources made by incubators developed managerial actions and innovative mechanisms that made possible to incubated firms achieve its objectives. Incubators acting as tool of support in firms initial phase, by providing all necessary needs such as technical and managerial training, infrastructure which contribute in the success of incubated firms.

Ozdemir and Sehitoglu (2013) have reviewed the associated works on the performance of business incubators as a small-medium enterprise support tool and its importance for Turkey. In Turkey, business incubators contribution to the technical and entrepreneurial education should be taken into account as an important fact. Isabelle (2013) Indicated that five key factors that entrepreneurs should take into account about incubators. The five factors are stage of venture, fit with incubator's mission, services provision, selection and graduation policies and network of partners.

Kavhumbura (2014) investigated the critical success factors of business incubators and small business development organizations in South Africa. Some critical success factors, namely supportive government policy, availability of funding, access to technical expertise and management competencies were found to have no significant relationship with incubator performance while stakeholder support, financial sustainability, stringent selection criteria and networking were positively correlated to the performance of the small business organization.

Tietz *et al.* (2015) have performed a literature review on business incubators. The findings show that most of the themes are connected with the services provided by the incubators and its management; therefore, there are many research gaps could be explored by academic scholars such as the interrelationship between business incubators and triple helix or internal characteristics of business incubators. Ogutu and Kihonge (2016) have surveyed selected countries in America, Asia, Africa and Europe to explore the relationship between the number of incubators in a country and the Gross Domestic Product. The study used content analysis, historical data and statistical analysis to establish a strong relationship between the numbers of incubators in a country and the Gross Domestic Product.

## **MATERIALS AND METHODS**

The researchers want to know how far the effect of business incubators (strategic incubation services and

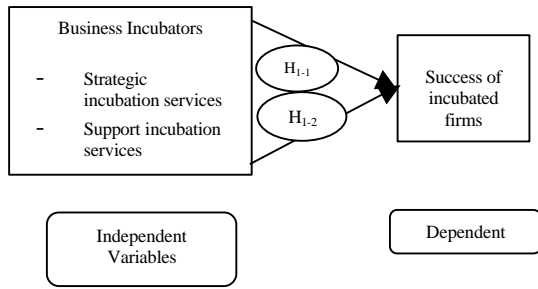


Fig. 1: Research framework

support incubation services) on success of incubated firms, then framework could be made to support the research hypotheses. The independent variables in the research are strategic incubation services and support incubation services and the dependent variable is success of incubated firms, framework of the research can be seen in Fig 1. The methodology used consists in application of a questionnaire, where the managers of 31 incubated firms in four business incubators in Jordan responded. The research instrument includes numerous questions made for various indicators that consist of 12 indicators for strategic incubation services (feasibility studies before incubation, business planning and establishment services, training and development, counselling services on the development of new products, assistance in funding, assistance in obtaining grants, counselling services on human resources management, accounting services, legal services, networking services with other entrepreneurs, assistance in export and assistance in e-business), 5 indicators for support incubation services (secretarial and office services, shared meetings room, cleaning services, maintenance services and shared break rooms) and 1 indicator for success of incubated firms. In addition to 5 questions to determine firms' characteristics, 4 questions to identify reasons of joining business incubators and 2 questions to determine the cost of rental units of the incubator and the quality of services provided by the incubator. From research framework, testable hypotheses can be developed to measure the validity of framework relationships. Hence, the main hypothesis and sub-hypotheses are shown as follows:

- C H<sub>1</sub>: business incubators (strategic incubation services and support incubation services) are positively related to the success of incubated firms.

The following two sub-hypotheses can be derived from the main hypothesis:

- C H<sub>1.1</sub>: strategic incubation services are positively associated to the success of incubated firms

- C H<sub>1.2</sub>: support incubation services are positively associated to the success of incubated firms

## RESULTS AND DISCUSSION

**Characteristics of incubated firms:** Table 1 shows the characteristics of incubated firms in four business incubators in Jordan (King Hussein Business Park Incubator, Amman Arab University Incubator, Philadelphia University Incubator and Yarmouk University Incubator). The 77.4% of incubated firms are practicing service activity, Nearly half of firms are limited liability companies, 71% of firms remain less than 2 years in incubation, 93.5% of firms are micro and small businesses, more than half of firms have part-time employees and 93.5% of firms employees have scientific qualifications.

**Reasons for incubation:** Table 2 demonstrates one-sample test for reasons of joining incubators from respondents' point of views. Incubator facilities, challenges of establishment stage and challenges of the small size of the firm are the most important reasons for joining incubators in Jordan. But integration with existing firms in the incubator is not significant factor for joining incubator in Jordan.

**Cost of rental units and quality of services:** Table 3 shows one-sample test for cost of rental units of the incubator and quality of services provided by the incubator from respondents' point of views. The quality of services provided by the incubator is very good but the cost of rental units of the incubator is slightly high.

**Hypotheses testing** To test hypotheses, multiple regression analysis was used to measure the effect of strategic incubation services and support incubation services on success of incubated firms. Table 4 indicates that there is a statistical effect of strategic incubation services on success of incubated firms; beta = 0.679, p = 0.000, therefore hypothesis H<sub>1.1</sub> is supported. This result consistent with Azzam and Musa (2010)'s study which indicated that there was a significant impact of the strategic factors (strategic vision, strategic leadership and incubation strategy) on entrepreneurial firms success.

While Table 4 indicates that there is no statistical effect of support incubation services on success of incubated firms; beta = -0.022, p = 0.882 as a result, H<sub>1.2</sub> is rejected. This means that support incubation services is not significant for success of incubated firms. But strategic incubation services is strongly significant for success of incubated firms, otherwise the incubated firms will fail.

Table 1: Characteristics of incubated firms

Variables	Categories	Frequency	Percent
Firm activity	Commercial	6	19.4
	Service	24	77.4
	Industrial	1	3.2
Legal form	Sole proprietorship	7	22.6
	Partnership	9	29.0
	Limited liability company	15	48.4
Duration of incubation	<1 year	10	32.3
	1-2 years	12	38.7
	>2 years	9	29.0
No. of fulltime employees	<5 employees	23	74.2
	5-19 employees	6	19.4
	20-99 employees	2	6.5
No. of part-time employees	None	14	45.2
	<5 employees	14	45.2
	5-19 employees	2	6.5
Employees qualifications	20-99 employees	1	3.2
	Scientific qualifications	29	93.5
	Professional qualifications	2	6.5

Table 2: One-sample test for reasons of joining incubat

Category	t-values	df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
					Lower	Upper
Challenges of establishment stage	5.118	30	0.000	1.09677	0.6591	1.5344
Challenges of the small size of the firm	2.559	30	0.016	0.64516	0.1303	1.1600
Integration with existing firms in the incubator	0.135	30	0.893	0.03226	-0.4551	0.5196
Incubator facilities	5.429	30	0.000	1.22581	0.7646	1.6870

Table 3: One-sample test for cost of rental units and quality of services

Category	t-values	df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
					Lower	Upper
The cost of rental units of the incubator	-0.701	30	0.489	-0.06452	-0.2524	0.1234
The quality of services provided by the incubator	6.568	30	0.000	1.12903	0.7779	1.40801

Table 4: Multiple regression analysis for effect of strategic incubation services and support incubation services on success of incubated firms

Model	Unstandardized coefficients (B)	SE	Standardized coefficients (β)	t-values	Sig.
1 (constant)	1.941	0.570	3.407	0.002	0.002
Strategic incubation services	0.566	0.124	0.679	4.570	0.000
Support incubation services	-0.022	0.149	-0.022	-0.149	0.882

### CONCLUSION

Based on the results then it can be concluded the following implications: since, there is a positive effect of strategic incubation services on success of incubated firms, managers of researched business incubators in Jordan should pay more attention to sustain these strategic incubation services in thier business incubators.

Since, the cost of rental units of the incubator is slightly high, managers of researched business incubators in Jordan should take in account the possiblity of reduce the cost of rental units in their incubators. Since, the data was gathered from incubated firms in only four business

incubators, generalizability to other incubators and incubated firms might be limited. Therefore, further studies are recommended to be conducted on all business incubators and incubated firms in Jordan.

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