THE ROLE OF BUSINESS INCUBATORS IN THE SUCCESS OF ENTREPRENEUR STARTUPS: A Field Study in the Jordanian Economy

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ABSTRACT

The portion of small businesses in most Arab countries is very high and it is, almost, account for about 80% of the whole businesses in the national economy. Thus, the effect of small businesses on the growth and development of the national economy and business sustainability is very high. Therefore, decision makers at all levels in the national economy have to pay extra attention and support to small businesses specially in the early startup stages (Seed stage), which are, usually, very critical and could lead to failure. Business Incubators are an effective body to perform the task of supporting small businesses during that critical stage. Business incubators could provide new (entrepreneurial) startups with all necessary aid that they need during their startup stages, in term of, business knowhow, material suppliers, equipment required, consultancy, location selection and layout and financial support. The aim of this study was to assess the influence of business incubator on the success of entrepreneur startups. A questionnaire was used to collect the required data. All the population of business incubators in Jordan were covered in this study (19 organizations nationally). Findings show that Incubators financial advice and services and its technical and administrative policies have a significant influence on the success of entrepreneur startups in Jordan.

Keywords: Business Incubator, advice, polices, and startup.

1. INTRODUCTION

The small and medium businesses sector has been contributing significantly in the development of Jordanian economy. It has a major role in achieving national economic growth and objectives (Thurik, Wennekess, 1999: in Al-Wade 2010). The number of small enterprises in most Arab countries in general, and in Jordan, in particular, composes a largest proportion of the total number of business organizations in the national economy. In 2014 small business formed about 90% of the total number business organizations in the Jordanian economy (Rifai 2010 / Al-Wade 2010). This fact suggests that, small business have great influence on the movement of the national economy and therefor it deserves an exceptional bolstering and support from all concerned parties specially for entrepreneurial companies. This is due to the fact that these small enterprises and entrepreneurs usually suffering from considerable shortages in technical skills and competencies, administrative and financial knowledge and marketing experiences which are essential requirements for survival and success (European Commission 2000) (Allen and Rahman,1958, Peters et al 2004: in Al-Wade 2010 and Allen and Mccioskey, 1990). Furthermore entrepreneurial and small businesses are confronting many challenges and facing difficulties to get any sort of financial fund and support, to develop and successfully manage their projects.

Based on the above mentioned facts the important role of "Business Incubators" has become clearly noticeable by people who are not satisfied with their recent jobs or those who are unemployed and intent to establish their own businesses and create new jobs. The official historical data indicated that many startups were failed due to considerable lack in
managerial, financial, technical and marketing competencies and skills. By contrast, there are many startups based on a new ideas or opportunity (Opportunity Entrepreneurial Activity) were successful. But in both cases “Business Incubators” plays a key role in increasing the likelihood of success of small businesses and startups (Rifai, 2010). Statistics shows that 33% of new businesses failed after their third year and 40% failed after their seventh year (OECD 2002, in Al-Wade 2010). These failure percentage were decreased to 15%-20% for incubated startups (Bruton 1998, Abetting 2004: in Al-Wade 2010).

2- HISTORICAL BACKGROUND

The results of recent studies suggest that “Business Incubator” units are an effective mechanism for supporting the growth and development of small entrepreneurial firms (McAdam and Marlow, 2008). The main objective of establishing “business incubators” is to provide necessary aid and support for small businesses and new startups to maintain continuous growth and survival. In the early stages of founding, incubator units, they were located close to universities to achieve three key objectives; technology transfer, promotion of entrepreneurship and the commercialization of leading edge research (Main, 1996; Shane, 2002; Albert and Gaynor, 2003). Furthermore, many types of supportive services such as concept testing, technical information, intellectual property advice, access to capital and management guidance were provided (Zucker et al., 2002; Carayannis et al., 2006).

According to the available literature the concept of business incubators’ was first defined in the 1950s in USA. During the past six decades the concept has evolved and developed, due to great changes in economic conditions, regional needs and technology. Business incubator was used as a mean to freshen up the economy of a region, and providing necessary support to entrepreneurs to be able to develop and establish new businesses (Mian, 1996). During the 1970s, technological incubators have become an important tool to encourage the development of technology clusters. This movement was accelerated in the 1980s as a result of binding incubator concept with public research institutions (PRIs). Then, technological incubators have been characterized as a sectoral focus for developing and disseminating information technologies and biotechnology (Vedovello, 1997). Thus, incubators are now exist in many countries round the world to facilitate regional innovational development, and ensure an effective cooperation between research centers and industry by providing and exchanging information throughout an international networks (Thursby and Kemp, 2002). In its generic sense, that the term “incubator” is often used to describe a wide range of organizations that, in one way or another, helping entrepreneurs to develop their ideas from inception to commercialization and launching a new enterprise. A broad definition of the term embraces science and technology parks, as well as organizations which have no single physical location and concentrate instead on managing a network of enterprise support services (Lindelof and Loftsen, 2004).

More than a decade ago “Business Incubators” were established in Jordan by both public and private sector including universities. The main task of these incubators was to support new small startups in their early stages (seed, development and market introduction) and help them passing these critical phases to increase the likelihood of success and survival (Rifai 2010). There are more than 3500 business incubators worldwide 60% of which are concentrated in North America and Europe (Al-Wade 2010).

4- LITERATURE REVIEW

It is generally recognized that business incubators support the consistency and growth of new small firms as they provide managing business facilities (Allen and McCluskey, 1990), promoting external investors and providing professional advisors (Hannon and Chaplin, 2000). Incubators offer a stable environment to enable new small firms to pool resources (OECD, 1997), and enabling them to share knowledge and build up a network of alliances with other entrepreneurs (Wilcock, 1999, Smilor and Gill, 1986; Barrow, 2001). Initially, incubators emerged in proximity to universities to promote technology transfer and commercialization of innovative and novel research (Shane, 2002; Albert and Gaynor, 2003). University based incubators normally pursue three main objectives; technology
transfer, promotion of entrepreneurship and commercialization of leading edge research (Zucker et al. 2002; Lockett and Wright, 2005; Nouira et al., 2005). Other objectives include, development of entrepreneurial culture and spirit, civic responsibility, establishing new sources for founding (Albert and Gaynor, 2003). The University incubator aims at providing number of initial services such as concept testing, technical advice, intellectual property advice, seed capital and management guidance. Such advice and support are, usually, offered by experts. Moreover incubators attract the attention of business angels, venture capitalists, whilst facilitating industrial networks, strategic advice and mentoring (Albert and Gaynor, 2003).

Business incubator proximity to university associate with the availability of knowledge, facilities and labor force can be beneficial in several ways (Dettwiler et al., 2006; Loefsten and Lindeloef, 2001; Loefsten and Lindeloef, 2003). Co-operation with university staff may provide access to the new knowledge in the concerned area which might result in developing more innovative products (Lockett and Wright, 2005; Nouira et al., 2005; Felsenstein, 1994). Making a link with a university may also reduce development costs (Markman et al., 2005). In addition to that link with university will convinced customer that the offered products or services are based on the updated knowledge and theories (Zucker et al., 2002). Furthermore, link with university maintain the availability of specialist and skilled labor which may be considered as an extra advantage to be located close to a university (Quintas et al., 1992; Barrow, 2001).

Facilities normally provide by incubator, include business advice, service and incubator management. Business advice includes that are needed for incubator’s employees or for incubator administration (Lee and Osteryoung, 2004; Rothschild and Darr, 2005). Moreover, the service resource provided by the incubator refers to secretarial services, conference facilities, canteen and car parking which are usually much less costly than individual premises and services (Markman et al., 2005). Effective incubator management can ensure that new firms have an access to the resources of business advice including programs specialist and seminars (Safraz, 1997).

In general, Business Incubators are considered as a development program to facilitate that diversify of the economic activities, increases wealth, create new jobs, deploys new technology and reduce risks of investment in new start-ups. Business Incubators are consider as a well-known mechanism to support (entrepreneurial) small projects (Start-ups) by offering a wide range of services and facilities in order to overcome all critical, complex and dangerous early phases successfully. Business Incubators offer the most necessary requirements for Start -up business success such as administrative, support & advice, business office layout, equipment purchasing, and providing financial aids (Rifai, 2010).

Role and Objectives of Business incubators
Business incubators services are covering many industrial and service sectors, such as tourism, media, and other types of business. The main role of business incubators is to provide necessary services for entrepreneur startups according to the nature of each individual project.

The major tasks of business incubator could be summarize as follow:
1- Rehabilitation of a new generation of business owners by assisting them starting their new business. This might contribute significantly to the creation of new jobs and facilitate national economic growth and development.
2- Supporting new startups projects in all economic sectors, especially during their early critical phases.
3- Provide all necessary aids to create a successful business startups environment.
4- Development of human resources to enable new business to meet the administrative, financial, accounting, technical and marketing needs, during the establishing phase.
5- Offering scientific and managerial consultations, particularly, for feasibility studies and how to build a business plan for new startups.
6- Acting as a mediator in providing financial services by connecting new startups with financial sector intuitions
7- Providing new startups with market analysis consultations.
8- Providing the relevant support and assistance for new small enterprises to enabling them achieving their goals in term of growth and quality.
9- Benefiting from scientific research results by implementing these results in a business project.
10- Increase the investment in viable innovative ideas to expand annual growth of the national economy.

4-1 Business incubator's Requirements
These requirements can be summarized as follow:
1. Highly qualified incubator adviser or manager who would be responsible for the creation of an appropriate environment for business startups.
2. Community support with a speared network of relationships with companies, universities and government bodies to be able to perform its tasks.
3. Adoption of project selection criteria which must be define simply and clearly.
4. Funding source for pilot projects which is usually considered as the hardest obstacles financing small pilot projects.
5. Permanent assessment and evaluation: Incubators must constantly evaluate their work to be able to take all necessary steps to improve their performance and outputs compliance with their changing and dynamic business environment.
6. Unexaggerated available capacity: The available capacity of an incubator should not be exaggerated technically and financially.

4-2 Business incubators and their impact on the success of emerging small pilot projects
In the magazine "Administration and Economy", No. 83 for the year 2010 results of a questionnaire has been published, which targeted to determine the impact of business incubators in the success of small businesses and thus of the sustainability of the whole economy. This questionnaire was done by Dr. Anwar Ahmed Nahar Al-Azzam and by Prof. Dr. Sabbah Mohammed Musa (2010). Below are information about the above mentioned survey:
1- The study population: (a) business incubators in Jordan, (b) pilot projects, which graduated from the incubators, (c) incubated projects at that time, and (d) pilot projects did not enter the incubators.
2- The study sample: 69 pilot projects, which were incubated and graduated from the incubator
3- The sampling unit and analysis: contains 69 Managers. The researchers retrieved 58 questionnaires.

4-3 Business incubators in Jordan
There are many business incubators in Jordan in public and private sector including public and private higher education sector (Universities). Below is a list of almost all Business Incubators in Jordan:
1- Injaz (public sector) aimed graduate students to teach them the skills they need to set up small enterprises ( http://www.injaz.org.jo/ )
2- NAFES (Public and private sector) support research and development in the industrial sector (http://www.nafes.org.jo/english.html)
3- Young Entrepreneurs Association - YEA (Private sector): helps in introducing and spreading the innovation culture in Jordan and the role of entrepreneurship in the development process. ( http://www.yea.com.jo/ )
4- Jordan’s technology Incubator (Public sector): supports technology companies (http://www.ipark.jo/)
5- Jordan innovation centre (Public sector): focuses on registration of patents, intellectual property, and support new start-ups projects by consultancy regarding these activities. (http://www.jic.jo/)
6- Queen Rania Center for Entrepreneurship - QRCE (Non Governmental Organization): supports students and trains them managerial skills, technical and entrepreneurial skills and focus on technology. (http://www.qrce.org/?q=programs)

7- Jordan Upgrading & Modernization Program JUMP (public sector and government) supports small and medium enterprises through giving them technical support, consultancy and training.

8- Jordan Enterprises Development Corporation - JEDCO (Public sector): supports export oriented companies to enhance the competitive strength of Jordan on the international market (http://www.jedco.gov.jo/)

9- Technology Business Incubator - Philadelphia University (Private sector): develops innovative and creative ideas by turning them into businesses successfully and enables ideas owners gaining income
(http://www.philadelphia.edu.jo/arabic/university-centers/2015-03-10-09-07-06).

10- Yarmouk University: Academic entrepreneurship center of Excellence (Public sector): create the well equipped incubator and the appropriate climate in order to rehabilitate students and graduates to meet the evolving needs and changing requirements of the local and regional labor market through cooperation and integrated efforts of all of the Academic entrepreneurship center of Excellence, Yarmouk University and different economics sectors. (http://www.yu.edu.jo/)

11- Jordan Enterprise Development Corporation (JEDCO): supporting the development process of the implementation of innovative and creative ideas and transfer them successfully in the market.

12- Department of incubator and scientific creativity - The Higher Council for Science and Technology HCST - Network Innovation Jordanian centers: helping owners of new start-ups by implementing the innovative and creative ideas successfully in the market. (http://hcst.gov.jo/ar/?p=76)

13- Al Urdonia lil Ebdaa (Jordan corporation for entrepreneurship): supports new start-ups, especially outside Amman, to establish their own new business successfully.
(http://www.bic.jo/)

In addition financial sector for small and micro credits plays an important role in the process of financing small and emerging new Jordanian start-ups. The most important micro-credit companies are (Middle East Micro Credit Company - MEMCC) which change its name to (Jordan Access to Credit Program -JACP).

5- METHODOLOGY

5-1 Research Instrument:
The instrument used in this paper based on related literature in term of data collection tool or relevant statistical testing and analysis. A questionnaire was considered as a suitable mean for data collection. Therefore a three parts 5 points Likert-scale questionnaire was designed and revised by three academic referees and four incubator's managers and then it was modified according to their comments. The first and second part of the questionnaire was designated to the two main independent variables, Incubator financial aids and advice services and Incubator technical and administrative policies respectively. The third part of the questionnaire was designated to the dependent variable: The success of entrepreneurial and innovative Startups.

5-2 Sample and data collection:
36 questionnaires were distributed to all Jordanian Incubators managers (i.e. almost the whole population) and 32 were returned and used for statistical analysis .To examine the validity of the research data collection mean Cronbach’s alpha coefficients were computed to assess the reliability of the questionnaire and the consistency of its statements .Relevant statistical analysis was processed using SPSS software.
5-3 Research model, variables and hypotheses:
The model of the research is illustrated in figure (1).
It is clearly summarized the impact of the two independent variables on the dependent variable.

The variables of the research are:
1- Incubators financial aids and advice service (X1):
   The first independent variable.
2- Incubator Technical and administrative policies (X2):
   The second independent variable.
3- The Success of Entrepreneurial Startups (Y):
   The dependent variable.

In compliance with the research model the main hypotheses were formulated as follow:
1- (Ho)- There is no statistically significant impact for "Incubator financial aids and advice service" and "Incubator Technical and administrative policies" on "the success of entrepreneurial and innovative startups".
2- (Ho.1)- There is no statistically significant impact for "Incubators financial aids and advice service" on the "Success of entrepreneurial and innovative startups".
3- (Ho.2)- There is no statistically significant impact for "Incubator Technical and administrative policies" on "the success of entrepreneurial and innovative startups".

Figure (1) The model of the study

Independent Variables

- Incubator financial aid and advice service
- Incubator Technical and administrative policies

Dependent Variable

- Success of entrepreneurial and innovative startups

5-4 Construct Reliability:
To evaluate the reliability of the research variables Cronbach’s alpha coefficient was computed. The results are shown in table (1) where the alpha coefficient for the overall perception is 0.911 while other coefficients are diversified between 0.761 - 0.888. These results allow stating that the questionnaire is sufficiently reliable for statistical analysis.

Table (1): Reliability Statistics

<table>
<thead>
<tr>
<th>The Variables</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Variables</td>
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<tr>
<td>Incubator Financial Aids and services</td>
<td>0.761</td>
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<tr>
<td>incubator Technical and administrative policies</td>
<td>0.888</td>
</tr>
<tr>
<td>Dependent Variable</td>
<td></td>
</tr>
<tr>
<td>The success of Entrepreneurial Startups</td>
<td>0.827</td>
</tr>
</tbody>
</table>
Analysis and discussion:
To determine the impact, if any, of the two independent variables (X1 and X2) on the dependent variable (Y), SPSS statistics were used and regression analysis was conducted as it considers the type of causal relationships between variables. The statistical analysis results portrays by tables (3 to 7). These results clearly indicate that there are positive significant (at 0.05 level) impacts for the two independent variables (Incubators financial aid and advice service and Incubator’s Technical and administrative policies) on the dependent variable (the success of the entrepreneurial startups). The calculate F-values are ranged from 4.887 to 16.083 against 4.08 tabulated F-value.

Table (2): ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3.084</td>
<td>2</td>
<td>1.542</td>
<td>8.162</td>
<td>.001</td>
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<tr>
<td>Residual</td>
<td>5.667</td>
<td>30</td>
<td>.189</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>8.751</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Incubator Financial Aids and advice services, and incubator Technical and administrative policies.
b. Dependent Variable: The success of entrepreneurial startups

Table (3): coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.370</td>
<td>.548</td>
<td>4.321</td>
<td>.000</td>
</tr>
<tr>
<td>Incubator Financial Aids and advice</td>
<td>.525</td>
<td>.131</td>
<td>4.010</td>
<td>.000</td>
</tr>
<tr>
<td>services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incubator Technical and administrative</td>
<td>.321</td>
<td>.145</td>
<td>2.211</td>
<td>.035</td>
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<tr>
<td>policies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: The success of entrepreneurial startups

Table (4): ANOVA

<table>
<thead>
<tr>
<th>Model</th>
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<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<td>2.989</td>
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<tr>
<td>Residual</td>
<td>5.762</td>
<td>31</td>
<td>.186</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.751</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Incubator Financial Aids and advice services
b. Dependent Variable: The success of entrepreneurial startups

Table (5): Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.223</td>
<td>.503</td>
<td>4.415</td>
<td>.000</td>
</tr>
<tr>
<td>Incubator Financial Aids and advice</td>
<td>.525</td>
<td>.131</td>
<td>4.010</td>
<td>.000</td>
</tr>
<tr>
<td>services</td>
<td></td>
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Table (5): Coefficients

<table>
<thead>
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<th>Model</th>
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<th>Standardized Coefficients</th>
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<th>Sig.</th>
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<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.223</td>
<td>.503</td>
<td>4.415</td>
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<tr>
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<td>Incubator Financial Aids and advice services</td>
<td>.525</td>
<td>.131</td>
<td>.584</td>
</tr>
</tbody>
</table>

a. Dependent Variable: The Success of Entrepreneurial Startups:

The Success of Entrepreneurial Startups \( Y \) = 2.223 + 0.525 * Incubator Financial Aids and advice services \( X_1 \)

Table (6): ANOVA

<table>
<thead>
<tr>
<th>Model</th>
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<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
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<td>1.192</td>
<td>4.887</td>
<td>.035</td>
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<tr>
<td>Residual</td>
<td>7.559</td>
<td>31</td>
<td>.244</td>
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</tr>
<tr>
<td>Total</td>
<td>8.751</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Incubator Technical and administrative policies

b. Dependent Variable: The Success of Entrepreneurial Startups

Table (7): Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>2.930</td>
<td>.590</td>
<td>.369</td>
<td>4.968</td>
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<tr>
<td>Incubator Technical and administrative</td>
<td>.321</td>
<td>.145</td>
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<td>2.211</td>
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<tr>
<td>policies</td>
<td></td>
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</tr>
</tbody>
</table>

a. Dependent Variable: The Success of Entrepreneurial Startups

The Success of Entrepreneurial Startups \( Y \) = 2.930 + 0.321 * Incubator Technical and administrative policies \( X_2 \)

6- HYPOTHESES TESTING

The standardized regression coefficient (Beta) is a measure of how strongly each predictor variable (Independent) influences the criterion variable (Dependent). The statistical analysis results portray by tables (3 to 7) clearly indicate that Incubator’s financial aid and advice policies has a positive impact on the success of entrepreneurial startups as Beta (standardized coefficient) value is (0.584). Incubator’s technical and administrative polices also has a positive impact on the success of entrepreneurial startups, but less stronger with beta value of (0.369). The significant levels for all the statistical results are above 0.05.

The above results provide enough evidence to infer that the null hypotheses should be rejected and the alternate hypotheses should be accepted.
7. CONCLUSION AND RECOMMENDATION
Findings have shown that Jordanian Incubators play a very positively important role in the success of new small businesses in the national economy. This can be statistically formulated as follow:

1. The success of entrepreneurial and innovative startups \( Y = 2.223 + 0.525 \) Incubator financial aids and advice polices \( X_1 \).
2. The success of entrepreneurial startups \( Y = 2.930 + 0.321 \) Incubator technical and administrative polices \( X_2 \).

These results suggest that financial aids and advice services is a critical element for the success of new small business. This is practically mean that about 90% of Jordanian national economy businesses (small businesses) are in critical need for business incubator aids and services although the national role of incubator is very limited.

The main recommendation for all those who are concerned about Jordanian economic development and new jobs creation process is to pay extraordinary attention to expand and reinforce the role of "Business Incubators" in term of providing the necessary aids and support for all small businesses in general and for entrepreneurial startups in particular.

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