

ANALYSIS OF THE IMPACT OF THE BUSINESS INCUBATOR CENTER ON THE ECONOMIC DEVELOPMENT IN HAZLETON, PENNSYLVANIA (USA)

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Abstract: This paper concentrates on the analysis of the impact of Business Incubator Centre on the economy development. The analysis has been done on the example of Hazelton Incubator Centre in Pennsylvania (United States). We conduct our analysis using various indicators divided into four groups: social indicators, procedural indicators, technical indicators and financial indicators. On the basis of those indicators we analyses functioning of this business incubator center.

Keywords: business incubator, entrepreneurship, indicators, financial indicator, social indicator, innovativeness, economic development.

ANALIZA WPŁYWU CENTRUM INKUBATORA BIZNESOWEGO NA ROZWÓJ EKONOMICZNY W HAZLETON, PENNSYLVANIA (USA)

Streszczenie: This paper concentrates on the analysis of the impact of Business Incubator Centre on the economy development. The analysis has been done on the example of Hazelton Incubator Centre in Pennsylvania (United States). We conduct our analysis using various indicators divided into four groups: social indicators, procedural indicators, technical indicators and financial indicators. On the basis of those indicators we analyses functioning of this business incubator center.

Keywords: business incubator, entrepreneurship, indicators, financial indicator, social indicator, innovativeness, economic development.

Introduction

Northeastern Pennsylvania used to be (1860-1955) a very economically prosperous region with a large number of anthracite coal mines, steel industry and various manufacturing companies. The situation changed in the mid-1950's, when the use of oil for heating purposes caused a decrease for the demand of coal. The lower price of coal resulted in the underinvestment in the coal mining industry. This lack of funds led to compromising safety in the coal mining industry. Due to an error, deep mining was done too close to the bottom of the Susquehanna River. In 1954, a tunnel collapsed and caused the Susquehanna River to flow into the underground tunnels of the coal mines. Before the situation could be controlled most of the deep anthracite mines were flooded. The result was the end of anthracite deep mining in the region (Al-Mubarak, and Busler, 2012).

In the 1980's, a decrease in the demand for steel caused the closing of the steel industry. This very prosperous region became depressed with a high unemployment rate. Many residents left the region seeking better employment opportunities. This resulted in a decreasing population and lower real estate values (Dublin, and Licht, 2005). The lower real estate costs attracted a large number of immigrants to the area because they could afford to provide inexpensive housing for their families (Al-Mubarak, et al. 2015; Blanco, 2016; Comprehensive, 2013).

Presently, approximately 50% of the students in Northeastern Pennsylvania school districts attend supplementary English as a Second Language (ESL) classes. The incoming workforce and the lower cost of operating a business have been linked to the creation of new entrepreneurial opportunities which utilize innovative technology (Jonek-Kowalska, 2011; Wolniak, 2014; Sz wajca, 2016; Konp, and Brzóska, 2016; Pichlak, 2016; Osika, 2016; Olkiewicz et al. 2017; Wolniak, 2017). To reduce unemployment, local, state and industry leaders have created business incubator centers.

In Northeastern Pennsylvania, business incubator center (CAN-BE) has significant manufacturing and office space. CAN-BE is a business incubator center (BIC) which is located within one mile of the Penn State-Hazleton Campus. Even though the business incubator center and Penn State Hazleton are not part of the same organization, CAN-BE maintains a close and mutually beneficial working relationship with the Penn State Hazleton faculty and students. This economic model has stimulated the growth of local industry and development of Penn State Hazleton (Lose, and Tenegeh, 2015).

The aim of the paper is to analyse the functioning of the Business Incubator Centre from economic development point of view. The analysis was done according to indicators detailed described in (Grebski, 2018).

1. Model of Cooperation between the Business Incubator Center and a Local University

The cooperation between CAN-BE and Penn State Hazleton is more cohesive and better coordinated. Therefore, that experience is being used as the guideline for the proposed model of cooperation between a business incubator center (BIC) and a local university. The cooperation and working relationship between a BIC and a university benefits all of the parties (Pennsylvania, 2018). It allows the university to better fulfill its educational mission. In recent years, manufacturing jobs became cross-disciplinary. As a result, there is a growing need for cross-disciplinary training to better prepare students to meet the demands of industry. The cooperation with BIC's is the perfect opportunity for students to apply "in a real-world industry setting" the knowledge that they have learned at the university (Greater Hazelton, 2018). Allowing students from different majors to work together helps them to develop cross-disciplinary communication skills. Students develop a better understanding of their future role in the business world. Those skills would be almost impossible to acquire in a traditional classroom setting. The faculty members involved in the project are more visible and gain recognition in the business world. Faculty also develop a better understanding of industry and that allows them to be more effective in the classroom. Cooperation between the local university and BIC allows the achievement of the following goals (Grebski, 2018):

1. economic development goal of providing multidisciplinary assistance to start-up companies,
2. educational goals of providing unique educational experiences to students,
 - a. gaining first-hand experience by applying concepts presently learned in the classroom "in a real-world environment",
 - b. developing cross-disciplinary communication skills by working with students from different majors,
 - c. gaining a better understanding of their role in the business world,
 - d. developing professional contacts and building-up their resumes,
 - e. developing an understanding of the role that different professions play in the business world.
3. university development goal of keeping the curriculum current and reflecting the needs of industry.

The model of cooperation between the business incubator center and a local university is shown in Fig.1.

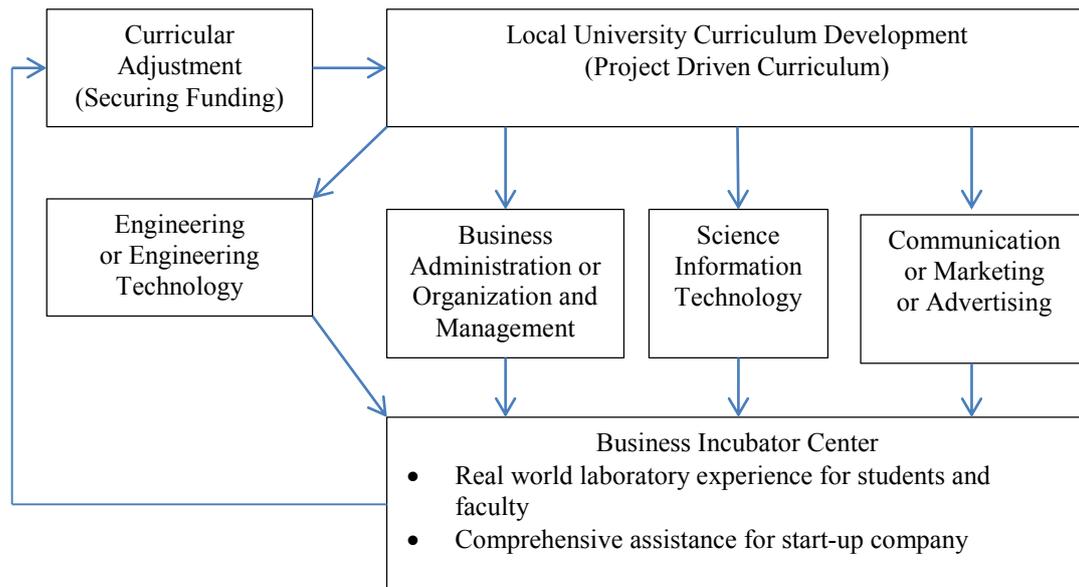


Figure 1. Model of multidisciplinary cooperation between a local university and business incubator center. Source: Authors own work.

The cooperation between a local university and the business incubator center provides very comprehensive assistance to new startups and/or existing companies. At the same time, students are working alongside inventors who become a role model for creativity. Students are also developing cross-disciplinary communication skills. Observing the start-up companies as role models, students are encouraged to pursue their own business ventures (Davies, 2009). There should be some university courses linked to the Entrepreneurial program. Students should be given credit for those courses. There needs to be at least one faculty member from each discipline to supervise the college students involved in the Entrepreneurial program. Students are required to submit a final report for the project to the faculty members supervising the project. The project report will also be submitted to the client company. The client company will comment on the benefits of the project from the company's perspective. It is very beneficial to apply for external funding to financially support more complex projects (Wolniak, 2016; Wolniak, 2017; Wolniak, and Grebski, 2017).

2. Analysis of the Impact of the Business Incubator Center on the Economic Development in Hazleton, Pennsylvania (USA)

Based on the data collected at the business incubator center in Hazleton, Pennsylvania, the individual indicators were assessed. The summary of the assessment is listed in Tables 1-4.

Table 1.

Assessment of social indicators for the business incubator center in Hazleton, Pennsylvania (USA)

Indicators	Method of Assessment of the Indicators' Assessment	Assessment Number
The number of new jobs created by start-up companies during the incubation period (1-3 years).	This indicator was assessed by administering the survey and conducting interviews with companies in the incubation stage.	30 jobs during 3 years incubation period 10 jobs/year(average)
The number of jobs created by new companies during the post-incubation period (3-6 years).	This indicator was assessed by administering the survey and conducting interviews with companies in the post incubation stage.	18 jobs during 3 years post-incubation period. 6 jobs /year(average)
The number of students finding part-time employment or paid internship in start-up companies.	This indicator was assessed by administering the survey and conducting interviews with companies in the incubation stage.	20 students during 3 years incubation period. 6.66 students/year (average)
The number of graduates finding full-time employment in start-up companies during the incubation period (1-3 years).	This indicator was assessed by administering the survey and conducting interviews with companies in the incubation stage.	0 (none)
The number of graduates finding full-time employment in new companies in the post-incubation period (3-6 years).	This indicator was assessed by administering the survey and conducting interviews with companies in the post incubation stage.	2 jobs during 3 years post-incubation period. 0.66 jobs/year(average)
The percentage of start-up companies owned by women.	This indicator was assessed by conducting interviews with the personnel of the business incubator center. Business Incubator Center in Hazleton is in possession of the statistical data. That statistical data is collected by CAN-BE to be included in the proposals for public funding.	8%
The percentage of start-up companies owned by underrepresented minorities.	This indicator was assessed by conducting interviews with the personnel of the business incubator center. Business Incubator Center in Hazleton is in possession of the statistical data. That statistical data is collected by CAN-BE to be included in the proposals for public funding.	8%
The percentage of start-up companies owned by immigrants.	This indicator was assessed by conducting interviews with the personnel of the business incubator center. Business Incubator Center in Hazleton is in possession of the statistical data. That statistical data is collected by CAN-BE to be included in the proposals for public funding.	8%

Source: Authors own work.

As illustrated in Table 1, the CAN-BE business incubator center has a significant impact on the economic development of the Hazleton Area. On average, sixteen new jobs are being created annually by companies in either the incubation (10 jobs) or the post-incubation stage (6 jobs). In addition to this, approximately seven Penn State Hazleton students finds temporary employment or internship opportunities (annually) with the companies at CAN-BE. Full-time

employment opportunities for engineering graduates is very limited (.67 graduates annually). The reason for this low number is the high cost of hiring full-time engineering graduates.

Approximately 8% of the start-up companies are owned by underrepresented groups (8% women, 8% minorities, 8% immigrants). This factor makes a significant and positive impact on the economic development of the area.

Table 2.

Assessment of organizational/procedural indicators for the business incubator center in Hazleton, Pennsylvania (USA)

Indicators	Method of Assessment of the Indicators' Assessment	Assessment Number
Annual number of clients receiving help from the business incubator center related to the evaluation of an invention/business idea during the beginning stage.	This indicator was determined by interview with personnel of the business incubator center. Business incubator center is keeping record of this data and using them when applying for public funding.	90 (average)
Annual number of clients receiving help from the business incubator center related to the development of a business plan or business model (before the incubation stage).	This indicator was determined by interview with personnel of the business incubator center. Business incubator center is keeping record of this data and using them when applying for public funding.	50 (average)
Number of start-up companies during the incubation period (1-3 years) and their success rate, that is, the percentage of companies who have graduated from the business incubator center.)	This indicator was determined by interview with personnel of the business incubator center. Business incubator center is keeping record of this data and using them when applying for public funding.	12 companies 66% success rate
Number of companies receiving assistance from the business incubator center during the post-incubation stage (3-6 years).	This indicator was determined by interview with personnel of the business incubator center. Business incubator center is keeping record of this data and using them when applying for public funding.	8 companies
Number of full-time staff employed by the business incubator center.	Taken from the directory of the business incubator center.	2 full-time staff
Number of weekly hours that the staff of the business incubator center is available.	As posted in the business incubator center.	40 hours weekly

Source: Authors own work.

Approximately ninety entrepreneurs annually receive assistance from a business incubator center in the form of an evaluation of their inventions or business ideas (table 2). In addition, fifty entrepreneurs receive help in the development of a business plan. At the present time, there are twelve companies in the incubation stage and eight companies in the post-incubation stage. The success rate during the incubation stage is 66%. The office of CAN-BE is open forty hours per week with two full-time employees (Director, Administrative Assistant).

Table 3.

Assessment of scientific/technical indicators for the business incubator center in Hazleton, Pennsylvania (USA)

Indicators	Method of Assessment of the Indicators' Assessment	Assessment Number
Number of faculty from the local university cooperating with the volunteers at the business incubator center.	This indicator was determined by administering the survey and interview with faculty, students, volunteers and the personnel of the business incubator center.	4 faculty
Annual number of students doing projects which benefit start-up companies in the business incubator center.	This indicator was determined by administering the survey and interview with faculty, students, volunteers and the personnel of the business incubator center.	35-40 students
Number of providing services to the business incubator center, engineers, lawyers, accountants, business leaders, etc.	This indicator was determined by administering the survey and interview with faculty, students, volunteers and the personnel of the business incubator center.	10-15 volunteers
Annual number of innovative projects/technologies implemented by start-up companies.	Determined by administering the survey and interview with tenant companies of the business incubator center.	8 innovative projects Annually
Annual number of training workshops for new entrepreneurs sponsored by the business incubator center (or annual number of participants attending those workshops).	This data is available in statistics of the business incubator center.	120 participants annually

Source: Authors own work.

As shown in Table 3, there are four full-time Penn State Hazleton faculty and approximately thirty-five to forty students annually maintaining a presence at the CAN-BE business incubator center. In addition, there is a team of ten to fifteen volunteers providing assistance to companies in the beginning and incubation stages of development. On average, eight innovative projects are being developed and implemented by the clients of CAN-BE (Wolniak, and Grebski, 2018). CAN-BE is offering professional development workshops free to the general public with approximately one hundred and twenty participants annually.

Table 4.

Assessment of financial indicators for the business incubator center in Hazleton, Pennsylvania (USA)

Indicators	Method of Assessment of the Indicators' Assessment	Assessment Number
Average cost of creating a new job by a start-up company during the incubation stage.	Cost of operating the business incubator divided by the number of jobs created (annually).	\$21000/job
Annual budget of the business incubator center and level of subsidy from public and private sources.	Budget of CAN-BE incubator center is available to the public.	\$210 000 Annually
Cost of services provided by the business incubator center.	Provided by business incubator center	See Table 6.4
Tax incentives for start-up companies during the incubation stage and post-incubation stage.	Companies in CAN-BE business incubator center are released from paying taxes over a period of 10 years.	Released from paying any corporate income taxes for ten years

Cont. table 4.

Annual level of subsidy for start-up companies from regional workforce development funds or economic development funds.	Determined by interview with tenant companies in CAN-BE business incubator center.	\$ 4000/new created job
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Source: Authors own work.

The annual budget of CAN-BE is approximately \$210,000 (table 4). The cost of creating new jobs at CAN-BE is approximately \$21,000 per job. The companies in CAN-BE take advantage of the Keystone Opportunity Zone (KOZ) and are released from paying any corporate taxes for ten years. In addition, individual companies creating new jobs can receive subsidies from workforce development funds (up to \$4000 for each new job created).

4. Conclusions

Based on the experience of cooperation between CAN-BE, business incubator center, and Penn State Hazleton, the following conclusions were formulated.

1. A business incubator center is an effective method of stimulating economic growth. It has a positive effect on social, technical and financial indicators.
2. A business incubator center is a cost-effective method of stimulating economic growth. The cost of creating new jobs is approximately 6x lower than creating jobs by other kinds of investments.
3. The cost of creating new jobs at the business incubator center in Pennsylvania is \$21,000/job (compared to a range of \$120,000-\$280,000 by other forms of investments) (Grebski, 2018).

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