

Dr Hab. Wiesław Urban, Professor of Białystok University of Technology  
Faculty of Engineering Management  
Białystok University of Technology

## **The review report of doctoral dissertation**

by Michalene Eva Grebski

entitled

### **A comparative analysis of the organization and management of business incubator centers in the USA and Poland**

supervised by

Dr Hab. Eng. Radosław Wolniak, Professor of Silesian University of Technology

co-supervised by

Dr Eng. Bożena Skotnicka-Zasadzień

#### **General characteristic of the dissertation**

The dissertation prepared by Michalene Eva Grebski contains 333 pages, 234 of which form a main part the dissertation, the other pages are devoted for a bibliography list, lists of Figures and Table, and appendixes. The dissertation includes 63 Tables, 47 Figures, 10 Appendixes; the reference list includes 227 items of publications and 46 websites.

The main part of the dissertation is divided into nine chapters, including the Introduction and Conclusions. The four Chapters are devoted to theoretical deliberations of economic growth and issues related to academic business incubators. Chapter 2 concerns measures and stimulus of economic growth, Chapter 3 is addressed to innovativeness as an economic growth stimulus. Chapter 4 is devoted to the role of incubator centres. In Chapter 5 there is a comprehensive review of scientific methodologies that can be employed in an incubator centres investigation.

In Chapter 6 two incubators are presented and their activities are reviewed, one of them is CAN BE's Greater Hazleton Business Innovation Centre which is located in Hazleton, Pennsylvania, USA, another one is the incubator centre operating at Park Naukowo-Technologiczny TECHNOPARK Gliwice in Gliwice, Poland. Chapter 7 presents the investigation of these two incubators, alike their impact on the local economy. In Chapter 8 there is a postulated model of the incubator centre in terms of its organization, finance and relation to stakeholders. The content structure of the dissertation, the division on chapters and subchapter, is appropriate for scientific work at this level.

#### **Research aims**

The dissertation has determined several research aims, they are as follow: (1) to collect and analyse the data on the effectiveness of the business incubator centres in terms of stimulating

the economic growth of the region, (2) to collect and analyse the data related to the benefits of cooperation between an university and the business incubator centre, taking into consideration the benefits for the university, benefits for the business incubator centre, as well as benefits for the local community, (3) to collect and analyse the data on the cost effectiveness of business incubator centres. Apart these aims the dissertation considers goals referring to literature review in the particular fields according to the scientific goals set.

The research aims are supplemented by a series of specific research questions which form a backbone of the scientific discussion within the dissertation. These questions are as follow: (1) Is a business incubator centre an effective method to stimulate economic growth? (2) Is a business incubator centre a cost effective method to stimulate economic growth? (3) Is the cooperation between the university and the business incubator centre beneficial for faculty and students? (4) Can a business incubator centre be used by the university as a teaching laboratory and learning factory? (5) Can a business incubator centre be used by a university to teach innovativeness and multidisciplinary communication? These questions also served as a substantive navigation for the Author whilst gathering, analysing and concluding on the data referring to academic business incubator activities.

Additionally, in the dissertation there are several 'utilitarian' goals which are consisted on the models of management and cooperation with stakeholders of business incubator centres. This is very important in a doctoral dissertation to set also practical goals, apart theory building and concluding on an empirical data. In my opinion the model developing, in the case of this dissertation, called by the Author as 'utilitarian', brings also a contribution to the wider knowledge on academic business incubator operations.

### **Scientific hypotheses**

The Author has developed three research hypotheses: (1) Business incubator centres are an effective method of stimulating economic growth of the region. (2) Cooperation between a university and a business incubator centre brings benefits to both parties. (3) Financing of the business incubator centre is a profitable investment.

These hypotheses are coherent to research aims, they concern fundamental issues for the studied phenomenon.

### **Research methodology**

In the dissertation, the combination of quantitative and qualitative methodology approaches is presented. The general methodological approach can be summarised as a comparative case study method, where many aspects of two incubators are comprehensively investigated, described and mutually compared. This in-depth investigation allowed to conclude the role of incubator centres in the economy as well as on many other aspects of functioning these centres; it also allowed to develop a multicriteria model of such type of organization.

The survey methodology is employed in order to determine the level of satisfaction of client companies operating within incubator centres, survey methodology is also employed to investigate the perception of benefits from incubator centres within stakeholders, namely students and volunteers providing services to the business incubator centres. The same survey questions were directed to respondents in two researched incubator centres: CAN BE in Hazleton and TECHNOPARK in Gliwice.

The survey data referring to the satisfaction of incubator centres residents is presented in following tables: Table 7.4a, Table 7.4b, Table 7.4c, Table 7.4d. The investigated samples from both research objects were: CAN BE - 12 respondents, TECHNOPARK - 6 respondents. The data referring to investigation of the perception of stakeholders is presented in Table 7.5, numbers of respondents were 16 and 12 respectively. The Principle Component Analysis is employed to analysing and concluding on the gathered data. The samples of respondents are not huge, at the same time when considering that the surveys served as a tool in the comparative case studies framework, they are fully justified and appropriate.

The qualitative tools are also widely exploited by the Author. There were unstructured interviews with client companies and personnel of incubator centres. This is a typical tool in the case study methodology. Apart these, in the dissertation there are an expert qualitative technique – the SWOT analysis performed for both investigated incubator centres, and an elaborative multicriteria model of the academic business incubator centre.

### **Scientific value**

The field of the study is the academic business incubator centre operations. Taking into consideration the vital needs of modern economies, particularly the desire of innovations and entrepreneurship, the study presented in the dissertation is perceived as not only fully justified but also as desirable and important.

The dissertation contributes to the existing knowledge in many ways. Its Author has summarised her investigations with nine scientific conclusions related to the research questions. The conclusions are referring to assessment of the academic business incubator centre formula in the economy as a development stimuli, its cost effectiveness and the role as a gate and a bridge for future great business leaders, entrepreneurs and innovators.

Previously posed three research hypotheses, according to the Author, are positively verified and justified. The dissertation proves that business incubator centres are an effective method of stimulation local and regional economic growth, moreover that cooperation between a university and a business incubator centre is beneficial for both. In my opinion, the substantiation of the third hypothesis is in some ways misleading (p. 233, 234), I suppose the Author had rather in mind not 'a profitable investment' in terms of return on the investment and positive net cash flow, but actually the financially efficient public spending/intervention on job creation. Apart listed above scientific contribution the dissertation provides many more valuable generalizations and practical guidelines.

### **Remarks**

The dissertation, as by nature very creative scientific work performed by an individual, has also some shortcomings. First of all, the style of writing in some places differs a bit from typical academic scientific writing. I mean for example elaboration of crucial scientific elements with shortened, slogan style. The research aims are expressed as slogans (see p. 5) – this is not typical for scientific dissertations, even for thesis. The consequences of such style might manifest themselves as misunderstandings. For example, the headline 'Manufacturing as a Method to Measure Economic Growth' (p. 20) might be understood not properly. Can the manufacturing serve as a method for something?

Another issue is the literature review, particularly its scope and nodal points. The interesting issue is why so much space is devoted to theories on human creativity (Chapter 3)? But at the

same time very little space is devoted to widely discussed theories by Richard Florida or still very inspiring economics theory by Joseph A. Schumpeter?

## Conclusion

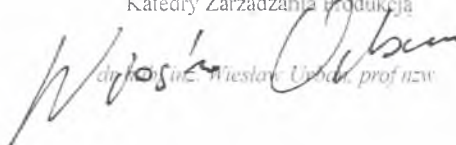
Scientific contribution presented by the dissertation is valuable and sufficient as a doctoral level scientific elaboration. The research objectives are met and theses posted in the dissertation, in the vast majority, are appropriately proved.

It is supposed that the doctoral dissertation entitled 'A comparative analysis of the organization and management of business incubator centers in the USA and Poland' deserves to be forwarded to a public examination. Its Author Mrs Michalene Eva Grebski has demonstrated sufficient scientific maturity by elaborating this dissertation as well as by executing the empirical research. So that, she deserves to be allowed to defend her scientific work to the Scientific Council.

In my opinion, this doctoral dissertation meets the requirements of doctor degree.

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dr hab. inż. Wiesław Urbaniak, prof. nzw