

## Opponent Review Report

The dissertation thesis titled, EVALUATION OF THE ROLE OF CRUCIAL IMPACTS ON NETWORKS FOR TECHNOLOGICAL INNOVATION, authored by Ing. Henry Junior Anderson, a student of the doctoral study program in Public and Regional Economics at the Faculty of Economics and Administration, University of Pardubice, contains 124 pages, including graphics.

The aim of this dissertation is to assess the contributory role of financial, interactive, institutional and structural factors in the network of technological innovation generation. It is a very ambitious, current goal and its solution is needed.

The sequence of individual chapters of the work is logical, I will perform the assessment within the individual chapters:

**The first chapter** is devoted to the conceptual framework. Author is based on the theory of innovation systems, which I consider to be correct. It is a sufficiently broad and globally argued theory, which is also applied in Europe. The role of technologies is highlighted what is novel attribute of the current standard theories. The author included it in the technological innovation systems (TIS). He supported this statement with quality foreign references. In chapter 1.1.2 he argues the importance of perceiving technological aspects, which I appreciate. The following chapter 1.2 talks about indicators or variables that help to identification TIS. I perceive this part as important for the implementation of further research.

I consider chapters 1.3 and 1.4 to be rather complementary and broadly discussing other aspects that are not necessary for further research implementation. However, they have the role of arguments, which can be discussed.

Chapters 1.5 and 1.6 again seem inconsistent. Nevertheless, the titles of these chapters lead the reader to other topics that have not been sufficiently discussed before. These parts are rather disturbing.

Chapter 1.7 is already a return to the discussion of topics that aim to fulfil the goal of this dissertation. It deals with innovators as important elements of innovation systems, resp. creators of technological innovation.

Chapter 1.8 Research Gap and Motivation for research is an important chapter. Based on the processed analysis of the current state of knowledge, the author defined the main goal of the dissertation. In my opinion, it is very general and if it had not been supplemented by other sub-

objectives, like hypotheses or research questions, it would be very difficult to successfully defend a dissertation.

It is logical and correct to assume that innovative systems are influenced by several factors, many of them were identified by author and considered their analysis as the goal of the dissertation. However, this is an open list of possibilities and more detailed arguments for the selection of financial, interactive, institutional and structural factors are lacked. Likewise, their general definition is difficult to apply in research.

The logical structure of the goal and partial hypotheses are described and graphically illustrated in Figure 5. I appreciate that the author distinguishes innovation as output from outcome. This is an important logical but also methodological step; which today's practice significantly neglects.

The partial goals of the dissertation are much more specific. Their concept fits into the main goal of the work. It is, of course, possible to discuss the disjunction of the concept of such research. However, I believe that this concept can be accepted when applying the principles of scientific abstraction. The structure of the solution of individual hypotheses is shown in Figure 6, which I appreciate.

**The second chapter** is devoted to methodology. First, the author mentions the source of the data and the geographical area in which he conducted his research. There are no revolutionary ideas; the regions are traditionally defined as in dozens and dozens of other works. Here, the author could be far more creative and could find countries or regions where the TIS solution could bring interesting and new results.

Furthermore, the author discussed individual methods and methodological procedures that are used in several studies around the world. He also honestly argued the choice of variables in Table 3, which I really appreciate.

I have no reservations about the rest of this chapter. The methods are standard, their description is valid for the used literature, which I only state, I do not blame.

**The third chapter** contains analyses of individual sub-objectives, or relevant hypotheses. Here, I appreciate that the author proceeded in individual parts very methodically and logically. The individual variables are clearly defined and described, and the results are presented below. An important part is the interpretation of the results, which is rich and clearly refers to the theoretical foundations and logical research framework.

Given the breadth and more general concept of some sub-objectives, it would be possible to discuss the disjunction of the results provided, like their applicability in individual states. Here it should be noted that the author did not deal with the economic or social situation in the analysed countries, so some of the opinions, conclusions or recommendations are more of an academic nature.

For the record, I state that by third chapter elaborating, Ing. Anderson's fulfilled the scientific goal of the dissertation.

**The final chapter** summarizes the results and provides an overview of other recommendations. Since I will not be personally present at the defence speech, I ask only one question: What new does your dissertation bring? How does it complement the current state of scientific knowledge?

#### **Conclusion of the review**

Based on the assessment of the submitted dissertation, I state that the thesis meets the positive requirements for this type of thesis. The dissertation is one of the quality research works and the reservations mentioned above do not significantly reduce its quality.

**I recommend the Mr. Anderson's dissertation for the defense procedure and after its successful realization, I recommend awarding him a philosophy doctor (Ph.D.) degree.**

In Banska Bystrica, 2020-05-28

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