



UNIVERSITY OF DEBRECEN

Faculty of Economics and Business

Institute of Applied Economics

Director: Prof. Hc. Prof. Dr. András NÁBRÁDI



Review of Ph.D. Thesis

Applicant: Zsuzsanna Mihók

Title: Economic analysis of the horse sector and relevant topics for its sustainable development in the Equestrian Revolution

Reviewer: Prof. Hc. Prof. Dr. András Nábrádi, CSc, Ph.D. (University of Debrecen)

1. The thesis topic novelty and actuality, scientific and social importance

In her thesis, Zsuzsanna Mihók focused on the economic issues of the horse sector and attempted to explore the major correlations in the development of the sector. As an educator engaged in sectoral economic issues, I firmly declare that **a comprehensive, in-depth study of this kind is unprecedented in the past decades of Hungarian literature.** Horse breeding does not belong to the successful branches of economy. Its historical role saw a transformation following the industrial revolution. Its contribution to the GDP is relatively low. However, the author calls attention to the radically new role of horse breeding and the equestrian sector, which lend themselves to easy quantification by direct and indirect indicators. **I also declare that the methodology introduced by the candidate about the calculation of the generated impacts, applied correctly to the horse sector, has never been published before.** I wholeheartedly agree with the statement by the Candidate "...while horses contribute to the physical, mental and emotional wellness of people, huge amounts of economic impacts are generated...". I consider her work as of huge significance in practical terms; I specifically underline its

theoretical approach and timeliness. I highly appreciate already the introductory part of the thesis.

2. Quality of the literature processing

There is scarcely any research in Hungary on the economic issues of the horse sector, and there are also few attempts internationally. It may be the reason that the Candidate mainly used foreign literary sources and their substantive criticism while processing the literature. In addition to the 121 literary sources, the list of references includes further 36 information sources related to the economic impacts in 2013. Given the nature of the topic, the references cover an extended period, however, I feel that it is commendable that the sources of economic nature come from the last decade(s). **The literature processing related to important scientific preliminaries of the topic.** Her references in the text are appropriate; they are easy to identify in the list of references. I believe that the particular merit of the thesis is the expression of the Candidate's opinion not only in the processing of the literature, but in the whole paper as well, where she confronted the wide range of views from various authors politely, but if needed, firmly. **It can be stated that the literature overview was elaborated critically and analytically by the candidate.** All the preceding illustrates that the Candidate relied on previous research as much as possible. For the opponent, it seems evident that the Candidate processed the literature first and then she set out to construct her scientific views.

3. Research objectives, methods

The author presented her research goals in a separate chapter. As a referee requested to take part in the preliminary Ph.D. defense, I am glad to notice that the Candidate ultimately accepted and implemented my proposals and reconstructed her thesis accordingly. She set two distinctive objectives: **I.** estimation of the economic impacts generated by the Hungarian Horse Sector, within this point she emphasized two sub-objectives: **a;** the operational characterization and international comparative analysis of the Sector, **b;** the evaluation of the methodology applied to quantify the economic impacts generated by the horse industry, and **II.** the explanation of the observed differences of order of magnitude in equestrian demand between the Hungarian Horse Industry and those of other countries, and among the countries in general. She asked three characteristic questions to achieve her goals. 1.) By what indicators can the horse industry be analyzed at the international level, 2), How can the economic impacts of the horse industry be estimated, and 3), Which

factors determine the demand for horses and horse-related activities. Based on the research objectives, and research questions she set up four hypotheses, and finally, she visualized the interrelations among the objectives, research questions, hypotheses and applied methods in a “process flowchart”.

It must be noted that Candidate created an almost unsolvable challenge for herself in terms of methodology when she had **to break new ground**. In economics, direct impacts are quantified and expressed as input-output, i.e. in costs and revenues. However, the identification of derived indirect effects, positive and negative externalities poses a challenging task. By using the findings of secondary research in the literature and her results based on her primer research, she could finally fulfil her objectives. Whether her methodology could be further refined is out of the question, as she presented several issues in her thesis that are worth studying; however, in the absence of the required information (data), she was unable to carry it out. Nevertheless, I find her work commendable, constructive and a gap-filler. Her work is based on natural raw data, she converted them to “money” and **then constructed a methodological basis that she could later test and introduce her results afterward**. In order to be able to characterize the Hungarian Horse Sector, 76 indicators in total are defined in 8 different groups, as the basis for estimation of economic impacts generated by the Hungarian Horse Industry. Finally, she promoted the model reflecting the impact of the horse sector on the national economy by determining eight indicator groups and aggregating international and national raw data. She sufficiently detailed her sources of data collection, categorized the direct and indirect sources and the dimensions of their calculations (EUR, \$, thousand person / benchmark etc.) and then generated percentiles.

In the comparative study of international literature she used the GDP, the Human Development Index and sought to find a correlation between these indices and the horse sector. As she mentioned in her thesis “...having the most potent and providing the most pieces of information, the analysis was made by obtaining the levels of coincidence by determining the countries where horse racing or equestrian disciplines were practiced ... among countries ranked on the basis of the economic indicator in question below or above the average levels of the same indicators”. The methodology she applied is: top 25% countries calculated by each of the horse racing or equestrian indicators among the top 25% ranked by economic indicators. This investigation method is unique, as the establishment of correlations between percentile rank, Human Development Index and the

investigated indices of the horse sector is so far unprecedented. Note that despite this, the Candidate attempted to include earlier research findings in the literature of her investigations, which is also a worthy initiative. In conclusion, I claim that in spite of the fact that the present research **is unprecedented**, and the Candidate's investigation methods are suitable for scientific data processing in this field.

4. The level of processing of the research results and evaluation of mathematical statistical results

During the processing part of the thesis, she estimated the direct and indirect economic impact applying the expenditure approach to calculating the sector's GDP. This methodology is unique, **it has never been formerly elaborated**. The methodology was developed on the basis of horse and horse related activities. The primary data - collected by the candidate - come from national and international sources, representatives, and specialists of the horse related sectors. This database consists of operational and financial information as well. Based on the huge database **she established a new calculation model of the horse sector**, where she could calculate the direct and indirect economic impacts of the Hungarian Horse Sector. The level of these processing methodology is unique and excellent. The macroeconomic analysis is also respectable. She applied different indicators in the horse industry.

5. The adequacy of conclusions drawn from the results.

In Chapters 5. and 6. Candidate summarized her research findings. The findings are presented in detail in her thesis, similarly to the background research. Her research findings are logical and they are supported by evidence. **Here I must note that I find the listing of the impact categories in Tables 25-30 of Chapter 5., its in-depth discussion and the total impact calculated by them, exemplary.** The integration of the presented impact categories, their calculation methods are also recommended in the discipline of equestrian economics at national and international level.

6. Are there discussions in the thesis?

Yes, in the chapter six, unfortunately the name of "discussion" is not presented in the table of contents only in the text of the thesis without numbering.

7. Evaluation of publications

As a core member of another doctoral school, I can merely present my own opinion. The Candidate translated English and German books from the literature into Hungarian, thus creating an enormous value. All the translations are related to the horse sector. If anyone is capable of translating such huge books adequately and correctly from a professional point of view, it does not necessarily mean that he/she meets the scientific requirements of the Ph.D. degree. The publications related to the topic of the dissertation include only two that are of scientific value, and they are at present approved for publication. They were presented with the label: “release is expected soon”. The translation of the eight books and the Candidate’s further three publications (Lovasélet 2013, Lovasnemzet 2014) cannot be regarded as independent work of scientific value, even if they were prepared in a discipline similar to the dissertation topic. Despite all these, I hope that the Evaluation Committee will find that the Candidate’s thesis is worth not merely one, but at least two Ph.D. dissertations!

I inspire the scientific Candidate’s consultant and the Evaluation Committee to request the Candidate to construct the present doctoral dissertation in order to publish it as a single-author book. The economics of the horse sector is the vacuum of Hungarian animal husbandry. The reviewed version of the dissertation will be suitable to fill this gap.

8. Does the thesis have new scientific results? What are they?

The candidate presented four different, new and novel research results. According to the reviewer, their opinions are **all acceptable**;

1. The criteria of the micro- and macroeconomic evaluation of the horse industry were developed in respect of the expectations of the Equestrian Revolution in the 21st century.
2. The calculation model of the horse sector was established on the basis of horse related activities.
3. On the basis of the model, the direct economic impacts generated by the Hungarian Horse Sector were estimated.

4. The factors were revealed that verify the differences in equestrian demand among countries, from a quantitative point of view.

9. Structure and articulation of the thesis, quality of tables and figures, style and appearance

The thesis consists of 167 numbered pages divided into 10 main chapters. The body of the thesis is around 147 pages, which is the standard length of a Ph.D. dissertation. It is written in clear and concise English, using the language, styles, and conventions of academic writing. The thesis starts with the statement of the research problems. There are clear research objectives, research questions, and she put forward a measurable and examinable hypothesis. The method is adequate and the same time unique and novel. The thesis is a good read, written in excellent English. Given that the author is not a native English speaker, the language quality of the thesis is more than impressive. Most of the figures and tables are easy to read (with exceptions of a non-numbered figure in page 9). An impressive amount of 121+36+5 current and relevant items can be found in the references list, and all of them are cited in the text as well. The references are regular. The thesis is well structured and meets the requirements of the doctoral school. The balance of theoretical and analytical part is all right as well. The overall appearance of the thesis is perfect.

Overall evaluation

The candidate proved that she is able to carry out sophisticated and valuable scientific research; that she knows and is able to apply the methods that are required for such an analysis. The thesis is without doubt the candidate's own work, and its sophistication level is way above the requirements of a Ph.D. dissertation. I fully support the thesis to be submitted for a public defense, and the candidate to be awarded the Ph.D. degree.

Questions to be asked at the defence:

1. Do you find it a convincing reason for decision-makers in the sector that the direct and indirect impact of the horse sector is the total of 257.4 million EUR (appr. 79 billion HUF) in Hungary, 0.2% of the total GDP to develop the horse sector or would you consider the mention of other factors?

2. Based on your research findings and practical experience what kind of overall strategic moves would you initiate in order to develop the Hungarian horse sector?



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Reviewer