University of Miskolc
Faculty of Economics

**Hantos Elemér Doctoral School of Business,
Management and Regional Sciences**

EMESE HENRIETT GERŐ JENEINÉ

The economic impact of the financial and capital
market crisis and the pandemic crisis on the
territorial characteristics of Hungarian micro-,
small- and medium-sized enterprises

Thesis Statements of Ph.D. Dissertation

Supervisor:

Dr. Kincses Áron associate
professor,
PhD

Head of Doctoral School:

Prof. Dr. Sikos T. Tamás professor
doctor of the Hungarian Academy
of Sciences

Miskolc, 2022.

Table of contents

Összefoglalás

Doktori disszertációm keretében bemutatom a 2008-as pénzügyi és tőkepiaci válság, valamint a jelenlegi pandémia okozta válságok hatását a magyar mikro-, kis- és középvállalkozásokra (a továbbiakban: kkv-k vagy mikro-, kis- és középvállalkozások) és azok térszerkezetére. Mivel egy régió fejlődése a gazdasági szereplők és a háztartások döntésein alapul, kutatásaim középpontjában a magyar mikro-, kis- és középvállalkozások térszerkezete és gazdasági teljesítménye áll. Elemzéseim a járási szintre összpontosítanak. Bár igaz, hogy a kkv-k nem hoznak létre térbeli szervezeti egységet, és ezért bármely alosztályban vizsgálhatók (az önkormányzati szinttől a világszintig), a kkv-k gazdasági mutatóit alacsonyabb regionális szintre akartam tenni, ezzel növelve tanulmányom újdonságát. Kutatásom időszaka a 2008-as pénz- és tőkepiaci válsággal kezdődik és a COVID-járvány okozta és kiváltott gazdasági válsággal ér véget. Doktori disszertációm vége felé, 2022 első negyedévére, főként az oltások miatt, a járvány a végéhez közeledik Magyarországon, de a világ máris új nehézségekkel néz szembe, nevezetesen az orosz-ukrán háború okozta gazdasági válsággal. Az infláció meredek emelkedése, a részvényárak általános esése, a dollár általános leértékelődése, a globális ellátási és ellátási láncok (energia, élelmiszer, nyersanyagok és összetevők) bizonytalansága olyan gazdasági pályára kényszeríti a világgazdaságot - beleértve a magyar gazdaságot és a hazai vállalkozások gazdasági teljesítményét is -, amelyet nehéz megjósolni. A témával kapcsolatos kutatások azonban már túlmutatnak a jelenlegi doktori disszertációm

keretein, az ehhez kapcsolódó elemzés és hatásvizsgálat lesz a következő publikációm témája.

Kutatásom fő célja tehát az általam vizsgált válságok hazai mikro-, kis- és középvállalkozásokra és gazdasági teljesítményükre gyakorolt hatásának vizsgálata. A fő cél mellett más célokat is kitűztem, többek között az egyes válságok által leginkább érintett magyar körzetek vizsgálatát, azt, hogy az egyes válságok hogyan befolyásolták a területi egyenlőtlenségek kialakulását a kkv-k és gazdasági teljesítményük tekintetében, és hogy ez hogyan változott a vizsgált évek során. Csoportosíthatók-e a területek, és rajzolhatók-e térbeli mintázatok? Milyen mértékben befolyásolják gazdasági erejüket a strukturális és független helyi tényezők? Végül, de nem utolsósorban azt szerettem volna megvizsgálni, hogy a magyar kerületek közül melyek a legversenyképesebbek és a legkevésbé versenyképesek, és hogyan változott ez az általam vizsgált válságok során.

Disszertációmban a kutatási célok meghatározását a kutatási módszertan részletes leírása követi, ami a disszertáció elméleti részéhez vezet. Ebben a fejezetben kiemelem az európai mikro-, kis- és középvállalkozások kulcsfontosságú gazdasági szerepét, bemutatva a kkv-k szerepét és jelentőségét a felzárkózásban, valamint képet adok az európai és nemzeti kkv-k alapvető jellemzőiről és helyzetéről is. Disszertációm elemző fejezeteiben bemutatom a vizsgált válságok hatását a magyar kkv-kra és gazdasági teljesítményükre, valamint a kkv-k gazdasági teljesítményén keresztül a válság által leginkább érintett ágazatokra és körzetekre. A Magyarországon működő kkv-k területi sajátosságait, változásait vizsgálom, a következő kérdésekre keresem a választ: mennyire

koncentráltak a kkv-k Magyarországon, hogyan változott a területi eloszlásuk 2008 óta, milyen területi hatása van a válságoknak a kkv-k számára, forgalmára, hozzáadott értékére, foglalkoztatottak számára, azaz gazdasági teljesítmény, valamint mely területek tekinthetők a kkv-k számára sérülékeny területeknek. Disszertációm elemző részében a magyar kerületekben működő kkv-k területi egyenlőtlenségének vizsgálatára összpontosítottam, olyan módszereket alkalmazva, mint a Lorenz-görbék a térbeli egyenlőtlenségek mérésére (Lorenz, 1905), a Lorenz-görbéhez kapcsolódó relatív koncentrációs együttható és a térbeli egyenlőtlenségek mérésére szolgáló Hoover-index, valamint a Gini-index és a Hirschland-Herfindal-index a koncentrációk konkrét mérésekkel történő tesztelésére. A magyar térszerkezet bemutatására és a térbeli folyamatok elemzésére a súlypont módszert, a tényezők gazdasági tényezőkre bontására pedig a Nagy Nemes regressziós megközelítést használom. (Nagy Nemes, 2009). A térbeli autokorreláció jelenségét (Dusek, 2004) Moran I. térbeli autokorrelációs mérésével vizsgálom. Disszertációmban azt a kérdést is megfogalmazom, hogy a mikro-, kis- és középvállalkozások legfontosabb jellemzőinek és gazdasági teljesítményének különböző regionális egyenlőtlenségei mennyiben területi jellegűek. Annak érdekében, hogy választ kapjak erre a kérdésre, a shift-share elemzést használom a térbeliség és más úgynevezett strukturális tényezők hatásainak szemléltetésére (Kiss, 1998). A módszer segítségével kimutatható, hogy az egyes körzetek nemcsak a gazdaság ágazati szerkezetének javításával dinamikusíthatók, hanem olyan átalakulással, amely figyelembe veszi a helyi jellemzőket is, mivel a

fejlődés vagy a fejlődés üteme e két tényező következtében változik (Kiss, 2008).

Disszertációmat egy összefoglalóval zárom, amelyben a legfontosabb megállapításait és téziseit foglalom össze, és javaslatokat teszek eredményeim gyakorlati alkalmazására.

A kutatás eredményeit számos publikációban publikálták, megkönnyítve ezzel a témával kapcsolatos további kutatásokat. Lehetőséget látok arra, hogy eredményeimet és eredményeimet az oktatási, vállalkozási és regionális fejlesztési politikában, valamint a gazdaságpolitikai intézkedések tervezésében hasznosítsam.

Introduction

In the framework of my doctoral dissertation, I present the effects of the economic crisis triggered by the financial and capital market crisis of 2008 and the pandemic that started in 2020 on domestic micro-, small- and medium-sized enterprises (hereinafter: SMEs or micro-, small- and medium-sized enterprises) and their spatial structure. Since the development of a region is based on the decisions of economic actors and households, the focus of my research is on the examination of these actors, namely domestic micro-, small- and medium-sized enterprises and their economic performance and spatial structure. My analyses are focused on gait level. While it is true that SMEs do not create any spatial organisational units, so they can be examined in any spatial division (from the municipal level to the world level), at the same time I wanted to subject the economic indicators of SMEs to a lower regional level, thus raising the novelty of my doctoral thesis. The time dimension of my research begins

with the money and capital market crisis of 2008 and ends with the economic crisis that has become 'famous' in everyday language only as the COVID pandemic. Towards the end of my doctoral thesis, by the first quarter of 2022, the epidemic is fading in Hungary – mostly thanks to vaccinations – but at the same time the world is already facing new difficulties, namely the economic shock caused by the Russian-Ukrainian war. The marked surge in inflation, the general fall in stock prices, the Hungarian Forint general devaluation against the dollar, the uncertainty of global supply and supply chains (energy, food, raw materials, components) are forcing the world economy, including the Hungarian economy, and the economic performance of domestic enterprises into an economic path that is difficult to predict. However, the research on this topic is already beyond the scope of my present doctoral dissertation, and the related analysis and impact assessment is perhaps already the topic of one of my next publications.

The main goal of my research is therefore to examine the impact of the crises on domestic micro-, small- and medium-sized enterprises and their economic performance. In addition to the main objective, I also set other objectives, including examining which domestic districts were hardest hit by each crisis, how each crisis affected the development of territorial disparities in terms of SMEs and their economic performance, and how this changed over the years under review. Can the domestic districts be grouped together and do they draw any spatial patterns? To what extent is their economic strength influenced by structural and local factors? Last but not least, I also examine which of the domestic districts are the

more competitive and less competitive districts and how this has changed during the crises I have examined.

In my dissertation, the definition of the goals of the research is followed by a detailed description of the research methodology, which leads to the theoretical part of the thesis. In the first chapter of my study I will highlight the key economic role of European micro-, small- and medium-sized enterprises, presenting the role and importance of SMEs in catching up with regions, and I will also give an idea of the basic characteristics and situation of European and domestic SMEs. In the analytical chapters of the thesis, I present the effects of the crises examined on domestic SMEs, their economic performance, the branches of the national economy and districts of the national economy most affected by the crises through the economic performance of SMEs. I examine the territorial characteristics of SMEs operating in Hungary and their changes, looking for answers to the following questions: how concentrated are SMEs in Hungary, how their territorial distribution has changed since 2008, what is the territorial impact of the crises on the number of SMEs, their turnover, their added value, the number of people employed here, i.e. their economic performance, and which areas can be considered as vulnerable areas from the point of view of SMEs. In the analytical part of my dissertation, I focused on the study of territorial inequality through the economic performance of SMEs operating in Hungarian districts, using various methods to measure territorial inequalities, such as the Lorenz curves (Lorenz, 1905), the relative concentration coefficient associated with the Lorenz curve and the Hoover index for measuring territorial inequalities, as well

as the Gini index and the Hirschland-Herfindal index. To present the Hungarian spatial structure, to analyze spatial processes, I use the center of gravity method, and to examine the economic force fields, I use the Nemes Nagy regression approach, the method of division into factors. (Nemes Nagy, 2009). I examine the phenomenon of territorial autocorrelation (Dusek, 2004) with Moran's value I. In my dissertation, I also formulate the question of to what extent the different territorial differentiation of the most important characteristics and economic performance of micro-, small- and medium-sized enterprises is territorial, regional. In order to answer this question to illustrate the effects of spatiality and other so-called structural factors, I use shift-share analysis (Kiss, 1998). With the help of the method, it can be shown that a district can be dynamized not only by improving the sectoral structure of the economy, but also by transforming it, taking into account local conditions, since the development or the pace of development changes as a result of these two factors (Kiss, 2008).

I will conclude my work with a summary, in which I will summarize its most important findings and theses and formulate recommendations for their practical application. The results of the research have been published in a number of publications, facilitating further research on the subject. I see an opportunity to further exploit the results in the field of education, enterprise and regional development policy, and the planning of economic policy measures.

1.   Subject of the research

In the framework of my doctoral dissertation, I present the effects of the economic crisis triggered by the financial and capital market crisis of 2008 and the pandemic that started in 2020 on domestic micro-, small- and medium-sized enterprises and their spatial structure. My analyses are focused on district level. While it is true that SMEs do not create any spatial organizational units, so they can be examined in any spatial division (from the municipal level to the world level), at the same time I wanted to subject the economic indicators of SMEs to a lower regional level, thus raising the novelty of my doctoral thesis. The time dimension of my research begins with the money and capital market crisis of 2008 and ends with the economic crisis that has become 'famous' in everyday language only as the COVID pandemic.

1.2.   Relevance of the topic of the research

In December 2019, a pneumonia epidemic of an unknown origin was reported by Chinese health authorities to the World Health Organization (WHO). The disease, called COVID-19, caused by the SARS-CoV-2 virus, spread rapidly and became a worldwide epidemic. The measures ordered to deal with the health crisis caused by the pandemic situation have caused a social and economic shock all over the world. As a result, the topic of my thesis was triggered by the unfortunate fact that this economic shock has thrown back the Hungarian economy, the economic performance of domestic enterprises and, as a result, the competitiveness of domestic regions.

The pandemic has caused disruptions in every country in the world, in every segment and actors in the economy; It

has disrupted production and distribution chains, supply networks, labor markets and changed the consumption and investment habits and decisions of the public and economic actors, including micro-, small- and medium-sized enterprises. At the beginning of the pandemic and with its globalization, air transport, tourism, many production plants were almost completely shut down, catering establishments were suspended and their turnover dropped to zero or dropped significantly.

In addition to the decline in household and business incomes, business profits also fell significantly. In a context of negative outlooks and uncertainty, bank lending activity moderated in such a way that banks required the use of more collateral or higher institutional guarantees to secure funds.

The economic outlook and adverse conditions in the financing market required very rapid intervention. There was a need for new, easily and quickly adaptable financing products that would help domestic, distressed businesses, especially more vulnerable micro-, small- and medium-sized enterprises, to alleviate their financing difficulties, solve their financing problems, maintain the jobs they work in and mitigate the negative effects of the economic crisis caused by the pandemic.

With the outbreak of the socio-economic crisis caused by the pandemic, the first phase of economic protection measures in Hungary started with the announcement of the emergency situation announced on March 11, 2020, by a government decision, and the announcement of the Economic Protection Action Plan. One of the organizations responsible for the development and implementation of the Economic Protection Action Plan

was my workplace, the State Secretariat for Economic Strategy and Regulation of the Ministry of Innovation and Technology.

Following the outbreak of the crisis, most of my colleagues, including myself, were engaged 24 hours a day in creating measures, projects and products aimed at the health of human life and the protection of families and domestic businesses.

The introduction of the products was carried out with extraordinary speed, significantly shortening the 'mandatory' steps of product development, after a quick professional assessment, and the testing of the products – like in other European Union countries – was already in production.

In 2008, the world has already experienced a crisis in the money and capital markets. One of the most significant dates in terms of the financial market crisis is 15 September 2008, when Lehman Brothers filed for bankruptcy protection. The filing of bankruptcy protection was also a symbolic starting point for a recession that spread to the whole world, and countries such as Latvia, Hungary or Romania could no longer finance themselves, so in a very short time they would have become defenseless, that is, insolvent without outside help, which is synonymous with state bankruptcy. That is why they had to seek the help of the IMF and the EU (Miklós, 2013, p. 78). In fact, this date marks the beginning of the time dimension of my research.

In view of the fact that I was already working at that time as a specialist dealing with business development and development policy in the predecessor institution of the aforementioned ministry, and I was already able to

contribute to the management of the crisis at that time, the topic of my research was clearly the comparison of the two crises and the responses to crises from different aspects, primarily the effects of domestic micro-, small- and medium-sized enterprises on their territorial characteristics.

1.2.1. The novelty of the topic

The topic is novel in several ways, which I will summarize in points below:

− a global epidemic such as the one that occurred most recently occurred at the beginning of the XX century, and therefore its economic effects, their effects on micro-, small- and medium-sized enterprises and their territorial characteristics, cannot be projected onto it or drawn parallels with the modern pandemic of today, furthermore comparable data are not available;[1]

− Although the Great Depression of 1929-33 can be compared with the two crises I examined, the strong reliance on foreign markets, the close dependence on international activity, the inadequacy and weakness of the internal market, the drastically deteriorating exchange rates, the wide-opening agricultural scissors and the country's disastrous indebtedness (Vizi, L.T.,

---

[1] In the beginning of the 20th century, during the First World War, Spanish flu (also known as three-day fever) seized its victims around the world, including in our country. Spanish fever is one of the 'A' types of influenza virus, an epidemic that has rapidly grown worldwide. It began to spread in Hungary in the summer of 1918 (Bruckner, 2020).

2015, 78.), however, the territorial management indicators of enterprises from this period are not available, the comparison could only be made at the level of the available national indicators.[2]

- in the late 1990s, the world's population experienced several financial crises, all of which resulted in significant GDP reductions for countries. The reasons were quite wide: unfavorable exchange rates, outflow of foreign capital, insufficient functioning of the financial intermediation system, credit crunch (Halmosi, 2004) (Mexican crisis of 1994, Asian crisis of the 1990s, regime change after 1989). These crises, in their temporality, nature and geography, cannot be fully adapted or paralleled with the economic effects of the current pandemic;
- the examination of Hungarian SMEs at the territorial level, the examination of the territorial characteristics of SMEs at district level are covered by a relatively small number of researches, the present research on the effects of certain crises on the territorial characteristics of enterprises, especially SMEs, at district level, is novel among research;
- examining the impact of the COVID pandemic on the economic performance and territorial (district) inequalities of SMEs during the duration of my

---

[2] The Great Depression of 1929-33 also hit Hungary unprepared, but not unexpectedly, at the meeting of the Government on March 23, 1928, in connection with the country's credit exposure, Foreign Minister Lajos Walko noted that it is not possible to build a country's economy on credit, only what we collect (Vizi, L. T., 2015, 78.).

research, there were still relatively few publications regarding the effects of the pandemic crisis on SMEs, the literature consisted of Commission Communications, publications, official publications and recommendations of individual international organizations;

- The inventory of crisis management measures affecting domestic micro-, small- and medium-sized enterprises, and the examination of the impact of crisis management measures applied during each crisis on enterprises is also beginning to unfold – over the duration of my research – therefore the topic can be said to be novel from this point of view as well.

It is because of the above background that I have come to the conclusion that in my dissertation I will provide a summary assessment of the two biggest crises of recent decades: the 2008 money and capital markets crisis and the pandemic economic crisis

- its effects on micro-, small- and medium-sized enterprises,
- on the development of the spatial characteristics of crises on these types of enterprises.

Due to the novelty of the topic, I assumed that the results and experiences could show varied results from a regional point of view.

In the near future, we must be prepared for global crises caused by epidemics or crises triggered by other factors that are shaking the entire world economy. Unfortunately, the Russian-Ukrainian had started towards the end of my research, which is actually the basis for new researches, so it can even be stated that, in order for a crisis not to cause

social and economic damage of a similar scale in the future or to minimize it, it is necessary to have research findings that can be applied in practice. They show how the negative economic impact of crises can be reduced and minimized, and more importantly, how we can prepare for it already with a well-developed strategy, with programs that can be easily and quickly deployed and adapted.

1.3. Aims of the research

The aim of the research is to discover and research:

— how the crises I examined have affected Hungarian micro-, small- and medium-sized enterprises and their economic performance:

    a. in the 2008 money and capital markets and

    b. in the economic crisis caused by the pandemic in December 2019,

and in detail:

— the development of the turnover of SMEs at district level, which were the most important branches of the national economy in terms of the development of SMEs' turnover (Chapter 5.1);

— the spatial and sectorial concentration of SMEs' turnover (Chapter 5.1);

— whether neighborhood relations have an impact on territorial differences in SMEs' turnover (Chapter 5.1);

— the factors justifying the change in the turnover of SMEs (Chapter 5.1);

— economic power or local influence plays a greater role in the development of district turnover (Chapter 5.2);

— which districts stand out in terms of turnover of a particular branch of the national economy (Chapter 5.3);
— the competitiveness categories of each district (Chapter 5.4);
— the territorial concentration of key economic indicators of SMEs (Chapter 5.5);
— Which regions have been most affected by the pandemic in the sectors of the national economy related to tourism, hospitality and tourism (Chapter 5.6)?

On the basis of the above, in summary, with regard to SMEs:
– what lessons can be learned from experiences, conclusions can be drawn about each crisis,
– in the event of an impending crisis, what proposals can be formulated to deal with the crisis and reduce its negative economic and social impacts?

2. The structure of the study

After presenting the purpose, significance of my research topic, and describing the methodology of the research, in the second chapter I will carry out a theoretical overview of the works presenting the territorial inequalities closely related to my topic, competitiveness, as well as the SME definition and its development. After presenting the most important characteristics of European and domestic SMEs, I will conclude the chapter with a summary.

In the third chapter, I will describe the hypotheses I have put forward, this includes a total of 5 hypotheses, together

with a brief description of the methods used to support them.

In the fourth chapter, I present in detail the effects of the financial and capital market crises and the crises triggered by the current pandemic on SMEs by crisis, describing the most important stages of each crisis and the measures applied to deal with them, summarizing the most important characteristics of each crisis, the most important characteristics of SMEs during the crises, their territorial characteristics, and I will conclude the chapter with a summary and conclusions.

In chapter five, I will describe in detail the methodology of empirical research and the results of the research in the framework of six subsections. In the first subsection, I will deal with the district-level results related to the turnover of Hungarian SMEs in 2020 and their change compared to the money and capital market crisis. The chapter includes the most important branches of the economy in terms of the development of the turnover of SMEs, the branches of the national economy with the highest growth during the period under review, the presentation of the development of the HHI index between 2008 and 2020, the autocorrelation studies of the SMEs' turnover, territorial inequality studies and the factors contributing to the development of SMEs' turnover. The second subsection deals with the study of economic strength fields and the application of the regression approach. In the third subsection, I analyze the spatial processes, present the centers of gravity of each branch of the national economy compared to Budapest and the distances of the standard. In the fourth subsection, I deal with competitiveness studies, using the method of division into factors, I present

the competitiveness categories of each Hungarian district, the district economic strength and the competitiveness situation of SMEs. In the fifth subsection, I will carry out the territorial concentration tests, covering the study of absolute and relative concentrations. In the sixth subsection, I present the problems of the pandemic and domestic tourist areas. I will conclude the subsection with summary findings.

In the sixth chapter, I deal with the presentation of new, scientific results, highlighting the most important findings of the results achieved in the empirical research chapter in each subsection.

The seventh chapter contains the conclusions of my doctoral dissertation and the formulation of suggestions.

Chapters 7-11 include a bibliography, a supervisor's recommendation and a list of scientific publications, annexes and acknowledgements.

1. table Structure of the research

Logical structure	Keywords	Research process outputs
Chapter 1.: – The significance and topicality of the topic; – Determination of the purpose of the research; – Description of the research methodology	– the money and capital market crisis of 2008; – pandemic-induced economic crisis; – SMEs; – territorial inequality	– Summary of the novelty of the topic; – Defining the goals of the research; – Description of research methods; – Placement of research among other research
Chapter 2.: – Theoretical review, literature processing	– regional research; – differentiation of spatial and territorial inequalities; – regional disparities; – competitiveness; – SME definition;	– Processing of concepts, literature; – Presentation of the development of territorial disparities in Hungary;

Logical structure	Keywords	Research process outputs
	− The role and importance of SMEs	− Explaining the role and importance of European and Hungarian SMEs
Chapter 3.: − Hypotheses of research and applied methods	− Concentration; − Lorenz crooked; − Gini coefficient; − Hoover index; − centroid method; − territorial autocorrelation, − Hirschland-Herfindal index − regional sciences	− Formulation of theses related to empirical research; − Selection of methods used to test theses
Chapter 4.: − On the impact of the crises under review on SMEs	− crisis management measures; − sources of financing; − economic protection measures; − loan programs; − the most important territorial features of the SME sector; − central area, central region; − territorial differences	− A tabular comparison of the money and capital market crisis and the present-day crisis from several points of view, describing its characteristics; − Summary of crisis management and mitigation measures
Chapter 5.: − Empirical basis of research	− district-level analyses of SME turnover; − growth; − territorial inequality studies; − GINI index, HHI index; − autocorrelation; − local patterns; − breakdown into factors; − nationwide shift; − compositional effect; − local ingredient; − economic forces; − regression approach; − spatial processes;	− Proof or rejection of hypotheses; − Formulation of theses; − Making summary findings;

Logical structure	Keywords	Research process outputs
	– centroid method; – competitiveness analyses; – district economic strength; – Absolute, relative concentration tests; – tourist areas	
Chapter 6.: – Summary, conclusions, proposals	– Summary of research along hypotheses – business development, business development; – development of financing instruments, programmes; – monitoring of crisis management tools	– Summary of proposals for conclusions, formulation of proposals for the exploitation of research results; – Description of ideas for conducting research

Source: Own editing based on Doctoral thesis

3. Methodology of the research

Given that the present pandemic crisis, as a phenomenon to be investigated, is still relatively new and unexplored, it is necessary to carry out **exploratory research**. During the exploration, my aim was to find out, on the one hand, the impact of the previous crisis on money and capital markets on domestic SMEs and their territorial specificities, and what facts, conclusions and practical experience are available to mitigate the economic effects of a crisis. During the exploration, I also aimed to find out what kind of literature related to my doctoral topic is available in connection with the current pandemic.

After the exploratory stage, **a description and comparison will be made**, the years before and during each crisis and the subsequent domestic situational

picture, focusing on the situation of SMEs and their territorial specificities. These types of descriptive studies are what?, where?, when? And how? questions are answered. After that, an explanation of the findings will be given. (Babbie, 2001).

In my doctoral dissertation, I used **literature review**, secondary information processing, and **quantitative** methods.

3.1. Positoning my research among other researches

Regional sciences began to be dealt with by domestic researchers in the 1960s. Domestic regional science in 2017 was clearly placed in the domestic disciplinary space by the academic classification system. Regional Sciences is a discipline found among the Social Sciences. It brings together the main directions of research in five priority thematic areas. These are: Social Spatial Theory, Regional and Urban Economics, Economic and Social Processes of Territorial and Settlement Development, Territorial and Rural Development Policy, Planning and Governance, and Territorial Statistics and Analysis Methods (Lengyel et al., 2020).

The topic of regional and urban economics with the economic growth and development of domestic regions,

it deals with competitiveness, innovation capacity, impact analysis of development policies, etc. Studies on this topic are published not only in regional scientific forums, but also in economics and business sciences. A comprehensive Hungarian textbook on the topic is associated with the names of Lengyel and Rechnitzer from 2004 (Lengyel-Rechnitzer 2004).

My research, according to classification, *belongs to the Regional and Urban Economics* **dealing with the economic growth, development, competitiveness, innovation capacity of domestic regions, and the impact analysis of development policies within regional sciences.**

4. Hypotheses of the research

Based on the literature I reviewed, my professional knowledge, I set up the following theses related to empirical research, and for testing theses, I used the methods summarized below.

Hypothesis 1 (H1): The effects of neighborhood relations were more significant in the spatial structure of SMEs' turnover by district by 2020 compared to the money and capital markets crisis.

One of the fundamental questions of regional science is how similar or different the appearance of a phenomenon on a given unit of territory is compared to the values of neighboring units of territory. Based on the quantification of the similarities, conclusions can be drawn about the spatial context of the phenomenon under study and its nature (Tóth, 2003).

The spatial structure of SMEs' turnover, taken into account all branches of the economy, is changing favorably as a result of the stronger impact of neighborhood relations, by the end of the period under review, more districts will be under the positive influence of neighborhood relations

compared to 2008, so I expected a significant positive change in the spatial structure by 2020.

The starting point of my assumption was that as the country's economy develops, more districts will come under the positive influence of neighborhood relations than there were in 2008. My thesis is tested using the Local Moran I test functioned for the method of testing territorial autocorrelation. The Moran I indicator shows how similar or different the value of the studied area is from its neighbors, the Local Moran statistics are suitable for detecting areas that are similar or different from their neighbors. (Tóth, 2003).

Hypothesis 2 (H2): **Based on the method of factor breakdown in the development of the turnover of SMEs by district, the role of the national impact is the most decisive in the period 2008-2020.**

To examine the change in the turnover of SMEs in each district between 2008 and 2020, I used the classic version of shift-share analysis. One common method of regional analysis is shift-share analysis (Nemes Nagy, 2009), which was used for regional forecasting. This procedure breaks down the change in the performance of a particular branch of the national economy observed in a given region into a national effect, a sectorial effect and a competitiveness effect, also known as a regional one. The national (national shift) effect shows how the performance of the district would have changed if it had developed at the same pace as the national economy. The sectorial (compositional) effect includes positive or negative effects due to the sectorial composition of the district, showing

whether the branches of the economy in a given district grew faster or slower than the ratio. Finally, the competitiveness effect captures individual (local components) effects and quantifies how much the development rate of the district has deviated from the level that would have been expected based on growth at the level of the national economy and the sectorial composition (Zsibók, 2018).

With the help of this breakdown method, I examine which of the national, local and sectorial component i.e. the compositional effect, plays the biggest role in the development of the sales revenue of SMEs in the period 2008-2020. Based on my findings on each of the crises examined - the turnover of companies decreased - my assumption was that the role of the national impact is the strongest and that it is the one that most strongly shapes the development of SMEs' turnover at the level of the national economy.

Hypothesis 3 (H3): In 2020, local factors played the most significant role in the economic strength of districts.

In examining the economic forces, I examine how today (2020) the economic strength of the districts, which is the economic strength of the districts per inhabitant, is influenced by the turnover per employee of SMEs operating in the districts, i.e. structural and to what extent, the independent local factors. To test the hypothesis, I use a linear regression method similar to the approach to shift-share analysis, modeling the relationship between two or more random variables.

In his article entitled *" A regionális fejlődés erőforrásainak átrendeződése, új súlypont: a tudás" (Rechnitzer, 2008 in*: Legyel-Lukovich, 2008), he states that local conditions and local resources are appreciated, which manifest themselves in a number of economic (e.g. production traditions, local innovation environment) and non-economic (e.g. community relations, subsidies) factors, which also served as the basis for my hypothesis. My assumption was that nowadays the role of local resources has become so valued that it influences the turnover of SMEs more than structural (economic power).

Hypothesis 4 (H4): During the analyzed crises, there is a significant change in the relative concentration of the number and revenue of SMEs.

To prove my hypothesis, I used Lorenz curves expressing the concentration per district units of cumulative net turnover of SMEs relative to the cumulative frequency of the number of SMEs. My hypothesis was based on the fact that by 2020, compared to 2008, both the number of SMEs and their turnover increased in the majority of districts (calculated at 2020 prices), compared to 2008, by 2020 there were only nine districts in which there was a decrease in sales.

It should be noted, however, that enterprises adapt to the changing economic environment with a multi-instrumental package of measures, and company managers use different tools in times of crisis to overcome the difficulties caused by the downturn (Laki, 1992; 566) [3],

---

[3] Frequently used tools of corporate adaptation during the 2008 money and capital crisis were: changing prices, changing products, increasing

which can have an impact on the development of the number and turnover of SMEs, including their relative concentration.

In the chapter on the most important territorial characteristics of the domestic SME sector, I summarized the following, which made it necessary to test the hypothesis:

- One of the factors fundamentally determining the economic spatial structure was the increase in entrepreneurial activity, which had an impact on employment and the creation of businesses that support further economic activity (Faluvégi, 2020, 119.).
- Enterprise density and economic development are developing in parallel. It is clear from the statistical data that in 2008 and also during the current health crisis, the business density was higher in the Transdanubian regions (Central Transdanubia, West Transdanubia) and lower in the lowland regions, and the lowest value from 2008 to the present was represented by North Hungary. The economic development indicators of each region also developed in parallel, in terms of gross value added, turnover and export turnover.

---

turnover, expanding, restructuring capacities (investment), fully or partially changing markets, increasing share in certain submarkets, reducing inputs (for example, by reducing inventories), deferral, failing to pay (forced lending), deferring the payment of tax and public charges, omission, organizational restructuring, redundancy, leasing or selling part of the company's assets (Laki, 1992, p. 566)

5. Hypothesis (H5): Overall, in Hungary, during the crises examined, territorial disparities in terms of the number and economic performance of SMEs decreased, and during prosperous periods they increased.

To test my hypothesis, a special type of Hoover index was used, the Robin Hood index, which assigns scalar to inequalities in the territorial distributions of income (xi) and population (fi). The index shows what percentage of income should be transferred between units of land (taken from those living in richer areas and given to those living in poorer areas) so that income is distributed in the same way as the population. By analogy with the Robin Hood index, the Hoover indices of SMEs can also be interpreted. (Major–Nemes Nagy, 1999).

It was a finding in the literature that the crisis sensitivity of the counties that played a greater role in the production of domestic GDP was indicated by the fact that, with the exception of Budapest, their annual growth rate between 1994 and 2007 was higher than in the subsequent period, and the growth of counties with a smaller share of GDP was the exact opposite, i.e. these counties were less affected by the crisis that unfolded in 2008. The imbalance trends during the 2008 crisis period are therefore not due to the faster catching-up of the less developed regions, but to the decline of the more developed regions. (Korompai-Szabó, 2016, in: Tóth-Gubik (ed.), 2016, 228).

2. table The relationship between the aims of the research and hypotheses

Objectives of the research		Methods	Hypotheses	Outcomes
General	detailed			
How the crises I examined have affected Hungarian micro-, small- and medium-sized enterprises and their economic performance: the 2008 money and capital markets and the economic crisis caused by the pandemic that erupted in December 2019?	**Chapter 5.1:** How was the district-level turnover of SMEs, which were the most important branches of the national economy in terms of the development of SMEs' turnover? How has the spatial and sectorial concentration of SMEs' turnover developed? Do neighborhood relations have an impact on territorial differences in SMEs' turnover? What factors can be used to justify the change in the turnover of SMEs?	Indices: GINI; HHI; Hoover; Autocorrelation studies (Moran I); Method of division into factors	H1; H2	From 2008 to 2020, there were a total of nine districts in which there was a decrease in sales. In 136 of the 197 districts, the role of *Trade, motor vehicle repair,* and in 44 districts, the role of the *Manufacturing Industry* was prominent. From 2008 to 2020, there was no spatial regularity for the branches of the economy with the highest growth in SME turnover. The spatial differences in the turnover of domestic SMEs decreased to a lesser extent between 2008 and 2020, taking into account all branches of the economy together. National impacts are the most significant in the

Objectives of the research		Methods	Hypotheses	Outcomes
General	detailed			
				development of SMEs' turnover in 2020, second is the impact of the local component and third is the sectorial component.
	Chapter 5.2: Does economic strength or local influence play a greater role in the development of district revenues?	Shift-share;	H3	In districts, the influence of the structural, economic force resulting from their economic strength plays a greater role.
	Chapter 5.3: Which districts stand out in terms of turnover of a particular branch of the economy?	Center of gravity method	-	Budapest's dominant role has declined in most branches of the national economy. The movement of the centers of gravity, different in relation to each branch.
	Chapter 5.4: What are the competitiveness categories of each district	Method of division into factors	-	There is a strong link between the development of districts and the competitiveness of SMEs.
	Chapter 5.5: How is the territorial concentration of the most important	Absolute and relative concentration tests; Gini index; Lorenz curve	H4; H5	In times of crisis, the territorial concentration in terms of indicators of

Objectives of the research		Methods	Hypotheses	Outcomes
General	detailed			
	economic indicators of SMEs developing?			economic performance of SMEs decreases significantly, while in times of economic prosperity the indicator increases or stagnates.
	Chapter 5.6: Which districts are the most affected by the pandemic in the sectors of the national economy related to tourism, hospitality and tourism?	Comparative test	-	SMEs in vulnerable sectors and regions are the most exposed to the risk factors of globalization and technological development, to the effects of the crisis. The districts hardest hit by the crisis caused by the epidemic were the districts in Hungary most visited by domestic and foreign tourists.

Source: own edit.

5. Summary of the research along hypotheses and results

Based on the literature I reviewed, my theoretical and professional knowledge, I used and tested hypotheses related to the empirical research.

<u>H1:</u> The effects of neighborhood relations were more significant in the spatial structure of SMEs' turnover by district by 2020 compared to the money and capital markets crisis.

The starting point of my assumption was that as the country's economy developed, more districts would be positively influenced than there were in 2008. My hypothesis was tested using the Local Moran I test function.
However, using the Local Moran I test function, it was found that there was no significant change between 2008 and 2020 in terms of the spatial structure of the turnover of SMEs operating in different industries, the spatial structure remained unchanged or changed slightly. **Hypothesis 1** is therefore not acceptable on the basis of the results, **it has been rejected.**

Thesis 1.

There was no significant change between 2008 and 2020 in terms of the spatial structure of the turnover of SMEs operating in different branches of the national economy, the spatial structure remained unchanged or changed slightly.

H2: **Based on the method of factor breakdown in the development of the turnover of SMEs by district, the role of the national impact is the most decisive in the period 2008-2020.**

To examine the change in the turnover of SMEs in each district between 2008 and 2020, a classic version of shift-share analysis will be used. Using the method of breakdown into factors, I examine which of the national, local and sectorial component, i.e. the impact on composition, played the biggest role in the development of SMEs' turnover in the period 2008-2020. Based on my findings on each of the crises examined, the turnover of companies decreased, my assumption was that the role of the national impact is the strongest and that it is the one that most strongly shapes the development of SMEs' turnover.

In the majority of districts, the impact of the nationwide shift in the development of SME revenues is the most decisive from 2008 to 2020. The second is the local component, and in the third place, the sectoral composition, i.e. the compositional effect, plays a role in the development of SMEs' turnover between the years 2008 and 2020, so the latter is the least decisive factor in the size of SMEs' turnover in a district. The national shift had a positive impact on the volume of SME revenues in all districts, i.e. the general national trend was the most significant in almost all districts, on the basis of which **hypothesis 2 was adopted.**

Thesis 2.

In the majority of districts, the impact of the national shift in the development of SME revenues was the most decisive from 2008 to 2020.

H3: In 2020, local factors played the most significant role in the economic strength of the districts.

In examining the economic forces, I examine how today (2020) the economic strength of the districts, which is the economic strength of the districts per inhabitant, is influenced by the turnover per employee of SMEs operating in the districts, i.e. structural and to what extent, the independent local factors. To test the hypothesis, I use a regression method similar to the approach to shift-share analysis.

My assumption was that nowadays the role of local resources has become so valued that it influences the development of the sales revenue of SMEs more than structural (economic) power, however, the opposite was demonstrated, therefore **hypothesis 3** cannot be justified and **has been rejected.**

Thesis 3.

The economic power of the districts, which is quantified by the district economic power per inhabitant, is the sales revenue of the SMEs operating in the districts per employee, i.e. structural factors have a stronger influence than independent local factors.

H4: During the analyzed crises, there is a significant change in the relative concentration of the number and revenue of SMEs.

To prove my hypothesis, I used Lorenz curves expressing the concentration per district unit of cumulative net turnover of SMEs relative to the cumulative frequency of the number of SMEs. My hypothesis was based on the fact that by 2020, compared to 2008, both the number of SMEs and their turnover increased in the majority of districts (calculated at 2020 prices), compared to 2008, by 2020 there were only nine districts in which there was a decrease in sales.

On the basis of the results, **hypothesis 4 was rejected**, the opposite of the statement in the hypothesis was proved, since the results show that the range and order of districts outstanding in terms of the relative concentration of the number and net turnover of SMEs during the period under review changed minimally.

Thesis 4.

During the crises examined, there was no significant change in the relative concentration of the number and turnover of SMEs, practically the same districts in Budapest proved to be dominant in the years under review.

H5: Overall, in Hungary, during the crises examined, territorial disparities in terms of the number and economic performance of SMEs decreased, and during prosperous periods they increased.

To test my hypothesis, a special type of Hoover index was used, the Robin Hood index, which assigns scalar to inequalities in the territorial distributions of income (x_i) and population (f_i). The index shows what percentage of income should be transferred between units of land (taken from those living in richer areas and given to those living in poorer areas) so that income is distributed in the same way as the population.

The turnover and value added of SMEs are on almost the same trend, inequalities are fundamentally decreasing during the period under review (2008-2020) and did not reach the level of 2008 even in the year before the pandemic.

In terms of the number of employees in SMEs, the index follows an inverse trend in relation to the turnover and value added of SMEs, for this indicator the value of the index was higher in both 2019 and 2020 than in 2008, however, this does not change the fact that during the crises under review we can observe a trend towards reducing territorial disparities, emerging from the crisis, and at a time of economic prosperity, inequalities in terms of turnover and value added of SMEs are decreasing and increasing in terms of the number of people employed. **Hypothesis 5 was accepted.**

Thesis 5.

During the crises examined, territorial disparities in terms of the number of SMEs and their economic performance (turnover, number of employees, gross value added) decreased and increased during prosperous periods.

6. Summary

The role and importance of SMEs is outstanding and will be appreciated even more in the future. Both start-ups and existing businesses contribute to the growth of employment, the economy and the economic performance of the given area by seizing opportunities, through which they also have a role to play in overcoming individual crises.

The priority treatment of SMEs and their concentration on their specific needs is still key for the policy in the future, the good direction of this is *The strategy for strengthening Hungarian micro-, small- and medium-sized enterprises 2019-2030* (Ministry of Innovation and Technology, 2019). The Strategy provides businesses of all sizes and shapes with the right framework for their development activities. In addition to horizontal areas of intervention, it also takes a mosaic approach aimed at specific groups of undertakings, sometimes geographical areas. The regular measurement of the goals set out in the Strategy and the monitoring of the Strategy are therefore of paramount importance for defining current and future development ideas for micro-, small- and medium-sized enterprises in Hungary.

In the 2008-2020 period under review, territorial differences have decreased in 10 out of 17 branches of the national economy and increased in 7, so it is also possible to use a sectoral approach to territorial development to influence spatial processes.

Since the territorial differences in terms of SMEs' turnover at district level are influenced by neighbourhood conditions, development policy interventions are necessary that continuously monitor and take into account

the development of neighbourhood relations, because through them the influence of neighbouring districts can also take place.

Based on the studies, I found that spatial processes are relatively slow and significant changes did not occur during the relatively short period of the 2008-2020 period, so it is necessary to take this statement into account in the extent and time horizons of intervention in the case of economic policy, business development and territorial development programs.

The spatial differences in the turnover of domestic SMEs decreased slightly between 2008 and 2020, taking into account all branches of the economy together. As I indicated, the decrease could also be mitigated by development programmes aimed at reducing territorial-economic disparities (Economic Development Operational Programmes, Regional Development Operational Programmes). The conclusions drawn from the review and evaluation of each programme can serve as a basis for the implementation of the development ideas of the current planning period (2021-2027) that reduce territorial disparities.

Since national impacts are the most decisive factor in the development of SMEs' turnover in 2020, the second is the impact of the local component, and the third is the sectoral composition, i.e. the compositional effect, so this is the least determining factor in the volume of turnover in a district, it is necessary to take into account the factors contributing to the development of the turnover of enterprises, especially if it has a territorial orientation.

Based on the findings made during the examination of the economic forces, the programs developed for the

development of enterprises and, through this, for the development of individual regions, need to be identified and subject to investigation of the structural and local factors that positively and negatively influence the sales revenue of SMEs, because we can arrive at the formulation of more targeted development policy programmes through these.

The movement of the centers of gravity, i.e. the spatial fluctuations in the turnover of each branch of the economy, are different for each branch. For the above reasons, the examination of spatial processes, the examination of the centers of gravity of the individual branches of the national economy and their changes must precede the development of programmes aimed at reducing territorial disparities and regional development, and other means can be used to develop and reduce the branches of the national economy that are more dependent on Budapest and, with others, less dependent on Budapest.

Despite the fact that Hungary's spatial structure is no longer influenced by factors characteristic of the years of transition to a market economy, the basic features of the spatial structure of that time have largely survived, and the basic findings made on market economy crisis areas are still valid today, both in terms of the money and capital market crisis and the health crisis, therefore it is recommended that contemporary research and investigations on the subject go back at least to the change of regime, After all, the factors influencing the spatial structure of that time also play a role in drawing the present conclusions.

Since, on the basis of both the absolute and concentration tests, the territorial concentration of net turnover and gross

value added of SMEs has been found to be higher than the number of SMEs and the number of employees also showing strong concentration, it is found that a relatively small number of SMEs are responsible for a large part of the net turnover of sales produced by SMEs and for the production of their gross domestic product. It is therefore of particular importance to propose the use of development policy instruments that will result in a greater number of SMEs being involved in increasing the competitiveness of certain regions, i.e. further strengthening of programmes aimed at increasing the competitiveness of SMEs, including those already used, such as the Hungarian Multi, the Green National Champion Programmes.

The results related to the problems of domestic tourist areas showed that the branches of the economy most exposed to the effects of the economic crisis caused by the epidemic were the so-called IRS sector. That is why it is necessary to develop special financing instruments and programmes in times of crisis that are targeted at helping businesses in distress and are adapted to their current financing needs. It is important to determine the extent, scale, form (instrument) and timeframe of intervention on the basis of the severity of the situation, as if inappropriate instruments and measures and timeframes are used, it can already have a market-distorting effect. Continuous monitoring of individual crisis instruments should play an important role in this. It can be concluded that the future recommendations indicated by the OECD and other international, European and domestic studies to mitigate the economic impact of the health crisis, based on the experience of the 2008 world economic crisis, have been

taken into account by the policy and translated into concrete measures.[4]

I have confirmed the fact that SMEs in vulnerable sectors and regions are the most exposed to the risk factors of globalization and technological development, to the effects of the crisis. For this reason, particular attention should be paid to companies in these branches, and it is necessary to develop supportive, protective programmes to prepare for change and increase their resilience, thus helping these SMEs to cope with the negative effects of exposure and also strengthening the seizing of exposure-based opportunities.

---

[4] IRS: Accommodation and Hospitality:I; Arts, entertainment, leisure:R; Other service: S

7. Publications

7.1. Publications in the topic

7.1.1. Professional journals

➢ Kincses, Áron; Tóth, Géza; Jeneiné Gerő, Henriett Emese
A hazai mikro-, kis- és középvállalkozások (kkv-k) területi, versenyképességi elemzései, 2008–2020 [Competitiveness analyses of Hungary's micro-, small and medium sized enterprises (SMEs), 2008–2020]
Területi Statisztika, 2022, 62(4): 456–477; (2022)

➢ Jeneiné Gerő, Henriett Emese
A tőkepiaci és az egészségügyi válság összehasonlítása, KKV-kat érintő válságkezelő intézkedések [Comparison of the capital market and the health crisis, crisis management measures affecting SMEs]
Észak-magyarországi Stratégiai Füzetek, XIX. évf. 2022. 1. szám (2022)

➢ Jeneiné Gerő, Henriett Emese; Kincses, Áron; Tóth, Géza
A hazai mikro-, kis- és középvállalkozások térbeli jellegzetességei [Spatial characteristics of Hungarian micro-, small and medium-sized enterprises]
Területi Statisztika 61 : 6 pp. 769-796., 28 p. (2021)

➢ Jeneiné Gerő, Henriett Emese ; Kincses, Áron ; Tóth, Géza

A hazai KKV-k területi jellegzetességei válságok idején [Territorial characteristics of domestic SMEs during crises]

Statisztikai Szemle 99 : 12 pp. 1185-1211., 27 p. (2021)

➢ Kincses, Áron ; Tóth, Géza; Jeneiné, Henrietta Emese Gerő ; Pénzes, János

The impact of the coronavirus pandemic on the territorial characteristics of Hungarian SMEs (special regards to tourism)

Geojournal of Tourism and Geosites 39 : 4 supplement pp. 1483-1487., 5 p. (2021)

7.1.2. Conferences

Henriett Jeneiné Gerő (2022) The role of guarantee programmes in managing the crisis The XX Itinerant Assembly of the Hungarian Regional Science Society, Epidemic and crisis in the light of territorial-social impacts section, Budapest, 6-7 October 2022.

Henriett Jeneiné Gerő (2021) The effects of certain crises on domestic SMEs The XIX Itinerant Assembly of the Hungarian Regional Science Society, New forms of territorial inequalities and the changing territorial policy, Social and spatial inequalities, labour market processes section, Budapest, 4-5 November 2021.

7.2. Other publications by the author

7.2.1. Book excerpt

- ✓ Tóthné Dr. Sikora Gizella, Gerő Henriett Emese (2004) Munkaerőpiac: Oktatási Segédlet , 79 p. (2004) Miskolc: Miskolci Egyetem
- ✓ Tóthné Sikora Gizella, Gerő Henriett (2003) Az ESZA szerepe a munkaerő-piaci folyamatok alakulásában – esettanulmány a dán Ringkobing megye példája: X. fejezet (2003) Apertus Közalapítvány által támogatott az „EU-m@trix elemek" távoktatási projekt, Távoktatási tananyag
- ✓ Tóthné Sikora Gizella, Gerő Henriett (2003) Motivációs és érdekeltségi rendszerek: IX. fejezet (2003) Apertus Közalapítvány által támogatott az „EU-m@trix elemek" távoktatási projekt, Távoktatási tananyag
- ✓ Tóthné Sikora Gizella, Gerő Henriett (2003) Az Európai Unió foglalkoztatás és szociálpolitikája: V. fejezet (2003) Apertus Közalapítvány által támogatott az „EU-m@trix elemek" távoktatási projekt, Távoktatási tananyag,

7.2.2. Conference publication

- ✓ Gerő Henriett (2005) The Effects of the European Integration on the Hungarian Labour Market In: Gică, Oana Adriana (szerk.) The Impact of European Integration on the National Economy - Management Kolozsvár, Románia : Babes-Bolyai Tudományegyetem, (2005) Paper: x, 7 p.
- ✓ Gerő Henriett (2005) Regional Deviatons of the Unemployment in Hungary In: Lehoczky, L.;

Kalmár, L. (szerk.) 5th International Conference of PhD Students. Economics Miskolc, Magyarország : University of Miskolc Innovation and Technology Transfer Centre (2005) 430 p. pp. 59-63., 5 p.

✓ Dabasi Halász Zsuzsanna, Gerő Henriett (2004) The Roma Population and their Migration Trends in Szabolcs-Szatmár-Bereg County In: Application of Management Theory in Practice II. Kassa, Szlovákia: Technical University of Košice, Faculty of Economics (2004) pp. 48-55., 8 p.

✓ Henriett Gerő (2004) Newer directions of staff development In: Horváth, Á (ed.) IV Regional Advisory Conference Miskolc, Hungary: University of Miskolc, (2004) pp. 1-9., 9 p.

✓ Gerő Henriett (2004) Regional Characteristics of the National Labour Market In: Application of Management Theory in Practice II. Košice, Szlovákia: University of Economics in Bratislava, Faculty of Business Economics in Kosice, (2004) pp. 128-138., 11 p.

✓ Henriett Gerő (2004) The change of factors explaining inequalities in the labour market in Hungary from the beginning of the 1990s to the present In: Szegedi, Krisztina (ed.) Forum of doctoral students Section publication of the Faculty of Economics Miskolc, Hungary: University of Miskolc Innovation and Technology Transfer Center, (2004) pp. 55-61., 7 p.

✓ Henriett Gerő (2003) Unemployment conditions in Szabolcs-Szatmár-Bereg county in the 1990s In:

Lehoczky, László (ed.) Forum of doctoral students Faculty of Economics Section publication Miskolc, Hungary: University of Miskolc Innovation and Technology Transfer Center, (2003) pp. 78-83., 6 p.

✓ Henriett Gerő (2003) Health and safety protection at work in the European Union and Hungary In: Kováts, Gergely (ed.) Presentations of the II National Conference of Doctoral Students in Economics: Hungary on the threshold of the European Union: International and regional challenges Budapest, Hungary: National Association of Doctoral Students (DOSZ) (2003) pp. 130-135., 6 p.

✓ Zsuzsanna Halász, Henriett Gerő (co-author) (2003) The labour market migration of the Roma minority population of Szabolcs-Szatmár-Bereg County In: Lehoczky, László; Kalmár, László (ed.) 4th International Conference of PhD Students, Vol. 2. Economics Miskolc, Hungary: University of Miskolc, (2003) pp. 367-373., 7 p.

8. Literature

- BABBIE, Earl Babbie (2001) A társadalomtudományi kutatás gyakorlata. Budapest, Balassi Kiadó, 2001 ISBN 978-963-456-000-5
- BRUCKNER, Éva (2020) A halál lovasának látogatásai járványok alakjában Magyarországon, Polgári Szemle, 16. évf. 4–6. szám, 2020, 67–87., DOI: 10.24307/psz.2020.1006
- DUSEK, Tamás (2004) A területi elemzések alapjai Regionális Tudományi Tanulmányok 10. ELTE Regionális Földrajzi Tanszék–MTA–ELTE Regionális Tudományi Kutatócsoport, Budapest, 2004.
- FALUVÉGI, Albert (2020) megjelent: Területi Statisztika 40. évfolyam (2000) 4. szám 319–346. oldal) A magyar kistérségek fejlettségi különbségei, Területi Statisztika, 2020, 60(1): 118–148
- HALMOSI, Péter (2004) Pénzügyi válságok a kilencvenes években - egy évtized tanulságai, Szerk: Botos, K. Pénzügyek a globalizációban, SZTE GTK (2004), JATEPress, Szeged, 32-45. o.
- KISS János, Péter (1998) Az ágazati gazdaságszerkezet szerepe a regionális differenciálódásban Magyarországon, Tér és Társadalom, 1–2. sz., 138–162. p
- KISS, János Péter (2008) A területi jövedelemegyenlőtlenségek strukturális tényezői Magyarországon, Doktori (PhD.) értekezés, Szegedi Tudományegyetem Természettudományi Kar Budapest–Szeged 2008

- KOROMPAI, Attila - SZABÓ, Mátyás (2016) Új tendenciák településeink megújulásában p 228., pp. 227-241 In: TÓTH, Attiláné és S. GUBIK, Andrea (szerk.) Magyarország 2025-ben és kitekintés 2050-re Tanulmánykötet Nováky Erzsébet 70. születésnapjára. Arisztotelész Kiadó, Budapest, 2016 ISBN 978-615-5394-03-4
- LAKI, Mihály (1992) A vállalati magatartás változása és a gazdasági válság Közgazdasági Szemle 39: 6 pp. 565-578. , 14 p. (1992)
- LENGYEL, Imre - RECHNITZER, János (2004) Regionális gazdaságtan. Dialóg Campus Kiadó, Budapest, Pécs (Studia Regionum), 2004.
- LENGYEL, Imre - NEMES NAGY, József - RECHNITZER, János – VARGA, Attila (2020) A hazai regionális tudományról: eredmények és kihívások Hungarian regional science: achievements and challenges, Térés Társadalom 34. évf., 1. szám, 2020 https://doi.org/10.17649/TET.34.1.3233
- LORENZ, M. Otto (1905) Methods of measuring the concentration of wealth. Publications of the American Statistical Association. 1905, Vol. 9. No. 70. pp. 209–219.
- MAJOR, Klára – NEMES NAGY, József (1999) Területi jövedelemegyenlőtlenségek a kilencvenes években. Statisztikai Szemle, 1999, 77. évf. 6. sz. pp. 397–421.
- MIKLÓS, Gábor (2013) A Magyar eladósodás és válság hatásai, Budapest, Budapesti Corvinus Egyetem Közgazdaságtudományi Kar, in: Köz-Gazdaság, VIII. évfolyam, 1. szám, 77-86. p.

- ➤ NEMES NAGY, József (2009) Terek, helyek, régiók. A regionális tudomány alapjai Akadémiai Kiadó Budapest, 2009 ISBN 978 963 05 9864 4
- ➤ RECHNITZER, J. (2008): A regionális fejlődés erőforrásainak átrendeződése, új súlypont: a tudás In LENGYEL, I.–LUKOVICS, M. (SZERK.) (2008): Kérdőjelek a régiók gazdasági fejlődésében pp. 13–25., JATEPRESS, SZEGED.
- ➤ TÓTH, Géza (2003) Területi autokorrelációs vizsgálat a Local Moran I módszerével. Tér és Társadalom 17. évf. 2003/4. 39-49. p
- ➤ ZSIBÓK, Zsuzsanna (2018) Területi egyenlőtlenségek hosszú távon: a nemzeti szintű előrejelzések regionalizálása 91-99. in: Tudományos Mozaik 14. kötet Szerkesztette: Dr. Fata Ildikó - Dr. Gajzágó Éva Judit - Dr. Schuchmann Júlia Regionális folyamatok a változó világban és Magyarországon Tanulmánykötet Enyedi György professzor emlékére, Tomori Pál Főiskola, Budapest, 2018. ISBN 978-615-80727-2-4
- ➤ VIZI, L., Tamás (2015) A magyar külpolitika válságkezelő kísérletei a nagy gazdasági világválság idején Bethlen István és Károlyi Gyula kormányai alatt (1929-1932), Közép-Európai Közlemények, Évf. 8 szám 1 (2015) 77-91 o.