UNIVERSITY OF MISKOLC

FACULTY OF ECONOMICS

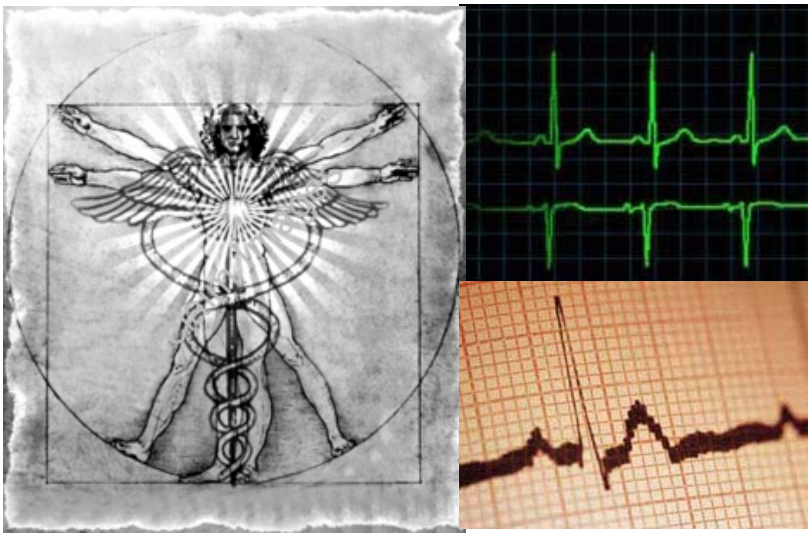
ALIZ SOMOGYI

THESES OF

'PUBLIC SERVICE AND PUBLIC MANAGEMENT'

- Coherence and Convergence Analysis of European Health Care Systems especially on Public Management –

PHD DISSERTATION



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CONTENTS

I. UNDERLYING OF RESEARCH TOPIC

What could be a more current issue for a social researcher these days than health care: nearly all health systems of the old continent experienced series of reforms in the past decade (British, French, German, even Scandinavians) and even today several European countries have to face the challenges of health care. The constraint of change is especially urgent in the post-socialist states where the waning and also ageing population is being clearly struck by the burden of economical closing-up/development forced by social and political expectations. From the era before the change of regime these countries inherited an ill-financed, centralized, state health care that worked at a low efficiency rate. Although the worsening health condition of the population and the dissatisfaction of almost all participants of this extremely expensive health care (providing?) system has made the need of change obvious, the wind-up of heritage of the socialist era has started only with several difficulties and after continual postponements; not accidentally: implementing the idea of free service on the basis of civic rights for the welfare states of the 21st century is almost an impossible mission thanks to the cumulated effect-machanism of changes in economy and society (mostly in a demographical sense).

The thought-proviking fact according to which the health systems of developed countries are doomed to constant renewals in consequence of the efforts to lift the above described inevitable conflict has led me to choose health care as the research topic of my PhD dissertation. Although a few decades ago the economical importance of health was disputed by many, these days several surveys has been accomplished to show its macro-economic effects as well as its contribution to the economy – according to surveys today's welfare is directly connected to the achievements in the field of health of the past times. The economical importance of health systems can be tracked in exact figures too: in the developed countries it is considered as one of the biggest sectors, that exceeds the share rate from GDP of the bank sector's, and the employment of human resources is one of the biggest in this sector (Harmat-Czárán, 2006, p. 16).

Many have undertaken the examination of health system from an economical point of view in several ways, often by highlighting the factors of current politics. The reason of chosing this topic as a subject of the present dissertation is examining the health system on the basis of a new approach, in reflection of public management as opposed to current political views.

II. AIMS OF RESEARCH

(Structure of dissertation and process of research see Figure 1)

Aims of research are the following:

(1) To map and display the features of the two 'basic sets' of health care, the service sector and the public sphere. Dealing with these two seemingly distant fields of scinence (viz. service management, public management) has two reasons: (1) first the strange fact that health care is balancing at the border of these two domains, can also be descibed as their mutual cut from a certain point of view, its anomalous character can be derived –among others- from this; (2) second the tendency according to which the reforms started in the public sector will raise expectation, induce changes in health care too.

(2) An outlined summary of public management and by this broadening the –relative- scarcity of scientific literature available in Hungarian, supplementing it with foreign surveys;

(3) An overall study on the health care market and health care services (dwelling on (1) the specific operational features, characters of the health care market; (2) the reasons of the forced still justified roles of the state; (3) the theoretic models of health care systems; (4) the so called 'classical basic types'; (5) the modification of state-functions determined by political, economical and social conditions.

(4) Comperative analysis of today's European health care systems regarding their structures and applied systems of instruments;

(5) Coherency and convergency study by means of statistic data and indices describing health care systems;

(6) Revealing the 'entry' of public management in the health care, the domination, the emergence of public management reforms in health care systems.

III. STRUCTURE OF DISSERTATION, PROCESS OF RESEARCH

The dissertation –regarding its structure- can be divided into two successive parts:

I. Research of literature *(Chapters I, II, III)*

II. Empirical research *(Chapters IV, V, VI)*

I. Research of literature (Chapters I, II, III)

Chapter I

The aim of the first chapter is multiple: partially to clarify the conceptual cirlce of services and to learn the features of how to manage public service organizations, public institutions that can be partially derivated from the characteristics of services and the unique feature of the public sector. The chapter after mapping the sectoral borderline will highlight the definitional problems of services, especially mentioning the relevant differences between a product and a service, and the specific, unusual methods of handling caused by the above mentioned differences. In this chapter the spot of health care services on the palette of services will also be pointed out.

Chapter II

The second chapter is engaged in public sphere, dwelling on the definitional problems of public goods and public services, the non-negligible role of the state, the development paths forced out by changed social expectations and economilcal circumstances. The world-wide reforms caused by the disfunctionality of the public sector will be profoundly examined as well as their effects on public administration, on public institutions, on the management methods and instruments of public service firms. The New Public Management widespread in Anglo-Saxon region and also the modernisational efforts of other European countries will be investigated. With the help of the English, German and Hungarian scientific literature regarding this issue a comperative analysis will take place in which the following will be examined: the features of national public administration system, the scientific-theoretic roots of the reforms and the effects of attitude change in institutions.

Chapter III

The crisis of health care is one of the most current topics these days: the disfunctionality of the health care systems is typical of all developed countries. The reasons of this crisis trace back to years and decades and root in several different fields from technological development to the ever

ruling political power, from the changed demographical circumstances to the effects of globalization. The aim of the third chapter is to display the health care through the features of the health care market, the theoretical models describing the health care systems, the classical basic types called into being by practice and the state's special role in health care.

II. Empirical research: coherence and convergence analysis (Chapters IV, V, VI)

Chapters IV-V

The aim of the fouth and fifth chapter is to investigate the supposition via international examples that the health care systems of today's developed countries show several similarities but even more differences compared to the theoretical roots as well as the classical basic types.
In the coherence analysis (fourth chapter) the health care systems of 29 European countries will be compared on the basis of the five attributions typical for health care systems. In this context the most important factors that describe operating health care systems are the foundation of the comparison, that are filled with essence by country-spectific elements.

The coherence analysis (fifth chapter) has multiple aims: (1) statistical analysis of the results of the comperative-descriptive analysis dwelled above; (2) investigating the supposition that a convergencial tendency can be traced in the statistical data and indices characterising the health care systems; (3) revealing the logical, interpretary relations and connections of the examined countries, groups of countries etc. on the basis of the results of the analysis.

Chapter VI

The sixth chapter contains the comparison of the results of empirical analysis and the effects of public management on health care.

The structure of dissertation follows the process of research (see Figure 1).

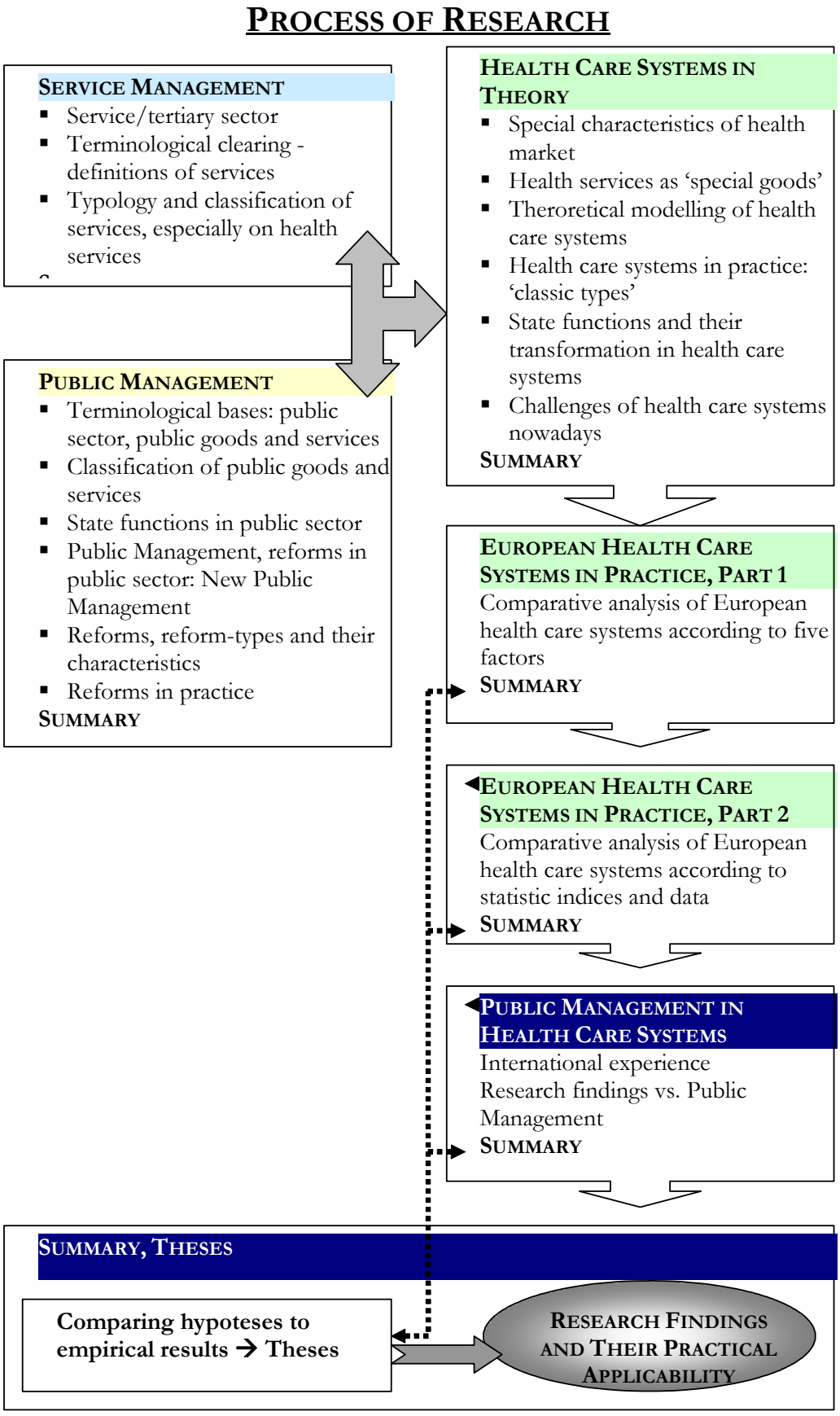

Figure 1 Process of Research

IV. METHODS OF EMPIRICAL RESEARCH

Coherence and convergence analysis focuses on the following hypoteses

H1: Identifying theoretical models describing health care systems and characterizing extremes (viz. market vs. public) with underlying principles (viz. principles of solidarity vs. equivalence) absolutely and definitely is not possible in practice.

Practising health care systems of developed countries could be identified much more with 'classical basic types' (viz. model of Bismarck, Beveridge, etc.) than extreme theoretical models, because 'classical basic types' have been evolved from practice preceding theoretical modelling.

H2: European health care systems in practice - regarding their structure and applied systems of instruments - are hybrid and that hybridity can also be demonstrated within clusters of health care systems having same roots (viz. clusters according to classical types).

Classical types of health care systems are determined by current political, social and economic circumstances: because of the wish and/or compulsion to adapt to these changing circumstances and national development, original types have been deformed and improved in all practising health care systems.

H3: Because of social, economic changes and technological development adaptation of 'best practices' and/or use of novel techniques, methods are necessary and unescapable for health care systems, which intensifies the process of diversity.

Among practising health care systems – regarding their applied systems of instruments and methods - similarities can be identified firstly not according to classical types, but the same or similar political and social structure, economic development and historical background.

H4: Countries belonging to same classical type show several differences regarding statistic data and indices describing health care systems - their heterogeneous feature can also be demonstrated statistically.

Going ahead in time diversity (this heterogeneous feature) can be represented much less, so change values of statistic data and indices move towards each other. According to this, countries having same or similar change values can be categorized into clusters, where countries belonging to the same cluster represent a species of direction (converging).

Sampling technique, choosing the analysed countries

Sample and sample technique determine basically the authenticity of research findings. Social sciences' researches differ probability and non-probability sampling: by the first one objectivity is ensured by the exclusion of conscious partiality of researcher (viz. probability of taking sample units into the sample is the same); the second one takes advantage of researcher's detailed and deeper knowledge about sampling population.

In case of probability and non-probability methods both ensuring of representative sampling is mostly accompained by problems, these difficulties did not affect the present study. Object of the empirical research, coherence and convergence analysis of European health care systems, concerns all European nations, but exclusively European countries, so number of sample units and the whole sampling population are exactly defined. Analysis of the whole sampling population absolutely meets requirements of representative sampling. Nevertheless the attempt to analyse every European country was limited by exclusive reasons, that is why type of non-probability sampling techniques, i.e. expert sampling has been applied. In this researcher selects sample units according to his own value judgement with the assumption that this way of selecting sample units give a cross-sectional model about the whole sampling population.

According to it 29 European countries have been chosen considering the following aspects:

- Most of the analysed countries' health care system have got relatively matured operating structure and their roots are derived from old traditions;
- Some European countries' health care systems have been also transforming nowadays – this in itself was not an exclusive reason: e.g. the Great European Powers' (f. i. *Germany*, *France*) health care systems lived (through) significant reforms in the last 1-2 years. Furthermore most of the post-socialist states' health care reforms have been started late and/or modernizing and transforming processes are underway (for example *Slovakia*, *Hungary*, *Ukraine*, *Romania*, etc.);
- Some countries have been eliminated from analysis due to the following causes: some states are irrelevant because of (1) their size (f. i. *Malta*, *Andorra*, etc.) or because of (2) their peripheral deposit (*Iceland*); (3) some countries have got very special national properties (for example political, cultural and historical background of *Cyprus* and *Turkey*); (4) some of successor states to the ex-Jugoslavia after fall-down of communist regime (*Bosnia-Herzegovina*, *Macedonia*, *Serbia*) did not befall peaceful development immediately. Areas endured civil war have bread-and-butter worries – analysis of their health care systems on the basis of all examination factors could not be possible.

Sources, references

Empirical researches are based on several literature, statistic data base* in which most relevant ones are the following:

- 'Health Care Systems in Transition' country studies published within the frame of 'The European Observatory on Health Care Systems' periodical**;
- 'Country Studies for Public Guidance' published by Hungarian Strategic Health Care Research Institute (Egészségügyi Stratégiai Kutatóintézet, ESKI)***;
- Official websites of national governments, health care institutions, departments, etc.;
- On-line data base (Eurostat) of European Union (www.ec.int.eu);
- On-line data base (www.who.int) and the latest available yearbook of World Health Organization (WHO) ('World Health Statistics 2006');
- On-line data base of OECD (www.oecd.org) and Study 'OECD in Figures 2006-2007'.

Process of coherence analysis (Chapter IV)

(1) Classifying and positioning the analysed countries' health care system according to 'classical basic types' *(Chapter 4.2);*

(2) Display the main features of health care systems; making a 'health care map and panorama' of Europe on the basis of five aspects: *(1) sources of finance and underlying principles; (2) health insurance system; (3) co-payments; (4) hospital financing and forms of hospital ownership; (5) remuneration and legal status of medical doctors (Chapters 4.3 - 4.5)*;

(3) Analysing clusters creation according to classical basic types *(Chapter 4.6)*

(4) Summary, comparing hypoteses (H1, H2 and H3) to research findings: drawing conclusions from empirical research.

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* *Date of statistic data and indicies' getting is April 2007 – changes and other modifications of data after it have not been considered for avoidance of incoherences and distortions.*

** *Detailed references - within above-mentioned sources - have not been marked singly due to the limited opportunities for cross-references' retrieval (English literatures do not use intermediate references). Original websites' availability is the following: http://ec.europa.eu/health/ph_threats/com/links_national_health_en.htm, http://ec.europa.eu/health/ph_information/dissemination/hsis/hsis_13_nhs_en.htm; http://www.euro.who.int/observatory*

*** *Primary source of Hungarian Strategic Health Care Research Institute's Studies is country studies of European Union ('The European Observatory on Health Care Systems' periodical). Hungarian versions of country studies see here: http://www.eski.hu/civiltajekoztatas/kepek/ho/anyagok; http://vega.medinfo.hu/civiltajekoztatas/kepek/ho/anyagok*

Process of convergence analysis (Chapter V)

(Statistical analyses are made by the help of **software SPSS 14.0**)

(1) Choosing statistic data and indices describing health care systems of analysed countries:
number of population; GDP per capita; real GDP growth rate; practising physicians (per 100 000 inhabitants); hospital beds (per 100 000 inhabitants); health expenditure (% of total household consumption expenditure); total expenditure on health (% GDP); public expenditure on health (% total expenditure on health) (Chapter 5.2.1);

(2) Homogenizing time series of choosen data and indices in the interests of comparability (determinating period and according to it selecting and systematizing data *(Chapter 5.2.2)*;

(3) Counting annual average change values (per index, per country) regarding the total period (1995-2004) *(Chapter 5.2.3);*

(4) Counting annual average change values (per index, per country) regarding the first three years (1995-1997) and the last three years (2002-2004) of the period *(Chapter 5.2.4);*

(5) Comparing annual average change values regarding the first (1995-1997) /last (2002-2004) three years of the period with annual average change values reagarding the total period (1995-2004) *(Chapter 5.2.5);*

(6) Analysing converging tendency and clustering of European health care systems on the basis of statistical researches *(Chapters 5.2.6 – 5.2.7)*;

(7) Analysing clusters and revealing potential connections among them (1) per statistic data and indices and (2) per 'classical basic types' of health care systems *(Chapters 5.2.6 – 5.2.7)*;

(8) Summary, comparing hypoteses (H2, H3 and H4) to research findings: drawing conclusions from empirical research.

V. SUMMARY OF RESEARCH FINDINGS: NEW AND NOVEL OBSERVATIONS

Theses/ Chapters I, II

T1: Definitions and classifications of services and service sector are very heterogeneous, which can be firstly derived from hybrid characteristic of services; the dominance of human element (participation of human element in service processes) further intensifies that subjectivity of approaches.

Because of the different national properties* that are manifested in various political and legal environment diversity of services can be much more demonstrated for public services.

The fact of terminological incoherence also enlarges the difficulties of conceptual clearing and exact classification because of inconsequent and incorrect use of Hungarian terms 'köz', 'közös', 'közösségi' and 'kommunális'**.

Due to unique, individual feature of health services, their consequent and correct positioning in service typologies generally is difficult.

* Legal and political structrures determinating basically public sectors represent similarities according to state forms and public administration's system, but differences can be much more revealed than potential similarities regarding public services and their regulation due to specific differences of national development.

** Terminological inexactitude ensues from the followings: (1) restrictive feature of translation which could deform original meaning of expressions and cause linguistic misinterpretations (for instance there are expressions *'common'*, *'public'* and *'collective'* in English, *'gemein'*, *'kollektiv'*, *'kommunal'*, *'öffentlich'* in German for Hungarian terms *'köz'*, *'közös'*, *'közösségi'* and *'kommunális'*; (2) identifying public sector with public administration abusively.

T2: Acceptance of Public Management as a science both in law and economics is controversial*; despite of it - due to the size and importance of changes forced by social and economic improvements - its scientific evasion would not be thinkable.
Reform initiatives in public sector, viz. *New Public Management movements* had always been developing in harmony with national properties** and according to it they have been affected all parts of public sector in a less or bigger degree. That is why New Public Management movements can be better defined as coherent set of 'reform building blocks' than a standard conception.

* Bases of New Public Management are (1) Public Choice Theory originating from Institutional Economics and (2) Managerialism (Thom-Ritz, 2000, p. 24). The schools represent contrary opinions to each other: while Weberian bureaucracy-model – regarding determinated circumstances - declares priority of rules and norms above all, Managerialism votes for market conditions, managerial techniques and active participation of private sector.
New Public Management, as an alloy of theoretical extremes has been evolved from practice: it creates a global reform-orientation adopting some elements from Public Choice Theory and Managerialism and bringing in new ones with regard to national specialities.

** Above standard characteristics (for instance (1) adaptation of managerial techniques in public sector, (2) shift of public institutions' management to a new decision and value orientation due to increasing importance of service and customer orientation forced by change of social expectations) New Public Management movements always contain individual features of the country. Among others there are differences in origins and basic ideologies, animators/actors, directions, main orientations of the process or in applied system of instruments.

Thesis/ Chapter III

T3: Health service possesses especially subjective, unique features – it is such a 'special good'*, whose extraordinary character proceeds from (1) special properties of health market; (2) health, as 'subjective limit' which is both object and result of health service** and from (3) significant importance of human element.

Relevance of human factor in case of health services is derived from the special relationship between the customer (patient) and the provider (doctor): the patient is a participant, an object and a subject of the process at the same time, nevertheless he has got much less information about the action than actors of the other side.

In the absence of special knowledge (viz. knowledge of medical science) the effectiveness of cooperation with the provider might be limited due to confidence of that special situation which results a bilateral interdependence (as a '22 catch').

Successfulness of health services largely depends on willingness and confidence of patients, while distrust is derived from the doctors' special knowledge, bondage under pressure of necessity can significantly reduce his willingness.

** Health - similarly to time – could be defined as a 'subjective limit': (1) not replaceable; (2) lack of it affects the standard of living (limit the amount of work a man may do → decrease of income, etc.); (3) demand for health depends on individual value judgement (despite of economics' classical goods where demand depends on solvency of the person); (4) date, length and way of its care-taking, repairing and improvement usually could not be planned (cp. Kornai – Eggleston, 2004, pp. 46-48; Gidai, 1998, p. 23).

* *Use of expression 'special good' regarding Nagy-Dózsa (2005, p. 310).*

Hypoteses, Theses/ Chapters IV, V

H1/T4: Identifying theoretical models describing health care systems and characterizing extremes (*viz. market vs. public*) with underlying principles (*viz. principles of solidarity vs. equivalence*) absolutely and definitely is not possible in practice.
Practising health care systems of developed countries could be identified much more with 'classical basic types' (viz. model of Bismarck, Beveridge, etc.) than extreme theoretical models, because 'classical basic types' have been evolved from practice preceding theoretical modelling.

In everyday life health care systems are distinguished from each other - wrongly - according to principles of solidarity and equivalence. While underlying principle in health care systems' practice can be clearly revealed (most countries' national constitution has declared the right for health services as primal civil right (viz. principle of solidarity), features of theoretical (extreme) models which are distinguished on the basis of these principles cannot be revealed in practice, or not all of them, maybe not in clear form. Identifying these theoretical and clear features with applied system of instruments in practice is able to demonstrate only dominance, i. e. to show the distances to extreme values.

Roots of nowadays' practising health care systems are 'classical basic types'. Identification of health care systems with these models reflects reality much more than with theoretical ones. There is a connection between countries belonging to the same classical type regarding their historical roots and national-specific characters: (1) Beveridge-model has extended chiefly on peripheral areas of Europe; (2) post-socialist countries have changed their health care systems after fall-down of communism and returned to their earlier structures (Bismarck-model) (exceptions are Latvia and Estonia).

H2/T5: European health care systems in practice - regarding their structure and applied systems of instruments - are hybrid and that hybridity can also be demonstrated within clusters of health care systems having same roots (viz. clusters according to classical types).
Classical types of health care systems are determined by current political, social and economic circumstances: because of the wish and/or compulsion of to adapt to these changing circumstances and national development, original types have been deformed and improved in all practising health care systems.

As a result of the 'predetermined' feature of health care systems (viz. they can be descibed as a mutual cut of public and service sectors' certain parts) they are exposed to expectations forced by social and economic environment and also specialized by challenges derived from national characters. Health care systems are subordinated to continuous national and international changes – nowadays' health care structures differ from each other in such a great measure that classification according to classical types is only one opportunity of identification forms. Classification in that way discloses only a bit of reality – practice shows enormous diversity among countries belonging to the same clusters.

H3/T6: Because of social, economic changes and technological development adaptation of 'best practices' and/or use of novel techniques, methods are necessary and unescapable for health care systems, which intensifies the process of diversity.
Among practising health care systems – regarding their applied systems of instruments and methods - similarities can be identified firstly not according to classical types, but the same or similar political and social structure, economic development and historical background.

Health care systems' opportunities for improvement are limited by restricted social and economic circumstances. Forms of problem solving determined by environmental changes can be adaptations of international 'best practices' and successful applications considering the national specialities. The 21st century's globalisational processes strengthen this phenomenon: extension and rate of technological development was so enormous that it has broken down almost every difficulties of information stream.

H4/T7: Countries belonging to same classical type show several differences regarding statistic data and indices describing health care systems - their heterogeneous feature can also be demonstrated statistically.

Going ahead in time diversity (this heterogeneous feature) can be represented much less, so change values of statistic data and indices move towards each other. According to this, countries having same or similar change values can be categorized into clusters, where countries belonging to the same cluster represent a species of direction (converging).

Heterogeneity of European health care systems' structure and applied systems of instruments can also be revealed within clusters according to classical types regarding statistic data and indices (describing health care systems). It also means that clusters according to rate and tendency of change values cannot be identify by clusters according to classical basic types of health care systems.

Going ahead in time this heterogeneous feature reduces, so the tendency of change values shows a conversion in health care systems regarding statistic data and indices.

T8: Among converging countries (that belong to the same cluster according to same or similar change values of statistic data and indices) a connection can be revealed firstly not according to classical types, but their similar economic development and common historical roots.

Countries belonging to the same classical type cannot be identified with countries belonging to the same cluster according to rate and trend of change values (cluster according to same or similar change values of statistic data and indices) neither at the beginning nor at the end of the period.

T9: Converging can be defined according to clusters (determined by rate and trend of change values)* regarding both statistic indices and time (viz. comparing conditions at the beginning to conditions in the end).

- Strength of converging - regarding statistic indices - can be defined by the biggest cluster (viz. cluster having highest number of elements): the higher the biggest cluster's element-number is (the more significant the clustering is), the strongest the convergence among cluster's countries is.**
- Stability of converging - regarding time - can be described by constancy of clusters' element-number: the most significant the changing of clusters' element-number is (the more significant the difference between number of elements at the beginning and at the end of the period), the less the converging can be consolidated.*** Stability in time also describes the feature of process: (1) strengthening of clustering in time means converging, (2) weakening of clustering in time means diverging.

* **Number of clusters** is determined by applied method of empirical analysis in which the method defines borders of clusters according to rate and tendency of statistic indices' change values.

** **Converging** can be revealed in almost every case (per index, per period):
Comparing annual average change values regarding the first three years of the period (1995-1997) with annual average change values reagarding the total period (1995-2004) one dominant (relatively bigger) cluster can be revealed in the case of 7 indices.
Comparing annual average change values regarding the last three years of the period (2002-2004) with annual average change values reagarding the total period (1995-2004) one dominant (relatively bigger) cluster can be revealed in the case of 6 indices.

*** The number of countries changing a cluster regarding stability is not authentic: it is possible that the number of countries leaving a cluster with a decreasing tendency to an unchanged cluster is the same as vice versa. That is why the changing of clusters' element-number is more expressive. Changes can be demonstrated in the case of three indices at the end of the examined period in comparison with the beginning of the period: (1) GDP per capita; (2) real GDP growth rate; (3) total expenditure on health (% GDP).

(1) GDP per capita: at the beginning of the period there was one dominant cluster (cluster of decreasing tendency), at the end of the period two clusters with ab. same cluster-element could be revealed (cluster of decreasing tendency and unchanged cluster). That means a kind of divergency in the case of this index.

(2) Real GDP growth rate: at the beginning the size of the clusters of decreasing and increasing tendency were almost the same (according to the number of cluster-elements). At the end only one dominant cluster (decreasing) could be revealed – that means converging.

(3) Total expenditure on health (% GDP): at the beginning a cluster of decreasing tendency was dominant, at the end of the period the size of the clusters of decreasing and unchanged tendency were almost the same – that also means diverging.

T10: By the help of homogenized and relatively longer* time series of statistic data and indices describing economic and social progresses convergence-analysis can be made which is adequate to (1) reveal samenesses and similarities regarding rate and tendency of changes; (2) reveal connections among these; and (3) make clusters where elements of a cluster show similar or same changings.

Convergence or divergence can be represented by comparison of annual average change values of beginning/end (covering at least 3-3- years)** of the period with annual average change values of the total period.

Comparison is made by scatterplots per indices (by the help of software SPSS 14.0) where *y axis* of reference frame is defined by annual average change values of total period and *x axis* by annual average change values of beginning /end of the period.

Rate and tendency of changes (comparing changes values for the total period with values of the beginning / the end) can be represented by clustering of scatterplots' points (according to diagonal line and reference lines of x and y axes***).

By the help of cluster-analysis:

- sameness of cluster-elements can be studied (regarding time, elements of clusters at the beginning vs. at the end);
- displacement of countries can be analysed (regarding time, per indices);
- connections among countries belonging the same cluster can be discovered;
- converging or diverging among cluster-elements can be demonstrated.

* **Homogenizing** (viz. length, beginning and end of time period are the same) of statistic data and indices' time-series is necessary in the interest of comparability.
Consequences derived from analyzing of a relatively longer period are more authentic.

** **Annual average change value** describes the average change (%) regading time per statistic index, per annum.
Annual average change value of (at least) 3 years (because of averages) can equilibrate /compensate extraordinary, 'one-shot' and irregular statistic values (for instance effects of election) and it can also describe tendencies (data of 2 years is not able to describe a tendency).

*** **Diagonal line** of reference frame (where scale division of x and y axes are the same) describes the same rate of dependent and indipendent variables' changing. Above or under this diagonal line rate of changing is different (viz. above it rate of y axis' variables is quicker than rate of x axis' variables; under it rate of y axis' variables is slower than rate of x axis' variables).
Reference lines of x and y axes are bases of comparison for defining borders of clusters according to the direction of change (decreasing tendency, unchanged, increasing tendency). Reference lines depend on researcher' subjective value judgement by the help of a scale describing dimensions of change.

PRACTICAL APPLICABILITY OF RESEARCH FINDINGS, AIMS OF FURTHER RESEARCH

After the fall-down of communism and change of regime the first step for closing-up to Western Europe was creating the necessary conditions for market economy. Modernizing of big distributional systems - mentioned them as second step of closing-up – has not followed directly the preceding processes.

Reform-initiatives affecting and transforming public sector have also begun later in Hungary similarly to other post-socialist states. This delay can also be revealed in scientific researches: public sector and health care within it – maybe as the most special one among big distributional systems – have been permeated step by step into the focus of sciences' research. Western European researchers' results and scientific findings have not been integrated, novelties of foreign literature regarding public sector have not been or just barely been published in Hungary. Consequences of it - among others – also appear in the structure of Hungarian higher education.

Practical applicability of research findings concentrates on education (by complementation of Hungarian literature with international outcomes, making working papers, etc.); further opportunity of applicability is to present the results of research for scientific life because of novelty of empirical methods.

Furthermore findings of dissertation can be bases of secondary researches:

(1) improving of convergence analysis;

(2) deepening and detailing of health care systems' peresent analysis on the basis of

- longer time-series;
- focusing on certain areas of researh, for example:
    - analyzing countries according to classical basic types;
    - analyzing countries according to their geographical aspects;
    - analyzing countries having similar demographic and economic conditions;
    - analyzing countries belonging to the same clusters;
    - analyzing countries representing displacement (changing 'original' clusters).

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