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## **A NEW APPROACH OF TIME USE IN NATIONAL ECONOMY**

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### *Abstract*

*The importance of research in this area is that modern economies seek new value, while the time incorporates a significant economic value. The interest to investigate time use has increased in recent decades, refocusing research programs of economic science towards a new horizon of knowledge for the human economic behaviour.*

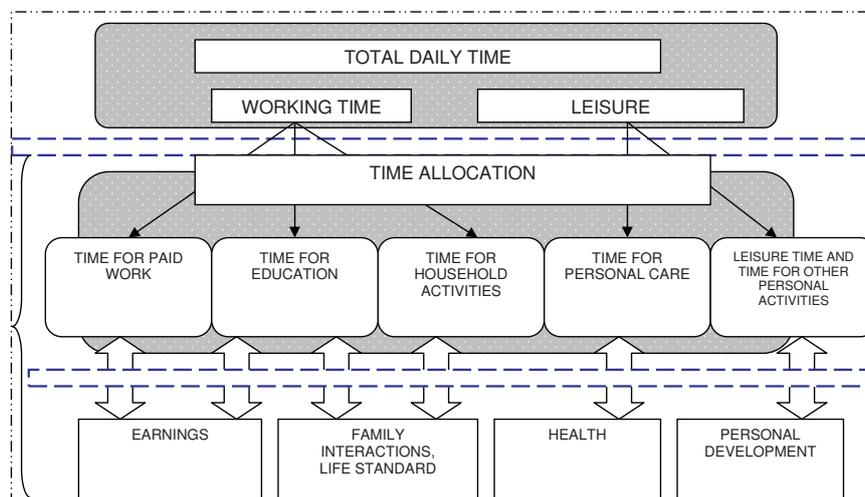
*Key words: work time, leisure, labour force, unemployment, statistic survey.*

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In Romania there has been relatively little research on the use of time topics. Notable concern regarding the measurement of time use resides within the National Institute of Statistics of Romania. Statistic data focusing on the use of time to work at the national economy level are provided annually by the Labour Force Survey (LFS), but actual need of knowledge about individual's time use - led to the completion Time Use Survey.

The time framework is an important landmark raised when discussing economic development and welfare issues. The historical social events count when trying to identify the main features and explanatory causes of a country's development level in comparison with other countries. Even the prospects which are developed to assign a probable path of future improvement are taking in consideration assumptions about the determining factors and ratings based on past and present circumstances. Thus, we have now revealed two types of time approaches: static approach and a dynamic approach of economic development and welfare. The figure below illustrates the main elements that make up the total time available to an individual within 24 hours.

Daily time use structure



Source: Time Use Survey

Assuming that time is a resource, we highlight the role of time in the economy, through analysis and synthesis of prominent views of the economic thought in this area. Within this framework, it is further presented the G.S. Becker model on the allocation of time allowing an analysis of time feasibility of the substitution of time among certain daily activities – where all individual decisions are determined by their own opportunity cost. Becker’s economic interpretation of this theory reveals that substitution effects of working time with time for consumption tend to offset each other. Although the theory on which this model is based has been constantly contested, for the main reason that it has not fully clarified the economics of human behaviour, Becker has the merit of economic research to be extended to the social sciences, bringing the attention towards the importance of “economic approach” over individual behaviour (family / household), in general, and the importance of time allocation in particular.

Time use research is a multidisciplinary, integrated approach of economic science, beyond the traditional economic theories. International organizations involved in statistics works (EUROSTAT, ILO\*, OECD\*\*) are always concerned about the improvements on the quality of data and methodologies used to achieve statistical research regarding the use of time, especially working time. Also, the International Association for Time Use

\* International Labour Organization

\*\* Organization for Economic and Co-Operation Development

Research organizes, conferences held annually bringing together economic research, with areas of particular interest, aimed at different social patterns and organization of working time and leisure, social and gender inequalities, the allocation of time over different stages of life, time use and the impact on economic and social life.

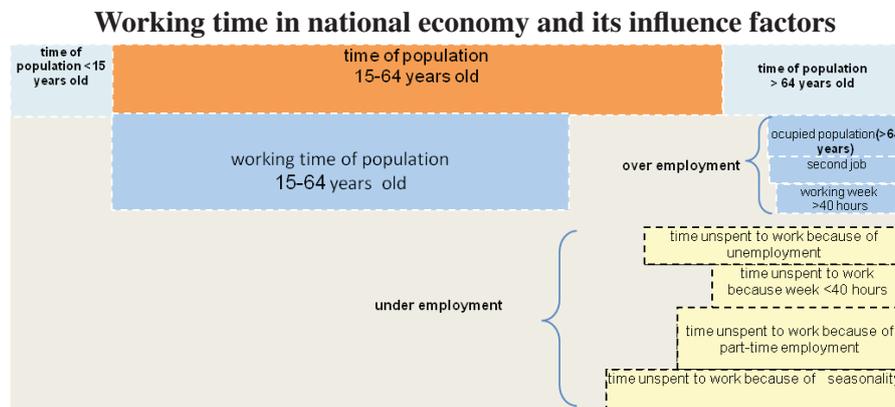
The statistics on allocation and the use of all available time, seek to explain the nature, duration and location of all activities undertaken by the population during a referenced period (usually 24 hours). Using sufficiently small time units (minutes) can track time for different economic activities, but also the non-economic. Currently, there are still difficulties in terms of international comparability of data, even though the statistical research methodologies define a single conceptual framework which can in fact define the individual time use sequence available on a daily basis. The arising difficulties and particularities derive from the multitude and complexity of individual perceptions on the concept of time, and also cultural and national economy diversities covered by statistical surveys.

In Romania, time use survey was organized and coordinated by the National Statistics Institute, as a research experiment in 2000. The survey provides information on the structure and use time to the public, including information on; the daily average of the various activities undertaken by the population, the types of days (working and rest), in conjunction with features on the manner and extent of employment of persons in households of profit-making activities. Although it is an important source of data, time use survey raises several questions more than providing solutions. There are shortcomings related, mainly on delimitations of defining the different ways of using time and the numerous problems and difficulties in measurement and data collection, processing and analysis of results. In this regard, it is considered most necessary to launch a new statistical survey of this kind in Romania, generating internationally comparable statistical indicators - main source of reference for measuring the time budgets of people in our country. According to the recent information, the National Institute of Statistics is preparing a similar survey in 2011, with an upgraded content and improved methodological framework. This research has been making several proposals on improving the significance of the sample of respondents, and questionnaire content, especially in matters of efficiency and creativity - two major segments of the underlying personal time, work and leisure.

At the national and or social level, “the models” of the use of time available varies depending on other several factors. The most obvious difference is determined by the socio-economic development. In this study, I

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adopted the working assumption that time is not simply a marker between two successive events, but a measure of the added value produced by its use. In other words, given equal time limits, no individual or the society can follow the same development path. These differences lead us to conclude that there are a number of factors which could have favourable or unfavourable influence on both the individual development and the society levels. A special attention is paid, to factors with positive or negative strong impact regarding the efficiency of the use of time of each individual in terms of achieving nominal and real convergence between Romania and EU countries; of the increase of each individual potential creativity and minimizations “dead times” which have a detrimental influence to individual himself and the society. A general scheme that reflects the working time is the following:



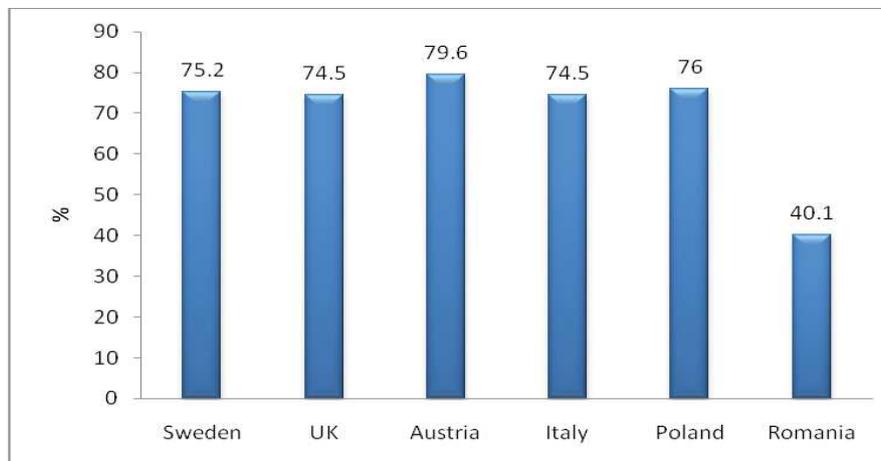
*Source: illustration of author's on the base of own methodology for calculation the working time at national level*

Based on data provided by the Labour Force Survey, and according to the above calculation algorithm, it was determined the potential sum of actual working time spent in Romania. As to observe changes over time, we compared the estimated work time of 1997 to the one of 2000, and the respective calculation of that of 2002 with the one of 2008. For the choice of the reference years it was taken into consideration the following aspects:

1. AMIGO was performed for the first time in Romania, experimentally, in 1996, therefore, the survey results are considered relevant, since 1997;
2. In 2001-2002, the methodology for achieving labour force survey was revised according to the latest Eurostat regulations, so data series are not comparable with previous years;
3. Latest figures available at the time of the study are for 2008.

The obtained results from the calculations show the number of hours actually worked in the national economy is 40% of the entire sum available time. Next, using the same methodological calculation, we estimated the time available for work and time actually spent working in some EU member states. The results (listed in the chart below) show differences among the analyzed countries in terms of the entire sum of utilization of time available for work, Romania having the lowest (40.1%).

**Utilization of available working time  
in some EU member states, in 2008**



Source: own calculation based of Eurostat data, 2010  
[http://epp.eurostat.ec.europa.eu/portal/page/portal/employment\\_unemployment\\_lfs/data/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/employment_unemployment_lfs/data/database)

These differences regarding Romania show significant potential reserves of working time which the involved decision-makers should take into their consideration, knowing that the best means for social self-protection is to promote sustainable growth by increasing the amount of working time and employment.

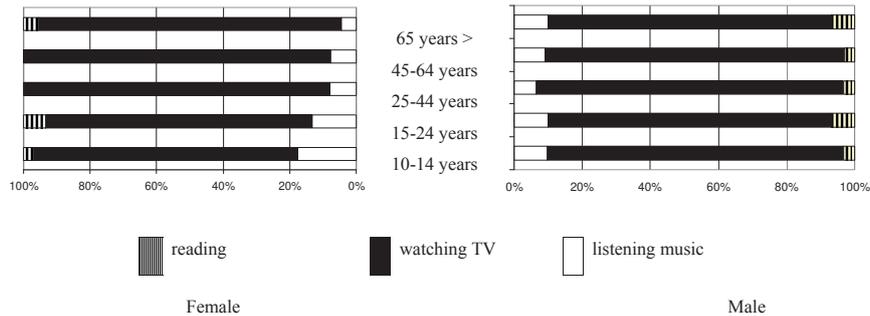
At the individual level, the time outside of work, is allocated, in general, to personal care activities, leisure activities, socialization, personality development, and volunteering activities etc. This is a segment associated with the leisure time in most cases; it also includes a number of economic activities.

Reading, television, radio programs, and travel are part of the entertainment activities outside work. As shown by time use survey, the full

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working staff age (25-64 years) read very little (0.3 hours / day). The most time for reading is allocated by the girl student's age (0.6 hours / day, age group 10-14 years).

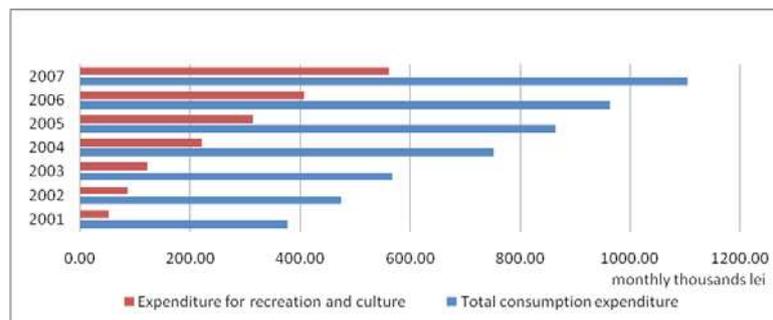
### Leisure activities, by age groups and gender –working and rest days



Source: Romanian TUS, 2000

The household expenditure on recreation and culture can also represent an indicator to illustrate how leisure time is spent by Romanian population. The data on consumption expenditure structure provided by the Household Budget Survey shows that people spent in 2007, 4.7% monthly average of total revenue for recreation and culture, the trend being on an upward slope.

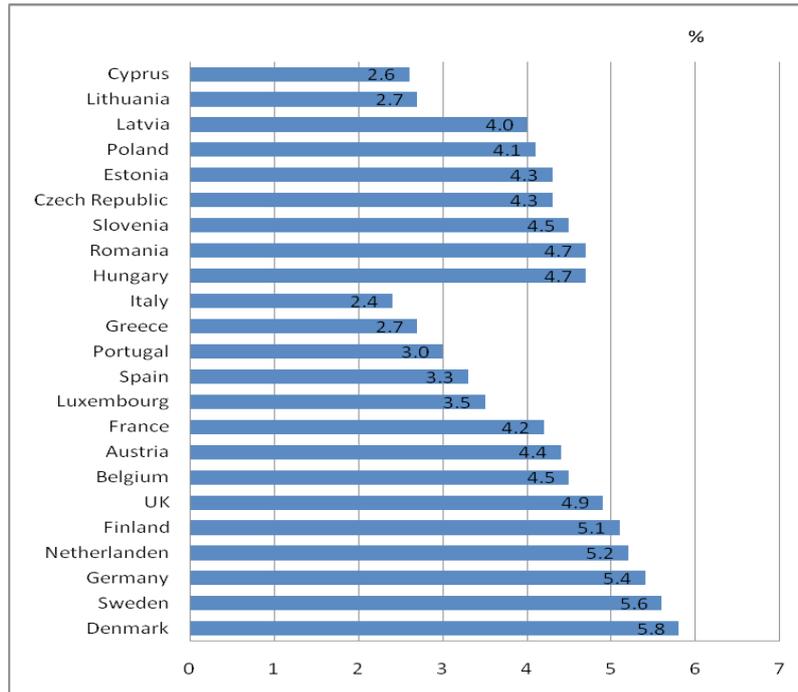
### Household expenditure for culture and recreation activities in Romania



Source: Household Budget Survey, 2008

Among the Member States of the European Union, the largest weighting of household's expenditures for cultural activities is recorded in the Nordic countries (Denmark and Sweden) and lowest in Italy and Cyprus.

**Cultural expenditure as % of total household expenditure in EU**



*Source: Eurostat Cultural Statistics, 2007*

At the macro-economic level, leisure time differs from one country to another, depending, in general, of the degree of socio-economic development. From the prospective viewpoint the employment policies should involve a growing interest targeting the flexibility of different types of employment and employment programs as to achieve a balance between the time allocated to remunerated work and leisure time. An important aspect of the relationship regarding time used for work / free time is represented by the unemployed labour. In many cases, is favourably influenced by acquiring new skills in a formal or informal training with the purpose of reintegration, in more favourable conditions, into the labour market. In this context, the entrepreneurial vectors has a paramount importance, which, through its innovative features and

flexibility, provides a specific adaptation including the unemployed, part-time workers and those engaged in seasonal employment by nature.

Thus, the free time is becoming a prerequisite of increasing importance to strengthen, stimulate and promote human creativity, both at individual, group and societal levels. This assumption can be valued under competitive market economy circumstances, institutionalized only when identifying forms and mechanisms such as public-public partnerships, private-private and private-public, enabling better coordination and compatibility consistency of decisions on improving and streamlining the relationship between work and leisure time.

One of the main research findings shows that use of time requires a multidisciplinary approach, inclusive and permanent, as a theoretical basis of allocation beyond the traditional economic theories. The multitude of factors subject to rapid and sometimes substantial changes over time involves the application of adequate non linear method of analysis and forecasting. Junction between economics, sociology and other scientific disciplines is a basic requirement for developing a common framework, definition, analysis and interpretation of time use at the individual level, nationally and internationally.

Balance between time spent and private life has become a priority area of social and economic research, taking into account the need for further improvement, and adequacy of measurement system and analysis of economic and social development, based on the primary role of the human capital factor, the creative capacity resulting in innovation. The measurement of time use is still an open research problem in both theoretical and methodological terms (the theory of efficient use of working time and the relevant system of indicators, measurement techniques, data collection methods and processing etc.), as well as the policy-mix to improve the efficiency of human capital in general.

The research, attempted to offer a synthesis of the main theories and models used in the economic sphere, to quantify the contribution to economic and social development of time by analysing a number of factors which influence the trends and the new aspects arising from science and technology development objectives (knowledge society) and the developmental budget regarding employment available at the national level in Romania, and European context. At the same time there were also considered controversial issues, still unresolved, and new problems in the research arena, related in particular, to the need of the maximization of the qualitative component of the economic and social phenomenon and processes, generated by the evolution ratio between working and leisure time.

Another factor directly related to rapid changes in consumption and production patterns, triggered by technological change and globalization, is lifelong learning, which, to varying degrees, in different proportions and intensities, is affecting intellectual activities changes the relationship between work and leisure time, social and professional skills in the direction of education betterment and increase of competitive capacity of labour.

Other important aspect of the working time is represented by the unemployed labour which requires new skills in a formal or informal training with the purpose of reintegration, in more favourable conditions, into the labour market.

Working time is now strongly influenced by changes in classification of occupations, the progress of science and technology and ICT application that determines changes of relationship between work as routine, repetitive, monotonous, monitored and controlled, in favour of creative work. The increasing knowledge-based and social nature of work raises complex issues to training and education system, but also during the productive activity itself, to knowledge management in companies with domestic and foreign capital in Romania, the difference narrowing regarding the efficiency gap of time use between regions sectors and enterprises with domestic and foreign capital.

Leisure time is a prerequisite of increasing importance to strengthen, stimulate and promote human creativity, both at individual, group level, or the society as a whole.

### **Conclusions**

Romania is a country with a high potential for employment, which to date is not used in optimal proportions. Such a conclusion is resulting from calculations performed within the thesis, on the basis of the application of our own methodology, which shows that registered time actually worked in the national economy is only 40% of the total budget available in time at national level.

In this regard, it is considered most necessary to launch a new statistical survey of this kind in Romania, generating internationally comparable statistical indicators - main source of reference for measuring the time budgets of people in our country. According to the recent information, the National Institute of Statistics is preparing a similar survey in 2011, with an upgraded content and improved methodological framework.

**Bibliography**

- BECKER G. S., A Theory of the Allocation of Time, *Economic Journal of Time*, 75(299)/1965
- CARAGEA, N., Education, Training and Labor Market in Romania, Bucharest, LEX et SCIENTIA, , nr. XV vol. 3/2008, ISSN: 1583-039X, 2008
- CARAGEA, N., The Work in Romania – An Analysis of the Macroeconomic Perspective, *REVISTA ECONOMICĂ* nr. 5-6 (42-43)/2008, vol. II, ISSN: 1582-6260
- CARAGEA, N., Time Allocation and the Implications for Economic Development, *Romanian Journal of Economics*, nr.2(38)/2009, anul XIX, vol. 29 , ISSN 1220-5567, 2009
- FISHER, K., (2002) An initial exploration of the employment conditions of full-time and parttime workers in A researchers Guide to the National Statistics Socio-Economic Classifications
- HREHORCIUC-CARAGEA, N., ISTRATE, G., Noi modele de utilizare a timpului și noi forme de muncă în România, *Revista Română de Statistică*, nr. 8/ 2009, p. 25-42, cod nr. 601, ISSN: 1018-046X, ISSN: 1844-7694
- HREHORCIUC-CARAGEA, N., ISTRATE, G., The Significance of the Individual Time for Economic and Social Development, Leuphana University Lüneburg, Germany, 2009
- ISTRATE, G.M., CARAGEA, N. – Time-Constraint and Socio-Demographic Characteristics of population in Romania, paper presented at the 2006 Annual Conference of International Association of Time Use Research (IATUR)
- PANDURU, F., ISTRATE, G.M. and others (2001) – Utilizarea timpului, Institutul Național de Statistică, București
- VOINEAGU, V., TITAN, E., *Teorie și practică econometrică*, Ed. Meteor Press, 2007
- \*\*\* Guidelines on Harmonized European Time Use Surveys, Eurostat, May 2000;
- \*\*\* Romanian Statistical Yearbook, National Institute of Statistics, Bucharest, 2009;
- \*\*\* Romanian official statistics website: [www.insse.ro](http://www.insse.ro)