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Time allocation of people not working in the market: how does unemployment differ from economic inactivity in Central Eastern Europe?

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Abstract. The new theories of household behavior, considering time as an essential human resource, and time allocation as a major issue in the decision-making, permitted the application of economic analysis to a broader spectrum of human activity than the traditional approach did. Referring to the concept of Becker and Gronau, the article compares the non-market activity of the unemployed to the allocation of time of those who, being of working age, are economically inactive. An analysis was performed for Estonia, Slovenia, Bulgaria, Poland, Lithuania, and Latvia using comparable time-use statistics extracted from the HETUS database.

According to the results obtained, the unemployed are more prone to active consumption compared with the economically inactive. A similar comparison of unemployed women to those who declare themselves as "fulfilling domestic tasks" confirmed the differences in the observed structure of leisure for the entire population. Furthermore individuals, who do not work in the market, pursue various types of consumption, depending on their declared activity status. Inactive agents produce more time-consuming commodities in contrast to the unemployed. The latter, having the opportunity to value their time in the context of the salary they obtained when working, pursue goods-intensive consumption to a greater extent.

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INTRODUCTION

One of the main objections to the traditional theory of consumer behaviour was that it proposed an oversimplified relationship between consumption and changes in utility (Hawrylyshyn, 1977, p. 82). The definition of "consumption" as a simultaneous exchange of money for goods, along with the acquisition of utility, seemed to be manifestly insufficient (Michael and Becker, 1973, p. 385). It was unclear whether utility increased (or decreased) as a result of purchasing, possessing, or perhaps utilising goods. Critics rightly pointed out that a concept, according to which quantities of goods or services become the arguments of the utility function, is in practice unable to explain the mechanism, or technology, of consumption. Such criti-

cism led to the emergence of several theoretical concepts, the descriptions of which were published almost simultaneously in the mid-1960s (Becker, 1965; Lancaster, 1966a; Lancaster, 1966b; Muth, 1966). They proposed the so-called "new theory of the household," which assumed that market goods and services are not themselves the agents which carry utility, but are "only" inputs in the process of its creation (Gronau, 1977, p. 1099). As a result of a certain type of production which takes place after the market transaction, a household obtains commodities or characteristics, and it is they that become arguments of the utility function.

The most prominent and popular of these concepts is that proposed by Becker (1965).[1] What differentiated his concept of the household production function (HPF), not only from the traditional neoclassical way of explaining consumer behaviour but also from the theoretical approaches of Muth and Lancaster, was the role he assigned to consumers' time. Time, added together with goods and services as arguments of the household production function, became one of the most important resources used for the production of basic commodities. Thus, it was assigned a significant role in shaping consumers' levels of utility and their prosperity. Consequently, individuals who seek to maximize satisfaction from consumption face three kinds of restrictions: classic budget constraints, scarcity of time, as well as the technology of production. Assigning a role of utility-carrying agents to the effects of household production rather than to market goods and services made it possible to describe and explain how satisfaction from consumption arises. The example which best illustrates the importance of time in the process of consumption and creating utility is meal preparation (Hawrylyshyn, 1977, p. 83). In many situations, the quality of ready-made goods purchased on the market (e.g. cakes from a cake shop) is assessed as being lower than that of equivalent products made personally (homemade cakes). In both cases, the cost in the form of money spent either on the ready-made cake or the ingredients for baking may be the same, but the difference in time expenditure is substantial. If a person's time has a price, then they must take into account how time-consuming the production process is in their decision-making. Thus, time allocation becomes one of the most fundamental issues in the decisions of households.

This article presents an economic analysis of the time budgets among representatives of Central and Eastern European societies. At the beginning of the twenty-first century, Estonia, Slovenia, Bulgaria, Poland, Lithuania, and Latvia had relatively high unemployment rates. Thus, the aim of this study is to perform a comparative analysis of the time allocation of economically active but unemployed people with that of people who are not interested in market work.[2] A hypothesis was formulated which assumes that the unemployed are more likely to spend their free time actively in comparison to the economically inactive. It was assumed that the structure of consumption by the former group, at least to some extent, is a result of the desire to maintain their attractiveness on the labour market. The latter group, on the other hand, does not have such needs by definition, which should be reflected in their time structure.

The next part of the article presents the theoretical concepts used for the analysis. This section also discusses the data sources. The findings of the analysis, together with their interpretation, are presented in the third section. The summary contains the most important conclusions as well as indicating directions for further analyses.

[1] The shortcomings of the traditional theory were pinpointed even earlier, and some suggestions for eliminating them were made, for example, in the works of W. C. Mitchell (1937). However, it was only Becker's coherent and comprehensive model that could be used as a tool to analyse the decisions made by household members as well as provide the possibility to empirically verify its predictions. In the words of Pollak (2002, p. 5): "In the competition for scarce space on the research agenda, the winners share one essential characteristic. Intrinsic interest helps, sex appeal helps, policy-relevance helps, but „researchability" is essential. By building and analysing simple, tractable models of family behaviour, Becker demonstrated that researchability of the family."

[2] According to the standard LFS (labour force survey) framework, people who do not work are classified either as unemployed or inactive persons.

THEORETICAL CONCEPT AND EMPIRICAL MATERIAL

Despite its many advantages and "breathing empirical life" into theoretical reflections on the behaviour of households, Becker's model also contains some faults which have been criticized by researchers (DeSerpa, 1971; Pollak and Wachter, 1975; Pollak, 1999). One of the major shortcomings that have been indicated is Becker rejection of the existence of joint production. Under such an assumption, household members do not care which activities they spend time on, which implies a lack of any direct utility or disutility derived from the performance of activities. According to critics, most people perform certain household activities more willingly than others; which indicates the existence of joint production. This leads to the conclusion that the time spent on household activities is not only an input in the production of commodities, but it is also a direct carrier of utility and thus should be an argument in the utility function.

Objections were also expressed as regards the inclusion of production technology with constant returns to scale in the HPF model. This, however, was a minor drawback, and the use of a production function homogeneous of degree 1 was perceived as a substantial benefit. The adopted assumptions aimed at obtaining a straight budget line, which implied the independence of households' preferences for budget constraints that had to be taken into account in the decisions of households (Huffman, 2010, p. 16).

A very interesting modification of the HPF model was proposed by Gronau (1977; 1980; 1986), who also included the time of consumption (L) in the utility function. His distinction between the time allocated for production activity and the time during which utility is produced has contributed to further popularizing the new household economics. However, breaking with Becker's simplification brought with it certain problems. For example, not all household activities can be clearly assigned to the time of production or the time of consumption. However, the benefits of this solution outnumbered the drawbacks (Gronau, 1977, p. 1100). Moreover, the "new image" of consumption technology provided even better instruments for the economic interpretation of research findings regarding the time use of populations.

An important obstacle encountered by economists involved in the analysis of consumers in terms of operationalizing the research problems was a shortage of adequate information relating to non-market activity. While the new models emphasized the importance of time allocation in this respect, scarce and imprecise data on the time-use of populations effectively hindered empirical verification of the predictions made on the basis of theoretical patterns (Aguiar, Hurst and Karabarbounis, 2012, p. 3). It was only in the last two decades that a marked improvement in this respect has been recorded (Eurostat, 2004, p. 3; 2009, p. 21; Cushman, Veal and Zuzanek, 2005, p. 10; Österberg and Baigorri, 1999, p. 1). The frequency of time-use surveys increased and, more importantly, considerable effort was made to ensure the comparability of data in both time and space (comparison of results from different countries).

One of the most popular sources of time-use data, which contains comparative statistics for 15 European countries, is the Harmonised European Time Use Surveys database (HETUS).[3] In 1996 and 1997, Eurostat launched a number of pilot studies that resulted in the guidelines for HETUS (United Nations, 2013, p. 1). The database compiles harmonised micro-data from Germany, Spain, France, Italy, Norway, Finland, Sweden, the United Kingdom, Belgium, Bulgaria, Estonia, Latvia, Lithuania, Poland and Slovenia (Eurostat, 2009, p. 21). It was developed by Statistics Finland and Statistics Sweden with financial support from the European Commission. The micro-data are not directly accessible, but estimations can be produced by a table-generating tool.

[3] Another good source of harmonised cross-national time-use data is the Multi-national Time Use Study (MTUS). The MTUS project, partly funded in its early phase by the European Foundation for the Improvement of Living and Working Conditions, harmonised data from 44 studies conducted in 21 countries from the 1960s through the mid-1990s into a single data-set (Kimberly and Gershuny, 2015).

At the turn of the millennium the first set of European guidelines were agreed. This gave a considerable boost to the harmonisation process; allowing, for the first time, the publication of time-use survey data with a good level of comparability and the creation of a harmonised database: the TUS database (Eurostat, 2009, p. 21). A time use episode in the database is defined by four substantive domains and a temporal identifier. The substantive domains are Main activity (49 categories), Secondary activity (10 categories), Location/ means of transport (11 categories), and With whom (8 categories). The temporal identifier holds information on the time when episodes start and end. The national activity codes were transformed to a more general level that decreased the number of episodes, but that did not affect the secondary activity total (Väisänen, 2006, p. 10).

This analysis uses HETUS data for the countries of Central and Eastern Europe. Table 1 presents a list of the countries together with information about the periods during which time-use surveys were conducted in each one.[4]

Table 1

The time periods of time-use surveys conducted in Central and Eastern European countries included in the HETUS database

Country	Time period of survey
Estonia	04.1999-03.2000
Slovenia	04.2000-03.2001
Bulgaria	15.10.2001-15.10.2002
Lithuania	01.2003-12.2003
Latvia	02-08.2003 and 10-11.2003
Poland	06.2003-05.2004

Source: Eurostat, 2005, p. 6.

EMPIRICAL FINDINGS

Table 2 shows the proportion of the working age population in the group of the economically inactive. Statistics for individual countries relate to the periods in which time-use surveys were conducted (if a time-use survey was conducted over a period spanning more than one year, the analysis considered the year in which the survey covered more months, or if the number of months was the same – the second year).

The data presented shows that in all the countries the category of the economically inactive consists mostly of people of working age; however, the time structure of the remaining people could affect the outcome of the analysis. Therefore, when using the HETUS database, the age bracket was limited to the 15-64 range, which meant that comparisons could be made between people of working age characterised by a different status on the labour market.

[4] Further rounds of time-use surveys conducted in these countries should in future lead to updating the database with more recent findings illustrating the allocation of time in the individual societies.

Table 2

The proportion (%) of the working age population in the economically inactive group

Country	Proportion of working age population
Estonia	0.59
Slovenia	0.64
Bulgaria	0.61
Lithuania	0.57
Latvia	0.59
Poland	0.67

Source: Own calculation based on Eurostat data.

In order to compare the allocation of time for unemployed and economically inactive people, commodities produced at home were assigned to the corresponding activities, which in turn were described in terms of a time input in the form of average time (cf. Ahn, Jimeno and Ugidos, 2003). The list includes commodities the comparison of which was considered important from the point of view of the implemented analysis. Table 3 presents the list of commodities and the corresponding types of activity. An assumption was made that in order to increase their attractiveness on the labour market, the unemployed are more inclined to spend their leisure time in an active manner than the economically inactive. Differences between the analysed groups with respect to the allocation of time to specific types of activity should confirm the formulated hypothesis. Hence, leisure time activities were divided into those which were active and passive in nature (cf. Ahn, Jimeno and Ugidos, 2003, pp. 7-8; Zaidi and Zolyomi, 2011, p. 30). Obviously, the way in which the different activities were assigned to particular groups is entirely subjective.

Table 3

Basic commodities with corresponding groups of activities

Commodities	Time use
Basic personal care	Sleeping, eating, other personal care activities
Housing (House work)	Food preparation, dish washing, cleaning the house, other household upkeep, laundry, ironing, handicrafts, gardening, tending domestic animals, caring for pets, walking the dog, construction and repairs, shopping and services, physical care, child supervision, teaching, reading, talking with children, other domestic work, organisational work, informal help to other households, participatory activities, free-time study, homework, travel related to shopping, transporting a child, other domestic travelling
Active leisure	Entertainment and culture, walking and hiking, other sports, outdoor activities, other computing activities, other hobbies and games, reading books, other reading, travel related to leisure activities
Passive leisure	Visits and feasting, other social life, relaxing, computer and video games, TV and video, radio and music, unspecified leisure activities

Source: Compilation based on HETUS data.

Table 4 contains information on the differences in time expenditure for the unemployed and the economically inactive of working age. As regards the latter group, average times were given for people belonging to three categories that can be defined as "inactive in the labour market." These are respondents whose economic activity was defined as "In retirement or early retirement or has given up business," "Fulfilling domestic tasks", and "Other persons"; and these three were combined into one category: "Inactive."

Table 4

Monthly differences in average time spent on a specified activity by unemployed and inactive persons

Activity	Bulgaria	Estonia	Latvia	Lithuania	Poland	Slovenia
Personal care TOTAL	06.45	00.00	-10.50	-02.10	02.30	03.50
Housing TOTAL	-48.00	-49.45	-24.50	-38.00	-23.30	-39.50
Active Leisure TOTAL	16.00	06.45	04.40	15.30	05.30	10.20
Passive Leisure TOTAL	21.00	15.00	-05.30	20.50	12.40	23.50

Source: Own calculations based on HETUS data.

In as many as four countries, unemployed people spend either more or the same amount of time on activities included in the "Personal care" group in comparison to inactive people. Only in Latvia and Lithuania do people who are not looking for work devote more of their time to personal care.

Very clear differences can be observed in respect of household production (housing). Assuming that on average both the analysed groups – the unemployed and the economically inactive – possess the same production technology, the latter group produce considerably more domestic substitutes for market goods. This difference is certainly largely connected with the presence of people described as "Fulfilling domestic tasks" in the economically inactive category. This issue will be further analysed later in this section.

The results obtained for the activities assigned to "Active leisure" confirm the hypothesis which was adopted at the beginning of this paper. In all the analysed countries, without exception, people seeking work spend more time on active leisure than those who declare that they currently have no intention of entering the market.

In the results of the surveys which are contained in the HETUS database, activity status appears in response to a question included in the Individual Survey. It reads, "Do you consider yourself mainly as..." and has 7 options for answers, including "Fulfilling domestic tasks (housekeeping, taking care of children or other persons, etc.)" (Folbre and Yoon, 2008, p. 21). Due to the fact that in none of the countries studied did the proportion of men who declared themselves as belonging to that category exceeded one percent, it can be assumed that it is the domain of women. Therefore, the next stage of the analysis focused exclusively on women, comparing those who are unemployed with those who by choice, instead of market activity, devote themselves to working in the household.

Table 5 presents the differences in the time expenditure of unemployed and economically inactive women for specific types of activities over one month. In accordance with the principle adopted in international labour statistics, fulfilling domestic tasks is not a job or profession, so women who in a time-use survey indicated such a status were treated as economically inactive.

Table 5

Monthly differences in average time spent on a specified activity by unemployed women and those fulfilling domestic tasks (hh.mm).

Activity	Bulgaria	Estonia	Latvia	Lithuania	Poland	Slovenia
Personal care TOTAL	-00.30	04.00	06.00	20.00	08.30	03.30
Housing TOTAL	-28.00	-27.30	-20.00	-59.30	-33.00	-23.00
Active Leisure TOTAL	05.00	-08.30	01.00	11.00	12.30	18.00
Passive Leisure TOTAL	24.30	17.30	13.00	29.30	10.00	25.00

Source: Own calculations based on HETUS data.

The data presented shows that inactive women who define their status as "Fulfilling domestic tasks" allocate much more time to household production than unemployed women do. The greatest difference was observed in Lithuania – almost 60 hours more per month. This happens mainly at the expense of passive leisure. Also, the amount of time spent on "active consumption" is generally lower in the inactive group (except for Estonia). Thus the findings show that in almost all the analysed countries unemployed women spend more time on "Active leisure" than those who remain outside the labour market, which also supports the hypothesis formulated at the beginning of this paper. The validity of such an assessment could be further reinforced by greater differences with regard to active leisure than passive leisure. However, such a result was obtained only for Poland.

The comparison also shows that people of working age who do not work but who have a different activity status (unemployed vs. inactive), differ in terms of the allocation of time and the model of consumption. The economically inactive, who are almost entirely deprived of income from work (or undertake only odd jobs), show a greater tendency to consume time-intensive commodities rather than goods-intensive commodities. The latter are more frequently chosen by working people, or those that have been unemployed for a relatively short time. One can also assume that the longer economically active people look for work, the more time do they tend to devote to household production. In this sense, their allocation of time starts to resemble the time structure of those people who are not active in the labour market.

CONCLUDING REMARKS

The classical theory describes human behaviour in terms of monetary prices and monetary income, which naturally restricts the analysis to decisions relating to the market, thus overlooking a substantial part of human activity. The new theory of the household, by making time a fundamental human resource and its allocation a major issue in the decision-making process, made it possible to include a much broader spectrum of human activity in economic analysis. Referring to this concept, this paper has compared the non-market activity of the unemployed to the allocation of time for those who, although of working age, are economically inactive. This comparison shows that the former group spend more time on active leisure than the latter. This may attest to the fact that the unemployed, in order to maintain their attractiveness on the labour market, are more prone to spend their leisure time in an active manner. Inactive people, by definition, have no such need.

A comparison between unemployed women and those who declare themselves as fulfilling domestic tasks confirmed the differences in the structure of leisure observed for the entire population. The findings also indicate that those belonging to the latter group perform significantly more domestic production.

This suggests that individuals who do not work in the market engage in different types of consumption, depending on their activity status. The inactive, in contrast to the unemployed, to a greater extent consume time-intensive commodities. People who are unemployed, when measuring the value of their time with the market pay they previously received, are slightly more inclined to consume goods-intensive commodities.

Further analysis ought to take into account the length of time the economically active people remain unemployed. A comparison of the time allocation of people who are unemployed for a relatively short time, those who spend a long time looking for another job, and those who are inactive would help to better understand any differences in the behaviour of the different population groups. It can be assumed that the longer people remain unemployed, the more likely they are to substitute goods-intensive consumption with time-intensive consumption. This would indicate a process in which the allocation of time by unemployed but economically active people becomes similar to that of those members of society who are not present in the labour market.

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