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The Size and Determinants of Unpaid Work – the Gender Comparison

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***Abstract*—Examination of unpaid work is inter alia essential for the assessment of gender differences in different countries. The paper compares the various aspects of unpaid work between genders. We can confirm that women spent more time by unpaid work in all countries in the sample. The difference is more often evident in less developed countries. The main aim of the paper is to identify the determinants of unpaid work done by men and women. Using the regression models applied on cross-sectional data, we found that the determinants are different for the two genders. On the one hand the unpaid work done by women is more influenced by the number of children and elderly in the population as well as by the wage level in the labour market. On the other hand, male unpaid work is affected mostly by the number of Internet users and the educational level. The size of paid work is an important determinant for both genders.**

***Keywords*— unpaid work, econometric regression model, questionnaire survey**

I. Introduction

Activities that are included in unpaid work are usually an integral part of everyday life. Time allocation between paid and unpaid work may have different economical implications. Unpaid work can affect various decisions of economic agents, gender equality as well as the well-being of families. Moreover, the extent of unpaid work also affects the informational value of GDP or GNP as most common economic output indicators. Due to the fact that the majority of household production never gets to the market, it cannot be included in economic output indicators. Only a very small part of unpaid work is reflected in GDP, because of the national accounts methodology. Thus, we can say that the examination of the actual size of unpaid work, as well as the factors which motivate unpaid work are important with regard to macro-economic, microeconomic and socio-economic aspects. Despite the fact that the economical examination of unpaid work still stands in the shadow of paid work there is a growing interest in this issue recently. Hirway (2005) considered unpaid work as an important element of the economy that plays an essential role in various macroeconomic contexts. The author emphasizes the significant differences in the measurement of economic outputs of developing countries caused mostly by ignoring the unpaid work. According to Picchio et al. (2005) unpaid work is linked to the upkeep of living spaces and domestic goods, care for health, education, psychological needs as well as the maintenance of social relationships. Moreover, it is also necessary to consider the time spent caring for children and others. Authors also state that well-being of individuals requires not only material goods and personal services provided by the market, but also goods and services provided by unpaid work. Povazanova and Nedelova (2012) understand the concept of unpaid work as all human activities considered work for which the individual does not receive any wage or salary. The authors also emphasize that ignoring the value of unpaid work has a significant impact on the value of the data relating to the economic product.

Antonopoulos (2009) assumes that individuals allocate their time between activities that can be defined as paid work, unpaid work and activities which cannot be included as work. Becker (1991) points out that households maximize their production output when they optimally allocate their human capital in the form of labour between time spent on labour market activities (paid work) and time spent on non-market activities (unpaid work). If any household member has a comparative advantage in the market he will be focused more on paid work and vice versa. While Becker assumes that men have mostly a comparative advantage in the labour market and women in non-market production. The implications of unpaid work for gender equality are particularly strong. Several studies deal with the problem of the distribution of unpaid work between men and women, for example Callister (2005), Akintola (2006), Picchio et al. (2005). Based on their results, it is likely that unpaid work is significantly more often accomplished by women than men. Hence, this fact could have negative consequences on the economic status of women in society. Our paper deals with the problem of unpaid work in terms of the gender differences. We examine differences in the size and determinants of unpaid work between women and men. We want to verify certain assumptions about the different size of unpaid work for men and women. Specifically, a significant gender gap is assumed in the structure and determinants of unpaid work. The main aim of the paper was to identify the determinants of unpaid work for both genders. This can also help us to better understand the causes of the differences mentioned above.

II. Data and the methodology

The methodology is based on the official government methodology and developed in consultation with the Statistical office of the Slovak Republic by a team of researchers working

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within the project VEGA no. 1/0935/13 For the unpaid work analysis it is important to precisely identify those activities that can be included here. The situation is easier for paid work, because The United Nations System of National Accounts (SNA) provides the standardized framework for division of all economic activities. However, activities undertaken by households that produce services for their own use are excluded from SNA. These activities such as cooking, cleaning, care for children or adults or volunteering are essential parts of unpaid work. The production arising from these activities could be defined as non-economic production. Therefore we decide to include as unpaid work only activities not included in SNA. However, there are still some activities which are part of the SNA and could be also possibly included in unpaid work. Kascakova, Nedelova and Povazanova (2013) provide a closer look to this methodological problem. They also prefer to use a narrow definition of unpaid work. It means taking into account only activities not included in SNA.

Our analysis is partially based on the international data for several countries as well as national data from Slovakia. In general, the primary source of unpaid work data are statistical surveys called TUS (Time Use Survey). While surveys based on TUS were carried out in several developed countries, the data for the most of the developing countries is still missing. We used data from Ahmad and Koh (2011), which are available at OECD. These data summarize TUS surveys realized in 29 different countries. Thus cross-sectional data for 29 countries were used in both regression models. Data from the TUS for each country were collected in different years. Therefore we have to abstract from the potential dynamic changes in variables. However, we assume that differences in variables are much larger across countries than over time.

Determinants of unpaid work were analysed separately by two different regression models according to gender. The dependent variables included measures of women and man unpaid work in hours a day. Depended variables were included in the models based on the theoretical assumptions as well as previous empirical results. Indicators used in the regressions are obtained from World Bank databases (World Development Indicators database, Gender Statistic database) and OECD database. All variables used in both models are summarized in Annex 1. All variables were automatically standardized and the outliers were replaced by the highest respectively the lowest allowable value.

Another part of analysis was based on the national data from Slovakia. These data were obtained by unpaid work surveys carried out in the research projects VEGA 1/1141/1 and VEGA 1/0935/13 dedicated to research of unpaid work. Whereas there was no TUS survey of unpaid work realized in Slovakia, these projects represents one of the first attempt to research of unpaid work in Slovakia. Data for the first research project were collected by a research team from the Faculty of Economics (Matej Bel University) using a questionnaire in March 2012. The sample consisted of 4435 respondents. The sample was statistically representative by gender, region and number of household members. Questions were inter alia focused on the size of unpaid work and its structure. Unpaid work was divided into thirteen categories. Ten of them are not included inside the SNA boundary and can be therefore seen as part of a narrow definition of unpaid work. Only these ten categories of unpaid work were used in the paper. Data processing was realized using statistical software SPSS. Second research project built on the results of a previous one and explored new types of issues related to unpaid work. As part of this, another questionnaire survey was done in 2013 based on a sample of 1884 respondents. This survey can be considered as part of the pre-research. Questions were oriented more on respondents preferences, as well as on the potential substitution of unpaid work by special types of market services More detailed information on the research methodology applied in both projects can be found in publications by Povazanova, Nedelova (2012) and Uramova (2012).

III. The size and the structure of unpaid work by gender

There are significant differences in the total size of unpaid work as well as in the distribution of unpaid work between men and women across the countries we analyse. As we can see in Figure 1, countries with the highest size of female unpaid work have mostly relatively low levels of male unpaid work. This is true, for example, for Turkey, Mexico and India. On the other hand some of the counties with lower proportions of female work reach the highest size of male unpaid work, such as the cases of Denmark, Norway, Sweden or Finland. Particularly in the case of the Scandinavian countries, the shares of males and females in unpaid work are similar. Despite this fact, the share of unpaid work done by women is still higher in all countries included in the sample. While the average of female unpaid work is approximately 4 hours and 37 minutes a day, the unpaid work of men lasts only 2 hours and 13 minutes hours a day. This is partly offset by the higher size of paid work for men. Men spend in average approximately 5 hours and 36 minutes on paid work. It is nearly 2 hours more than women. Both of these differences are statistically highly significant base on t-tests. So we can conclude that whereas women devote more time to unpaid work, men are more engaged in paid work.

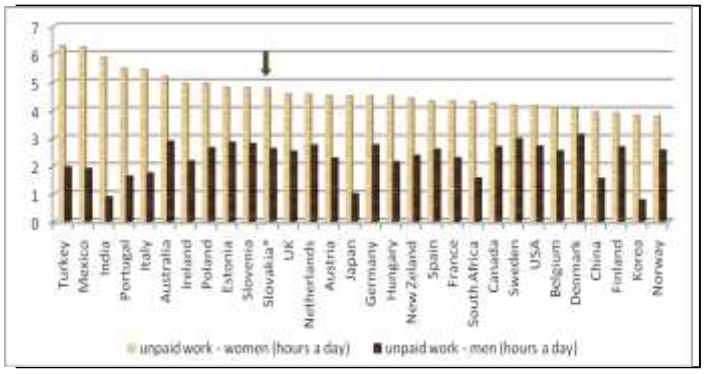

Figure 1. The size of unpaid work by gender in selected countries
Source: Authors, (based on the data: Ahmad, N. Koh. S. (2011).
*data for Slovakia were obtained by a questionnaire survey, which was part of the research project VEGA 1/1141/11.

The results confirm the assumption of differences in the comparative advantage between genders stated by Becker (1991). Gender inequality in unpaid work is significant in less developed countries. This may further worsen the economic situation of women in those regions. Significant differences are also in countries such as Japan and Korea. This may probably reflect cultural differences between these and other countries included in the sample.

Taking into account some methodological differences, the amount of unpaid work in Slovakia estimated by the questionnaires in our research can be compared with other countries where similar surveys were carried out. Whereas the average unpaid work of women was estimated at the level of four hours and forty five minutes a day, the estimated unpaid work of men was about two hours twenty minutes shorter. Both estimates for Slovakia are slightly above the average of other countries in the sample. The total amount of unpaid work was further divided into different categories in questionnaires. The observed structure of unpaid work of men and women is shown in Table 1.

TABLE I. STRUCTURE OF UNPAID WORK IN SLOVAKIA

			Food preparation	Household upkeep	Textiles - production and care	Tending ornamenal plants	Pet care	Reconstruction and repairs
Male	2013	N valid	899	888	853	863	864	874
		Mean	0:29:25	0:21:53	0:04:42	0:10:28	0:11:55	0:13:02
	2012	N valid	1831	1831	1831	1831	1831	1831
		Mean	0:28:07	0:25:38	0:04:07	0:06:51	0:14:24	0:17:39
Female	2013	N valid	972	972	962	939	923	898
		Mean	1:06:55	0:48:33	0:22:26	0:14:18	0:11:41	0:01:40
	2012	N valid	2115	2115	2115	2115	2115	2115
		Mean	1:13:07	0:51:41	0:24:36	0:12:05	0:15:00	0:02:14
			Shopping and services	Child care	Adult care	Volunteering	Total upaid work (outside the SNA boundary)	
Male	2013	N valid	900	810	800	802	909	
		Mean	0:25:26	0:23:33	0:06:10	0:04:17	2:30:50	
	2012	N valid	1831	1831	1831	1831	1831	
		Mean	0:21:36	0:28:12	0:05:50	0:03:21	2:35:45	
Female	2013	N valid	970	893	880	867	975	
		Mean	0:35:58	0:38:30	0:10:58	0:01:50	4:12:49	
	2012	N valid	2115	2115	2115	2115	2115	
		Mean	0:31:07	0:59:39	0:12:51	0:03:15	4:45:36	

Source: Authors (Based on the results of questionnaire survey - part of the research project VEGA 1/1141/11).

Thus we can again confirm that the distribution of unpaid work between men and women is not equal. The results suggest that women usually spend more time in all type of unpaid work activities, except the categories of reconstruction and repair, as well as volunteering. Men are clearly dominant in reconstruction and repairs. Other significant differences between genders are in the amount of time spent on activities related to textiles cooking and household upkeep. These three categories make up together approximately half of the total average of unpaid work of women. In addition, child care and shopping are also activities to which women usually devote a significant portion of their time. Caring for animals is about evenly split between men and women.

IV. Determinants of male and female unpaid work

Identification of the determinants of unpaid work helps to clarify its nature and causes. There are several reasons to engage in unpaid work and most of them are related to particular unpaid work activities. Nevertheless, there are common factors affecting the majority of these activities. Variables which we believed to have an impact on unpaid work of men and women are included in the models. The first important variable in both models is the extent of paid work. Considering the relative time of the individuals is divided to paid work, unpaid work and leisure time, it is obvious that this variable should be important. This leads us to the assumption that paid work has a significant negative effect on unpaid work. Another variable used in the model reflects the share of children under fourteen years and seniors older than 65 years in the population. This variable was included, because care for the children and for elderly adults is important aspects of unpaid work, especially for the unpaid work of women. We assume that a greater proportion of these age groups could lead to a higher size of unpaid work in the country. Along similar lines, unpaid work may be related to the marriage, assuming that married people could do more unpaid work. This is particularly true for women. Therefore we added the variable capturing the average age of the first marriage in the country. We predict a negative impact of this variable on unpaid work. The quality of infrastructure is another variable which may be a significant determinant of unpaid work. According to Chakraborty (2005) access to drinking water has a significant impact on time spent on unpaid work (especially for women who are in India are responsible for getting it). We believe that the variable measuring percentage of people using the Internet can also be a good proxy for the quality of the infrastructure in developed countries. The level of water infrastructure is very similar in our sample and IT and communication infrastructure is nowadays considered very important. Elson (2005) as well states, that investment in infrastructure could reduce the level of unpaid work and poverty in developing countries. According to Hronec (2012), the size of unpaid work is inversely dependent on the development of the tertiary sector. An insufficient supply of services may significantly increase the extent of unpaid work in the country. Compensation for work such as wages and salaries are likewise important in terms of a motivation to do unpaid work and the substitution between paid and unpaid work. We assume an inverse relationship between these. This means that higher wages in the labor market are a disincentive to unpaid work. This could be also partially linked with the arguments of Gupta (2006), who assumed a negative effect of higher household income on unpaid work. He further states that the income of women is two to three times more important in determining unpaid work than men's income.

Another two explanatory variables used in the models relate to the labor market. Higher levels of unemployment, according to us, could have a positive effect on the extent of unpaid work. On the other hand, a higher proportion of the labor force with

tertiary education could result in less unpaid work. Since we assume, that individuals with higher education are more often using market services as a substitution for unpaid work. In connection with this we likewise assume that a variable capturing the share of the urban population could have a negative impact on the extent of unpaid work, because people living in cities have better availability of market services compared to people living in the rural areas. The results of the regression model are summarized in Table 2 and Table 3. The first model examines the determinants of unpaid work done by women. As we can see from Table 2, there are four statistically significant variables at the ten percent level for women's unpaid work. Variables reflecting paid work and labour compensation are significant also at the five percent level. The impact of all statically significant variables is consistent with our expectations.

TABLE II. THE RESULTS OF REGRESSION FOR FEMALE UNPAID WORK

Model Term	Coefficient	Std.Error	t	Sig.	90% Confidence Interval		Importance
					Lower	Upper	
Intercept	6,407	1,842	3,478	,002	3,230	9,585	
paid_work_w_transformed	-0,007	0,002	-3,189	,005	-0,011	-0,003	0,396
Labour_compensation_transformed	-0,000	0,000	-2,395	,027	-0,000	-0,000	0,223
under14_and_over65_transformed	0,063	0,042	1,959	,064	0,010	0,156	0,149
INT_U_per1000_transformed	-0,016	0,009	-1,783	,090	-0,032	-0,001	0,124
unept_F2011_transformed	-0,020	0,018	-1,121	,275	-0,052	0,011	0,049
Urban_population_transformed	-0,007	0,009	-0,847	,407	-0,022	0,008	0,028
LF_TE_F_transformed	0,009	0,012	0,780	,445	-0,011	0,029	0,024
Ageatfirstmariage_f_transformed	-0,016	0,038	-0,412	,685	-0,081	0,050	0,007

Source: Authors (SPSS output).
Note: Data for 29 countries were included in the sample (the same as shown in Figure 1).

The most important determinant of female unpaid work is the size of paid work. The explanation is very straightforward in this case. The more time women spend in paid work, the less time they have for unpaid work activities and vice versa. Based on the results, the amount of compensation for labor and a share of Internet users in society have negative influence on the extent of unpaid work. This is also consistent with the expectations mentioned above. Thus, we can expect that, the higher the reward in the labor market, the fewer women will be willing to work outside. Similarly, a better quality of infrastructure and technology improves employment opportunities as well as making unpaid work easier. However, the significance of this variable is already very close to the threshold of 10%, so in fact this effect may not be significant. Furthermore the size of female unpaid work is positively affected by the number of children and older people in household. This can be mostly related to women's role in caring for these people.

On the other hand, our results suggest that the determinants of male unpaid work are partly different. The estimated effect of the variable involving the share of internet users is the most significant difference. Internet usage strongly influenced unpaid work in positive way. The explanation is not that straightforward. It is logical to believe that the number of internet users depends mostly on the regional level of economic-development. It is evident that the countries with the largest proportion of male unpaid work are mostly just those which are more developed. On the other hand this is clearly not true for female unpaid work. The effect indentified in the model could be as well related to some specific unpaid work activities especially by men. For example men are more often engaged in voluntary work as stated by Orviská (2012).

TABLE III. THE RESULTS OF REGRESSION FOR MALE UNPAID WORK

Model Term	Coefficient	Std.Error	t	Sig.	90% Confidence Interval		Importance
					Lower	Upper	
Intercept	5,385	2,274	2,368	,026	1,463	9,307	
INT_U_per1000_transformed	0,029	0,010	2,899	,009	0,012	0,047	0,374
paid_work_m_transformed	-0,006	0,003	-2,362	,027	-0,011	-0,002	0,266
LF_TE_M_transformed	-0,039	0,021	-1,877	,075	-0,076	-0,003	0,157
Ageatfirstmariage_m_transformed	-0,076	0,042	-1,782	,090	-0,149	-0,002	0,141
unept_M2011_transformed	0,023	0,020	1,177	,253	-0,011	0,057	0,052
Urban_population_transformed	0,004	0,011	0,385	,705	-0,015	0,024	0,007
under14_and_over65_transformed	-0,014	0,048	-0,281	,782	-0,097	0,070	0,004
Labour_compensation_transformed	0,000	0,000	0,156	,878	-0,000	0,000	0,001

Source: Authors (SPSS output).
Note: Data for 29 countries were included in the sample (the same as shown in Figure 1).

She also found that people using a PC are more likely to participate in voluntary work. This finding can be very similar to our results. It may be further related to other activities carried out over the Internet such as online shopping. Most studies dealing with the issue of e-commerce confirmed that male consumers make considerably more online purchases and spent more money online then females as reported by Zhou, Dai, Zhang (2007). Furthermore, we can assume that men more often buy more expensive products such as electric gadgets, cars or other equipment for household. The purchase of these kinds of products often involves another time spent by searching for information.

Unpaid work done by men is also more likely influenced by the educational level and the age at first marriage. We can assume that better educated men use more market services as substitution for unpaid work. This could be related to higher economic status and better access to services. The variable capturing the age at first marriage has a negative impact as well. This suggests that married men are more likely to participate in unpaid work then single. This fact may be related to larger households and child care. Single men could also use market services more often. Besides the different significant variables there is still another identical factor which is the paid work. The negative effect of paid work on unpaid work was additionally confirmed for male unpaid work. Both models of unpaid work are statistically highly significant based on the F-statistics. The adjusted R-squared value is 67.8 % for the first model and 55.7 % for the second model. The importance of all variables used in both models is graphically represented by the columns at Figures 2 and Figure 3.

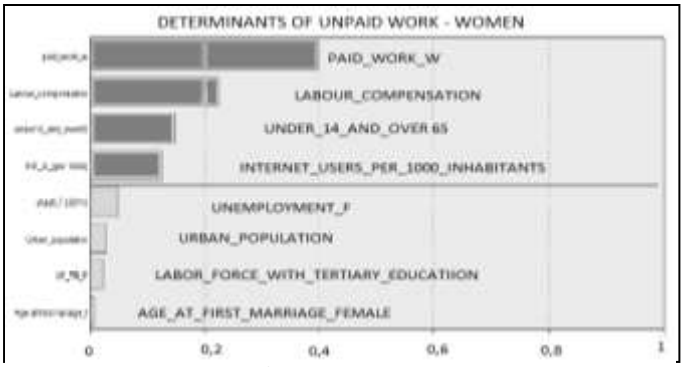

Figure 2. The determinants of unpaid work done by women
Source: Authors (SPSS output).

The factors of unemployment and share of urban population are insignificant for both genders. The share of inhabitants under 14 and over 65 is significant only for female. The results are in line with the assumption that women are more often doing care for children and elderly. Similarly, the labour compensation is a significant determinant of female unpaid work, but is not important for male unpaid work. This can be explained by the fact that men are still in most countries traditionally seen as the main breadwinners in a family. In contrast, a woman is more likely to choose between paid and unpaid work. The result can also be influenced by the fact that men are often less suitable for unpaid work in terms of skills. Therefore, they are actually less able to substitute paid work with unpaid work.

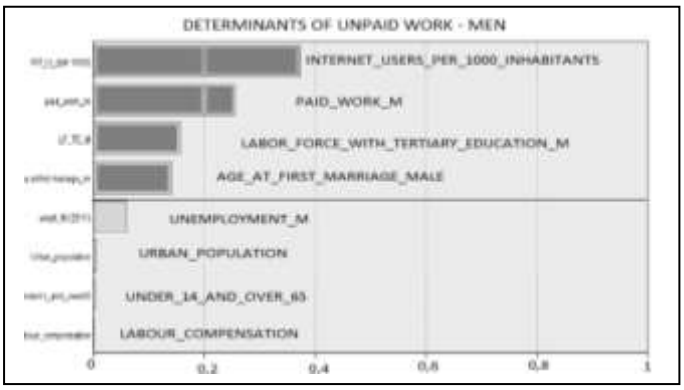

Figure 3. Determinants of unpaid work done by men
Source: Authors (SPSS output)..

The relationship between the unpaid and paid work of women is illustrated on Figures 4. The countries such as Turkey, India and Mexico can be identified as evident outliers.

Another interesting finding is that our results are mostly consistent with the results of Kascaková, Nedelova, Povazanova (2013) for Slovakia. They found that the unpaid work is significantly influenced by the age, educational level, income level and gender. Gender was a significant determinant in all categories of unpaid work. Furthermore, students and pensioners did less unpaid work in average. While the authors analyzed the determinants based on the national data, our paper is oriented to an international comparison. Hence, the cross-sectional data were used.

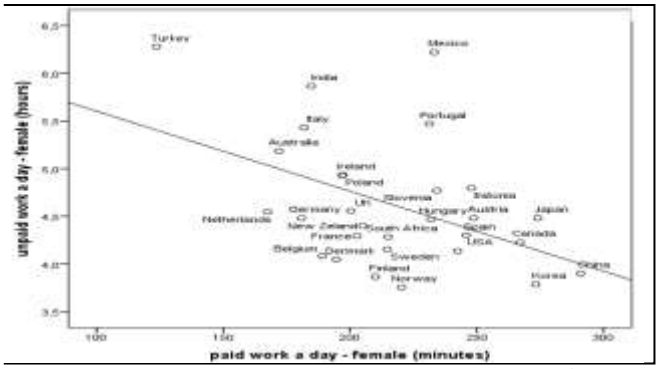

Figure 4. The relationship between unpaid work and paid work of women
Source: Authors, based on the data: Ahmad, N. Koh. S (2011).

We can conclude that the differences between the genders in terms of the size as well as the determinants of unpaid work are also clearly evident in our research.

v. Conclusion

Unpaid work is an often overlooked element of the economy, despite the fact that a considerable part of human time is dedicated to such activities. The distribution of time between men and women is important from the perspective of gender economic equality. Based on the results we can confirm that women do more unpaid work than men in all countries in the sample. On the other hand, men spend more time in paid work. This could lead to income inequality between genders. The problem is particularly noticeable in less developed countries where the share of female unpaid work is mostly very high. In contrary, men usually do more unpaid work in the more developed countries such as the Scandinavian ones. When speaking about categories of unpaid work, the results suggest that women usually spend more time in most activities. The exceptions are voluntary work and reconstruction, where men are dominant.

Furthermore, we identified different determinants of unpaid work for women and men. The unpaid work done by women is influenced by the size of paid work, labor compensation in the labor market and the share of children and elderly in the population. The effect of paid work and labor compensation is negative. It is evident that the more time women spend in paid work, the less time they have for unpaid work. We can also expect that, the higher the reward in the labor market, the fewer women will be willing to do unpaid work. Moreover the female unpaid work is positively influenced by the number of children and older people. This may be due to women's role in caring for these age groups of people. On the other side, the suggested determinants of male unpaid work are the share of Internet users in the population, the size of paid work, educational level and the age at first marriage. Based on the results it is likely that the number of Internet users has positive impact on unpaid work. The education level also affects the unpaid work, in this case negatively. It is likely that better educated men have better paid work opportunities and use market services more often. The existence of substitution between paid and unpaid work has not been confirmed for men unpaid work. While men are

still in most countries seen as family breadwinners, a woman is more likely to choose between paid and unpaid work. Men as well often lack skills needed for a number of unpaid work activities thus they are not able to substitute the paid work, although this may be a consequence of not engaging in unpaid work as a causal factor.

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References

[1] Ahmad, N., Koh, S. (2011). *Working Party on National Accounts - Incorporating estimates of household production of non-market services into international comparisons of material well-being*. OECD working paper no 42, 2010. Retireved from: http://search.oecd.org/officialdocuments/displaydocumentpdf/?cote=STD/CSTAT/WPNA%282010%299&doclanguage=en.

[2] Akintola, O. (2006). *Gendered Home-Based Care in South Africa: More Trouble for the Troubled.* In *African Journal of AIDS Research* 5(3), 2006. pp. 237–247.

[3] Antonopoulos, R. (2009). *The Unpaid Care Work–Paid Work Connection.* Working paper no. 86. Geneva: ILO. Retrived from: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_119142.pdf

[4] Becker, G. (1991). *A Treatise on the Family (enlarged edition),* MA, USA Harvard University Press, 1991. pp. 424**.**

[5] Craig, L. (2006). *Does Father Care Mean Fathers Share? A Comparison of How Mothers and Fathers in Intact Families Spend Time with Children.* In *Gender and Society* 20(2): pp. 259-281.

[6] Chakraborty, L., S. (2005). *Public investment and unpaid work in India: selective evidence from time use data.* NY: Levy Economics Institute, New York. Retrived from: http://www.levyinstitute.org/undp-levy-conference/papers/paper_chakraborty.pdf .

[7] Elson, D. (2005). *Unpaid Work, the Millennium Development Goals, and Capital Accumulation.* Conference on Unpaid Work and the Economy: Gender, Poverty, and the Millennium Development Goals, New York: Levy Economics Institute, October 1-3, 2005. Retrived from: http://www.levyinstitute.org/undp-levy-conference/papers/paper_Elson.pdf.

[8] Gupta, S. (2006). *Her Money, Her Time: Women's earnings and their housework Hours*. In *Social Science Research*, 35: pp. 975-999.

[9] Hirway, I. (2005). *Integrating Unpaid Work into Development Policy*. Conference on Unpaid Work and the Economy: Gender, Poverty, and the Millennium Development Goals. New York: Levy Economics Institute, October 1-3 2005. Retrieved from: http://www.levyinstitute.org/undp-levy-conference/papers/ paper_Hirway-Session1.pdf .

[10] Hronec, M. (2012). *Vplyv platenej a neplatenej práce na ekonomiku.* (Influence of Paid and Unpaid Work on the Economy). In *Trh práce v kontexte špecifík neplatenej práce, meranie jej rozsahu a dopadu na domácnosti, podnikateľskú sféru a ekonomiku: zborník vedeckých štúdií VEGA 1/1141/11* (Collection of Scientific Studies: The Labour Market in the Context of Unpaid Wrok, Measuring its Extent and Impact on Households, Businesses and the Economy). Banská Bystrica : Faculty of Economics, Matej Bel University, 2012.

[11] Kascakova, A., Nedelova, G., Povazanova, M. (2013). *Determinants of unpaid work in Slovakia.* In *Statistica*, 91(3), 2013 pp. 47-55.

[12] OECD (2011). *Society at a Glance 2011: OECD Social Indicators*. OECD publishing. http://dx.doi.org/10.1787/soc_glance-2011-en

[13] Orviska, M. (2012). Sociálno-ekonomciké súvislosti a význam skúmania a merania nepaltenej práce v kontexte ekonomiky štastia. (Socio-economic coherence and the importnance of examining and measuring of the unpaid work in the context of the economics of happiness). In *Trh práce v kontexte špecifík neplatenej práce, meranie jej rozsahu a dopadu na domácnosti, podnikateľskú sféru a ekonomiku: zborník vedeckých štúdií VEGA 1/1141/11* (Collection of Scientific Studies: The Labour Market in the Context of Unpaid Wrok, Measuring its Extent and Impact on Households, Businesses and the Economy). Banská Bystrica : Faculty of Economics, Matej Bel University, 2012.

[14] Picchio, A. et al. (2003). *Unpaid Work and the Economy: A Gender Analysis of the Standards of Living.* Taylor & Francis, 2003. pp. 256.

[15] Povazanová, M., Nedelova, G. 2012. *Neplatená práca v SR v porovnaní s vybranými krajinami svetového hospodárstva.* (Unpaid Work in Slovak Republic in Comparison with the other Countries of the World Economy) In Trh práce v kontexte špecifík neplatenej práce, meranie jej rozsahu a dopadu na domácnosti, podnikateľskú sféru a ekonomiku*: zborník vedeckých štúdií VEGA 1/1141/11.* (Collection of Scientific Studies: The Labour Market in the Context of Unpaid Wrok, Measuring its Extent and Impact on Households, Businesses and the Economy). Banská Bystrica : Faculty of Economics, Matej Bel University, 2012.

[16] Uramova, M. 2012. *Interdisciplinárny výskum neplatenej práce v podmienkach SR – ciele, metódy a postupy riešenia.* (Interdisiplinary research on unpiad work in Slovakia – objectives, methods and procedures to address). In *Trh práce v kontexte špecifík neplatenej práce, meranie jej rozsahu a dopadu na* domácnosti, podnikateľskú sféru a ekonomiku*: zborník vedeckých štúdií VEGA 1/1141/11.*(Collection of Scientific Studies: The Labour Market in the Context of Unpaid Wrok, Measuring its Extent and Impact on Households, Businesses and the Economy). Banská Bystrica : Faculty of Economics, Matej Bel University, 2012.

[17] Zhou, L. Dai, L. Zhang, D. (2007). *Online shopping acceptance model a critical survey of consumer factors in online shopping*.In Journal of Electronic Commerce Research, 8(1), 2007. pp.41-62.

Annex 1:

Model 1: UNPAID WORK - WOMEN			**Model 2: UNPAID WORK – MEN**		
Label	**Description**	**Source**	**Label**	**Description**	**Source**
Dependent variable			**Dependent variable**		
UNPAID_ WORK_W	unpaid work (hours a day) - women	Ahmad, N., Koh, S. (2011)	UNPAID_ WORK_M	unpaid work (hours a day) - men	Ahmad, N., Koh, S. (2011)
Independent variables (different)			**Independent variables (different)**		
PAID_ WORK_W	paid work (hours a day) - women	Ahmad, N., Koh, S. (2011)	PAID_ WORK_M	paid work (hours a day) - men	Ahmad, N., Koh, S. (2011)
LF_TE_F	Female labor force with tertiary education (%)	World bank database	LF_TE_M	Male labor force with tertiary education (%)	World bank database
AGE_AT_ FIRST_ MARRIAGE_F	Average age of marriage for women	World bank database	AGE_AT_ FIRST_ MARRIAGE_M	Average age of marriage for men	World bank database
UNEPT_F	unemployment rate- women	World bank database	UNEPT_M	unemployment rate - men	World bank database

Independent variables –common for both models		
Label	**Description**	**Source**
INT_U_per1000	Internet users per 1000 inhabitants	World bank database databank.worldbank.org
LABOUR_ COMPENSATION	Yearly labor compensation per employee, PPP, (in USD)	OECD database http://stats.oecd.org
URBAN_ POPULATION	Urban population percentage	World bank database databank.worldbank.org
UNDER_14_AND_OVER_65	Percentage of population under 14 years and over 65 years	World bank database databank.worldbank.org