Status of Women in Society and Life Expectancy at Birth

ANICA NOVAK
Association for Education and Sustainable Development, Slovenia
anicanovak@yahoo.co.uk

ŽIGA ČEPAR
University of Primorska, Slovenia
ziga.cepar@fm-kp.si

ALEŠ TRUNK
International School for Social and Business Studies, Slovenia
ales.trunk@yahoo.com

The purpose of this paper is to investigate the influence of the status of women in society over life expectancy at birth. Based on the data of some of the socio-economic variables for 187 countries worldwide, collected by the United Nations within United Nations Development Programme – Human Development Report, we developed a regression model of life expectancy factors. Through empirical testing of the three hypotheses which refer to different aspects of the status of women in society, we found that the employment ratio between women and men has a statistically significant negative impact on life expectancy at birth, which is, at least at first glance, unexpected. At the same time, the number of teenage births per 100 women aged 15–19 as well as gender inequality has a statistically significant negative impact on life expectancy at birth.

Key words: life expectancy at birth, population ageing, employment ratio between women and men, gender inequality, teenage pregnancy

Life Expectancy and Population Ageing

A prolonged life expectancy at birth, along with a decreasing birth rate is the main factor for our ageing population (United Nations 2009). An ageing population is one of the biggest socio-economic challenges facing 21st Europe, an issue of the whole world, as well as the EU. In 2025 more than 20% of Europeans will be aged 65 or more, in particular the number of people aged 80 or more will increase substantially (European Commission n. d.). Population ageing does not only have economic consequences, but also social, psychological, cultural, institutional and political consequences (Malačič 2008,

795) and therefore requires changes and adjustments in many different fields of certain countries' systems. Obviously, population ageing affects the living standards in certain countries, the quality of life or welfare, which are quite complex concepts (Mandič and Filipovič Hrast 2011, 16–17; Dubska 2010; Osberg and Sharpe 2011, 1–5; Watson, Pichler in Wallace 2010, 1–3).

Čepar and Bojnec (2013; 2014) prove a negative impact of population ageing on absolute demand for higher education, which confirms the earlier investigation of Campbell and Siegel (1967), Handa and Skolink (1975) and Sloan et al. (1990). Population ageing affects the labour market through an increase of expenditures for pensions, healthcare, social security and care for old people and through a decrease in the number of people who constitute the workforce (Dimovski and Žnidaršič 2007, 2–15). Population ageing might increase labour costs, outdated knowledge and competencies (Dixon 2003, 70–74; Johnson and Zimmermann 1993, 1–22) and might negatively affect economic growth (Malmberg 2011, 279).

In today's world, one tenth of the population is aged 60 and above. Experts predict that in the next forty years that percentage will increase substantially, even double, especially due to the ageing population in the developed world. The process of population ageing can be measured by the growth of the median population age, by the growth of the ageing index and by the growing percentage of old people.

The median population age is the age that divides a population into two numerically equal groups – that is, half the people are younger than this age and half are older. The growth of the median age reflects an ageing population. On a global scale, in 1995, the median population age was 25 years, and in 2010, 28.5 years (Statista n. d.). In 2010, 31 countries had a median age higher than 40 years, with Slovenia among them too, where the median age was 42.1 years (World by Map n. d.). The figure below shows the median age of the population in the EU (27) for the years 1991, 2000 and 2010. As in the rest of the world, the median age is also increasing in the EU. We can see that the median age in the EU (27) is higher than in the rest of the world. In 2010, the median age in the EU (27) was 40.9 years old.

The ageing index is the ratio between the older population (aged 65 and above) and younger population (aged 0–14), multiplied by 100 (Statistical Office of the Republic of Slovenia N. d.). The figure below shows the ageing index for the EU (27) from 1995 to 2012. The columns show the percent of the young and old population, while the curves show the ageing index. From the figure, we can see that

FIGURE 1 The Median Age of the Population in the EU (27) for the Years 1991, 2000 and 2010 (adapted from Eurostat 2013)

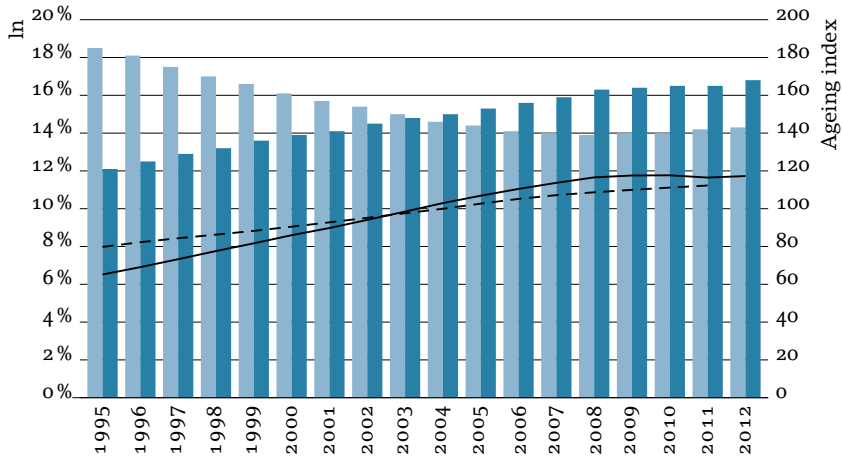

FIGURE 2 Ageing Index in Percentage of Younger and Older Populations in Slovenia in the EU (27), 1995–2012 (light columns – 0–14 years, dark columns – 65+ years, line – ageing index, dashed line – EU–27 ageing index; adapted from Institute of Macroeconomic Analysis and Development 2012)

the percent share of the population aged between 0–14 has been decreasing, and the percent share of the population aged 65 and above has been increasing. In 2003, the percent share of the population between the ages of 0–14 was the same as the percent share of the population aged 65 and above.

Percentage of older population (aged 65 and above) is steadily growing. In 2008, the number of the older population in the total population reached 77 million people or 17% of the total population. According to projections, by 2020 the older population will total 113 million or 25% of the total population (United Nations 2009).

The increasing life expectancy at birth is on one hand a key factor of the ageing population, which has numerous consequences for the economy, and on the other hand a high life expectancy at birth is a goal of every society. This is why we wanted to explore and present the causes which affect the different levels of life expectancy at birth in the different countries around the world. We were especially interested in whether the different social statuses of women in society

in different countries have an effect on the level of life expectancy at birth.

The Research Hypotheses, Methodology and Data Used

Here we present the research hypotheses and the methodology which was used to achieve the objectives of the research and to test the research hypotheses together with assumptions on which our research is based as well as its limitations in a sense of its scope, geographical limits and time frame. Finally, the most important data used in this investigation is explained.

The Research Hypotheses

There are many different socio-economic factors of life expectancy at birth. In our research we wanted to find out which factors, out of those that could be measured by the United Nations Development Programme data from the Human Development Report, could sufficiently explain variations in life expectancy at birth across countries. Moreover, we wanted to statistically test whether the status of women in society has any influence on life expectancy at birth. We used the cross section data of 187 countries worldwide for the year 2010. Our main research thesis is that the status of women in society has an important influence on life expectancy at birth. In order to test the main research thesis, we set the following three hypotheses.

HYPOTHESIS 1 *Employment ratio between women and men positively impacts life expectancy at birth.*

HYPOTHESIS 2 *Number of births per 100 women aged 15–19 years negatively impacts life expectancy at birth.*

HYPOTHESIS 3 *Gender inequality negatively impacts life expectancy at birth.*

Methodology

We ran several multivariate regression models, in order to test our main research thesis and the three hypotheses. First, we collected secondary data from the United Nations' Human Development Report (United Nations 2013). The data refers to several socio-economic variables of 187 countries worldwide for the year 2010. Statistical observation units are individual countries. The cross section data enables us to exclude any time related effects from the analysis. The cross section demographic and socio-economic data were properly arranged, transformed and entered into a statistical computer package SPSS, which was used for regression analysis.

In the regression analysis, life expectancy at birth was used as a dependent variable to measure the average life span of a country's population. Several socio-economic variables were used as explanatory variables. We set the initial regression model which was tested on the available data of the 187 worldwide. We tested the following general form of the regression model:

$$\text{Life expectancy at birth} = \alpha + \beta_1 \times f_1 + \cdots + \beta_n \times f_n + \mu \quad (1)$$

Using regression analysis based on the least square method we estimated parameters of different regression models and chose the best fitting models based on the standard error of the models, adjusted determination coefficient, F-test and t-tests.

Assumptions of our investigation are mostly related to the indicators which are used to measure socio-economic factors of life expectancy at birth. We assume that indicators measured and calculated within the Human Development Report to proxy life expectancy factors are methodologically adequate and correct. Life expectancy at birth is used as a dependant variable in regression analysis, measuring an average human life span by countries. In this research we measure the status of women in society by employment ratio between women and men, by the number of teenage births per 100 women aged 15–19 and by gender inequality. Methodological assumptions of regression analysis were also tested and are presented within the results of our research.

Limitations of our investigation narrow the scope of investigation and refer to some methodological problems which are mostly related to missing values for some countries' indicators. We use aggregate country data for a sample of 187 worldwide countries; we are limited to the year 2010 and are focusing on socio-economic factors only.

All secondary data was collected from the databases of the United Nations which was acquired through the United Nations Development Programme – Human Development Report (United Nations 2013). Besides data on life expectancy at birth, we used the following data for the explanatory variables in the regression analysis of life expectancy factors; public health spending (spending on public health as a percentage of GDP), gross domestic product per capita expressed in US dollars, gender inequality (a composite measure that reflects the potential loss due to inequality between females and males through three dimensions: reproductive health, empowerment and the labour market), expected years of schooling (the expected number of years of schooling from school entry onwards), employment ratio between women and men (the ratio be-

tween female and male working population (aged 15–64) who are actively involved in the labour market), ratio between men and women with at least upper secondary education (the ratio between women and men aged 25 years or older with secondary or higher education attainment), urban population (number of people living in areas classified as urban areas, according to the criteria of each particular country) and the number of births per 100 women aged 15–19 years (number of births to women aged 15–19 per 100 women).

Overview of the Data Used

Hereinafter, the factors used in the paper are presented.

Expenditure on Public Health (expressed in percentage of GDP). Funding for health systems can come for foreign or national resources which can be private or public (World Health Organisation n. d.). An increase in expenditure on health per capita means the country is using more of its resources to take care of and improve the health system. Higher expenditure on health per capita means that improvements in medical technology can be made. Higher expenditure on health per capita means that health and preserving life are important values for the country (Hall in Jones 2004).

Expected Years of Schooling (expected number of years of schooling from school entry onwards). Individuals in higher education earn more money and have better jobs. Consequently, this means that the income for their household is higher and allows them a better standard of living. People with higher education are also more aware of how to avoid the risk of illness (they have better information about health services, nutrition and hygiene) as well as how to live a longer and more comfortable life (United Nations 2010, 36).

Educational systems vary from country to country depending on the average level of education reached in the country. Gomezelj Omrzel and Trunk Širca (2008) claim that it is necessary to evaluate knowledge regardless of where the individual received it. In the case of Slovenia, where the expected years of schooling is 17 years, the most emphasis is on higher education. 70% of the Slovene population are already in tertiary education. Wiechetek and Trunk Širca (2014), Rožman et al. (2014) and Trunk Širca et al. (2006) discussed the competencies of young graduates on entering the labour market, Arzenšek et al. (2014) and Dermol et al. (2013) are thinking even deeper, saying that the knowledge gained by an individual is not enough to develop society; development of a suitable mechanism to put knowledge into practice is needed.

Gender inequality (a composite measure that reflects the potential loss due to inequality between females and males through three dimensions: reproductive health, empowerment and the labour market). Gender inequality contains three dimensions:

(a) Reproductive Health. By the definition which was accepted at the International Conference on Population and Development in 1994 in Cairo, reproductive health is defined as having good physical, mental and social being in all areas which are connected to the reproductive system, its functions and processes (UNFPA 2013a).

Problems with reproductive health are still the main causes for death and illness among women during the birthing process (UNFPA 2013b). The risk of death when giving birth is decreased through education, suitable nutrition, healthcare for pregnant women and through access to contraception (United Nations 2010, 90).

(b) Empowerment. The empowerment of women is an important aspect towards gender equality; it gives women more autonomy and means improvements in gender equality. Empowerment of women includes 5 components (United Nations n. d.):

1. feeling of self-worth,
2. right to choose,
3. right to access information and resources,
4. right to freely make life choices within the family and out of the family and
5. the opportunity to influence social changes, with the purpose for creating a more righteous social and economic society.

(c) Employment. Access to full and decent employment poses a challenge for types of women who must work in insecure and badly paid jobs. Particularly in developing countries, a large portion of women are employed in informal activities. In Sub-Saharan Africa, the level of employment among women is high (around 55%); however out of those employed, 82% work in hard (indecent) conditions. Women from Arabic countries have increased their participation in employment from 9% in 1980 to 27% in 2008, which is still only half of the global average (United Nations 2010, 77–91).

The advancement towards equality is still limited in poorer countries, among poor women and those which suffer because of different forms of exclusion (e.g. because of nationality, remoteness, disability, . . .) (World Bank 2012, 73).

Gross Domestic Product per Capita (gross domestic product, expressed in US dollars). There is a strong link between gross domestic

product and life expectancy at birth (in countries where there is a high gross domestic product there is also a higher life expectancy).

From 1970 to 2010, the gross domestic product of developing countries rose by 2.3% annually, while the development of the country rose by 1.5% a year. An increasing GDP means higher income per capita, which individuals can use. An individual can afford a higher standard of living, healthcare and medicine, which impacts on higher life expectancy at birth. However there are also deviations. Some countries with low GDPs have high life expectancies at birth, because their governments value the needs of the people highly. A good example is Cuba, which has a low GDP, but a life expectancy of 77. Another reason for a low GDP and relatively high life expectancy at birth is the level of non-marketable activities. In cases where there is a lot of self-sufficient farming, people have enough food for themselves, however will not contribute to the GDP; they will not buy food and/or sell it, so there will not be an exchange of money, (Statistical Consultants n. d.).

Urban Population (number of people living in areas classified as urban areas, according to the criteria of each particular country). The increased share of urban population is connected with the natural growth of the population as well as the migration of the population from rural areas into urban environments. The main causes for migration into urban environments are the services and jobs which an urban environment offers (UNEP 2001, 240). Life in an urban environment allows for easier water supply, and thus better hygiene conditions. It also gives larger access to education, health and social services.

By 2050, it is predicted that the urban population will have reached 72% (specifically 3.6 billion in 2011 will increase to 6.3 billion by 2050). The rural population in less developed countries will continue to rise until 2021, and then it will begin to fall (United Nations 2012, 1–2).

The Number of Births per 100 Women Aged 15–19 (number of births to women aged 15–19 per 100 women). Pregnancy among young women has important consequences on a global level as well as on a social and personal level. Globally speaking the growth rate is larger when women have their first child in their teenage years; giving birth when young prolongs the reproductive period and increases fertility. On a social level, there is a strong link between teenage pregnancy and a low level of education in young girls. Girls who become mothers at a young age often stop their education. Stopping and interrupt-

ing education means that these girls have a lower level of education which is reflected in a loss of possible earnings. These girls are often financially dependent on their families (Singh and Darroch 1999; Rafalimanana 2006).

Employment Ratio between Women and Men (the ratio between female and male working population (aged 15–64) who are actively involved in the labour market). The difference between the male and female working population has decreased in the last ten years in all regions. Despite this, the female working population is smaller than the male working population in nearly all regions. The smallest share of actively working women and at the same time biggest difference between the female and male working population can be found in the countries of Western Africa and the Middle East. The largest share of the female working population and at the same time smallest difference between the female and male working population can be found in Sub-Saharan Africa (International Labour Organisation 2013).

In developed countries in the previous century, the male was the one who financially took care of the family. This has changed in modern times, where women are increasingly equal to men and are being employed in positions which were once thought to be exclusively for men. We notice that in less developed countries, the inclusion of women in the labour market is increasing (and is in a lot of places comparable to men), however the work is particularly physically demanding and badly paid. We notice that in less developed countries, despite high representation of women on the labour market, life expectancy at birth is a lot lower in comparison with developed countries, where similarly more women are being employed year after year.

Ratio between Men and Women with at Least Upper Secondary Education (the ratio between women and men aged 25 years or older with secondary or higher education attainment). The education of girls helps better reproductive health, better status in the family, community and society. Better education leads to a lower number of births (women with at least upper secondary education have less children than those women who are uneducated), the possibility of unplanned pregnancy and their risk of HIV (for girls who have finished upper secondary education, there is 4 times more chance that they will use contraception in comparison to girls who are uneducated) (Measure Evaluation Population and Reproductive Health 2013; Bloom 2006, 94).

TABLE 1 Final Linear Multivariate Regression Model Results, Year 2010

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Const.	67.890	4.534		14.974	0.000				
EYS	1.087	0.274	0.330	3.967	0.000	0.771	0.330	0.277	3.606
UP	0.070	0.027	0.163	2.547	0.012	0.656	0.219	0.470	2.129
GI	−0.136	0.041	−0.260	−3.285	0.001	−0.715	−0.278	0.305	3.275
ER	−0.113	0.024	−0.229	−4.658	0.000	−0.192	−0.379	0.791	1.265
NB	−0.527	0.160	−0.226	−3.301	0.001	−0.716	−0.279	0.410	2.441

NOTES Column headings are as follows: (1) variables; unstandardised coefficients: (2) B, (3) standard error; standardised coefficients: (4) β; (5) T, (6) exact significance level (p); correlation coefficients: (7) bivariate, (8) partial; multicolinearity; (9) tolerance, (10) VIF. $R^2 = 0.753$, adjusted $R^2 = 0.743$, F-statistics = 78,533 (exact significance level = 0.000), $N = 187$. Own calculations based on data from the United Nations (United Nations 2013).

Results of the Regression Analysis

We run several multivariate linear regression models in order to test each of the three hypotheses and our main thesis. In all the regression models we analysed the explanatory power of the independent socio-economic variables as well as the strength and the direction of the association between the dependent variable (life expectancy at birth) and independent variables (socio-economic variables). Using regression coefficients we tested the existence and the direction (positive/negative) of the association and impact that was assumed for each factor in each hypothesis. Using adjusted determination coefficient we tested the share of the variance that was explained by the independent variables. Using t-tests we tested the statistical significance of each individual explanatory variable, while using F-test to determine the statistical significance of the regression models as a whole. During regression analysis we ran many different models, however only one which was statistically significant and with the highest explanatory power was selected for interpretation in this paper.

All the initially collected independent socio-economic variables were included into the initial regression analysis. After we excluded statistically insignificant explanatory variables and those which were too correlated with each other we came to the following final multivariate regression model.

All the regression coefficients in the final models for both years are highly statistically significant ($p < 0.05$ for all betas) and there is no multicolinearity among the factor included in the model, since the tolerance is always greater than 0.1 and VIF is less than 10 for all the

variables. Statistically significant factors of life expectancy at birth with a positive impact are expected years of schooling and urban population, with a negative impact are gender inequality, employment ratio between women and men and number of births per 100 women aged 15–19 years (table 1).

If the expected years of schooling are increased by 1 year, life expectancy at birth is increased by 1.087 years, holding other factors/variables constant. If the urban population is increased by 1 percentage point, life expectancy at birth is increased by 0.070 years, holding other factors/variables constant. If the gender inequality is increased by 1 percentage point (measuring the relative potential loss due to the gender inequality), life expectancy at birth is decreased by 0.136 years, holding other factors/variables constant. If the employment ratio between women and men is increased by 1 woman per 100 men, life expectancy at birth is decreased by 0.113 years, holding other factors/variables constant. If the number of births per 100 women aged 15–19 years is increased by 1 birth, life expectancy at birth is decreased by 0.527 years, holding other factors/variables constant. The fair strength and direction of the association between life expectancy at birth and each explanatory variable is additionally confirmed by the bivariate and partial correlation coefficients (table 1).

We may conclude that the explanatory power of the regression model is relatively high. Adjusted determination coefficient for the regression model (adj. $R^2 = 0.0743$) tells us that the variation of all the factors included in the model together explain 74.3% of the variability of life expectancy at birth. F-test additionally confirms the statistical significance of the model as a whole.

Additionally, we also tested general methodological assumptions of the regression, to ensure the validity of the regression model results. We found out that the distribution of all variables included in the analysis is close enough to normal distribution, and so is the distribution of regression errors with average close to zero. The scatter diagram shows that regression errors exhibit no particular pattern and are evenly and randomly distributed over the area. There is no heteroscedasticity since constant variance of the errors is observed (homoscedasticity). All the necessary assumptions are fulfilled, so we may conclude that the regression model is efficient and unbiased.

Findings of the Research

Based on the regression analysis results, we found five socio-economic factors of life expectancy at birth, which explain quite well the

variations in life expectancy among countries. Higher expected years of schooling and higher share of urban population increase life expectancy at birth, whereas, higher gender inequality, higher employment ratio between women and men and higher number of teenage births per 100 women aged 15–19 years decrease life expectancy at birth.

The employment ratio between women and men, which is the ratio between the female and male working population aged 15–64, who are actively involved in the labour market, has a negative impact on life expectancy at birth. That means that we may reject the first hypothesis, which says that that impact is positive.

The number of births to women aged 15–19 per 100 women aged between 15–19 years is found to have a negative impact on life expectancy at birth, which *confirms our second hypothesis*.

Since gender inequality is also found as one of the statistically significant factors of life expectancy at birth, which decreases life expectancy at birth, we may also *confirm our third hypothesis*.

The three variables corresponding to the three hypotheses all describe the position and status of women in society. According to the unstandardised and standardised regression coefficients beta, we can see that these variables are maybe not the most important for the life expectancy variation; however they are also not the least important. The expected years of schooling variable is to be found in first place, however right after it, there are variables describing status of women in society.

Based on the results of our empirical investigation, we may therefore *confirm our main research thesis* that the status of women in society has an important influence on life expectancy at birth. Obviously, the better the status of women in society, the higher the life expectancy is at birth. Because from the first hypothesis, this conclusion is not as obvious as it is from the second and the third hypotheses, let us show our reasoning in the last section of the paper.

Conclusion

The originality of this research is demonstrated through our findings regarding the factors of life expectancy, which were obtained on the basis of our own empirical study. The regression model implies the original findings which are related to the type of the factors, direction of the impact of each individual factor and its power of influence and importance for life expectancy, with emphasis on the findings related to the role of the status of women in society.

The expected years of schooling is most certainly an important

factor of economic development. It is understandable that higher education gives individuals an opportunity to get a better job and better income thus a better standard of living, which positively impacts life expectancy at birth.

Urban population is prevailing in developed countries. Life in an urban environment allows for larger access to education, health and social services, more employment opportunities, easier water supply and better hygiene conditions, which again has a positive impact on life expectancy at birth.

The three indicators used to measure status of women in society negatively impact life expectancy at birth.

The employment ratio between women and men negatively impacts life expectancy at birth. The higher is the ratio, the lower the life expectancy at birth, which is unexpected at least at a first sight. How can that be explained? The employment ratio has higher values not only if the number of employed women is higher (the effect of the nominator) but also if the number of employed men is lower (the effect of the denominator). If we have look at the nominator first, it is somehow expected that in countries where more women are employed, life expectancy at birth is higher than in countries where less women are employed holding other conditions constant. However that is not supported by the signs of this factor (employment ratio) in our analysis. Maybe that is because in our case higher number of employed women means predominantly higher number of women being employed in low paid physical jobs, like in production, which is more typical for less developed countries with expectedly lower life expectancy at birth. In more developed countries, some women stay at home (reducing the nominator of the ratio) not because they have no equal opportunities in labour market, but because they can afford it, because the living standard in many household in developed countries allows women not to work, if they choose so. On the other hand, if we have a look at the denominator, the higher indicator can also be a result of a smaller number of employed men. Smaller number of employed men could be indicating general problems in the labour market, higher general level of unemployment and worse economic conditions in a country, which logically results in a lower life expectancy at birth, which in this case is supported by the sign of our employment ratio factor. To sum up, it is obviously quite possible that higher values for that indicator do not reflect better status of women in society, which might have been expected at a first sight, but in fact the opposite. Status of women in society might be better, when employment of women is somehow balanced with employment

of men, resulting in more constant and not higher employment ratio. For example, no one believes that a disproportionally high number of employed women and low number of employed men (which would result in higher employment ratio) reflects ideal society with high living standard and life expectancy at birth, but just the opposite. There might even exist some theoretically ideal or optimal value for that ratio, which could represent an interesting challenge for our further investigation. In the future it would definitely be worth researching the background of this indicator, since it might indirectly reflect some other indicators which were not included in this model.

A higher share of births to teenage mothers expectedly negatively impacts life expectancy, since that worsens life conditions of and potentials for these teenagers as well as for their children. Girls who become mothers as teenagers often give up their schooling, which leads them to lower level of education which is later on reflected in lower employment possibilities, lower salaries and lower living standard. So countries with higher share of births teenage mothers reflect and lead into some conditions which are typical for countries with lower life expectancy at birth.

Gender inequality as composite measure reflects the potential loss due to inequality between the female and male through three dimensions: reproductive health, empowerment and labour market. Problems with reproductive health are still the main causes for death and illness among women during the birth giving. The empowerment of women is an important aspect of gender equality; it gives women more autonomy and means improvements in gender equality. Equal opportunities for women in labour market are a challenge especially for women who work in insecure and badly paid jobs. All three dimensions of gender inequality negatively impact life expectancy. The higher is the gender inequality, the lower the life expectancy.

It is generally believed that life expectancy at birth is increasing. However it is not entirely true, especially in some undeveloped countries where life expectancy is even decreasing. From the results of this research it is clear how very important is the status of women in society for quality of life which is reflected also in life expectancy at birth. So we need to do more to further encourage gender equality, responsible motherhood and parenthood, education and equal opportunities in labour market.

References

Arzenšek, A., K. Košmrlj, and N. Trunk Širca. 2014. 'Slovenian Young Researchers' Motivation for Knowledge Transfer.' *Higher Education* 68 (2): 185–206.

Bloom, E. D. 2006. 'Education in a Globalized World.' *World Economics* 7 (4): 87–109.

Campbell, R., and B. Siegel. 1967. 'The Demand for Higher Education in the United States, 1919–1964.' *American Economic Review* 57 (3): 482–94.

Čepar, Ž., and Š. Bojnec. 2013. 'Macro-Level Determinants of Relative Participation in Undergraduate Higher Education in Slovenia.' *Eastern European Economics* 51 (6): 77–95.

———. 2014. 'Does Higher Relative Participation in Higher Education Also Mean a Higher Absolute Number of Students? The Case of Slovenia.' *Eastern European Economics* 52 (2): 85–100.

Dermol, V., N. Trunk Širca, K. Babnik, and K. Breznik, K. 2013. 'Connecting Research, Higher Education and Business: Implication for Innovation.' *International Journal of Euro-Mediterranean Studies* 6 (1): 65–80.

Dimovski, V., and J. Žnidaršič. 2007. 'Ekonomski vidiki staranja prebivalstva Slovenije: kako ublažiti posledice s pristopom aktivnega staranja.' *Kakovostna starost* 10 (1): 2–15.

Dixon, S. 2003. 'Implications of Population Ageing for the Labour Market.' *Labour Market Trends* February, 67–76.***

Dubska, D. 2010. 'The New Paradigm – Why Is It Important to Measure the Progress of Societies?' Paper presented at 20th Statistical Days. http://www.stat.si/StatisticniDnevi/Docs/Radenci%202010/Dubska_New%20paradigm-prispevek.pdf

European Commission. N. d. 'Staranje prebivalstva.' http://ec.europa.eu/health/ageing/policy/index_sl.htm

Eurostat. 2013. 'Median Age of Population, EU-27, 1991–2011.' Http://epp.eurostat.ec.europa.eu/statistics_explained/images/a/a0/Median_age_of_population%2C_EU-27%2C_1991-2011_%281%29_%28years%29.png

Gomezelj Omrzel, D., N. and Trunk Širca. 2008. 'The Validation of Different Kinds of Knowledge at the Higher Education Level.' *Higher Education in Europe* 33 (4): 423–36.

Hall, E. R., and C. I. Jones. 2004. *The Value of Life and the Rise in Health Spending*. Cambridge, MA: National Bureau of Economic Research.

Handa, M. L., and M. L. Skolink. 1975. 'Unemployment, Expected Returns, and the Demand for University Education in Ontario: Some Empirical Results.' *Higher Education* 4 (1): 27–44.

Institute of Macroeconomic Analysis and Development. 2012. 'Indeks staranja.' http://www.umar.gov.si/fileadmin/user_upload/publikacije/dr/13/Va/A5_9.xls

International Labour Organization. 2013. 'Labour Force Participation Rate.' http://kilm.ilo.org/manuscript/kilm01.asp

Johnson, P. A., and K. F. Zimmermann. 1993. 'Aging and the European Labor Market: Public Policy Issues.' In *Labor Markets in an Aging*

Europe, edited by P. A. Johnson and K. F. Zimmermann, 1–22. Cambridge: Cambridge University Press.

Malačič, J. 2008. 'Socialno ekonomske posledice staranja prebivalstva.' *Zdravniški vestnik* 77:793–8.

Malmberg, B. 2011. 'Age Structure Effects on Economic Growth – Swedish Evidence.' *Scandinavian Economic History Review* 42 (3): 179–295.

Mandič, S., and M. Filipovič Hrast. 2011. 'Blaginja v starajoči se družbi: analitična izhodišča.' In *Blaginja pod pritiski demografskih sprememb,* edited by S. Mandič and M. Filipovič Hrast, 7–25. Ljubljana: Fakulteta za družbene vede.

Measure Evaluation Population and Reproductive Health. 2013. 'Family Planning and Reproductive Health Indicators Database.' http://www.cpc.unc.edu/measure/prh/rh_indicators

Osberg, L., and A. Sharpe. 2011. 'Comparisons of Trends in GDP and Economic Well-being – the Impact of Social Capital.' http://www.oecd.org/dataoecd/5/32/1824740.pdf

Rafalimanana, H. 2006. 'Adolescent Fertility in the Developing World: Levels and Trends in the 1990s and Early 2000s.' http://paa2006.princeton.edu/papers/60711

Rožman, L., V. Jošt Lešer, N. Trunk Širca, V. Dermol, and V. Skrbinjek. 2014. 'Assessing Student Workload: Tough Nut to Crack.' In *human capital without Borders: Knowledge and Learning for Quality of Life; Proceedings of the Management, Knowledge and Learning International Conference 2014,* 1411–6. Bangkok; Celje; Lublin: ToKnowPress.

Singh, S., in J. E. Darroch. 1999. 'Adolescente Pregnancy and Childbearing: Levels and Trends in Developed Countries.' *Family Planning Perspectives* 32 (1): 14–23.

Sloan, J., M. Baker, R. Blandy, F. Robertson and W. Brummitt. 1990. *Study of the Labour Market for Academics.* Canberra: Australian Government Publishing Service Press.

Statista. N. d. 'Median age of the world population from 1990 to 2010 and a forecast until 2100.' http://www.statista.com/statistics/268766/median-age-of-the-world-population/

Statistical Consultants. N. d. 'Life Expectancy at Birth Versus GDP per Capita.' http://www.statisticalconsultants.co.nz/weeklyfeatures/WF6.html

Statistical Office of the Republic of Slovenia. N. d. 'Indeks staranja.' http://www.stat.si/doc/pub/rr816-2004/IZRACUNI_SLO.htm

Trunk Širca, N., B. Nastav, D. Lesjak, and V. Florjančič. 2006. 'The Labour Market, Graduate Competences and Study Programme Development: A Case Study.' *Higher Education in Europe* 31 (1): 53–64.

UNEP. 2001. *State of the Environment and Policy Retrospective: 1971–2002.* London: Earthscan.

UNFPA. 2013a. 'Master Plans for Development.' http://www.unfpa.org/public/home/sitemap/icpd/International-Conference-on-Population-and-Development/ICPD-Summary

———. 2013b. 'Improving Reproductive Health.' https://www.unfpa.org/rh/

United Nations. 2009. 'World Population Ageing 2009.' ESA/P/WP/212, United Nations, New York. http://www.un.org/esa/population/publications/WPA2009/WPA2009_WorkingPaper.pdf

———. 2010. *Human Development Report 2010.* New York: United Nations Development Programme. http://hdr.undp.org/sitesdefault/files/reports/270/hdr_2010_en_complete_reprint.pdf

———. 2012. 'World Urbanization Prospects: The 2011 Revision.' http://esa.un.org/unup/pdf/WUP2011_Highlights.pdf

———. 2013. 'Human Development Report 2013, Complete.' http://hdr.undp.org/en/media/HDR_2013_EN_complete.pdf

———. N. d. 'Guidelines on Women's Empowerment.' http://www.un.org/popin/unfpa/taskforce/guide/iatfwemp.gdl.html

Watson, D., F. Pichler, and C. Waallace. 2010. *Subjective Well-being in Europe: Secound European Quality of Life Survey.* Luxenburg: Office for Offical Publications of European Communities.

Wiechetek, L., and N. Trunk Širca. 2014. 'Enterpreneurs' Expectations and Students' Competencies According to the First Stage of the Synergy Project Evaluation.' *International Journal of Management, Knowledge and Learning* 3 (1): 101–123.

World Bank. 2012. *Gender Equality and Development.* Washington, DC: World Bank. Http://siteresources.worldbank.org/INTWDR2012/Resources/7778105-1299699968583/7786210-1315936222006/Complete-Report.pdf

World by Map. N. d. 'Median Age.' http://world.bymap.org/MedianAge.html

World Health Organisation. N. d. 'Health Financing.' http://www.who.int/trade/glossary/story047/en/