

San Antonio: Texas, USA

2014 Applied Demography Conference January 8-10, 2014

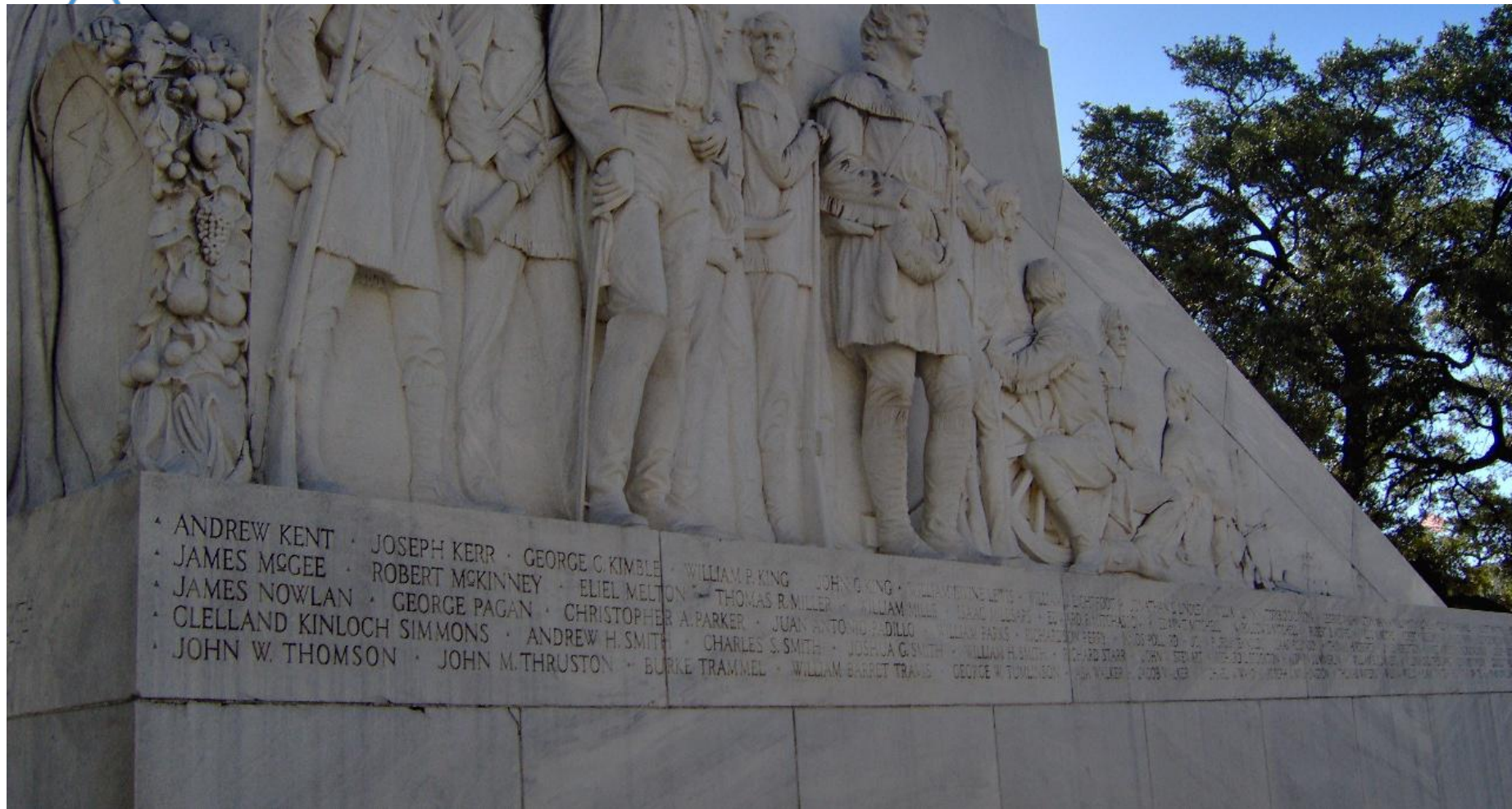
San Antonio je sedmým nejlidnatějším městem v USA a druhým v Texasu. Žije zde asi 1,8 milionu obyvatel, na ploše 1067 km².

Je zde největší základna amerického letectva **Lackland Air Force Base**. Školí se tu letečtí specialisté z celého NATO, včetně České republiky.



Pevnost Alamo je svědkem bitvy Američanů o Texas

189 mužů, většinou dobrovolníků, bránila po dobu 13 dní pevnost proti přesile 4000 vojáků mexického generála Antonia Lópeze de Santa Any, jenž usiloval o připojení Texasu k Mexiku.



Památník Alamo

1836 byla bývalá missie Alamo obsazena posádkou 189 mužů, kteří se po třináct dní bránili nekolikatisícové přesile mexických jednotek



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Svatý Antonín: San Antonio

Město je pojmenováno **po svatém Antonínu Peduánském**, který má svátek 13.6., v den, kdy se zde zastavila v roce 1692 španělská expedice.

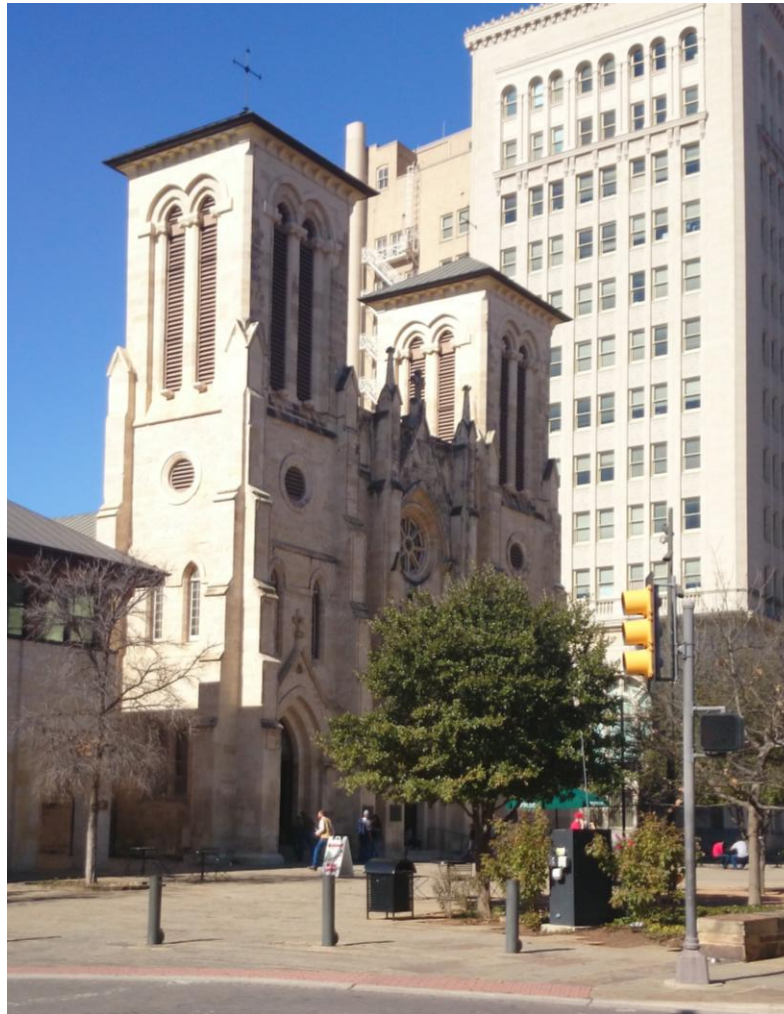


River Walk:

Nachází se zde spousta obchodů, barů i restaurací.



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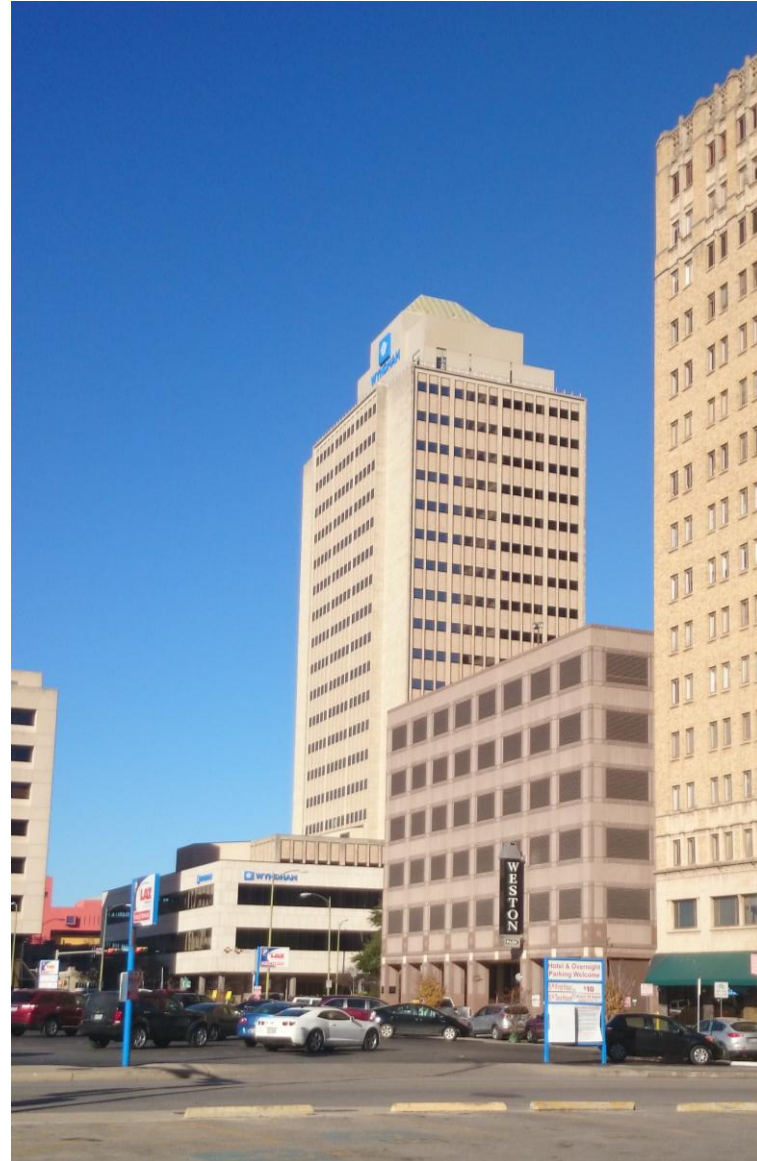


Cathedral of San Fernando:

Jméno podle Ferdinanda III Kastilského. Katedrálu postavili přistěhovalci z Kanárských ostrovů (1750) a proto je vevnitř obrázek Madony Candelarijské (Virgin of Candelaria), patronky Kanárských ostrovů.

Wyndham San Antonio Riverwalk hotel:

Among grand décor, this business hotel also boasts 37,000 square feet of flexible event and conference space, ideal for professional meetings and retreats, formal meals, cocktail parties and much more. .



Session Schedule at a Glance:

Wednesday, January 8, 2014				
4:00 p.m. – 7:30 p.m.	CONFERENCE REGISTRATION <i>San Antonio & Executive Foyers (3rd Floor)</i>			
6:30 p.m. – 8:00 p.m.	WELCOMING RECEPTION <i>San Antonio Ballroom (3rd Floor)</i>			
Thursday, January 9, 2014				
7:00 a.m. – 3:00 p.m.	CONFERENCE REGISTRATION <i>San Antonio & Executive Foyers (3rd Floor)</i>			
7:00 a.m. – 8:00 a.m.	CONTINENTAL BREAKFAST <i>San Antonio Ballroom Foyer (3rd Floor)</i>			
8:00 a.m. – 9:10 a.m.	WELCOMING SESSION <i>San Antonio Ballroom (3rd Floor)</i> Welcome: Lloyd Potter, Joachim Singelmann, Rogelio Saenz			
9:15 a.m. – 10:30 a.m.	SESSION 1A	SESSION 1B	SESSION 1C	SESSION 1D
	Elderly Survival and Mortality Issues (3)	Projecting School District Enrollments for Staffing, Budgets, and Classrooms (3)	Immigration and International Demography (3)	Census Bureau Estimates and Projections (Discussion Panel)
10:30 a.m. – 12:00 p.m.	SESSION 2A	SESSION 2B	SESSION 2C	SESSION 2D
	Topics Concerning Children and Youth (4)	Aging and Healthcare Studies (4)	Projections: Methods and Examples (4)	School Demography (4)

Thursday, January 9, 2014

San Antonio Ballroom

Keynote Address

“What's changing the world? Challenges of Health and Demography”

Keynote Speaker: Wendy Baldwin - President and CEO of the Population Reference Bureau

1:30 p.m. – 3:00 p.m.	SESSION 3A	SESSION 3B	SESSION 3C	SESSION 3D
	Race and Ethnicity Issues (3)	Education and Training Topics (4)	Poverty and Socioeconomic Studies (3)	Estimates: Special Topics (3)
20 Minute Networking Break				
3:20 p.m. – 4:50 p.m.	SESSION 4A	SESSION 4B	SESSION 4C	SESSION 4D
	Health Care and Public Health: Mortality and Care Issues (3)	Immigration Studies (3)	Spatial Analysis: Studies and Special Topics (3)	Projection Studies (4)
4:50 p.m. – 5:30 p.m.	Adjourn Presentation Sessions – Break			
5:30 p.m. – 6:30 p.m.	POSTER SESSION (11 participants)			

Friday, January 10, 2014

7:00 a.m. – 9:00 a.m.	CONFERENCE REGISTRATION <i>San Antonio & Executive Foyers (3rd Floor)</i>		
7:30 a.m. – 8:40 a.m.	CONTINENTAL BREAKFAST <i>San Antonio Ballroom</i> Keynote Address “Advances in population projection methods and their implications for the future” Keynote Speaker: Hania Zlotnik - Retired Director, Population Division, United Nations, Department of Economics and Social Affairs		
8:50 – 10:20 a.m.	SESSION 5A	SESSION 5B	SESSION 5C
	Data Collection Methods (3)	Healthcare and Public Health (4)	Population Change: Methods and Studies (3)
20 Minute Networking Break			
10:30 – 12:00 a.m.	SESSION 6A	SESSION 6B	SESSION 6C
	Health Care and Public Health: Insurance and Cost Issues (4)	Research Using Restricted Data in Census Research Data Centers (Discussion Panel)	Government Statistics: Evaluations and Studies (3)
12:00 – 1:30 p.m.	LUNCH <i>Participants - on your own</i>		
1:30 – 3:00 p.m.	SESSION 7A	SESSION 7B	SESSION 7C
	Special Topics in Demographics (3)	Environment and Natural Resources Topics (2)	Government Statistics and Data Use (3)
3:00 p.m.	CONFERENCE ADJOURNMENT		



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Potential reduction in mortality associated with the shifts of population educational structures in the Czech Republic

Jitka Rychtaříková

Klára Hulíková

9. 1. 2014

*Applied Demography Conference,
San Antonio, Texas, USA 8.1.- 10.1.2014*

Outline

- Long term mortality trends in the Czech Republic 1920-2012.
- Mortality differentials according to education level in selected countries in 2010.
- Three model scenarios in the Czech Republic 2009-2012 based on ${}_{50}e_{30}$ will show the impact of shifts in education (in structure or rates) on temporary life expectancy between ages 30 and 80.

Population structure and death rates by gender, age and education from 2009-2012

Change in population structure according to education level

Change in death rates according to education level

- Summary

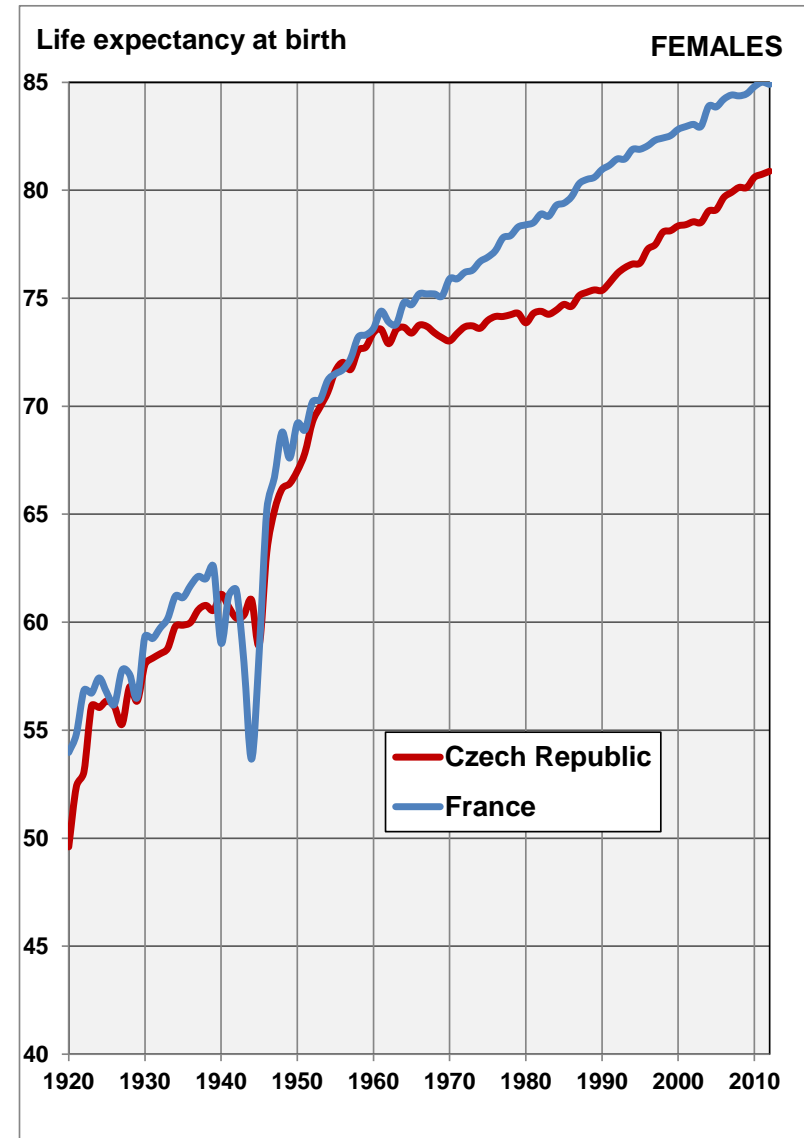
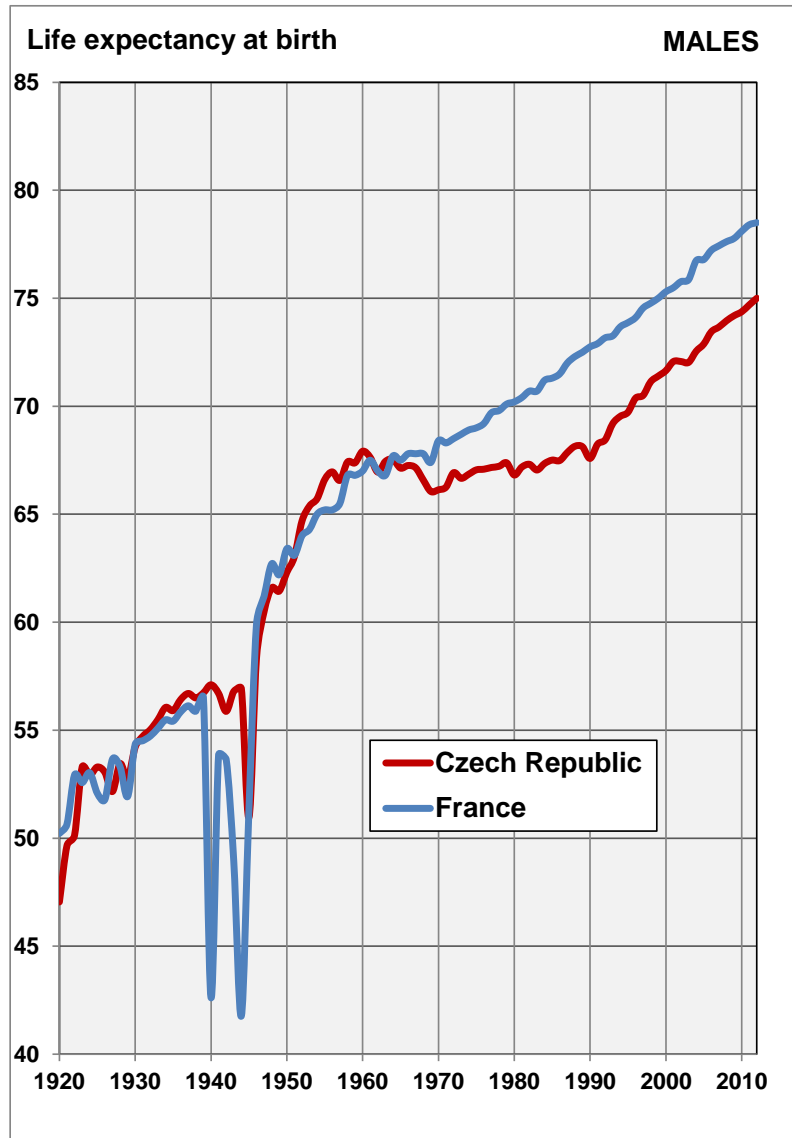
Educational inequalities in mortality are large in Central and Eastern Europe. Mortality levels are particularly high among low educated men as well as women in the Czech Republic. However, differences in male mortality by educational attainment exceed those of females.

Two particular mortality patterns are apparent when dividing the Czech classification of education into four categories - basic, vocational, secondary, and university.

Males with basic education experience much higher mortality when compared with their higher educated counterparts and an anomaly in the mortality gradient is observed among women when comparing basic and vocational education. Women with basic education show rather lower mortality level compared to their vocational counterparts.

Long term trends of life expectancy at birth in the Czech Republic and France 1920-2012

e_0 (males; females) 2012 : CR 75.0; 80.9; FR 78.5; 84.9



Factors behind long term mortality trends

- From the beginning of the 20th century into the interwar period, the mean length of life increased and male and female survival in the Czech Republic was close to the levels observed in France.
- During the post-war period (the 1950s), life expectancy at birth increased rapidly in the Czech Republic. This significant decline in Czech mortality was due to a quick development of a health care system that covered the entire population with basic but comprehensive health services.
- From the mid-1960s to the mid-1980s, the gap in life expectancy between the Czech Republic and France began to widen due to to an “epidemic” of heart diseases.
- Health conditions slightly improved in the Czech Republic in the end of the 1980s. However, the delay of the Czech Republic in the reduction of mortality rate compared to France did not diminish and life expectancy at birth followed an almost parallel trend in both countries.



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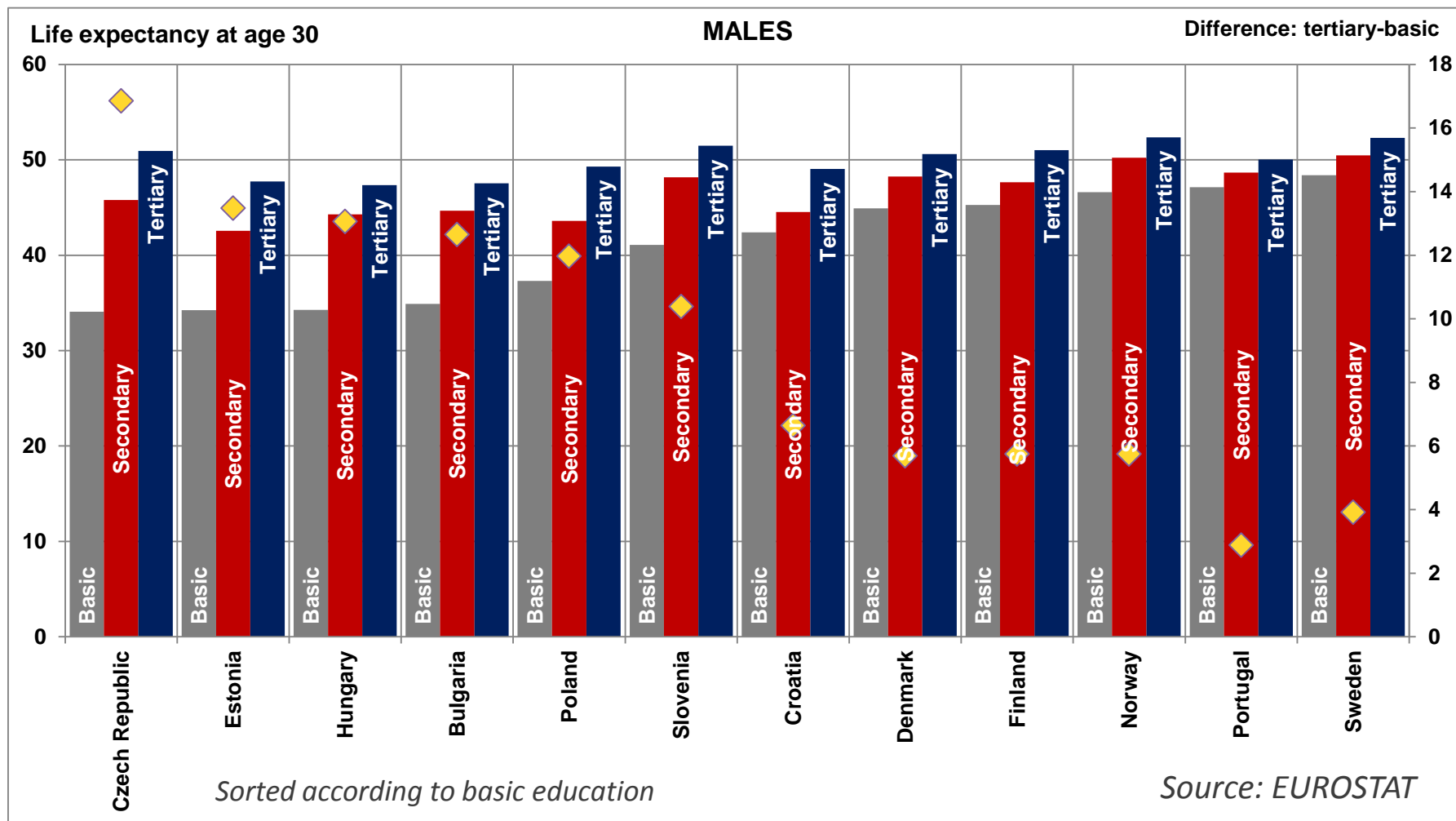
Basic=Pre-primary, primary and lower secondary education (levels 0-2)

Secondary=Upper secondary and post-secondary non-tertiary education (levels 3 and 4)

Tertiary=First and second stage of tertiary education (levels 5 and 6)

MALES

Life expectancy at age of 30 according to education level in 2010



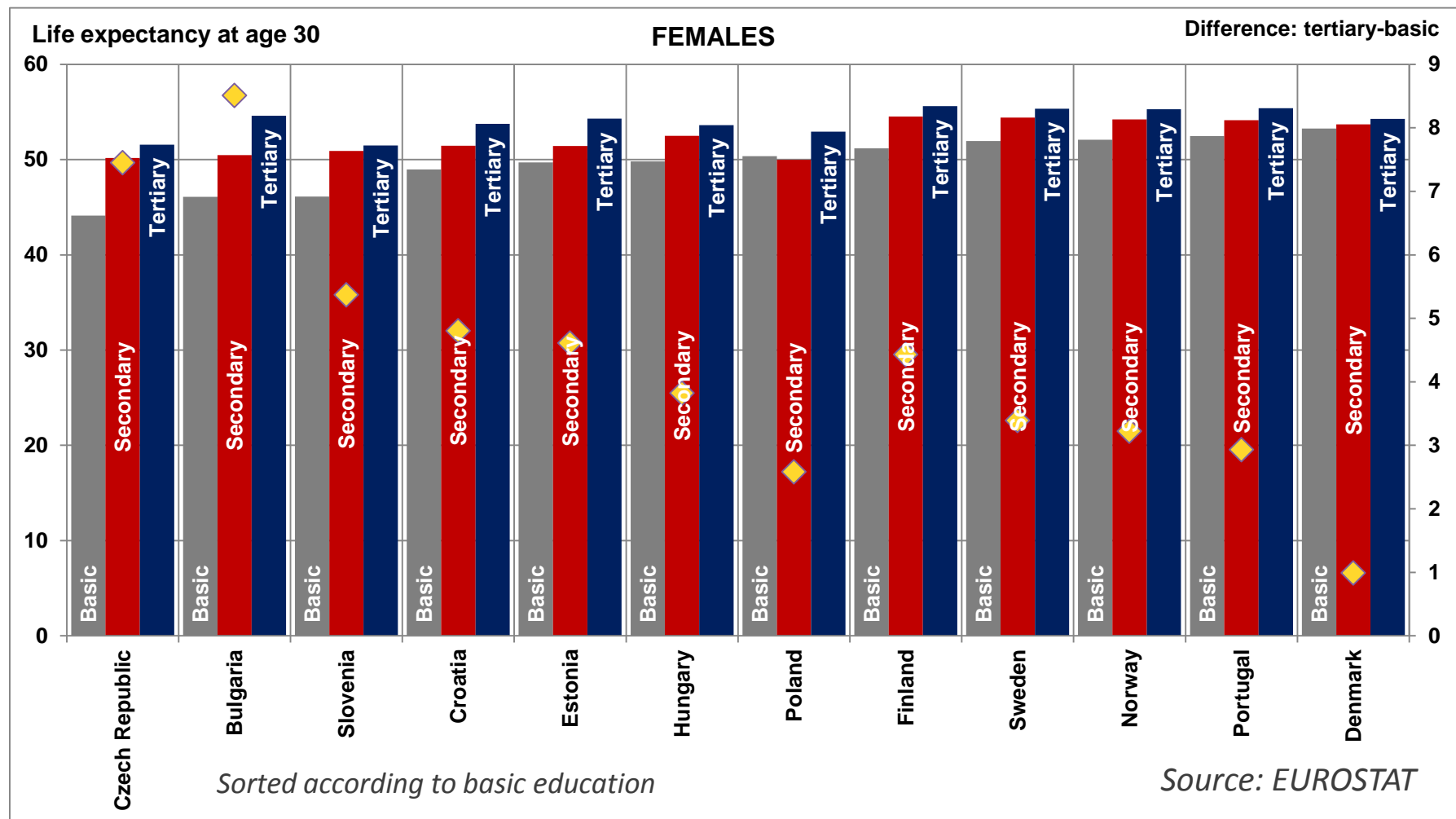
Basic=Pre-primary, primary and lower secondary education (levels 0-2)

Secondary=Upper secondary and post-secondary non-tertiary education (levels 3 and 4)

Tertiary=First and second stage of tertiary education (levels 5 and 6)

FEMALES

Life expectancy at age 30 according to education level in 2010



The Czech Republic shows a rather short life expectancy at age 30 for males and females with the lowest education even when compared with countries of higher mortality (Estonia, Hungary, Bulgaria).

The difference between life expectancy at 30 of people with the highest and the lowest educational attainment reaches 16.9 years among Czech men compared to 2.9 years in Portugal or 3.9 in Sweden.

Czech women with just a basic education, experience a less favorable survival time. The gap in mortality between the highest and the lowest education level is the second high (7.5), after Bulgarian one (8.5).

Therefore, it would be interesting to see how different scenarios impact total life expectancy based on shifting age structure or death rates towards higher educational levels.

Our study will address the age group 30-79 (age last birthday) using temporary life expectancy between exact ages 30 and 80.



Temporary Life Expectancy

Eduardo. E. Arriaga: Measuring and Explaining the Change in Life Expectancies, Demography, 21,1984,1, p.83-96

$${}_i e_x = \frac{T_x - T_{x+i}}{l_x}$$

The temporary life expectancy from age x to $x+i$ is the average number of years that a group of persons alive at exact age x will live from age x to $x+i$ years.

Life Table of the Czech Republic for Males in 2012:

$$T_{30} = 4\,519\,070; \quad T_{80} = 297\,187; \quad l_{30} = 98\,580;$$

$${}_{50}e_{30} = \frac{4\,519\,070 - 297\,187}{98\,580} = 42.83$$

Czech Republic 2012: ${}_{50}e_{30}$: males 42.83; females 46.25

The purpose of the study is to present three scenarios that will show how shifts towards a higher education contribute to the change in mortality level. Temporary life expectancies between ages 30 and 80 for males and females will be estimated for three scenarios:

- a) population structure by sex, age and education will remain the same as from the census 2011;
- b) 60 % of males having the basic education will move into the next higher category (vocational) and 60 % of women with basic and vocational education will move into the secondary education;
- c) sex age education-specific mortality rates will be shifted upwards by one level (basic=vocational, vocational=secondary, secondary=university, $\text{new_university} = 0.80 * \text{university}$). The proposed scenarios will show the impact of changes in education on temporary life expectancy and thus help in decision-making strategies.

Data

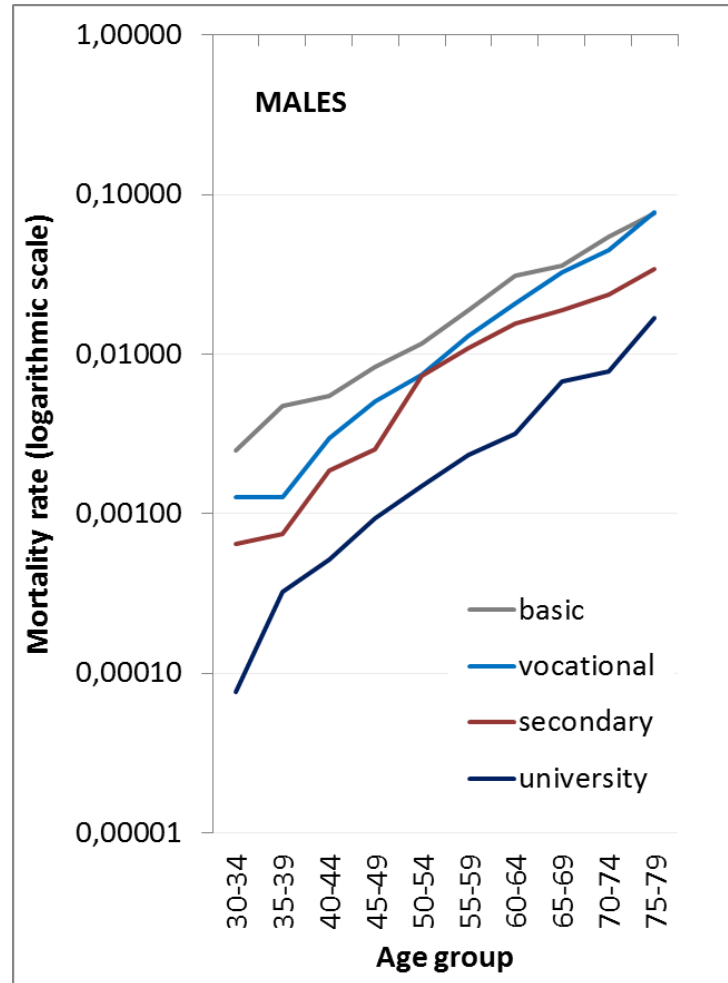
- Age-specific mortality rates according to education attainment calculated as an average from the years 2009–2012
- Population structure by gender, age and education (census 2011)
 - 5 year age-groups from 30–34 to 75–79 years
 - Levels of education used in the analysis are based on ISCED codes

Level of education	Educational attainment (ISCED 97)	Educational attainment (ISCED 2011)
Basic	ISCED 2	ISCED 2 and lower
Vocational	ISCED 3C	ISCED 35
Secondary	ISCED 3A	ISCED 34
University	ISCED 5A and higher	ISCED 64 and higher

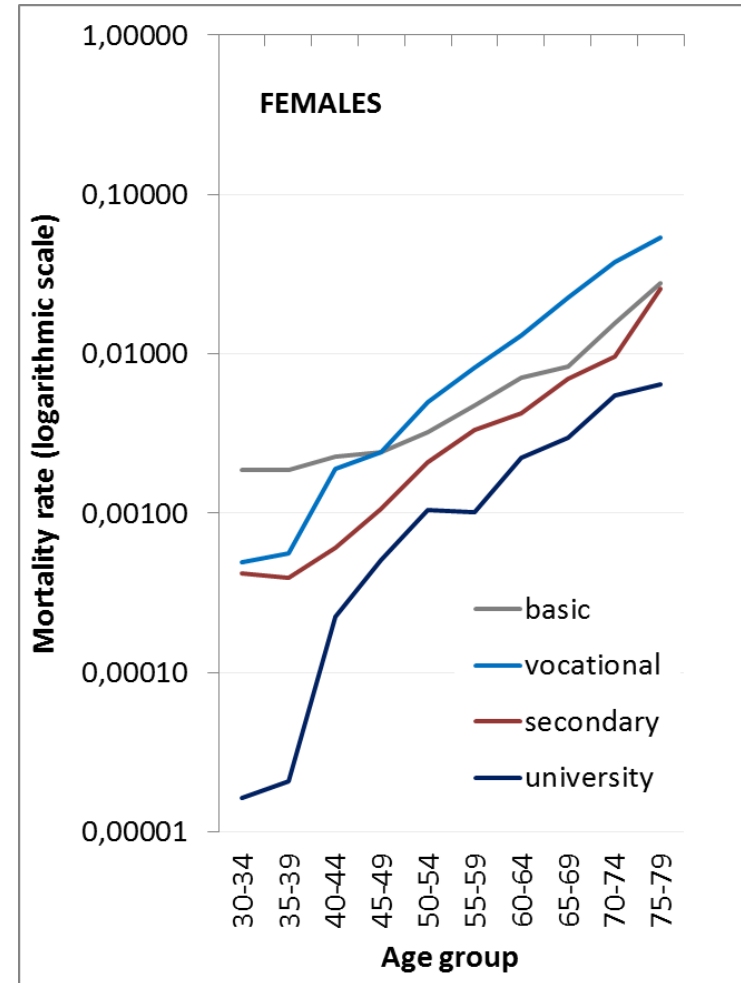


Age-specific mortality rates

Mortality rates as an average calculated from years 2009–2012



Significantly lower mortality of university graduated men

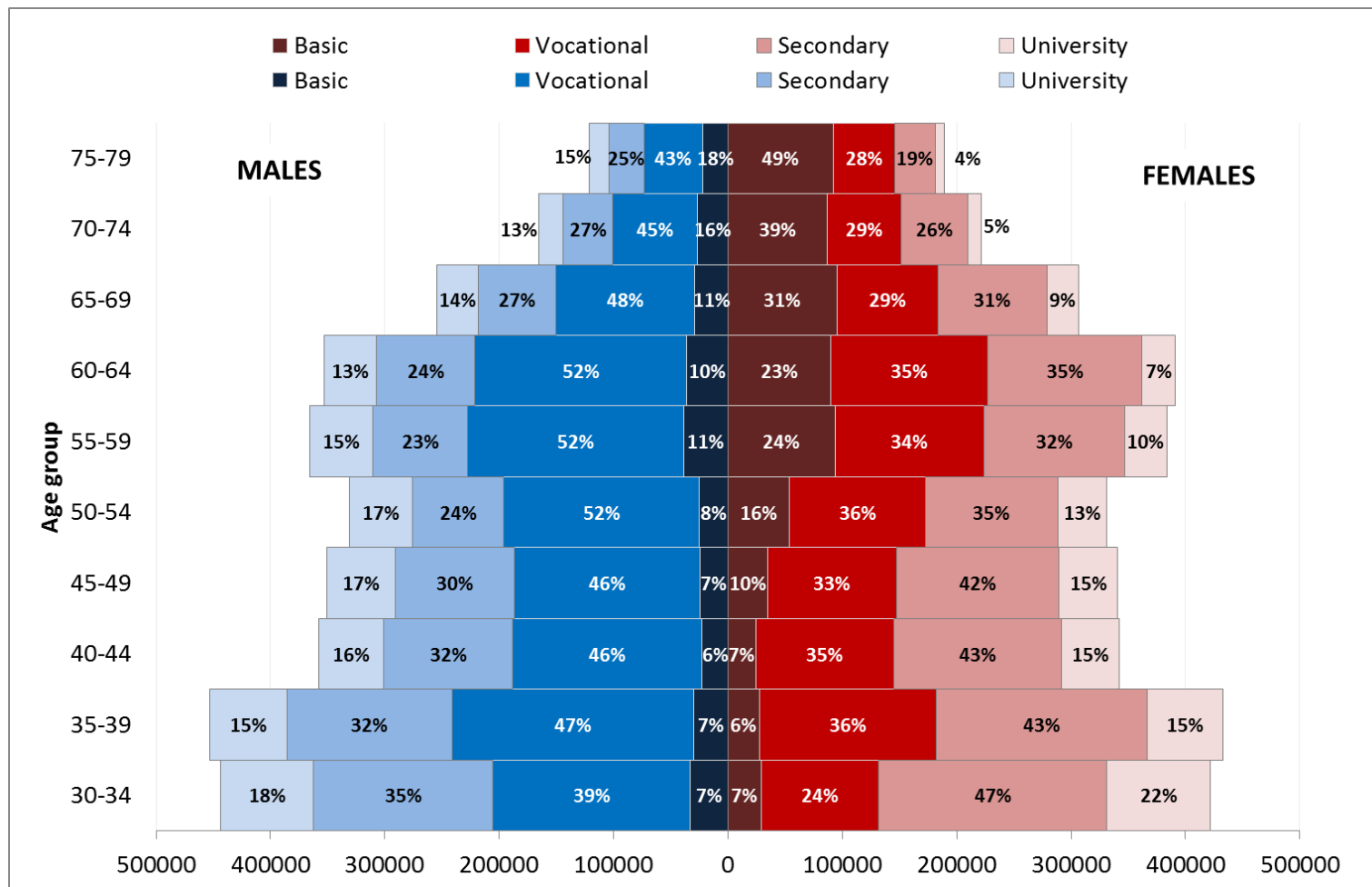


Crossover of mortality of women with basic and vocational education



Population structure of the Czech Republic

Population structure by gender, age and education (census 2011)



Description of three model scenarios to be elaborated



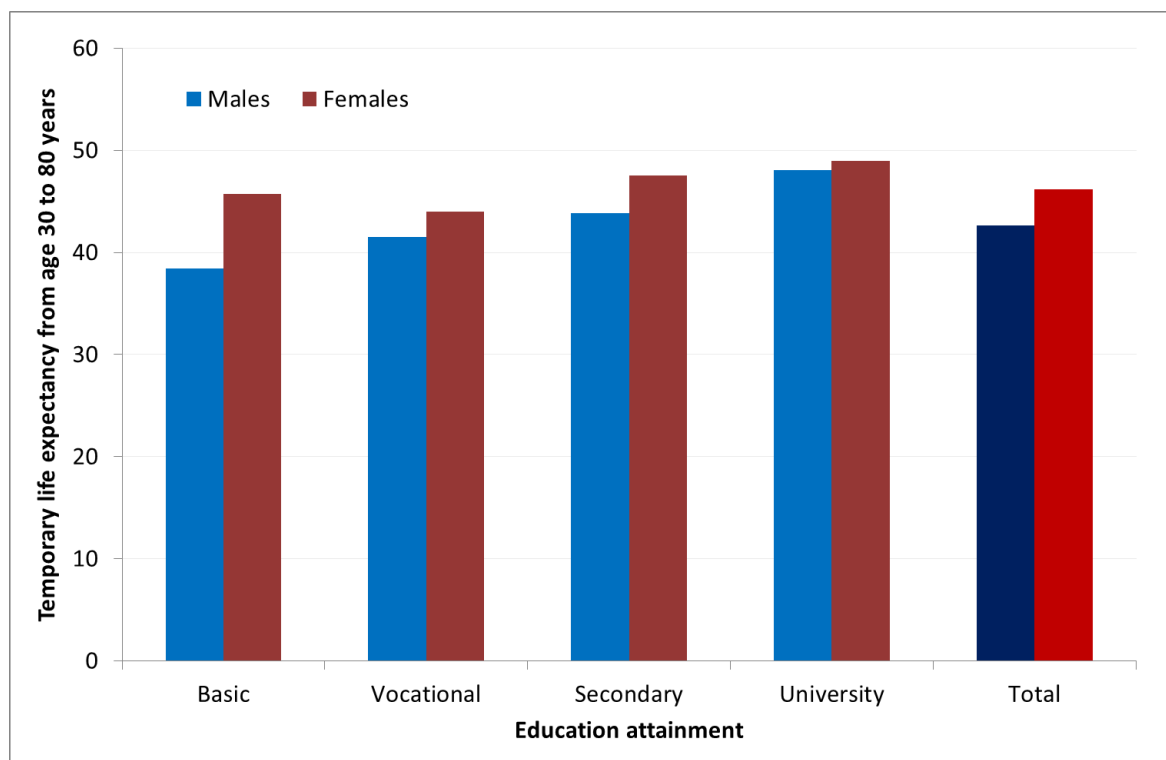
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- 1. Population structure by gender, age and education will remain the same as from the census 2011 as well as mortality rates will not change (reference output) .**
- 2. Changing population structure according to education level:**
60 % of males with basic education will move into a higher category (vocational) and 60 % of women with basic and vocational education will move into the secondary education
- 3. Changing intensity of mortality according to education level:**
gender age education-specific mortality rates will be shifted upwards by one level (basic=vocational, vocational=secondary, secondary=university, $\text{new_university} = 0.80 * \text{university}$)

The proposed scenarios will show the impact of shifts in education (in structure or rates) on temporary life expectancy between ages 30 and 80.

Scenario 1: Results

Temporary life expectancy from age 30 to 80 years

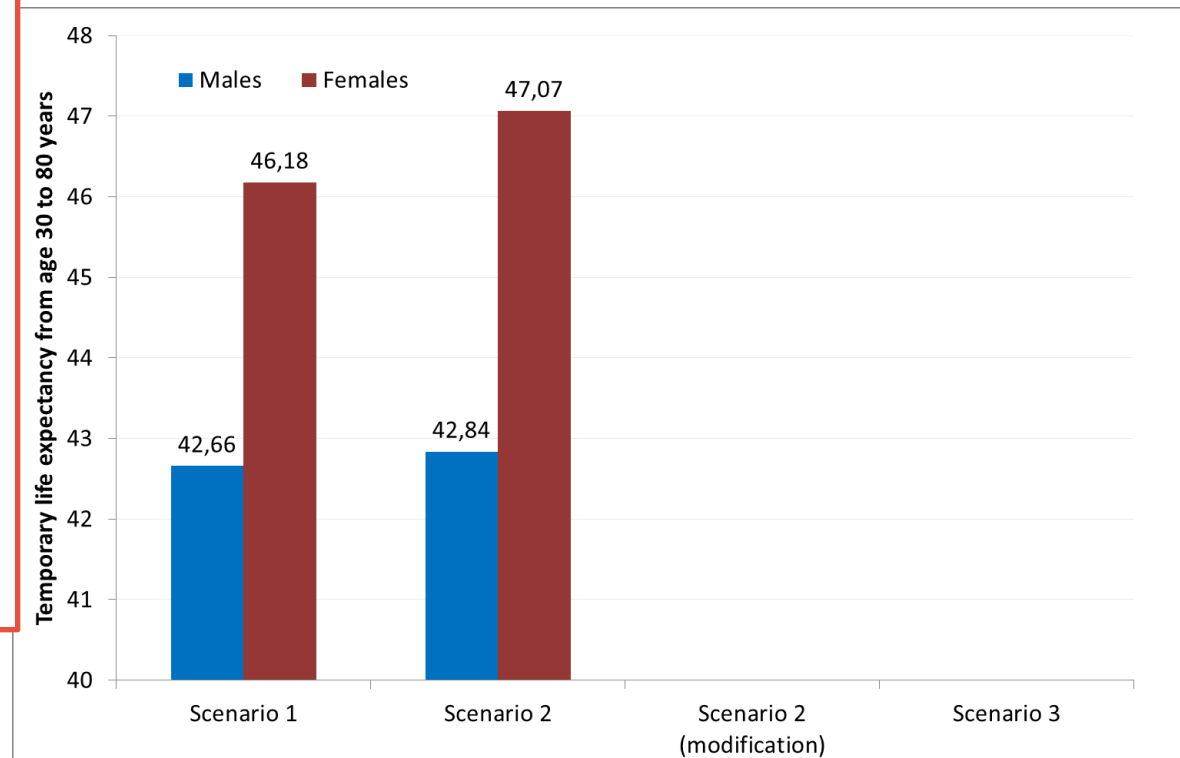


Scenario 2: Results

Temporary life expectancy from age 30 to 80

60 % of males with basic education were moved into a higher category (vocational) and

60 % of women with basic and vocational education were moved into the secondary education



Scenario 2: Results

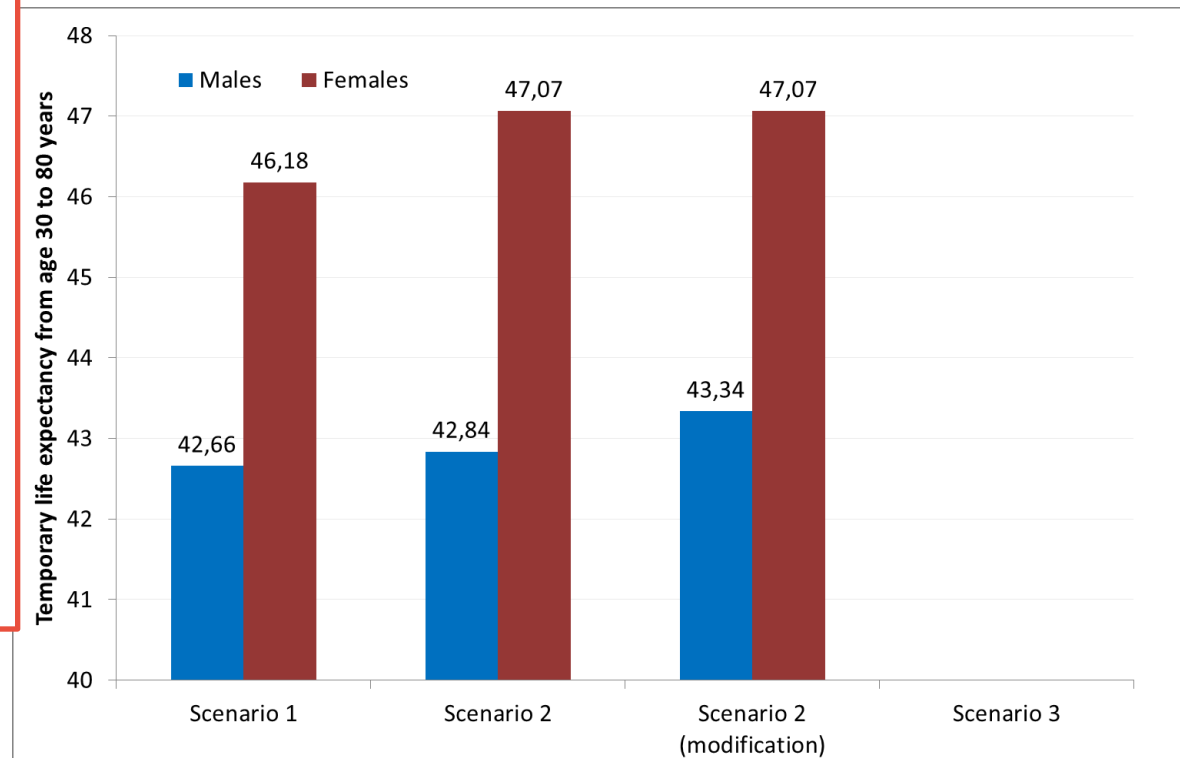
- Reduction of a small proportion of population with the lowest level of education has only a small impact on the increase of the temporary life expectancy (42.66 \rightarrow 42.84 for males)
- The impact is more significant for females, where the two less educated groups were combined and reduced (46.18 \rightarrow 47.07)

Scenario 2 - modification

- Suppose the Scenario 2 is modified for males: **60 % of males with vocational education will move towards secondary education**
- It corresponds with general trends in education attainment in the Czech Republic (general tendency towards secondary and university education)
- Moreover, vocational education is the most common nowadays in the Czech Republic

Scenario 2 – modification: Results

Temporary life expectancy from age 30 to 80



60 % of males with vocational education were moved into the secondary education and

60 % of women with basic and vocational education were moved into the secondary education

Scenario 2: Changing population structure according to education level

Scenario 2 – modification: Results

- Reduction of high proportion of population with vocational education has a more significant impact on the increase of the temporary life expectancy (42.66 → 43.34 for males)
- **In the Czech Republic, it is possible to expect a growth in life expectancy caused by the ongoing change in education structure**

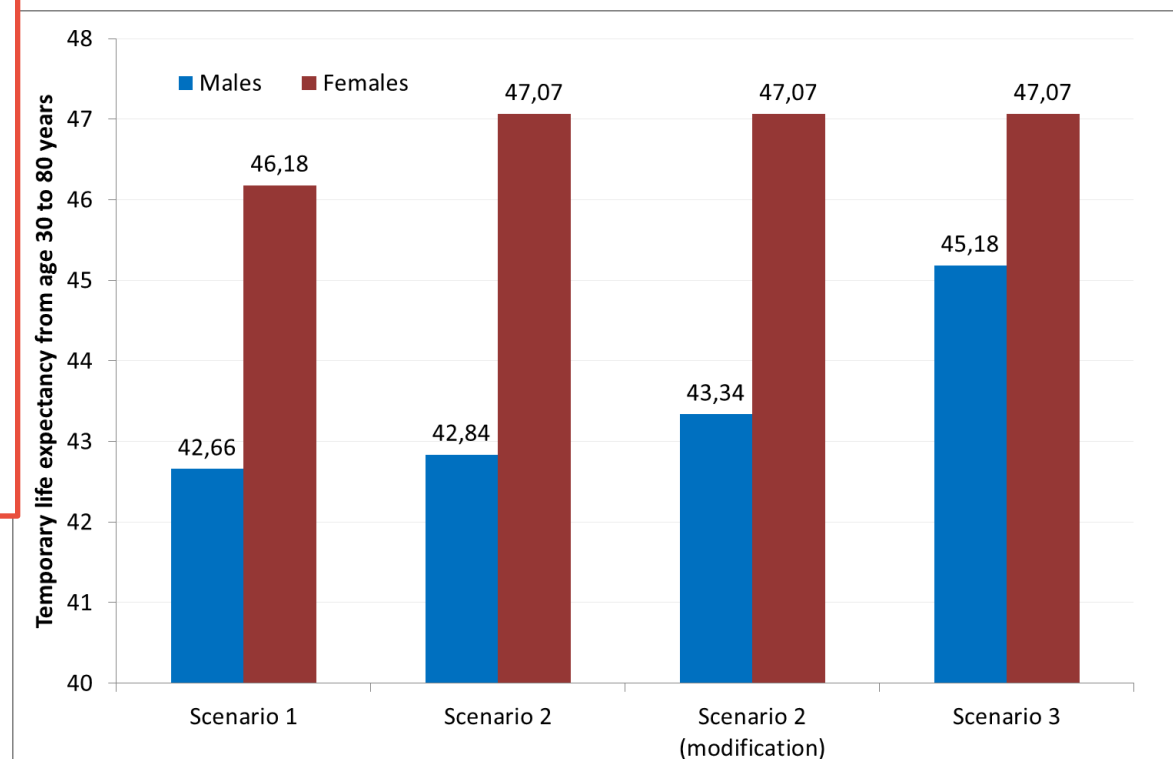
Scenario 3

- **Changing mortality rates according to education level**
- Gender age education-specific mortality rates will be shifted upwards by one level (basic=vocational, vocational=secondary, secondary=university, $\text{new_university} = 0.80 * \text{university}$)
- This corresponds with the overall trend of mortality decrease in the Czech Republic

Scenario 3: Results

Temporary life expectancy from age 30 to 80

gender age education-
specific mortality rates
are shifted upwards by
one level
(basic=vocational,
vocational=secondary,
secondary=university,
new_university=0.80*
university)



Scenario 3: Results

- The significant increase of temporary life expectancy for males is caused above all by shifting mortality rates towards lower levels, primarily those of males with secondary education
- For females the effect of the shift of mortality rates is the same as the effect of the shift in population structure according to education

Summary

- In recent years, the population of the Czech Republic experienced two phenomena: **increase in the share of higher educated people and a significant decline in mortality; therefore we can expect further increase of the temporary life expectancy of the Czech population**
- It was shown that a decrease of the proportion of population with the lowest education would lead to only a small increase in temporary life expectancy. This is due to the impact of the small weight of this education group in the total population.
- However, it is clear, that even a small sub-group of the population matters and is worth considering when looking at the overall mortality level.



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Thank you for your attention

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