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UNDERSTANDING SUICIDAL IDEATION AMONG ADOLESCENTS OF NORTH EAST INDIA THROUGH THE LENS OF DEMOGRAPHIC FACTORS

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Abstract

This paper attempts to identify the demographic variables that are related to suicidal ideation among adolescents in Tripura, India. Although the current literature points a grim picture of the suicide rate worldwide and in India as well, there is insufficient research in this area in India, especially in Tripura. Adding to the small body of research on suicidal ideation, the current study was conducted on a sample of 500 adolescents aged between 16 and 18 years (266 boys and 234 girls). The study found a high suicidal ideation rate of 9.6% among adolescents in Tripura, India. The gender, area of residence, substance use, and family environment of adolescents were found to have an effect on suicidal ideation. The highest rate of suicidal ideation was observed among boys (i.e. male gender), adolescents residing in urban areas, substance users, and adolescents living in a non-peaceful family environment. Community, the number of children in the family, family type, and family income were not significantly associated with suicidal ideation. Despite this, high suicidal ideation was reported by non-tribal persons, people who were an only child, nuclear families, and adolescents with a family income of 11 000 – 20 000 INR (Indian Rupees) per month.

Keywords: suicidal ideation; suicide; demographic variables; adolescents

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INTRODUCTION

Suicide: The World Scenario

Suicide as a serious social and mental health issue has concerned Indian society for decades. Suicide is a deliberate way of ending one's own life that can occur at any point of time (Kim *et al.*, 2019). It is a misfortune that not only affects the communities and the country in the long run, but also the families that are left behind. WHO data show that one person commits suicide every 40 seconds worldwide.

Suicide is a global phenomenon that transpires not only in high-income countries but other countries around the world too. Over 77% of worldwide suicides occur in low and middle-income countries (Gupta – Basera, 2019; WHO, 2021b). Females have the highest suicide rate in lower-middle income countries, whereas the highest suicide rate of males is in high-income countries in comparison to other income countries. However, high income countries have the highest suicide rates when ages are standardised. According

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Table 1 The Crude Suicide Rate (per 100,000 population) globally and other regions

Regional Divisions	Global	Europe	South-East Asia	America	Western Pacific	Africa	Eastern Mediterranean
Crude Suicide Rate	9.00	12.76	10.07	9.64	8.73	6.90	5.85

Source: Global Health Observatory Data Repository, World Health Organization (2021).

Table 2 The suicide rate in India and Tripura between 2016 and 2020

	2016	2017	2018	2019	2020
India	10.3	9.9	10.2	10.4	11.3
Tripura	17.6	17.7	18.2	18.2	20.9

Source: National Crime Report Bureau, 2021.

to WHO (2021a), suicide is the second major cause of death among youths in the age group of 15–29-year-olds in both genders. It is the second and third leading cause of death among females and males in this age group. Among adolescents (15 to 19 years), suicide is the fourth highest cause of death globally. According to WHO (2021), the crude suicide rate (i.e., the number of suicide deaths in a year, divided by the population and multiplied by 100 000) is increasing worldwide. The figures are given below in Table 1.

Suicide in India

The scenario of suicide cases in India is similarly grim. The National Crime Records Bureau (NCRB, 2020) reported that there was a 10% hike in suicide cases in 2020 from the preceding year. Suicide deaths resulting from the common methods of hanging and poisoning rose from 78.3% to 82.8% in 2020. Suicide rates are increasing rapidly year after year. Tripura is a small hilly state in the north-eastern part of India and is surrounded by Bangladesh on three sides. It is a place with a diverse mixture of different cultures, communities, and religions. Being such a small state in the remotest part of the country, the suicide rates in Tripura are increasing rapidly as well. Tripura ranks 8th among all the states and union territories of India for its suicide rate. Tripura also has the 2nd highest suicide rate among the eight north-eastern states. The suicide incidence and rate over the years between 2016 and 2020 in India and Tripura is presented in Table 2.

The numbers (in Table 2) show the dire situation of suicide and mental health in India and Tripura. The suicide rate is calculated as the total number

of suicides in a given year divided by the mid-year projected population (counted in million). The suicide rate in Tripura has always been higher than the national average rate. Out of the total number of suicides, 11,396 were children (under the age of 18) in 2020, which is 18% and 21% more than the number of suicide deaths among children in 2019 and 2018, respectively (NCRB, 2020). This number suggests that there are 31 suicide deaths every day among children. According to Swain *et al.* (2021), suicide is the third and fourth leading cause of death among adolescent girls and boys, respectively.

Several studies have reported a rise in suicide cases among adolescents across countries, including India, especially since the COVID-19 pandemic started (Chen *et al.*, 2022; Kim *et al.*, 2022). Numerous demographic, interpersonal, and family-related factors have been identified that play a decisive role in the suicidal attempts among adolescents (Gunduz *et al.*, 2016). Demographic differences in gender, race, ethnicity, the area a person lives in (Bell *et al.*, 2020), as well as psychological distress, depression, hopelessness (Lew *et al.*, 2019), bullying and a history of substance abuse have been found to play a very important role in the suicide attempts among adolescents (Kim, 2021; Romanelli, 2022). A study conducted on suicide cases in Tripura showed that 34.40% of people who committed suicide were in the 15–24 age group (Bhattacharjee, 2011).

Suicidal ideation has been found to be an important predictor of suicide among youths in several recent studies (Liu *et al.*, 2020; Morese – Longobardi, 2020). Suicidal ideation is the amalgamation of suicidal

thoughts and wishes that later develop into suicidal attempts among adolescents (O'Connor – Nock, 2014). Hence it is needed to study the suicidal ideation of adolescents in relation to their demographic characteristics in order to design interventions to prevent self-harm behaviour and suicide among adolescents.

Suicide and Suicidal Ideation

Suicide is an act where one hurts oneself with the intention to end one's life. However, suicide is usually preceded by suicidal ideation, intent, and plans (Silverman – Berman, 2014). Several recent studies have reported that mental health issues like depression, anxiety, substance use disorders, eating disorders, etc., are strongly associated with suicidal ideation (Bachmann, 2018; Brådvik, 2018). According to the three-step theory of suicide (Klonsky – May, 2015), there are several sociodemographic factors that can lead to people feeling pain (emotional) and hopelessness in life. These two combines to bring about suicidal ideation. But if suicidal ideation prevents connectedness to other people or roles in life, then it can push a person to end his/her life, i.e., to attempt suicide. The concept of suicidal ideation has been studied for many decades. Suicidal ideation is considered the initial stage in a progression towards more serious suicidal behaviours (Linehan – Nielsen, 1981).

Suicidal ideation is crucial for identifying and predicting youth suicide, which is in turn key to preventing suicidal behaviour among youths. It is a broad term used to describe a range of passive thoughts, wishes, and ideas about death, as well as active thoughts and planning about ending one's life, including the how, when, and where of an act of suicide (Harmer et al., 2022; Reynolds, 1988).

Suicidal ideation seems to lead to self-harming behaviour and can ultimately lead to the act of suicide (Klonsky et al., 2016; Large et al., 2021). Nock et al. (2008) found the global prevalence rate of suicidal ideation, plans, and attempts to be 9.2%, 3.1%, and 2.7%, respectively. Recent studies show a higher rate of these phenomena. The global prevalence of suicidal ideation ranged between 7.6% to 24.9%. Suicidal ideation seems to be most prevalent among the youngest population (Cheung et al., 2021).

A study conducted in 82 countries (Biswas et al., 2020) reported a cross-national 12-month prevalence (percentage of reported suicidal ideation in the last 12 months) of suicidal ideation to be 9.2% among adolescents (12–17 years).

In India the 12-month and lifetime prevalence of suicidal ideation was found to be 12.5% and 20%, respectively, which is quite high (Singh et al., 2021). In a study conducted in Shimla, India, 37.8% of adolescents aged between 16 to 19 years were found to have suicidal ideation (Thakur et al., 2015). According to the NCRB (2021), suicide is quite common among lower and upper secondary school students in India. It increased in 2020 from 7.4% to 8.2%.

Despite such high rates, very few studies have been conducted in India and none in Tripura to examine suicidal ideation among adolescents, especially in relation to demographic profiles. Several past theories and studies have also reported how demographics (like age, gender, ethnicity, education level, etc.) can predict suicidal ideation and behaviours among the population and can help to curb suicide deaths (Huang et al., 2017; Shneidman, 1993).

It is very clear that suicidal ideation is the amalgamation of suicidal thoughts and wishes, which can trigger adolescents to commit suicide. It is therefore very important to understand the nature of suicidal ideation and how it is related to the increasing suicide rate. Thus, it is a dire necessity of current times to determine the demographic factors responsible for suicidal ideation. Hence, the current paper is an attempt to gather more knowledge about suicidal ideation among adolescents in India and especially in Tripura.

Objectives

- 1) To examine the prevalence of suicidal ideation among adolescents in Tripura, a state in north-east India.
- 2) To determine how demographic variables are associated with suicidal ideation among adolescents in Tripura.

METHODS

Sample

The sample consisted of 500 adolescents from Tripura, a small hilly state in India. There were 266 boys

and 234 girls in the sample. The age of the participants ranged from 16 to 18 years and the mean age was 17.3. According to the American Psychological Association (APA, 2002), adolescents are considered to fall between the ages of 10 to 19 years. The age group of 15 to 19 years is considered late adolescence, which is the population that is the focus of the current study. Taking into account its age structure, India can be considered a youthful country, as, according to the most recent census in 2011 (*ORGI & UNFA*, 2014), there are 253 million adolescents (aged 10–19 years) in the country, which accounts for 20.9% of its total population. These numbers suggest that at least one-fifth of the world's adolescent population resides in India alone. According to the report, there are 0.73 million adolescents (10–19 years) in Tripura, which accounts for approximately 0.32% and 19.9% of the total population in India and in Tripura, respectively. These figures present a clear picture of how huge the youth population of India is, and yet a large proportion of them suffer from mental health issues, especially suicidal ideation and self-harm behaviours.

The participants in the study had a diverse demographic profile and all of them were currently studying and residing in the state of Tripura only. One vital inclusion criterion was that all the participants had to be students in the 9th to 12th grades, and they were fluent in the English language. A random sampling technique was used to select the participants for the present study.

Materials used

A basic information schedule was prepared to collect all the necessary demographic information from the participants. The Suicidal Ideation Questionnaire (SIQ) (*Reynolds*, 1988) was administered to assess suicidal ideation among the adolescent participants. The questionnaire is a 30-item battery of questions that assess the frequency and intensity of suicidal thoughts and wishes measured on a 7-point scale, where the score ranges from 0 (I never had this thought) to 6 (I have this thought almost every day), with a reliability coefficient of 0.97, which is highly reliable. The responses were then added to get a total score, which signifies the intensity of the suicidal ideation, endorsed by the participants. Total scores ranged from

0 to 180. After the scores were summed, the scores of the SIQ (Suicidal Ideation Questionnaire) were further categorised as no suicidal ideation (0–25), mild suicidal ideation (25 to 55), moderate suicidal ideation (55 to 75), and high suicidal ideation (75 to 180).

Procedure

A proper rapport was established with participants, who were informed of the objectives of the study. The ethical norms of research were followed during the data collection. Rest was allowed for in the course of data collection to avoid fatigue. Data were collected from those who were willing to participate. In total, 560 adolescents were approached for data collection, out of which 20 adolescents were unwilling to participate, while the response sheets of 40 adolescents were discarded because the information was incomplete. Thus, the study was ultimately conducted on 500 adolescents, with a response rate of 89.28%.

After the process of data collection, the data sheets were checked thoroughly in order to identify any gaps or discrepancies. The complete data sheets were then considered for data scoring and were categorised and tabulated. The frequencies were carefully calculated for all the demographic variables. The final scores of the participants on SIQ were then categorised into no suicidal ideation, mild suicidal ideation, moderate suicidal ideation, and high suicidal ideation. The Chi-square test and Fisher's exact test (for variables that could not fulfil the assumption of Chi-square) were then computed to determine the association between different demographic strata. Further, the contingency coefficient was computed to determine the association between suicidal ideation and the demographic variables. All the statistical analyses were done in IBM SPSS v26. Then the discussion and conclusions were accordingly prepared based on the findings.

RESULTS

As Table 3 shows, only 129 (25.8%) respondents had no suicidal ideation, whereas 223 (44.6%) and 100 (20%) respondents had mild and moderate suicidal ideation. However, 9.6% (48) of adolescents were found to have high suicidal ideation. This is the first study of its kind in Tripura, and the numbers are quite

high when compared to the prevalence rate of suicidal ideation in India.

Again, analysing the demographic variables and their association with various levels of suicidal ideation from Table 3, we can see that the majority of male

participants had mild suicidal ideation (52.3%), whereas the majority of the female participants had no suicidal ideation (36.3%). However, 10.9% of boys had high suicidal ideation and 8.1% of girls had high suicidal ideation. The association tests showed that

Table 3 Frequencies of the demographic variables and their associations with suicidal ideation

Gender	Boys	Girls	Total	χ²	C
No suicidal ideation	44 16.50%	85 36.30%	129 25.80%	23.38**	.228**
Mild suicidal ideation	139 52.30%	84 35.90%	223 44.60%		
Moderate suicidal ideation	54 20.30%	46 19.70%	100 20.00%		
High suicidal ideation	29 10.90%	19 8.10%	48 9.60%		
Community	Tribal	Non-Tribal	Total	χ²	C
No suicidal ideation	58 29.60%	71 23.40%	129 25.80%	3.4	0.082
Mild suicidal ideation	81 41.30%	142 46.70%	223 44.60%		
Moderate suicidal ideation	41 20.90%	59 19.40%	100 20.00%		
High suicidal ideation	16 8.20%	32 10.50%	48 9.60%		
Area of residence	Rural	Urban	Total	χ²	C
No suicidal ideation	82 35.20%	47 17.60%	129 25.80%	20.33**	.198**
Mild suicidal ideation	92 39.50%	131 49.10%	223 44.60%		
Moderate suicidal ideation	41 17.60%	59 22.10%	100 20.00%		
High suicidal ideation	18 7.70%	30 11.20%	48 9.60%		
Substance use	Yes	No	Total	Exact	C
No suicidal ideation	2 4.30%	127 28.00%	129 25.80%	55.53**	.339**
Mild suicidal ideation	8 17.40%	215 47.40%	223 44.60%		
Moderate suicidal ideation	20 43.50%	80 17.60%	100 20.00%		
High suicidal ideation	16 34.80%	32 7.00%	48 9.60%		

Table 3

cont.

Only child	Yes	No	Total		χ^2	C
No suicidal ideation	34 24.10%	95 26.50%	129 25.80%		2.48	0.07
Mild suicidal ideation	60 42.60%	163 45.40%	223 44.60%			
Moderate suicidal ideation	29 20.60%	71 19.80%	100 20.00%			
High suicidal ideation	18 12.70%	30 8.30%	48 9.60%			
Family environment	Not peaceful	Peaceful	Total		χ^2	C
No suicidal ideation	7 4.70%	122 34.90%	129 25.80%		130.8**	.455**
Mild suicidal ideation	49 32.70%	173 49.40%	223 44.60%			
Moderate suicidal ideation	55 36.60%	45 12.80%	100 20.00%			
High suicidal ideation	39 26.00%	9 2.90%	48 9.60%			
Family Income	Below INR 10,000	Rs. 11,000 to INR 20,000	Above INR 21,000	Total	χ^2	C
No suicidal ideation	95 27.00%	11 17.50%	23 27.10%	129 25.80%	3.89	0.088
Mild suicidal ideation	154 43.70%	29 46.00%	40 47.10%	223 44.60%		
Moderate suicidal ideation	69 19.60%	15 23.80%	16 18.70%	100 20.00%		
High suicidal ideation	34 9.70%	8 12.70%	6 7.10%	48 9.60%		

Note: **p<.001

 χ^2 = Chi-square, C = Contingency Coefficient, Exact = Fisher's exact test
All percentages are computed across the columns.

gender is linked to suicidal ideation among adolescents in Tripura ($\chi^2 = 23.38$; $C = .228$; $p < .001$). This implies that there is an association between the gender of the adolescent and their level of suicidal ideation.

The community in Tripura is divided into tribal people and non-tribal people. 'Community' refers to a group of persons who reside in a specific area and have a common cultural and historical heritage. In the present study, the 'tribal community' refers to the different indigenous people residing in Tripura who are known as Scheduled Tribes or STs under Article 366 of the Indian Constitution. The rest of the

population of Tripura (who are not STs of Tripura) are considered non-tribals. The results show that the majority of the tribal and non-tribal respondents had mild suicidal ideation, whereas 8.2% of the tribal respondents and 10.5% of the non-tribal respondents had high suicidal ideation. The inferential statistics shows that suicidal ideation among adolescents is not significantly related to the community they belong to ($\chi^2 = 3.4$, $C = .082$, $p > .05$).

In the current paper, the area of residence of participants are divided into rural and urban areas. Here 'urban area' denotes Agartala (the capital

of Tripura) and its nearby areas, which are densely populated and have more facilities and infrastructure. On the other hand, 'rural areas' refer to those areas that are outside the city areas and have a small population. According to the results, 35.2% of the adolescents from rural areas and 17.6% of the adolescents from urban areas have no suicidal ideation. Conversely, 7.7% and 11.2% of the rural and urban participants, respectively, have high suicidal ideation. There is an association between the adolescent's area of residence and their suicidal ideation ($\chi^2 = 20.33$; $C = .198$; $p < .001$). Thus, the results imply that there is a correlation between the area of residence and suicidal ideation among adolescents, indicating that adolescents from urban areas having more suicidal ideation.

On the basis of whether someone uses any kind of substance (like smoking or alcohol) or not, it has been found that substance use of any kind by adolescents is associated with their level of suicidal ideation ($\chi^2 = 55.53$; $C = .339$; $p < .001$). The majority of adolescents with no suicidal ideation had not tried any such substances, whereas 34.4% of the adolescents who had tried some substances have high suicidal ideation. Thus, the result implies that substance use by adolescents is associated with thoughts of self-harm.

Based on the results, whether the participant is a single child or have siblings is found to have no link with the level of suicidal ideation ($\chi^2 = 2.48$; $C = .070$; $p > .05$). This implies that there is no association between adolescents being a single child or not and suicidal ideation.

Family type refers to the nuclear or joint family. 'Nuclear family' denotes a couple with or without children, and joint family means an extended family of three or more generations living together. The results show that whether the adolescent is from a nuclear or joint family has no link with their level of suicidal ideation ($\chi^2 = 6.92$; $C = .117$; $p > .05$). This implies that there is no association between the adolescent's family type and suicidal thoughts.

Again, in terms of the family environment, the majority of the adolescents who had suicidal ideation, whether moderate or high, were found to be in a family environment that is not peaceful. The family environment is very crucial for our overall mental health and well-being. An individual's perspective about his/her entire family including

his/her interaction with each member of the family can be regarded as the perception of his/her family environment. In the present study, family environment was determined by the respondent's response about their family, including their living conditions, interaction, and cohesiveness, with the family environment defined as 'peaceful' or 'not peaceful'. Adolescents were asked to provide basic information about their family environment. This revealed that 26% of adolescents in a 'not peaceful' family environment had high suicidal ideation, whereas only 2.9% adolescents in a 'peaceful' family environment reported high suicidal ideation. These figures show the link between the family environment and suicidal ideation of adolescents ($\chi^2 = 130.8$; $C = .455$; $p < .001$). Thus, this result suggests that family environment is an important indicator of suicidal ideation among adolescents in Tripura.

Finally, the family income of adolescents is not significantly associated with their level of suicidal ideation ($\chi^2 = 3.89$; $C = .088$; $p > .05$). The majority of adolescents' families had an income below INR 10 000 per month and 19.6% and 9.7% of these families seemed to have moderate and high suicidal ideation, respectively. Despite these findings, family income is found to have no association with the adolescents' level of suicidal ideation.

DISCUSSION

The current study shows that 9.6% of adolescents in Tripura have high suicidal ideation. Around 25.8% of adolescents have no suicidal ideation and the rest have either mild or moderate ideation. Swain *et al.* (2021) found the highest level of suicidal ideation in India to be among adolescents and youths. However, no such study has previously been conducted in Tripura, so the current paper is an exemplary work for future research.

Further, the current paper revealed the significant role played by gender in the suicidal ideation of adolescents in Tripura. This is in line with the findings of previous studies. Many studies have revealed how suicidal ideation differs by gender (Morales-Vives – Dueñas, 2018; Swain *et al.*, 2021). High ideation among boys also explains why boys and young men are at a higher risk for suicide attempts and death by suicide (King *et al.*, 2020).

Community or ethnic identity was found to play no role in the suicidal ideation of adolescents in Tripura. These findings have been supported by many other studies, which showed that youths have a high chance of reporting suicidal ideation, regardless of their race/ethnicity or communal identity (Assari et al., 2017; Mueller et al., 2015; Perez-Rodriguez et al., 2008). This could be because of the socioeconomic development experienced by the citizens of Tripura, irrespective of differences in ethnicity, as the government has adopted several schemes as initiatives. According to Sarkar and Debbarma (2020), socioeconomic and educational development has been observed among tribal students in Tripura and the majority of tribal students have medium to high socioeconomic status and educational achievements. This can lead to better economic conditions and better healthcare (physical and mental health) facilities.

In the current research, the area of residence (rural/urban) is found to have a significant association with suicidal ideation. The majority of adolescents with high suicidal ideation lived in urban areas. Many previous studies have also found that the suicidal ideation rate was higher in urban areas than rural areas across different ages (Davaasambu et al., 2017; Lee, 2015). However, there are certain different predictors of suicidal ideation in rural and urban areas that instigate suicidal thoughts and behaviour among adolescents (Murphy, 2013).

Substance use seems to have a strong association with suicidal ideation among adolescents. This means that whether an adolescent uses any kind of addictive substances (like cigarettes, alcohol, etc) or not can be a predictor of/can lead to self-harm thoughts and behaviours. According to the NCRB report (2020), substance use was found to be an important predictor of adolescents' suicidal ideation in India. Several studies also showed that adolescents who used substances exhibited more suicidal ideation and behaviour than those who did not (Breet et al., 2018; Wang & Yen, 2017). This is because substance use can act as a secondary risk factor by increasing the stress level and intensifying any co-occurring psychopathology among adolescents (Esposito Smythers – Spirito, 2004).

Few studies have examined whether being a single child may or may not impact a person's

mental health (Cheng et al., 2020). Those that exist, however, have shown mixed results. A few studies reported a significant difference in the mental health of individuals with or without siblings, while others showed no difference (Cheng et al., 2020; Dutta et al., 2017). The present study also found no significant association between adolescents' suicidal ideation and their status of being an 'only' child or not.

Similarly, family type was not found to be associated with suicidal ideation in the present study. Narain (2021) also reported that adolescents are likely to report suicidal ideation irrespective of whether they are from a nuclear and joint type of family. It is the family dynamics and the bonds that the family shares that can predict if an adolescent will have ideation or not. Similar to the present findings, no statistical significance was found between family type and suicidal ideation in Bangladesh (Mali et al., 2018).

According to the NCRB report (2020), family problems are the chief cause of suicide deaths among adolescents in India. The current paper also concurs with the NCRB report. Many previous studies also indicated that disharmony in the family, a disturbing family environment, and an unhappy home environment can hamper a child's/a young person's psychological development and can lead to mental health issues including suicidal thoughts and behaviour (Lin et al., 2014; Yao et al., 2014).

Unlike family environment, the monthly income of families was not found in the current paper/research to have any significant association with adolescents' suicidal ideation. There are few studies that have reported no statistical association between family income and the prevalence of suicidal ideation among adolescents and there is a vast body of literature that claims otherwise. However, that being said, most of the adolescents with suicidal ideation are from a poorer economic background (Rao Azeem et al., 2019; Sousa et al., 2020).

CONCLUSION

In conclusion, this paper examined/identified demographic variables that relate to suicidal ideation among adolescents in India and specifically in the north-east state of Tripura. It also revealed an association between several demographic

factors and suicidal ideation among adolescents. The gender, area of residence, substance use, and family environment of adolescents were found to be associated with suicidal ideation. However, community, being the only child in a family, family type, and family income were not significantly associated with suicidal ideation.

The paper also captures the current mental-health scenario of adolescents worldwide. Suicide rates are increasing day by day and so is suicidal ideation. It is clear how our society and various demographic attributes are involved in promoting the mental health of an adolescent. If the demographic attributes that are risk factors (e.g., gender, area of living, substance use and family environment)

are identified, then special attention can be given to those factors to prevent future suicides among this age group. Parents, teachers, and the community at large can help to identify these risk factors and help to prevent suicide. The reason for the significant association between suicidal ideation and demographic factors in India should be the subject of research in the future. Organising various mental health awareness workshops to break down mental health myths as well as family counselling programmes will help to combat suicidal ideation among adolescents. Adolescence is a very vulnerable stage in life and special care should be provided by parents, teachers, and the community to enhance adolescents' mental health and well-being.

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ADVANCED INTRODUCTION TO DEMOGRAPHY¹⁾

Monika Šmeringaiová

In the 1980s people in Central Europe were confused about the difference between demography and democracy, but today, demographic challenges are well known, mostly with negative connotations.

These are the first thoughts of professor Wolfgang Lutz in his recent book *Advanced Introduction to Demography* (2021), which is nearly a handbook. Lutz is a currently resigned director of the Vienna Institute of Demography at the Austrian Academy of Sciences, a professor at the Department of Demography at University of Vienna, a founding director of the Wittgenstein Centre for Demography and Global Human Capital, and a deputy director general for science at International Institute for Applied Systems Analysis (IIASA).

The main aim of Lutz's book is to summarise and comment on the tremendous knowledge boom in the field of demography in recent decades. He focuses on describing and explaining the main trends and concepts using empirical data. One of the book's main contributions, however, is theoretical in character, where the author not only elaborates on a number of theoretical approaches but also sketches the way towards 'a unified demographic theory'.

In this review, I will go through the book's chapters and subchapters and note some implications in connection with Czech and Slovak demography, demonstrating the importance of Lutz's book for research in this region as well.

The first chapter briefly reviews the history of demography and this history of collecting demographic data. Although the earliest demographic events were already observed in the 17th century, demography itself has only existed since the first third of 20th century. In addition, there are

several approaches – broader, narrower, linguistic, or historical – to defining demography. The different subchapters discuss basic concepts and equations such as the demographic balancing equation, the period and cohort total fertility rate, and life tables. While demographers are already familiar with these terms and concepts, the information are useful for scholars from other disciplines. The next subchapter on data sources could be attractive for all readers. Lutz lists dozens of surveys, databases, and data explorers that can enrich the data sources usually used in this region, such as Eurostat and OECD Data.

I would venture to say that the book's biggest contribution is in its second chapter, where Lutz discusses the role of theory in demographic research and three main theoretical approaches. The flash point of the chapter is the proposal for a 'unified demographic theory'. It is grounded in an analysis of the theory of (1) demographic metabolism, (2) the demographic transition, and (3) the demographic dividend, each of which is characterised by a set of propositions that reveal the theories' similarities and singularities.

The first theory, according to the author, highlights how individually learned patterns of behaviour are copied during the life course, and how subpopulations with different characteristics can shape the characteristics of the whole of society over time.

The second theory, which is the well-known – or, as Lutz puts it, 'most prominent' – theory of the demographic transition, explains and predicts the irreversible process of fertility and mortality decline through the modernisation of societies (in which the spread of education plays a key role). This paradigm is more or less the basis for any others in demography.

Finally, the third theory, that of the demographic dividend, is the youngest and is closely connected to economics. It is concerned with explaining

1) Lutz, W. 2021. *Advanced Introduction to Demography*. Edward Elgar Publishing. 200 pp. ISBN: 978-17-8990-146-7.

economic growth and wellbeing based on changes in the demographic structure. Examples of the process are represented by the Asian Tigers (listed by Lutz), and possibly also Czechia and Slovakia as post-socialist countries, which moved to a market economy after the Velvet Revolution, and both experienced a sharp fertility decline.

Like the field of demography, all these theories are interventional and perspective, but they each cover only a limited number of phenomena. The proposed 'unified demographic theory', by contrast, is more expansive. In a nutshell, it turns the attention to individuals, who form sub-populations going through different stages of transition (related to literacy levels), which consequently shape the demographic behaviour of society and the level of economic growth as well. These are yet only the basic contours of a new multidimensional approach to demography.

In the third chapter, the reader finds what is traditionally expected of a demographic book: Lutz elaborates on the drivers of the (continuing) decline of mortality and fertility. The added value here is the attempt to decompose the modernisation factor as a 'vague explanation' into concrete factors like household living standards, public health, and literacy. The author also notes several economic factors but concludes that cultural ones are becoming increasingly relevant, which has significant implications for population policies also in Central and Eastern European countries.

The fourth and final chapter sets out the future outlook for demography. The emphasis is placed on several different areas. First, Lutz describes forecasting methods, such as the cohort component method and the ways it can be improved, and the population projections that are made either by national statistical offices or international organisations. Second, the author objects specifically to factors like education, different scenarios for migration and the environment, and population policies, all of which could potentially play a significant role in future demography. Interestingly, the case of Ethiopia is elaborated here as an example of radical demographic changes and questionable future projections. Third, ageing and dependency ratios are included in the discourse on future demographic trends. This has much to do with labour and pension policies and represents a challenge for both policymakers and public policy scholars.

To conclude, Lutz's new book is a highly relevant piece of literature for both students and scholars in the fields of demography, public policy, sociology, and economics. It briefly summarises the basics of the history, conceptualisation, and mathematics of demography. At the same time, it advances the traditional theoretical approaches and introduces a new one. Lutz also contributes to the debate on concrete factors relating to mortality and fertility and future demographic trends by focusing on the behaviour of 'homo sapiens literata', where education appears to be the main driver of population changes.

The 14th Conference of Young Demographers Will Take Place in February 2023

The Conference of Young Demographers has traditionally been an exceptional opportunity to spend four days discussing current demographic issues. It gives students and young researchers a chance to learn and obtain opinions and advice from colleagues from all over the world in a very friendly environment. It is our pleasure to announce that this year the conference is co-organised in cooperation with the Association for Young Historical Demographers (AYHD).

The 14th annual Conference of Young Demographers will take place from **8–10 February 2023** in Prague at the Faculty of Science, Charles University. Although the conference is mainly aimed at PhD students of (historical) demography, all young (in spirit) researchers from various fields of population studies are welcome. The working language of the conference is English.

Professor Daniele Vignoli will be our special guest in 2023 and will share his knowledge with us! Daniele is a Professor of Demography at the University of Florence and he received the Dirk J. van de Kaa Award for Social Demography from the EAPS in 2020. His main research focus is on the relationship between fertility and uncertainty.

Like last year, we support posters as a main form of presentation, not only for finished projects but also for works in progress. Posters are the best!

The deadline for submissions has already passed. However, you can still join us as a passive participant in the conference. **Registration for passive participation will open in January.**

The final programme of the conference will be announced in January 2023.

For more information, including information on passive participation at the conference, please visit our website (youngdemographers.github.io). Please feel free also to contact us with any questions at the following e-mail address: yd.demographers@gmail.com. We are looking forward to meeting you in Prague!

On behalf of the Organising Committee.

Anna Altová, Kateřina Brázová, Klára Hulíková, Barbora Janáková, Louise Ludvigsen (AYHD), Adéla Pola, Jitka Slabá and Martin Vondrášek

RELIK 2022 Conference

The Reproduction of Human Capital – Mutual Links and Connections

The Department of Demography of the Faculty of Informatics and Statistics of the Prague University of Economics and Business organised the fifteenth international scientific conference 'The Reproduction of Human Capital – Mutual Links and connections' on 10 and 11 November 2022. The conference was devoted to the issue of demography and human resources in a wider context and to the issue of population ageing and its consequences and economic context. The organisers believe that by sharing mutual experience and knowledge it is possible to further expand the perspective on human capital issues and draw attention to the importance of the state's investment in human capital.

The conference took place in hybrid form. Some participants, mostly Czech and Slovak researchers, took advantage of the possibility to present their papers in person. Foreign participants and others who could not participate in person were able to present papers on-line through the MS Teams platform. Like every year, special sections were organised for young scientists just starting out, where students and doctoral students from the Faculty of Informatics and Statistics (FIS VŠE) and other institutions presented their papers. This year, many new participants contributed to the conference programme. There has been an increase in interest in participating from abroad, and despite the online form of the conference participants were able not only to expand and supplement their knowledge of demography and human resources, but also to establish new contacts among participants.

Over 70 papers were presented at the conference. Traditional speakers included Jan Mertl, with a

paper on 'Payment for "State-Insured" Persons: Relic of the Past or Fiscal Tool of the Future?' and Ladislav Průša, with a paper titled 'Is the Project of Care Allowance Recipients in the Light of the Covid-19 Epidemic Current?' This was accompanied by Jaromír Vostatek's presentation titled 'Czech Old-Age Pensions: Priority Issues', Zuzana Dvořáková's paper on 'The Ageing Workforce and Early Retirement', and Mirka Wildmannová's 'Using Digital Technologies in Social Service Institutions'. International participants included Oksana Shubat and Anastasia Tobysheva, who presented a paper on 'Subjective Factors in Corporate Demographic Policy', Natalia Blednova, who spoke about 'Parental Labour Arrangement Duental Leave: The Gender Aspect', Branislav Šprocha and Pavol Tišliar, who presented a paper on the topic 'The Ongoing Transformation of Fertility in Slovakia in Temporal and Spatial Perspective', Konstantinos Zafeiris, whose presentation was on 'Czechia vs Greece: A Longitudinal Assessment of the Average Life Span, Healthy Life Expectancy, Gini Coefficient, E-Dagger and Keyfitz Entropy H', and Christos Skiadas and Yiannis Dimotikalis whose paper was on 'Expanding the Life Tables to Include Healthy Life Expectancy: The Case of Czechia and Hungary'.

The conference proceedings are available on-line at: <https://relik.vse.cz/cz/>.

Recent years – 2018–2020 – are included in the Web of Science evaluation, and the proceedings from 2022 will be sent for indexing too.

Jana Vrabcová

THE POST-WAR POPULATION CONSCRIPTION IN SLOVAKIA IN 1946¹⁾

Branislav Šprocha²⁾ – Pavol Tišliar³⁾

Abstract

The post-war situation in former Czechoslovakia was complicated. Suitable, reliable, and up-to-date data needed to address several urgent social problems were largely lacking. In 1946, more than 15 years had passed since the last population census 1930, and because of the major social changes and mass population transfers that had occurred in that time, it was not possible to make important decisions based on the previous census. Since for various reasons it was not possible to carry out a new population census in the first months and years after the Second World War, the decision was made to prepare an alternative solution in the form of two independent post-war population counts with different content and conducted at different times. In this article, we focus on the first of these two population counts, which was conducted on the territory of Slovakia in 1946. This article primarily sets out to identify the main purpose of the post-war population count in Slovakia in 1946, the method used to implement it, the content of the data it produced, and their processing and publication.

Keywords: post-war population conscription, Slovakia, 1946

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INTRODUCTION

The Second World War significantly affected the character and functioning of all of society in former Czechoslovakia. Its negative effects were felt by the population not just during the war years but in the period that followed as well. The situation was made worse by the damage to the economy, infrastructure, and housing stock, supply problems, and the mass population transfers at the end of the

war and in the first post-war years. Attempts to solve current and often acute problems, however, were complicated by the lack of up-to-date, reliable, and relevant information. In this regard, it is necessary to realise, especially with respect to necessary data on population structures, that the last Czechoslovak census was carried out in 1930. Although a planned census was carried out in Slovakia in 1940 (Tišliar, 2011) and in 1938 (Šprocha – Tišliar, 2012, 2018),

1) The article is a partial output from the VEGA project number 1/0097/ Small histories of big events: population censuses in Slovakia between 1919–1950 and APVV-20-0199 Transformation of population development in Slovakia in a regional perspective from the end of the 19th to the middle of the 20th century.

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in both cases the results obtained related only to the reduced territory of Slovakia after the Munich Agreement and the Vienna Arbitration. Moreover, only a very small part of the census material was processed and published (closer to *Šprocha – Tišliar*, 2012; 2018). The situation was even worse in the Czech Republic. The Population Census carried out in 1939 was only conducted in the territory that was separated from Czechoslovakia after the Munich Agreement, while in the Protectorate of Bohemia and Moravia the census was not conducted at all (*Berrová*, 2008b). The intention to conduct a census earlier than the one planned in 1950 was quickly abandoned owing to financial and time constraints, as well as the associated heavy labour and financial demands involved in processing for processing and publishing the data (*Berrová*, 2008; *Kučera*, 1987). In addition, mass migrations of the population continued to occur in the post-war period, and that could have affected the quality of the census process. On the other hand, there continued to be a great need to obtain up-to-date population data. As *Jureček* noted (1951), there was an especially strong need for data on the economic and social structures of the population. In this situation, a compromise solution was reached, and two independent population conscriptions were carried out in the Czech Republic and Slovakia as a substitute for the population census (*Fajfr – Sekera*, 1951). Their main purpose was to provide enough content to satisfy the most urgent need for up-to-date data in selected thematic areas. Both population enumerations took place independently of each other, without any connection or communication with each other, with a certain time gap between them and differences in content, and they therefore represent two separate population conscriptions. This is one reason why we will not analyse both population conscriptions at the same time. In this paper, we will focus on the first one, which was carried out in Slovakia in October 1946. In addition, we note that in the Czech Republic post-war conscriptions of the population by occupation took place in May 1947. The aim of the article is thus to present this lesser-known survey to the wider scientific community, identify its main purpose, and describe its method of implementation, the data content, and the data processing and publication.

THE BACKGROUND AND PREPARATORY WORK ON THE POPULATION CONSCRIPTION IN SLOVAKIA IN 1946

The background to the count of ration recipients in the population conducted in Slovakia in 1946 was that there was a need to obtain information about the current situation in the labour market, primarily in the context of efforts to mobilise and redistribute labour in certain (and especially selected trade) occupations. In addition, the aim was also to make certain improvements to the records on ration recipients. It should be noted that this objective was probably also one of the reasons why the post-war surveys were conducted separately in the two countries, since the rationing systems in Czechia and Slovakia were different (*Štěpková*, 2011) and thus did not create a reasonable framework for conducting the conscription in both countries at the same time. As noted in the introduction, the conditions for implementing a population conscription were created earlier in Slovakia. The delay in the Czech Republic was primarily due to the ongoing expulsion of the German population and the settlement of the border areas (*Berrová*, 2008a; *Jureček*, 1951).

The initial impulse for implementing a conscription in Slovakia was a request from the planning department of the State Planning and Statistics Office (*Štátny plánovací a štatistický úrad, SPSO*) for data that were necessary to organise the labour market. Due to the above-described problems with obtaining data that would be up-to-date, complete, and of good quality, however, adequate data were not available, and therefore the idea arose to implement a population conscription. In order to find a way to practically implement the counting activity, the decision was made to cooperate with the Commission for Nutrition and Supply (*Komisia pre výživu a zásobovanie*). The population conscription itself was thus linked to improving the records on ration recipients. The basic legislation on which the population conscription was based was decree no. 168/1946 of 17 September 1946 on the registration of ration recipients. According to this decree, every holder of a ration book (*odberné knižky*) or other document authorising the receipt of food stamps was required to register all supported persons with the local national committee (*národný výbor*) in the Record of Ration Recipients form.

The completed form then had to be returned to the national committee in the vicinity of the person's place of residence. The time frame for this registration was set from 23 September to 4 October 1946. The penalty for failing to comply with this obligation was that the holder of the ration book would not receive food stamps. In contrast to properly planned population censuses, there were some important differences in the preparatory phase of the enumeration of ration recipients. The main difference was the absence of preparations in the field. Before the data collection itself, there was no review of house numbers or of the list of residences, and no census districts were even created. Since the implementation of the census was fully the responsibility of the Commission for Nutrition and Supply (and not the Statistical Office) and specifically its officials on local national committees, no census commissioners or census auditors were appointed. With some generalisation it can be said that 'the post-war population conscription did not come to the people, but the people to the conscription', since the receipt of food stamps was conditional on their participation in this statistical enumeration. In addition, the period for which the data on a person's registration card would be valid was not determined. The only instruction for the population enumeration was on the above-mentioned time frame in which the entire registration should be carried out.

CONTENT AND IMPLEMENTATION OF THE CONSCRIPTION OF RATION RECIPIENTS

The content of the post-war population conscription itself was very modest compared to the planned population censuses. As mentioned above, an authorised member of the national committee indicated on the registration card all the persons on whose behalf the holder of the ration book was to receive food stamps. These were people who regularly took their meals in the household of the holder of the ration book. This included not only family members but also servants, maids, etc., for whom the head of the household received food stamps. However, anyone who was not present in the household at the time

of data collection for the reasons of study or work were not supposed to be listed on the registration card.

Absent members of a household were required to fill out and submit the registration card to the national committee in the area where they stayed, if they had their own ration book for food stamps. If their meals were provided by their employer, or if they ate in another household (e.g. if they sublet and ate at the residence of the lessor), they were supposed to be listed on the registration cards of those persons (e.g. their employer, the owner of the house, etc.). A different situation arose in the case of persons who were travelling at the time enumeration was carried out or were in a hospital or other medical institution. These people were supposed to be listed on the registration cards of the households in which they usually had their meals before they left.

Exceptions were also in place for the employees of such institutions. If they also took their meals at the institution, they were supposed to be listed in the book of the institution for food stamps or in the book of the head of the household of which they were a member. Soldiers were also in a specific position. Persons belonging to the military service were not allowed to be listed on the registration cards of the household they were from. Only soldiers who received food stamps had to fill in a registration card. It is clear from this overview of exceptions and specific cases that the post-war population conscription did not cover the entire population present in Slovakia. Thus, only those persons who, according to administrative records, received food stamps were required to participate in the population conscription. In a spatial perspective the criterion for inclusion in the conscription was that the person was the registered holder of a ration book.

Before the population enumeration itself, the registration cards were delivered by printers in Bratislava to individual rationing departments at the national committees. The national committees informed the population about this statistical enumeration through their 'usual' information channels, while they were also supposed to emphasise the penalties for failing to fulfil this obligation. The national committees were then supposed to ensure that each individual household had the opportunity to submit its registration card.

Figure 1 Registration card of the conscription of the population of ration recipients in Slovakia in 1946

Por. čís.	Priezvisko a meno	Rok narodenia	Rodinný stav	Povolanie (vyučenie)	Druh podniku, v ktorom pracujete a ako ste v ňom zamestnaný

Source: SÚS (1951), p. 27*.

As already mentioned, the national committee first listed on the registration card all the persons (household members) in order of age (from the oldest to the youngest) that the ration book (or other document) was drawn up to include. The number of registered persons had to be the same as the number of persons in the ration book for food stamps. At the same time, it was noted on the list of ration recipients that the registration card had been issued. This was to ensure that at the end of the conscription it would be possible to identify who had not participated in it. The list of these persons was to be sent separately to the Commission for Supply and Nutrition when the conscription was concluded.

In addition to the person's serial number, the person's first and last name, year of birth, marital status, and profession (apprenticeship), the type of company the person worked for, and type of work performed in the company were also recorded on the registration card. In the case of occupation, the instructions for the conscription indicated that the occupation for which the person had been trained should be recorded; therefore, it was not the occupation that the person actually working at when the conscription took place that was recorded. The type of company a person worked for, and type of work performed in the company were the facts to be stated. The economic sector in which people were employed and their occupational status were subsequently determined on the basis of these facts.

It was also explicitly stated in the registration card whether the person was unemployed.

After the end of the collection, all the submitted registration cards were sorted according to streets and house numbers. The inventory material sorted in this way was handed over to the distribution department of the Food and Supply Commission in Bratislava on 7 October 1946 at the latest. Thus, the post-war conscription of ration recipients differed from a properly planned population census in that no sub-steps were implemented in processing the census material. For example, no summaries for census districts or municipal or district overviews were created. As we mentioned, all the statistical material was automatically sent for central processing all the cards were collected and sorted. The absence of these steps was justified by the lower priority of data on the number of people in municipalities or districts. According to the central authorities, the reports on the number of food stamps issued were sufficiently high-quality and up-to-date. Thus, the structural characteristics of the population, which could not be obtained without central processing, remained key outputs.

THE STATISTICAL PROCESSING AND PUBLICATION OF RESULTS

Once collected and organised the enumeration material was machine-processed relatively quickly using punch cards⁴⁾ (Figure 2). The definitive results

4) The punch card was a common recording medium in this period. It was usually made of paper (thin cardboard). The information on it was encoded by the presence or absence of a hole at predetermined positions.

Figure 2 Punch card of the conscription of the population of ration recipients in Slovakia in 1946

Oblasť	Obec	Pageňiční číslo	Pokojník	Rok narodenia	Rod. číslo	Povolanie vyučané	Čas prerušenia	Povolanie ktoré zastáva	Podiel k povolaniu	Súpis zásobových osôb na Slovensku zo dňa 4.X.1946						
0 0	0 0 0	0 0 0 0	0	0 0 0	0	0 0 0	0	0 0 0	0 0							
1 1	1 1 1	1 1 1 1	1	1 1	1	1 1 1	1	1 1 1	1 1							
2 2	2 2 2	2 2 2 2	2	2 2	2	2 2 2	2	2 2 2	2 2							
3 3	3 3 3	3 3 3 3	3	3 3	3	3 3 3	3	3 3 3	3 3							
4 4	4 4 4	4 4 4 4	4	4 4	4	4 4 4	4	4 4 4	4 4							
5 5	5 5 5	5 5 5 5	5	5 5	5	5 5 5	5	5 5 5	5 5							
6 6	6 6 6	6 6 6 6	6	6 6	6	6 6 6	6	6 6 6	6 6							
7 7	7 7 7	7 7 7 7	7	7 7	7	7 7 7	7	7 7 7	7 7							
8 8	8 8 8	8 8 8 8	8	8 8	8	8 8 8	8	8 8 8	8 8							
9 9	9 9 9	9 9 9 9	9	9 9	9	9 9 9	9	9 9 9	9 9							
1 2 3	4 5 6 7	8 9 10 11	12	13 14	15 16	17 18	19	20 21 22	23	24 25	26 27 28	29	30	31	32 33	34 35 36 37 38 39 40 41 42 43 44 45

Source: SÚS (1951), p. 18*.

were also officially published quickly, which was unusual for that time.

In the summer of 1947, the SPSO was already able to publish a source publication entitled *Povolanie obyvateľstva na Slovensku podľa súpisu civilného obyvateľstva zo dňa 4. októbra 1946* (Occupations of the population in Slovakia according to the conscription of the civilian population dated 4 October 1946). It consisted of three main parts that presented data separately for Slovakia and for its districts. In the first part, data on the structure of the population by class and occupational group in combination with sex and main age groups were published.

The results were presented for 6 main occupation classes (A – F), based on the classification in effect at the time the post-war population enumeration was carried out, and for the 38 occupational groups within those classes:

- A – Agriculture, forestry, and fishing (2 occupational groups),
- B – Industry and trades (18 groups),
- C – Commercial trade, finance, and transport (7 groups)
- D – Public service and liberal professions (5 groups)
- E – Domestic and personal service (2 groups)
- F – Other occupations and persons without occupation data (4 groups)

The second part provided data on persons by occupation and data on occupational status (in selected trades) by sex.

From the vertical classification - the published data distinguished four groups of people by occupational status:

- 1) working in their occupation,
- 2) domestic servants,
- 3) family members without their own occupation,
- 4) unemployed.

Persons working in their occupation were further divided into:

- 1a) self-employed and hired workers,
- 1b) officials,
- 1c) specialist workers,
- 1d) apprentices,
- 1e) workers and day labourers.

In the case of family members without their own occupation, the conscription distinguished:

- 3a) children and pupils of national schools
- 3b) students of secondary and vocational schools
- 3c) others

The group of unemployed persons was further divided into:

- 4a) unemployed officials
- 4b) unemployed members of a profession
- 4c) unemployed workers and day labourers.

In the third part of the source publication based on the post-war population conscription, data on selected trades were presented. A total of 28 different trades were specified, such as blacksmith, mechanical locksmith, plumber, gunsmith, stonemason, concrete worker, mason, carpenter, scaffolder, etc.

Some of the definitive results on the economic sectors of the population in the districts of Slovakia and its social groups were also published in the Statistical Yearbook 1947.

In 1951, the State Statistical Office published a second source publication under the title *Soupis obyvatelstva v Československu v letech 1946 a 1947* (Population Conscriptions in Czechoslovakia in 1946 and 1947). As the title suggests, this publication contained the results of both post-war population conscriptions carried out in Slovakia and later also in the Czech Republic. In addition, since a new administrative arrangement was introduced in 1949, another aim of this second source publication was to publish the definitive results in reference to the new administrative divisions. In order to fulfil this objective, the census material had to be completely resorted and then statistically processed.

The published data were divided thematically into 28 tables and 3 supplementary tables. Due to the different content elements in the Czech and Slovak post-war population conscription, and especially the richer content of the conscription conducted in the Czech part of the republic, not all the tables included the territory and population of Slovakia. In the following overview, we present only the combinations of categories that related to Slovakia and came from the conscription of ration recipients from 1946.

Table 1 presents the area of regions, districts, and municipalities with more than 5,000 inhabitants (in km²), the total numbers of men and women, the total numbers of people in 1946 and 1930, and the increase / decrease in population size between the 1930 census and the 1946 population conscription, both in absolute and relative terms. The published data in this table also include the number of women per 1,000 men, as well as the population density expressed as the number of persons per 1 km² in 1930 and 1946.

In Table 2, the number of persons and the number of employed persons are published by region and

district. Table 2 also divides the employed (working) population into different sectors of economic activity (agriculture, forestry and fishing, mineral extraction, industry and crafts, other), in both absolute and relative terms (per 1,000 inhabitants, per 1,000 employed).

Table 4 presents the data on the number of municipalities by municipality size groups (-99, 100-199, 200-299, 300-499, 500-999, 1,000-1,999, 2,000-4,999, 5,000+ inhabitants), as well as the structure of the present population according to the size of the place of residence for regions and districts.

Table 8 presents the age composition of the population of Slovakia at the time of the conscription according to 5-year age groups (from 0-4 to an open interval of 95+) and by gender and marital status, in absolute (Tab. 8a) and relative terms (Tab. 8b). Because of the methods used to collect age data in Slovakia, the age groups are approximate, constructed from the year of birth.

Table 9 provided information on the age of the present population by 5-year groups of birth years and by sex for regions and districts.

Table 10 published data on the age structure of the present population of regions and districts, specifically by combining the categories of persons based on gender and selected age groups, which were then divided into the following categories: 0-2, 3-5, 0-14, 15-17, 18-20, 21-25, 25-49, 50-64 and 65+ years. This table also presented data for pre-school children (0-5 years), youth (15-25 years), persons eligible to vote (18+ years), adults (21+ years), and persons of productive age (15-49, 15-64 years). Table 11 provided data on the marital status of the present population by gender in regions and districts.

Table 12 presented the social stratification of the population in different sectors of economic activity by sex in absolute and relative terms for both Slovakia as a whole and the Slovak regions. The classification structure used in this source publication changed from the previous one. Since the Czech post-war conscription used a more modern classification that better reflected the reality of the time, a problem then arose when summary data were to be published for Czechoslovakia as a whole.

This problem already became apparent during the first efforts of the State Statistical Office to reclassify the data from the Slovak census. From the original statistical material, approximately 12,000 persons (more than 12%) could not be identified. Initially, they were included in the group of persons without gainful employment. The preparation of the second source work led to this question being raised and to the effort to further revise of the data, which was done by the Slovak Planning and Statistics Office. However, these changes were ultimately only reflected in the tables at the national level and specifically in Table 12 for the regions. This revision could not, however, be carried out for the districts or in other subsequent tables for the regions (see *Jureček*, 1951: 15*).

Table 12 presented in a horizontal view persons engaged in 9 sectors of economic activity:

- 1) Agriculture, forestry, and fishing,
- 2) Mining, industry, and trades,
- 3) Commercial trade and finance,
- 4) Transportation,
- 5) Public administration and service,
- 6) Free professions,
- 7) Personal and domestic services,
- 8) Persons without an occupation,
- 9) Other professions.

Within each economic sector category (vertical view), people were further divided into:

- A) Employed,
- B) Assisting family members of self-employed persons,
- C) Family members without their own occupation,
- D) Persons without an occupation⁵⁾.

Table 14 provided data on the number of inhabitants at the national level according to employment status and sector of economic activity in 1930 and 1946.

Table 15 presented information on people by employment status, sector of economic activity, and sex at the national level, while Table 16 presented the same information for the regions and Table 17 for the districts.

Two 'additional tables' were also included at the end of the source publication. Both tables provided

basic data from the post-war population conscriptions according to the administrative division that was valid in 1946 or 1947. The first of these two tables published data on the population by sex (for the years 1930 and 1946), population increases (or decreases) between 1930 and 1946, and population density by district. The second table provided data on the population by sector of economic activity (categories: agriculture, forestry, and fishing; mineral extraction, industry, and trades; others) also subdivided into occupation and employment status.

ANALYSIS OF THE MAIN RESULTS

According to the results of the post-war population conscription in 1946, there were more than 3.3 million civilian ration recipients in Slovakia. The largest number of people were counted in the western parts of Slovakia in the Bratislava and Nitra regions. Conversely, the least populated were the eastern regions: Košický and Prešovský regions (Tab. 1). The Banskobystrický and Prešovský regions also ranked among the east populated parts of Slovakia with 50–52 persons per 1 km². The opposite situation was observed in the above-mentioned western regions, where in the case of the Bratislava region population density was even as high as almost 107 persons per 1 km². The average population density in Slovakia in 1946 was 68 people per 1 km² (Tab. 1).

Compared to the last interwar Czechoslovak census from 1930, the post-war population conscription found a somewhat higher number of people in the territory of Slovakia, despite considerable emigration of the population (mainly ethnic Germans) at the end of the war and in the first months after the war's end. The biggest population increases between 1930 and 1946 were in the Bratislava region. The number of inhabitants increased slightly during this period also in the Prešov, Žilina, and Nitra regions. On the contrary, the Banskobystrický and Košice regions were characterised by a decrease in the number of inhabitants (Tab. I).

The results from 1946 also confirmed that women formed the majority of the population of Slovakia.

5) Persons living on benefits or annuities, students, pupils living away from home, persons in various social health institutions and facilities.

Table 1 Number of persons and population density in Slovakia and its regions in 1946 (in comparison with the population in 1930)

Region	Total population		Population density in 1946 (Person per km ²)	Population change (1946/1930)		Females per 100 males
	1946	1930		Abs.	Rel. (%)	
Bratislavský	801,114	768,967	106.5	32,147	4.18	104.8
Nitriansky	687,487	684,084	86.3	3,403	0.50	107.2
Banskobystrický	479,594	498,151	51.8	-18,557	-3.73	108.5
Žilinský	491,477	487,654	59.4	3,823	0.78	109.7
Košický	438,493	459,043	58.6	-20,550	-4.48	110.2
Prešovský	429,638	426,212	50.8	3,426	0.80	108.5
Slovakia	3,327,803	3,324,111	68.0	3,692	0.11	107.7

Source: SÚS (1951), authors' calculation.

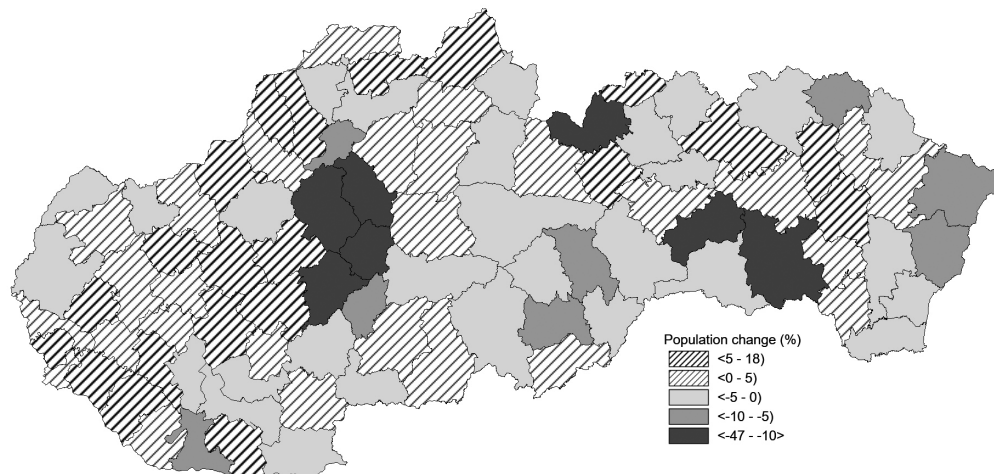
On average, there were almost 108 women per 100 men. The most significant predominance of women was identified in the north of Slovakia in the Žilina region and in the east in the Košice region. More balanced representation of both sexes, especially in the western part of Slovakia in the Bratislava region.

The largest decrease in the number of inhabitants was recorded in the districts of central (Turčianske Teplice, Kremnica, Prievidza, Nová Baňa) and eastern (Gelnica) Slovakia, which historically were areas with a large German minority. Significant decreases also occurred in the Vysoké Tatry and Košice districts (Figure 3). The most significant increase in the number

of inhabitants between 1930 and 1946 was observed in some districts in the western (Považská Bystrica, Partizánske, Trenčín), southwestern (Šamorín, Dunajská Streda), and eastern (Poprad, Sabinov, Giraltovec) parts of Slovakia, areas that experienced a significant boom in industrial production (Figure 3).

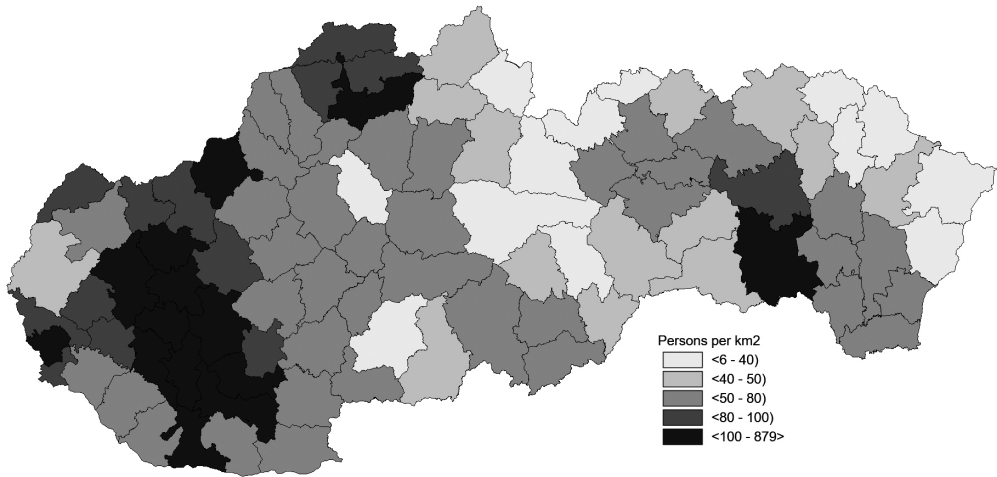
In terms of population density, the city district of Bratislava clearly dominated (with almost 880 people per 1 km²). In total, there were 13 more districts (out of 92) that were above the level of 100 persons per km². These were primarily agricultural districts in the western and southwestern parts of the country (Sereď, Šaľa, Galanta, Komárno), but also some

Figure 3 Changes in the number of inhabitants in the districts of Slovakia between 1930 and 1946



Source: SÚS (1951), authors' calculation.

Figure 4 Population density in the districts of Slovakia in 1946

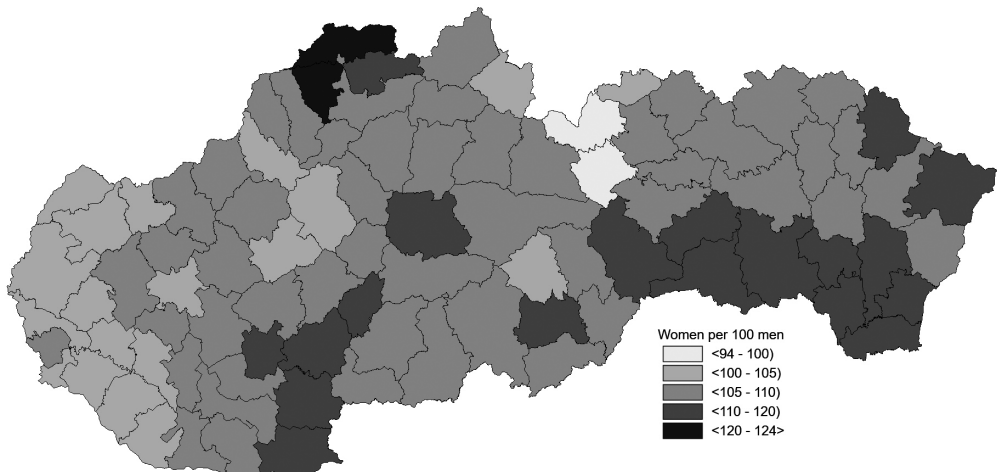


Source: SÚS (1951), authors' calculation.

districts with important economic centres (Trnava, Žilina, Trenčín). The lowest population density was in the mountainous regions of central and northern Slovakia (Vysoké Tatry, Liptovský Hrádok, Trstená, Brezno), and in the border districts in the northeastern part of the republic (Svidník, Medzilaborce, Sobrance, Stropkov) (Figure 4).

The biggest predominance of women in the population was found in the post-war population conscription in 1946. This predominance was especially apparent in the north of Slovakia in the districts of Čadca and Bytča. These are regions from which men traditionally emigrate to work elsewhere, not only abroad, but also to the nearby mining and

Figure 5 The number of women per 100 men in the districts of Slovakia in 1946



Source: SÚS (1951), authors' calculation.

Table 2 Age structure of Slovakia and its regions in 1946

Region	Proportion of persons in age (%)		Average age (year)	Ageing index
	0–14	60+		
Bratislavský	27.1	9.8	30.4	36.4
Nitriansky	27.4	11.0	31.1	40.0
Banskobystrický	25.4	12.1	32.2	47.5
Žilinský	30.4	9.2	29.4	30.3
Košický	29.4	9.3	29.5	31.7
Prešovský	32.7	8.0	28.0	24.5
Slovakia	28.4	10.0	30.2	35.1

Note: The ageing index indicates the number of persons aged 60 and over per 100 children under the age of 15.

Source: SÚS (1951), authors' calculation.

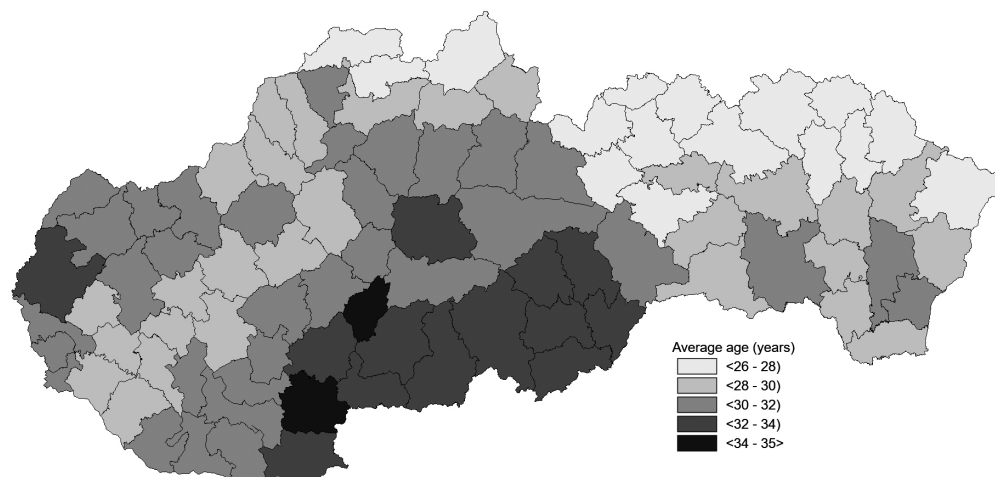
metallurgical region of Ostrava. Other important areas with an above-average predominance of women were in districts of southeastern Slovakia (in a continuous space from Rožňava district to Veľké Kapušany and Kráľovský Chlmec districts) and also some districts in southern and central Slovakia (Figure 5).

Slovakia was a country that still had a relatively young population after the Second World War. According to the results of the population conscription in 1946, the average age was just over 30 years. Children under the age of 15 accounted for just over 28%, while persons aged 60 and over made up only about a tenth of the entire population. For every 100 children, there were 35 seniors aged 60 and

over. As can be seen in Table 2, most of the older population resided in central Slovakia. In the Banská Bystrica region, the average age exceeded 32 years and the ageing index was almost as high as 48 persons. This region also had the smallest share of children and, conversely, a higher proportion of seniors. The opposite situation existed in the Prešov region, where children under the age of 15 made up almost a third of the entire population, and people aged 60 and over only about 8%. The average age in 1946 was only 28 years (Table II).

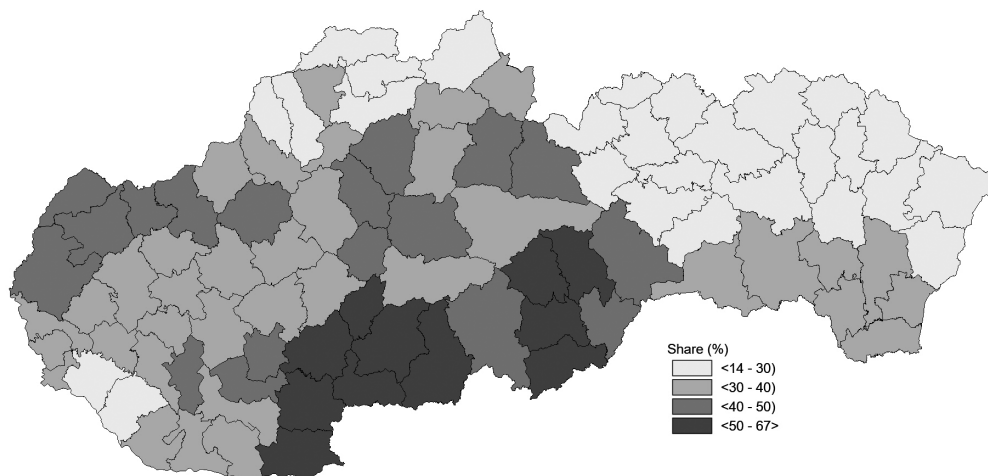
As Figures 6 and 7 show, older populations and higher ageing indexes were mainly found in districts in central and southern-central Slovakia. The highest

Figure 6 The average age of the population in the districts of Slovakia in 1946



Source: SÚS (1951), authors' calculation.

Figure 7 The ageing index of the population in the districts of Slovakia in 1946



Note: The ageing index indicates the number of persons aged 60 and over per 100 children under the age of 15.
Source: SÚS (1951), authors' calculation.

average age (over 34 years) was in the districts of Banská Štiavnica and Železovce. In another five districts in southern Slovakia (Levice, Modrý Kameň, Krupina, Rimavská Sobota, Revúca) the average age ranged from 33 to 34 years. The ageing index was also highest in these districts (Figure 7). A total of ten districts had an index score above 50 people, and all of them were located in central and southern Slovakia (Figure 7). The highest number of seniors per 100 children was clearly registered in the aforementioned district of Banská Štiavnica (64 persons) and Železovce (66 persons).

In terms of average age and the ageing index, the districts in the north of central Slovakia and especially the continuous area of districts in the east and northeast of Slovakia had the youngest population (Figure 6 and 7). In 5 districts (Kysucké Nové Mesto, Medzilaborce, Snina, Stropkov, Sabinov) from this area, the average age did not even reach 27 years. Together with the Námestovo district in the north of Slovakia, there were 6 districts with the lowest ageing index whose index score did not exceed 20 seniors per 100 children.

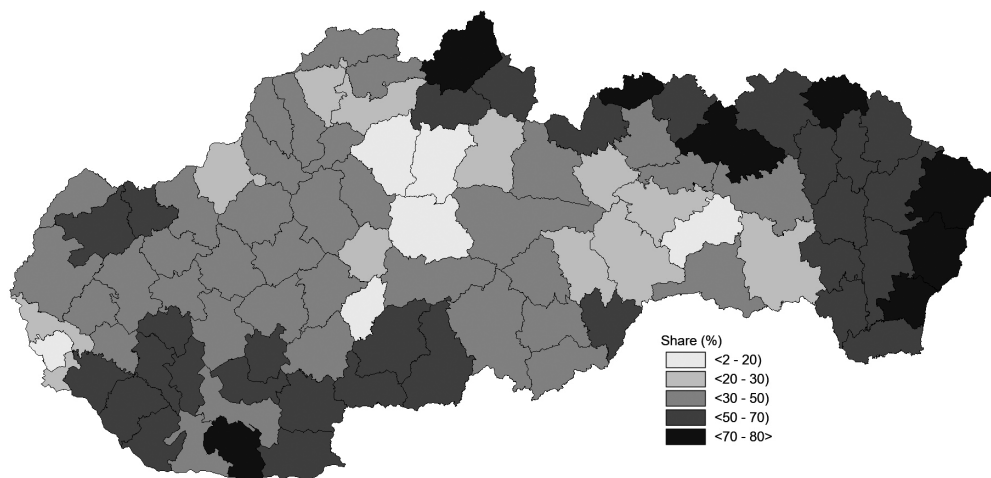
Table 3 Sectoral structure of Slovakia and its regions in 1946

Region	Persons dependent on (belonging to) the economic sector (%)*			Persons active in the economic sector (%)**		
	Agriculture and forestry	Industry and mining	Other	Agriculture and forestry	Industry and mining	Other
Bratislavský	39.9	25.2	34.8	32.1	29.5	38.4
Nitriansky	53.6	19.9	26.5	46.6	23.4	29.9
Banskobystrický	45.3	25.2	29.4	38.5	30.2	31.2
Žilinský	42.9	28.9	28.2	33.5	35.4	31.1
Košický	39.7	24.9	35.4	32.0	28.6	39.3
Prešovský	72.0	10.3	17.7	60.8	14.0	25.2
Slovakia	48.1	22.7	29.2	39.2	27.5	33.3

Note: * (employed) persons working in the given economic sector and persons dependent on this sector (e.g. children whose parents work in the given economic sector); ** (employed) persons working in the economic sector.

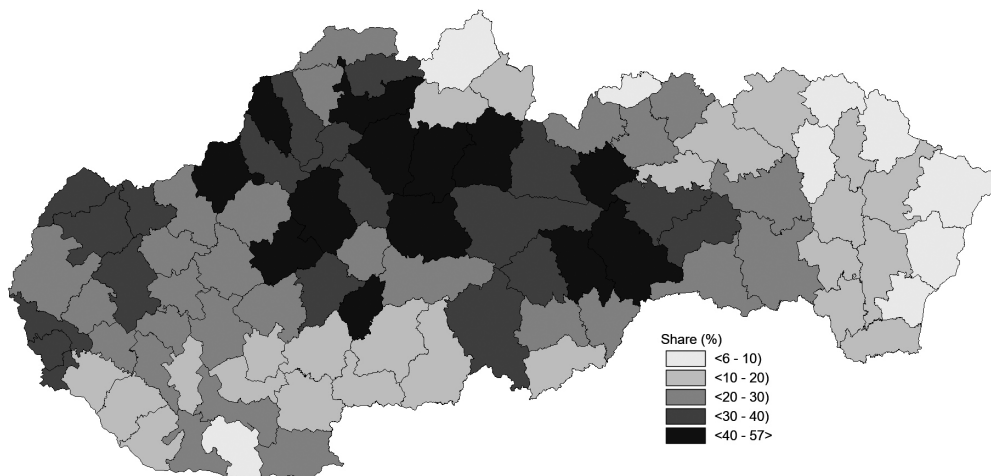
Source: SÚS (1951), authors' calculation.

Figure 8 Proportion of persons working in agriculture and forestry in the districts of Slovakia in 1946



Source: SÚS (1951), authors' calculation.

Figure 9 Proportion of persons working in industry and mining in the districts of Slovakia in 1946



Source: SÚS (1951), authors' calculation.

Despite the gradual development of industry and services in the interwar period and during the Second World War, most of the population in Slovakia remained dependent on agriculture. This was also confirmed by the results of the post-war population conscription in 1946. More than 48% of the entire civilian population worked in or were dependent on people who worked in agriculture

and forestry. Less than 28% applied for industry and mineral extraction, and the remaining third of the entire population worked in or were dependent on people who worked in other economic sectors (Tab. 3). In terms of the structure of the population according to the share of people working in different economic sectors, agriculture and forestry again predominated, but not to the same extent

as the sector's predominance according to the share of population dependent on this sector. However, there were quite large differences from a spatial point of view. The largest share of people dependent on agriculture and forestry and the largest number of people working in this sector were in the Prešov region. This sector was also very important for the population of the Nitra region. Conversely, the smallest share of people working in this sector was in the Bratislava and Košice regions (Tab. 3). Above average shares of the population also worked in industry and mining, especially in the Žilina region, and while above average shares of the population worked in other economic sectors in the Bratislava and Košice regions.

This is also confirmed by the data for individual districts in Slovakia. The highest proportions of people working in agriculture and forestry were found mainly in the northern and northeastern parts of Slovakia. In addition, an above-average share can also be found in the districts in the southern part of western Slovakia. The very opposite situation was found in the capital city and surrounding area and in several districts of central Slovakia (Figure 8). This central area had the districts with the highest shares of people working in industry and mining. The above-mentioned districts of northern, northeastern, and southern Slovakia, on the other hand, had the smallest shares of persons active in this economic sector (Figure 9).

CONCLUSION

The post-war population conscription in 1946 in Slovakia was a specific kind of statistical enumeration in terms of its nature, the primary reasons for its implementation, and the very course and method of its implementation, as it was basically implemented in a close time interval after the largest war in world history. Even though it was not a properly planned population census carried out under the auspices of the statistical office, it occupies a unique place

in the history of censuses in Slovakia. It represents important evidence of the effort and abilities applied in order to obtain necessary and in many ways unique information in the difficult post-war months and the methods used to do so.

On the other hand, in a retrospective light it is necessary to view this population conscription in the context of its time and reference to the main goals and possibilities of its authors. We can only agree with Jureček (1951: 7*), who noted in this regard: *'both [population conscriptions] were children of their time, which required quick and prompt solutions and favoured improvisation over long preparations and considerations'*. An equally important realisation is that the results of the post-war population conscription were to be used for purely practical purposes and thus had to be obtained as quickly as possible. This also affected the quality of the preparation process, the very scope of the collected data, and the course of the statistical enumeration itself.

Even if the content of the collected data was relatively limited, the data were an important source of information for analysing the character of the population in Slovakia in the first post-war months. From this point of view, the speed with which the data were published and the level of detail – reporting on the regional and district as well as the national level – is remarkable.

We can assume that the simplicity of the type of data collected in of the post-war population conscription contributed to this. This probably had to do with the lower requirements for machine processing than was the case with regular population censuses. We must also not forget the acute need there was for current data. This is probably why only data related to employment and economic status were published in the first source work. It was the second source work that then significantly expanded the possibilities of the research to include some other demographic characteristics (e.g. age, gender, marital status, etc.).

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THE TREND IN THE NUMBER OF CARE ALLOWANCE BENEFICIARIES IN THE CZECH REPUBLIC IN 2007–2021

Ladislav Průša¹⁾

Abstract

A new law on social services was adopted 15 years ago that significantly changed the system used to finance these services. A care allowance was designed that is paid to persons who, due to a long-term adverse health condition, need the help of another person in taking care of themselves and ensuring their own self-sufficiency. The aim of this contribution is to characterise the trend in the number of recipients of this social benefit in the years 2007–2021, and to compare this trend with projection data on care allowance recipients and outline the possibilities of further development in this area.

Keywords: social services, care allowance, COVID–19

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INTRODUCTION

In connection with the adoption of the Act on Social Services, a new social benefit was introduced in 2007 – the care allowance. The vast majority of recipients of this social benefit are people of post-productive age. The epidemiological situation caused by COVID-19 led to a decrease in the number of deceased persons/deaths and a decline in the average life expectancy of men and women. It therefore seems expedient to assess whether the data from a past projection on the trend in the number of people receiving this social benefit remain valid and current.

1. CARE ALLOWANCE IN THE YEARS 2007–2021

Under the current legislation, a care allowance based on four degrees of dependency is paid to persons

who, due to a long-term health condition, need another person's assistance to take care of themselves and be self-sufficient. The degree of dependency is assessed based on their ability to manage the following basic life needs:

- mobility;
- orientation;
- communication;
- meals;
- dressing and putting on shoes;
- personal hygiene;
- fulfilment of physiological needs;
- healthcare;
- personal activities;
- care for the household (this is not assessed for those under the age of 18).

The ability to manage basic life needs is assessed based on the functional impact of a long-term health

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condition on the ability to manage basic life needs. In order to recognise dependency in a particular basic life need, there must be a causal connection between the impairment of functional abilities caused by a particular health condition and the loss of the ability to manage the basic life need at an acceptable level. Functional abilities are assessed according to the abilities that a person with a condition still retains and in reference to what use is made of commonly and the utilisation of commonly available aids, means, objects of everyday use, equipment in the household and public spaces, or the use of medical devices.

A person under the age of 18 is considered dependent on the assistance of another person if:

- He or she is unable to manage three basic life needs due to a long-term health condition – first degree (slight) dependency;
- He or she is unable to manage four or five basic life needs due to a long-term health condition – second degree (moderately severe) dependency);
- He or she is unable to manage six or seven basic life needs due to a long-term health condition – third degree (severe) dependency;
- He or she is unable to manage eight or nine basic life needs due to a long-term health condition – fourth degree (complete) dependency

and requires a daily special care provided by another person.

A person over the age of 18 is considered dependent on the assistance of another person if:

- He or she is unable to manage three or four basic life needs due to his or her long-term unfavorable health condition – first degree (slight dependency);

- He or she is unable to manage five or six basic life needs due to his or her long-term unfavorable health condition – second degree (moderately severe dependency);
- He or she is unable to manage seven or eight basic life needs due to his or her long-term unfavorable health condition – third degree (severe dependency);
- He or she is unable to manage nine or ten basic life needs due to a long-term health condition – fourth degree (complete) dependency and requires daily assistance, supervision, or care provided by another person.

The current care allowance is as follows (see Table 1):

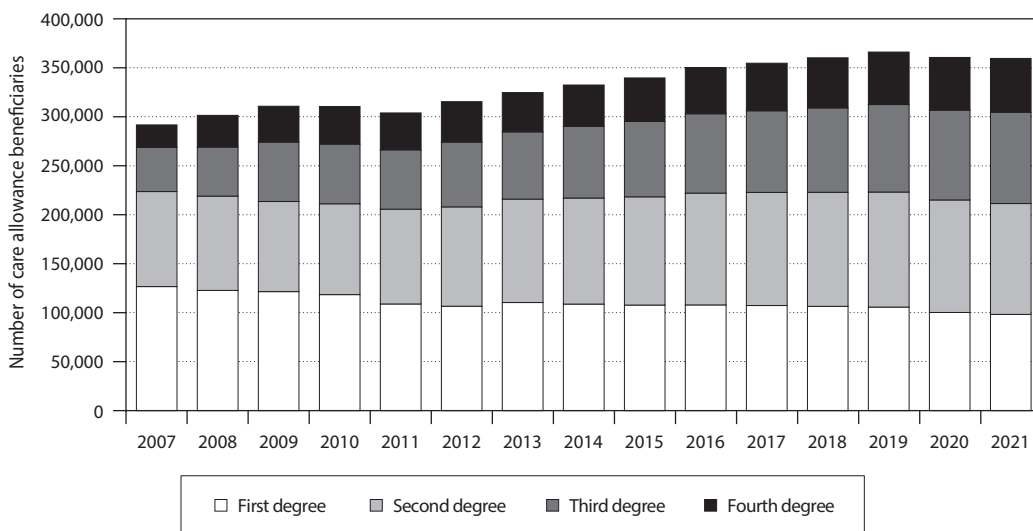
When the Social Services Act was drafted, it was assumed that approximately 175 000 people would be eligible to receive the care allowance and the cost of care allowances would amount to approximately 8 billion CZK (*Ministry of Labour and Social Affairs*, 2005). However, the actual number of care allowance beneficiaries and the cost of the care allowance payments during the period it has existed have been significantly higher than originally expected. The data from the care allowance information system show that in December 2007 approximately 292 000 people were receiving the care allowance, while in December 2010 the figure was approximately 311 000 people and in December 2019 it was more than 366 000 people.

The COVID-19 pandemic, which started in March 2020, had an impact on the trend in the number of care allowance beneficiaries. The data from the Ministry of Labour and Social Affairs' information system clearly show that compared to December 2019, when 366 000 persons were receiving the care allowance, by December 2021 the number of care allowance beneficiaries had dropped by approximately 6 500,

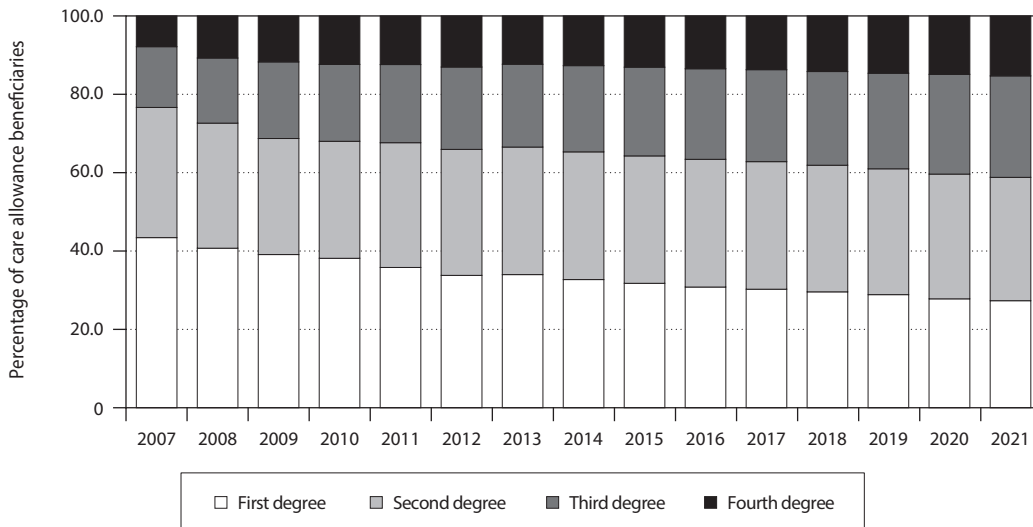
Table 1 Care allowance (in CZK/month)

Degree of dependency	Persons under the age of 18	Persons over the age of 18
First	3,300 CZK	880 CZK
Second	6,600 CZK	4,400 CZK
Third	13,900 CZK	12,800 CZK
Fourth	19,200 CZK	19,200 CZK

Source: Section 11 of Act No. 108/2006 of Coll., on social services, as amended.

Figure 1 The trend in the number of care allowance beneficiaries during 2007–2021

Source: Internal data of the Ministry of Labour and Social Affairs.

Figure 2 The trend in the percentage of care allowance beneficiaries during 2007–2021

Source: Internal data of the Ministry of Labour and Social Affairs.

while the number of care allowance beneficiaries classed as having a third or fourth degree of dependency had continued to rise (increasing by approximately 4 000 in the case of third-degree

dependency and by approximately 1 500 in the case of fourth-degree dependency).

These changes were also reflected in the structure of care allowance beneficiaries (see Figure 2).

These data show the following changes in December 2021 compared to December 2007:

- The percentage of care allowance beneficiaries classed with first-degree dependency dropped by 16.1 percentage points (from 43.4% to 27.3%);
- The percentage of care allowance beneficiaries classed with third-degree dependency went up by 10.4 percentage points (from 15.5% to 25.9%) and the percentage with fourth-degree dependency rose by 7.4 percentage points (from 7.9% to 15.3%).

The key factor responsible for these changes in the relative structure of care allowance beneficiaries was the decrease in the amount of the care allowance paid to people classed with first-degree dependency from CZK 2000 to CZK 800, a change that became effective on 1 January 2011 when Act No. 347/2009 Coll., amending some laws, was adopted as part of austerity measures/cutbacks introduced under the Ministry of Labor and Social Affairs. These measures resulted in an absolute decrease in the number of care

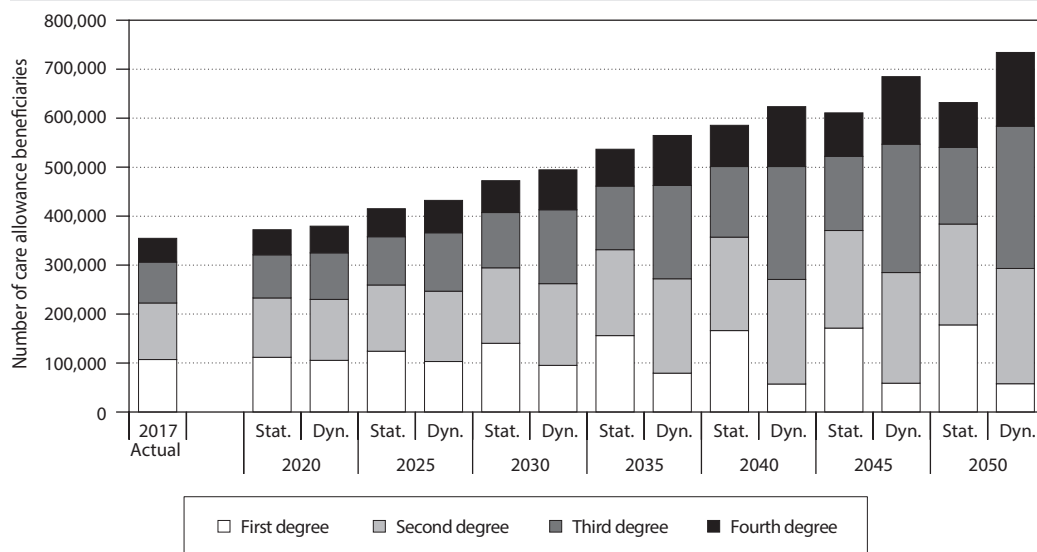
allowance beneficiaries classed with first-degree dependency, since many potentially eligible beneficiaries no longer apply for this relatively small allowance (e.g. because their old-age pension is sufficient) (Průša, 2018). On the other hand, the increase in the amount of the care allowance paid to people classed with a third- or fourth-degree dependency in 2019 led to an increase in the number of care allowance beneficiaries in these dependency categories.

2. THE PROJECTION OF THE TREND IN THE NUMBER OF CARE ALLOWANCE BENEFICIARIES UP TO THE YEAR 2050

In 2018, a projection was made to estimate the trend in the number of care allowance beneficiaries up to the year 2030 (Průša, 2018) and then extended all the way to the year 2050 (Horecký – Průša, 2019). Two variants were used to estimate these projections:

- the static variant – in which the percentage of care allowance beneficiaries in the total population by gender, age, and degree

Figure 3 The projected trend in the number of care allowance beneficiaries to the year 2050



Note: stat. = static variant - the percentage of care allowance beneficiaries in the total population by gender, age and degree of dependency in 2016 is preserved unchanged, dyn. = dynamic variant - this projection takes into account changes in the percentage of care allowance beneficiaries in the total population by gender, age, and degree of dependency between 2011 and 2016.

Source: Horecký – Průša, 2019.

Table 2 A comparison of the data on the number of care allowance beneficiaries with projected data

Degree of dependency	2020		
	Static variant	Dynamic variant	Reality
First	111,728	105,498	100,231
Second	121,161	124,517	114,782
Third	88,010	95,144	91,708
Fourth	51,415	54,353	53,818
Total	372,315	379,512	360,539

Source: Internal data of the Ministry of Labour and Social Affairs; Horecký – Průša, 2019.

of dependency from 2016 remains unchanged until 2050,

- the dynamic variant – which takes into account changes in the percentage of care allowance beneficiaries in the total population by gender, age, and degree of dependency between 2011 and 2016, and the average annual change in this percentage is projected at the same level after the entire monitored period up to 2050.

The data obtained from these projections show that the number of care allowance beneficiaries will continue to rise in the future due to an increase in the number of persons of post-productive age; in 2050, the number of beneficiaries will be between 632 000 and 734 000 persons (see Figure 3).

If we compare the data on the number of recipients of the care allowance with the projected data for 2020, we find that the total number of beneficiaries of this social benefit was approximately 12 000 persons fewer than there were approximately 12 000 fewer recipients of the allowance than in the static version of the projection. This difference was mainly caused by the lower number of beneficiaries of this benefit in the categories of first- and second-degree dependence. In contrast, the number of care allowance beneficiaries in the categories of third- and fourth-degree dependency was roughly in the middle of the interval between the static and dynamic versions of the projection, and the number of beneficiaries in the category of fourth-degree dependency even approached the upper limit of the dynamic projection variant. This is probably because of the increase

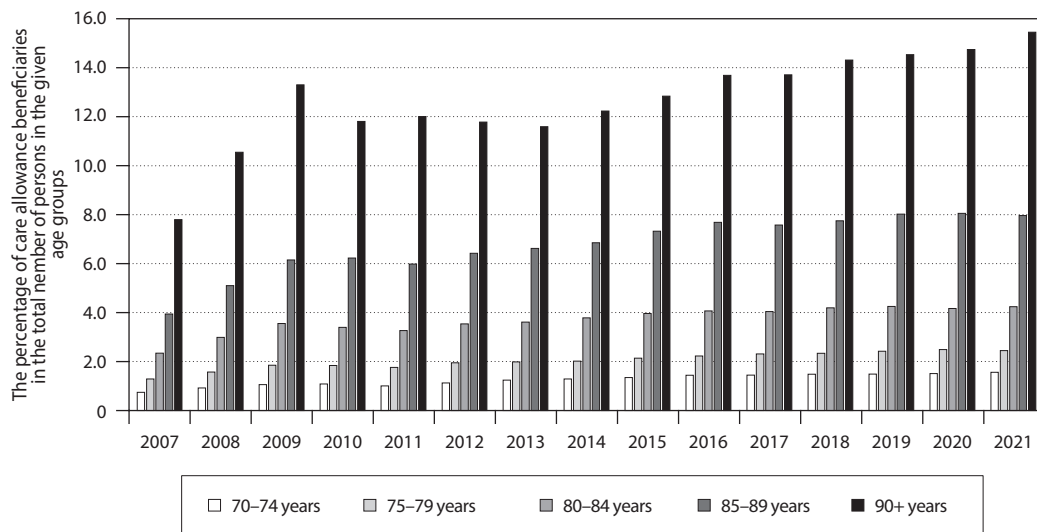
in the allowance for care in the categories of third- and fourth-degree dependency for those persons who did not use services in residential facilities, which occurred in 2019.

It is therefore obvious that, based on the new population projection, it will be necessary next year to update the projected trend in the number of care allowance recipients.

3. THE TREND IN THE PERCENTAGE OF CARE ALLOWANCE BENEFICIARIES IN THE TOTAL NUMBER OF PERSONS BY GENDER AND AGE

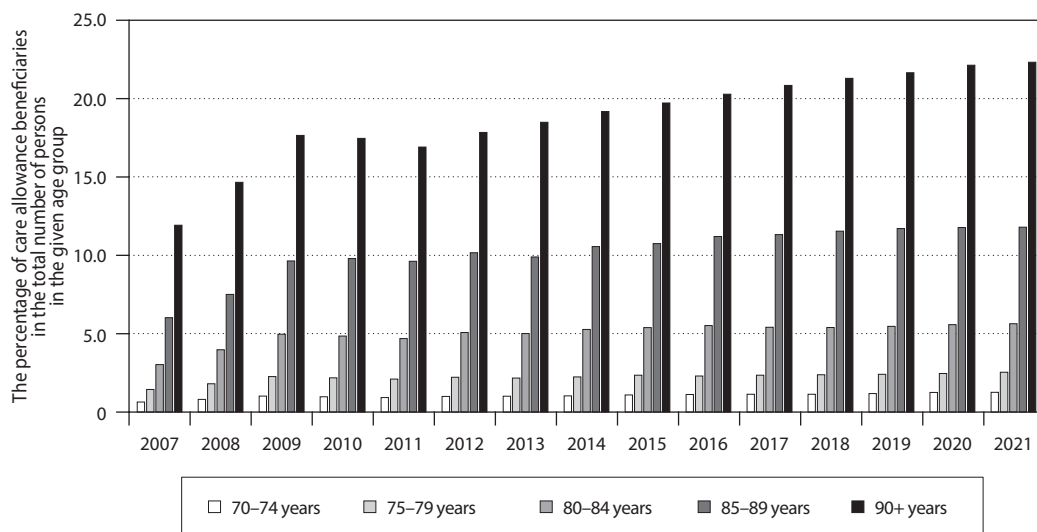
A very interesting trend in dependency is observed in individual age groups, especially in people over the age of 70. The degree of dependency, especially among persons over 70, is higher in women than in men, and this difference increases with rising age and the higher the degree of dependency. This difference can be explained by the fact that as long as senior citizens live with their partner, they can help each other to manage a difficult health situation and often do not apply for a care allowance, even though they would likely be eligible for it. They usually apply for a care allowance once their partner dies, when they live alone, are when they are then unable to manage living on their own and are dependent on the help of their loved ones or professional social services providers. Figures 4 and 5 show the trend in the percentage of care allowance beneficiaries in the total number of persons in the given age group during 2007–2021 in the case of men and women classed with a third-degree dependency.

Figure 4 The trend in the percentage of care allowance beneficiaries out of the total number of persons in the given age group during 2007–2021 (men – third-degree dependency)



Source: Internal data of the Ministry of Labour and Social Affairs; author's calculations.

Figure 5 The trend in the percentage of care allowance beneficiaries out of the total number of persons in the given age group during 2007–2021 (women – third-degree dependency)



Source: Internal data of the Ministry of Labour and Social Affairs; author's calculations.

CONCLUSION

Analyses of social services financing systems show that the current situation in the Czech Republic, where

the care allowance is used to finance two social situations, needs to be reformed. It is necessary to separate the financing of the providers of social

services through a care allowance from the financing of the caregivers through a long-term assistance allowance or other social allowance. It is obvious that the current model of providing a monetary care allowance without setting additional conditions for allowance eligibility makes social services financing inefficient.

A new solution could include a care allowance that is provided directly to the social services provider that provides social services to the client based on a contract. Also, dependency should be more differentiated, as the four degrees of dependency that the Czech system currently recognises are the fewest degrees of dependency among countries

in Europe. It would also be good to expand the spectrum of activities and needs when assessing the degree of dependency, to assign weights to these needs and activities, and to expand the number of degrees of dependency. For instance, the detailed list of dependency assessment in Germany, which came into effect on 1 January 2017, shows that this assessment is significantly more detailed, and therefore probably more accurate, than that in the Czech Republic (Hon – Průša – Bareš, 2020). Differentiating a greater number of degrees of dependency can thus be more accurate [would be a more accurate reflection of reality than the current system is.] than the current differentiation (Průša et al., 2021).

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Appendix

Trend in the number of care allowance beneficiaries over time						
Year	Variant	Degree of dependency				
		I	II	III	IV	total
2007	Reality	126,614	96,965	45,208	22,888	291,675
2010		118,388	92,778	60,907	38,441	310,514
2015		107,793	110,444	76,950	44,397	339,584
2017		107,285	115,466	83,295	48,636	354,682
2020	Static	111,728	121,161	88,010	51,415	372,315
	Dynamic	105,498	124,517	95,144	54,353	379,512
	Reality	100,231	114,782	91,708	53,818	360,539
2025	Static	124,291	135,199	98,474	57,336	415,300
	Dynamic	103,088	143,537	119,406	66,068	432,099
2030	Static	140,459	154,209	112,596	65,203	472,467
	Dynamic	95,320	166,805	150,867	81,640	494,632
2035	Static	156,129	175,320	129,809	75,375	536,633
	Dynamic	79,422	192,705	190,575	101,994	564,697
2040	Static	166,194	191,089	144,019	84,216	585,519
	Dynamic	57,170	213,708	230,333	122,452	623,664
2045	Static	171,453	199,154	151,540	88,922	611,069
	Dynamic	58,776	225,983	262,214	137,993	684,965
2050	Static	177,920	205,957	156,511	91,487	631,875
	Dynamic	57,655	235,634	290,473	150,536	734,298

Source: Internal data of the Ministry of Labour and Social Affairs; Horecký – Průša, 2019.

THE FIRST RESULTS FOR THE POPULATION CHARACTERISTICS OF THE 2021 CENSUS IN CZECHIA

Jakub Vachuška¹⁾ – Roman Kurkin²⁾

Abstract

The first results of the 2021 Census in Czechia were released in January 2022. The nationwide census was prepared in a combined form using both a census questionnaire and suitable administrative data sources. The aim of this paper is to analyse the data on population characteristics that were published until August 2022 – sex, age, marital status, educational attainment, citizenship, ethnicity, mother tongue, religious belief, and fertility. Where useful the variables are combined with sex/age structure. A basic comparison with data from the 2011 Census was also done. The population of Czechia increased by less than 1% and has grown older between the 2011 and the 2021 Census. The share of the population with higher levels of education continued to increase and 4.7% of the population in the 2021 Census were foreign nationals.

Keywords: 2021 Census, Czechia, sex, age, marital status, educational attainment, citizenship, ethnicity, mother tongue, religious belief, fertility

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INTRODUCTION

The 2021 Census was prepared as a combined one and the nationwide census form was supplemented with administrative data sources. The concept was same as in the 2011 Census, but more extensive use was made of administrative data sources and it was possible to reduce the number of questions (Šanda, 2022). The decisive moment was at midnight on 26 March 2021, when the electronic census forms were made available to fill in and submit. From 17 April, it was possible to obtain also paper census forms. Data collection continued until 11 May for both type of forms.

The 2021 Census was managed by the Czech Statistical Office on the basis of Act No. 332/2020

Coll. On the Census of the Population, Housing and Dwellings in 2021. The population results from the 2021 Census include all usually resident inhabitants of the Czech Republic. The place of usual residence is defined as the place where a person predominantly resides and spends his/her daily rest time, regardless of temporary absence due to recreation, visits, business trips, time spent in a health facility, etc., and where he/she is a member of a particular household (*European Commission*, 2008). For a person to be included in the usual resident population of the Czech Republic, the criterion is that the person must stay in the country for at least 12 months or have the intention to reside in the country long term.

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The first results of the 2021 Census became available on 13 January 2022 on the census website: <http://www.scitani.cz/>. The dissemination of the results is a continuous process that is going on. In this article all population characteristics published up to August 2022 are analysed. These include sex, age, marital status, educational attainment, citizenship, ethnicity, mother tongue, religious belief, and fertility. All characteristics are combined with sex and age group when suitable. A basic comparison is also made here with the 2011 Census, because only the last two censuses are based on the usual residence concept, so a comparison is useful.

The sources of data for this article were the results of the 2021 (and 2011) Census. However, some data are not derived from census forms but from administrative data sources. The population characteristics used in this paper could be divided into three categories. First there are the variables taken directly from administrative data sources, which were not part of the census form. Citizenship was taken from the Population Register managed by the Ministry of the Interior. Data on the marital status of Czech citizens came from the Information System of Inhabitants Records (the Ministry of the Interior) and data on the marital status of foreign nationals came from the Alien Information System (the Directorate of Alien Police).³⁾ Second, there are characteristics that were derived only from census forms – ethnicity, mother tongue, and religious belief – which are not available from any register because of their confidentiality and subjectivity. The last category consists of characteristics that were derived from information from both census forms and administrative data sources. Information from the census form usually had priority, if it passed controls. This last category includes sex and age (the Population Register), educational attainment (Registers of

the Ministry of Education, Youth and Sports), and fertility and specifically the number of children ever born alive to a woman (the Information System of Inhabitants Records and the Alien Information System – the relationship between mother and child).

POPULATION BY SEX AND AGE

The total population of Czechia according to the 2021 census was 10,524,167 and it rose by 87,607 people or 0.8% from the Census in 2011 (Table 1). The population was rather evenly distributed between men and women as it consisted of 49.3% men and 50.7% women. Compared to the 2011 Census the size of the male population increased by 1.5% and the size of the female population increased by 0.2%.

When it comes to dividing the population by age, the broadest categories 0–14, 15–64 and 65 and over were used. In the 2021 Census 16.1% of the population were aged 0–14 years, 63.5% were aged 15–64, and 20.4% were aged 65 and over. These shares were different for men and women: 16.7% of men were aged 0–14, 65.9% were aged 15–64, and 17.4% were aged 65 and over, while for women the corresponding percentages were 15.5%, 61.2%, and 23.3%. According to this indicator, the female population inclined to higher ages and was therefore older. It is also worth mentioning that the number of people whose age was unknown was almost 36,000 in the 2011 Census, while in the 2021 Census the age of every single person was known.

According to the 2011 Census, the pr–oportion of people aged 0–14 years (14.3%) and 65 and older (15.8%) in the population was smaller. This was also true for men and women separately. Among men,

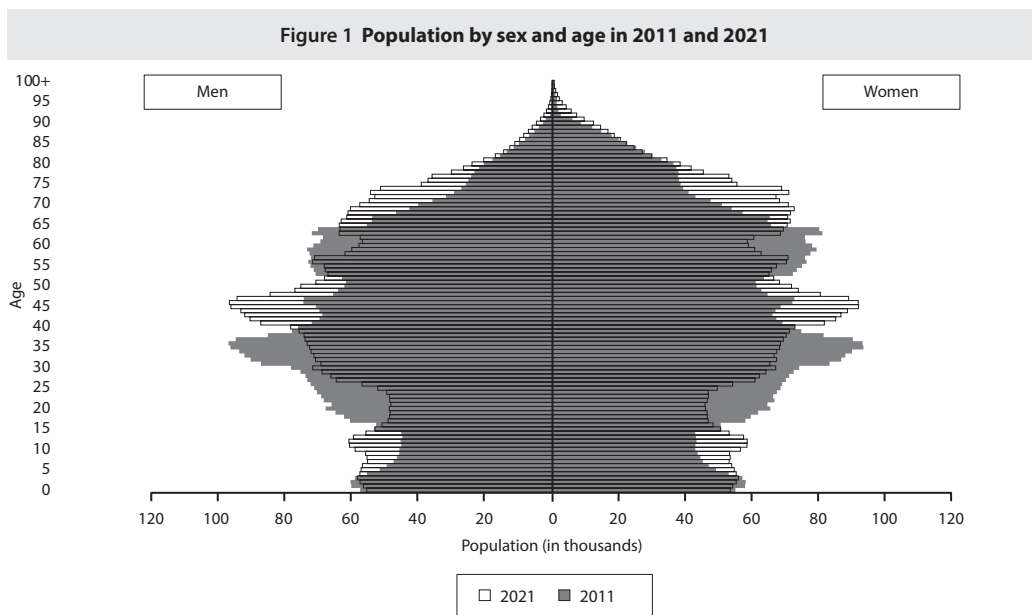
Table 1 Population by sex and age group in 2011 and 2021

Census	Total population	0–14 years			15–64 years			65+ years		
		Total	Men	Women	Total	Men	Women	Total	Men	Women
2011	10,436,560	1,488,928	763,949	724,979	7,267,169	3,661,790	3,605,379	1,644,836	664,125	980,711
2021	10,524,167	1,691,760	866,322	825,438	6,684,359	3,416,851	3,267,508	2,148,048	903,375	1,244,673

Note: The number of people with unknown age amounted to 36,000 people in the 2011 Census, while in the 2021 Census the age of every single person was known.

Source: 2011 and 2021 Census.

3) Marital status is recorded in the Population Register for the year 2022 but it was not recorded in the 2021 Census.



Source: 2011 and 2021 Census.

15.0% were aged 0–14 years and 13.0% were aged 65 and older, while among women the figures were 13.7% and 18.5%, respectively.

The mean age of the population in 2021 was 42.7 years. As noted above, women were older than men and their mean age was 44.1, while the mean age of men was 41.2 years. Women being on average older than men is one phenomenon. A second phenomenon can be observed when comparing mean age over time and in the 2011 and 2021 censuses specifically. The mean age of the population in the 2011 census was 41.0 years and thus lower than it was ten years later. This was also the case for men and women separately. The mean age of men in the 2011 census was 39.5 years and the mean age of women was 42.4 years; both men and women were older on average by 1.7 years.

A population pyramid (Figure 1) is used to present results by sex and age. The population of Czechia according to the 2011 Census is added for comparison. It illustrates both of the facts already mentioned: first, the ageing of the total population between the two censuses as an effect of more people surviving to an older age; and second, women being older on average as more of them live to an older age than men due to their overall lower level of mortality. The age of the largest number of men was 46 and the age of the

largest number of women was 45. People of this age were born in the 1970s, a decade that saw the largest birth cohorts in a long time.

Another indicator that describes the age structure is the ageing index. It represents the number of people aged 65 and over per 100 people aged 0–14 years. The ageing index was 127.0 in 2021, which means that there were 127 people aged 65 and over per 100 children aged 0–14 years. This figure was 104.3 for men and 150.8 for women, again showing the higher tendency for women to live to an older age. This indicator has changed greatly since the 2011 Census when these figures were 110.5 for the whole population and 86.9 for men and 135.3 for women.

POPULATION BY MARITAL STATUS

The results of the 2021 Census by marital status were processed using the administrative data sources of the Ministry of the Interior. The most common marital status among men and women whose marital status was known was never married: the share of never married men reached 48.0% and the share of never married women reached 38.2% (Table 2). The structure of the rest of the population by marital status was: married 38.9%, divorced 10.5%, and widowed 2.4%

Table 2 Population by marital status and sex in 2011 and 2021

Census	Men						Women					
	Total	Never married	Married	Divorced	Widowed	Not identified	Total	Never married	Married	Divorced	Widowed	Not identified
2011	5,109,766	2,287,597	2,211,579	466,461	126,475	16,086	5,326,794	1,876,830	2,197,895	606,486	634,671	10,237
2021	5,186,548	2,477,039	2,009,738	544,287	124,903	26,612	5,337,619	2,031,554	1,997,604	688,825	595,672	21,203

Source: 2011 and 2021 Census.

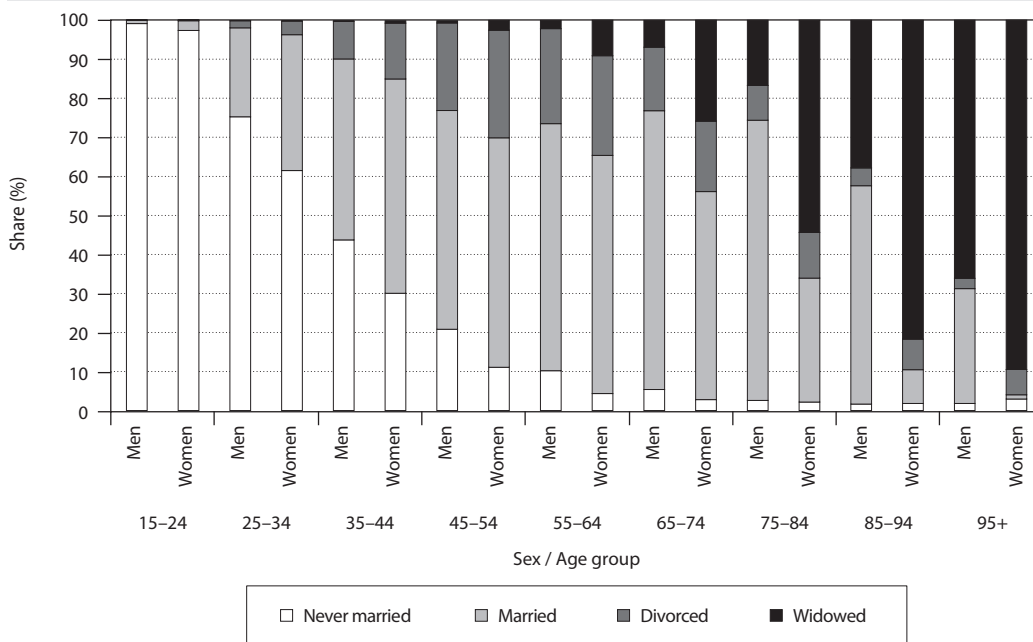
among men and married 37.6%, divorced 13.0%, and widowed 11.2% among women.

The administrative data sources of the Ministry of the Interior also contained information on registered partnerships. More than 3,000 men and more than 2,000 women were in a registered partnership according to the 2021 Census compared to 1,400 men and almost 600 women in the 2011 Census. For more than 700 men and more than 700 women in 2021 census and for more than 100 men and almost 100 women was registered partnership dissolved either

by a court decision or by the death of a partner. According to the 2021 Census, more than 700 women and more than 700 men had their registered partnership dissolved by a court, while the registered partnership of more than 100 men and more than 100 women was ended by the death of a partner. The number of people whose marital status was unknown was almost 48,000 in the 2021 Census and more than 26,000 in the 2011 Census.

In the 2011 Census these figures were quite different. The biggest difference was that most women

Figure 2 Share of the population of the given sex and age group by marital status in 2021 (%)



Note: Only for population with known marital status.

Source: 2021 Census.

were married: married women made up 41.3% of all women with known marital status, while never married women made up 35.3%. Married men made up 43.4% of all men and never married men made up 44.9%. Divorced men accounted for 9.2% (of the male population) and divorced women accounted for 11.4% (of the female population). The proportion of widowed men and widowed women in 2021 remained almost unchanged from the 2011 Census, when 2.5% of men and 11.9% of women were recorded as widowed.

However, these figures were highly dependant on age (Figure 2). In every ten-year group from 15–24 up to 65–74 years there was a higher share of never married men (among those with known marital status) than never married women, with the biggest difference observed in the 25–34 age group. Conversely, the proportion of married women was higher than the proportion of married men up to the 45–54 age group (included; with the biggest difference in the 25–34 age group), while from the 55–64 age group the proportion of married men began quickly rising above that of married women. While 55.9% of men aged 85–94 years were married, only 8.7% women of this age were married. As described in the paragraph below, this is a consequence of men having a shorter life expectancy than women: life expectancy at birth was 75.3 years for men and 81.4 years for women in 2020 (Český statistický úřad, 2021). The proportion of divorced men in every age group used in this article was similar to the proportion of divorced women: the biggest difference was just 5.0 percentage points at the age of 45–54 years. Widowhood was the most common marital status in the 75–84 age group and in every older group after that in the case of women and in the age group of 95 years and older in the case of men. On average 9 out of 10 women aged 95 or older were widows.

These figures are consistent with demographic knowledge (Koukalová, 2022). In Czechia women enter marriage on average earlier than men and with a higher intensity than men, and the 2021 Census data indicate a higher proportion of never married among men than women and, up to a certain age, a higher proportion of married among women than among men. Then from that age up the higher mortality rate among men causes marriages to end in women becoming widowed, and the low divorce rate

at an older age means that a high proportion of men who live to an older age are married.

POPULATION BY EDUCATIONAL ATTAINMENT

The highest level of educational attainment was surveyed only among people aged 15 and over according to the highest school completed. The data provided on the census form were supplemented with information on education from administrative data sources. The proportion of people with tertiary education out of the population aged 15 and over whose highest educational level was known was 18.7% in 2021. The most common educational levels were secondary including vocational without the school-leaving exam; 32.9%) and secondary or post-secondary education (32.8%). There was a substantial share of people with primary or lower secondary education, who accounted for 13.3% of the total. Education levels tended to be higher among the female population than the male population. Women made up a larger proportion of those with upper secondary, post-secondary, and tertiary education and a much smaller proportion of those with secondary including vocational (without the school-leaving exam). Contrary to the statement about women having higher levels of education, women had a larger share of people with lower secondary or primary education than men.

The biggest difference between the 2011 and 2021 Censuses was in the share of people with primary or lower secondary and tertiary education. While in the 2021 Census 13.3% of people had primary or lower secondary education, in 2011 the figure was 18.5%, and while 18.7% of people had tertiary education in the 2021 Census, in the 2011 Census the figure was 13.2%. When it comes to men, it was very similar, as in the 2021 Census 11.0% of men had primary or lower secondary education while in 2011 the figure was 14.2%, and 18.1% in the recent census had tertiary education while ten years ago the figure was 14.2%. Secondary including vocational (without the school-leaving exam) was another category with a notable difference: men with this level of education declined from 41.7% to 38.7%. An even bigger change was observed in the case of women with primary or lower

Table 3 Population by education attainment in 2011 and 2021

Census	Population aged 15 and older	No education	Primary or lower secondary education	Secondary including vocational (without the school-leaving exam)	Upper secondary or post-secondary ¹⁾ education	Post-secondary ¹⁾ professional education, conservatory	Tertiary education
2011	8,912,005	41,632	1,568,732	2,948,280	2,670,725	116,988	1,113,887
2021	8,832,407	56,100	1,107,860	2,736,983	2,729,091	138,588	1,552,407

Note: 1) Post-secondary non-tertiary. Categories by ISCED 2011 level: No education – 0; primary or lower secondary education – 1, 2; Secondary including vocational (without the school-leaving exam) – 3; Upper secondary or post-secondary education – 3, 4, 5; Post-secondary professional education, conservatory – 5; Tertiary education – 6, 7, 8.

Source: 2011 and 2021 Census.

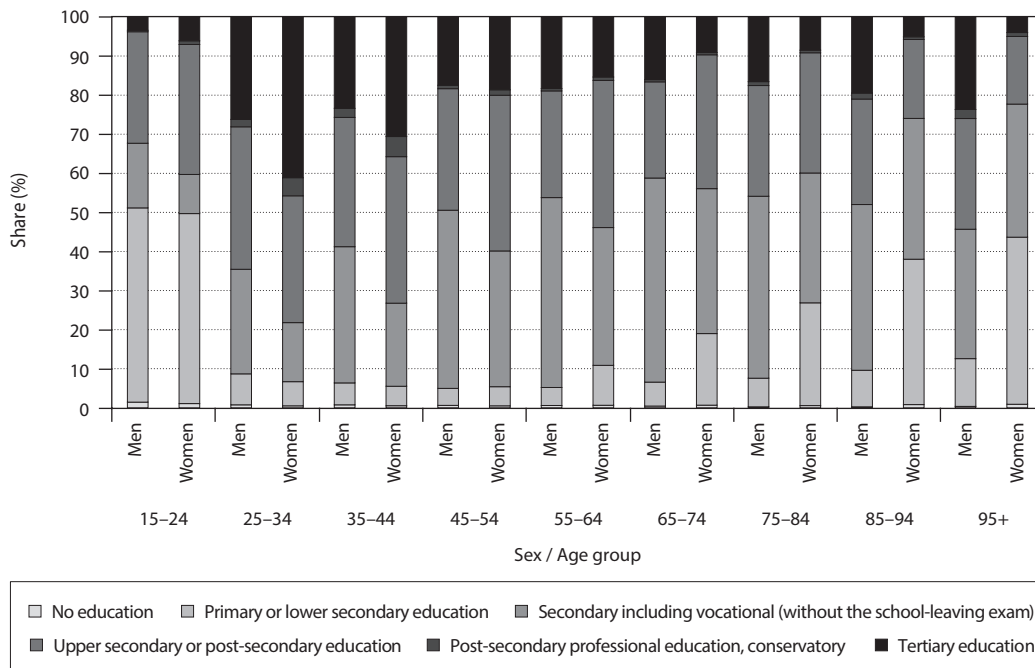
secondary education, which declined from 22.6% in the 2011 Census to 15.5% in the 2021 Census. A significant change was also observed in the case of women with tertiary education, which increased from 12.2% in 2011 to 19.1% in 2021.

From the 45–54 age group to older ages there was a trend of a rising share of men and women with primary or lower secondary education and

in these age groups this educational level was more common among women than men in 2021 (Figure 3).

The highest share of people with this educational level is in the 15–24 age group, which is due to the fact that they are still actively attending school. Men formed the larger proportion of people with secondary including vocational (without the school-leaving exam) than women in all the age groups used here except

Figure 3 Share of the population of the given sex and age group by educational attainment in 2021 (%)



Note: Only for the population with known education attainment.

Source: 2021 Census.

for the oldest one. People with secondary including vocational (without the school-leaving exam) reached the highest share in the 65–74 age group, as more than half of men and more than one-third of women in this age group had this education level.

Upper secondary or post-secondary education was more common among men than women in the 25–34, 85–94, and 95 and older age groups, while in all the other groups it was more common among men. The highest proportion of people with this education level was in the 25–34 age group (men) and the 45–54 age group (women). For both men and women in every age group, except for women in one age group, the smallest shares were those with post-secondary professional education or conservatory when compared to all the other categories of at least some level of education (meaning compared to each category except for no education). Women formed a higher share at this level of education than men in every age group up to 65–74, while the opposite was true in older age groups. Although women formed the larger share of people with tertiary education, this differed by age: Up to 45–54 years women more often had tertiary education than men, but from ages 55–64 and up men more often had tertiary education than women. The largest share of people with

tertiary education was observed among people aged 25–34 years (26.2% of men in this age group and 41.1% of women).

POPULATION BY CITIZENSHIP

According to the data taken from Population Register, 4.7% of the usually resident population in 2021 were foreign nationals and 94.6% were Czech citizens, both with one citizenship. The share of population with more than one citizenship was 0.4% and the share whose citizenship was not identified was 0.3%. Only 270 inhabitants had no citizenship. In accordance with a uniform methodology applied in all EU countries, persons with multiple citizenships are in this article classed into one country of citizenship in the following order: the Czech Republic, other EU Member State, other European country, other country outside Europe (European Commission, 2017). Since almost 90% of residents with multiple citizenship have a combination with Czech citizenship, the share of Czech citizens after this adjustment rose to 95.0% (Table 4) and proportion of foreigners remained the same (4.7%).

In comparison with 2011, the population with Czech citizenship rose by almost 46,000 (+0.4%); however, the population of foreign nationals rose even

Table 4 Population by citizenship and sex in 2011 and 2021

Census	Population with Czech citizenship			Population with foreign citizenship		
	Total	Men	Women	Total	Men	Women
2011	9,952,574	4,832,461	5,120,113	422,276	242,303	179,973
2021	9,998,510	4,899,007	5,099,503	496,250	271,337	224,913

Source: 2021 Census.

Table 4 Population by citizenship and sex in 2011 and 2021

Citizenship	Total	Men	Women
Ukrainian	150,505	83,244	67,261
Slovak	95,821	48,550	47,271
Vietnamese	54,256	28,707	25,549
Russian	35,785	15,580	20,205
Polish	14,450	6,099	8,351
Romanian	11,890	7,523	4,367
Bulgarian	11,006	6,693	4,313

Note: The selected citizenships are those with a sub-population of more than 10,000 people in the country.

Source: 2021 Census.

more – by 74,000 (+17.5%). The share of women in the population with Czech citizenship decreased slightly between 2011 and 2021 from 51.4% to 51.0%, while the share of women among foreign nationals increased from 42.6% to 45.3% in the same period. This finding is consistent with the trend towards the feminisation of migration in the Czech Republic (*Grajciarová, 2015*).

The most numerous sub-population with foreign citizenship in 2021 was that of Ukrainians (almost 151,000) followed by people with Slovak (96,000) and Vietnamese (54,000) citizenship (Table 5). Men made up a large/the larger share of foreign nationals with Romanian (63.3%), Bulgarian (60.8%), and Ukrainian (55.3%) citizenship. In contrast, women formed the majority of Polish (57.8%) and Russian (56.5%) foreign nationals.

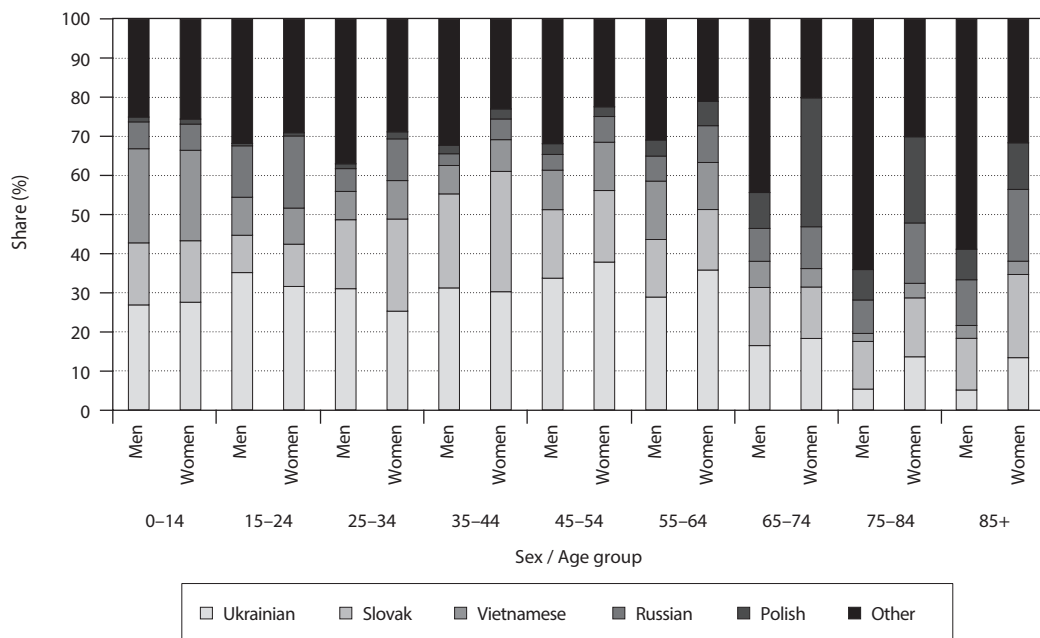
Ukrainian citizens were the most numerous foreign population among all the sub-populations by sex and age group defined in Figure 4 up to the 65–74 age group for men and the 55–64 age group for women. The share of Ukrainians was the largest in the 45–54

age group. Slovak citizens were the largest group of foreign nationals among men aged 75 and over and women aged 85 and over, but their share of foreign nationals was largest in the 35–44 age group. The proportion of Vietnamese citizens was largest in the 0–14 age group and the share of Russian citizens was largest in the 15 and 24 age groups. Polish women were dominant in the 65–74 and 75–84 age groups, the same is true for their highest shares.

POPULATION BY ETHNICITY

Ethnicity was reported by each person according to their own choosing. It was possible to indicate up to two ethnicities or to indicate none. This concept of free self-declaration is in concordance with United Nations recommendations (United Nations, 2017). Almost one-third of the population (31.6%) did not specify their ethnicity, which is about six percentage points more than in 2011. In the recent census 64.5% of the population declared only one

Figure 4 Share of the foreign population of the given sex and age group by citizenship in 2021 (%)



Note: Only the population of foreign nationals is included.
Source: 2021 Census.

Table 6 Population by ethnicity in 2011 and 2021

Census	Total population	Czech	Moravian	Slovak	Ukrainian	Vietnamese	Polish	Russian	Silesian	Not specified
2011	10,436,560	6,711,624	521,801	147,152	53,253	29,660	39,096	17,872	12,214	2,642,666
2021	10,524,167	6,033,014	359,621	96,041	78,068	31,469	26,802	25,296	12,451	3,321,058

Note: Includes only persons with one ethnicity. Ethnicities with more than 10,000 people were selected.
Source: 2011 and 2021 Census.

ethnicity (compared to 73.1% in 2011) and 4.0% (or 420,000 inhabitants) indicated two ethnicities in 2021 compared to 1.6% (or 164,000 inhabitants) in 2011.

In the case of dual ethnicity both ethnicities are considered equal; the prioritisation of one over the other, like in the case of citizenship, was not done. Table 6 and Figure 5 include only persons with one ethnicity, since to include and count persons with dual ethnicity and in both sub-populations would lead to a distortion of shares or comparisons with the 2011 Census. Combination of ethnicities is presented separately in Table 7.

The share of Czechs in the population with specified ethnicity decreased from 86.1% in 2011 to 83.8% in 2021 (in absolute number by 679,000). The proportion of Moravians and Slovaks declined to 5.0% and 1.3%, respectively. The least numerous ethnic group with a significant decrease was the Polish

ethnicity, the share of which decreased to 0.4%. Conversely, the share of Ukrainians and Russians rose to 1.1% and 0.4%. A small increase was also identified among the Vietnamese. The most significant relative increase between 2011 and 2021 was among Ukrainians (+46.6%) and Russians (+41.5%).

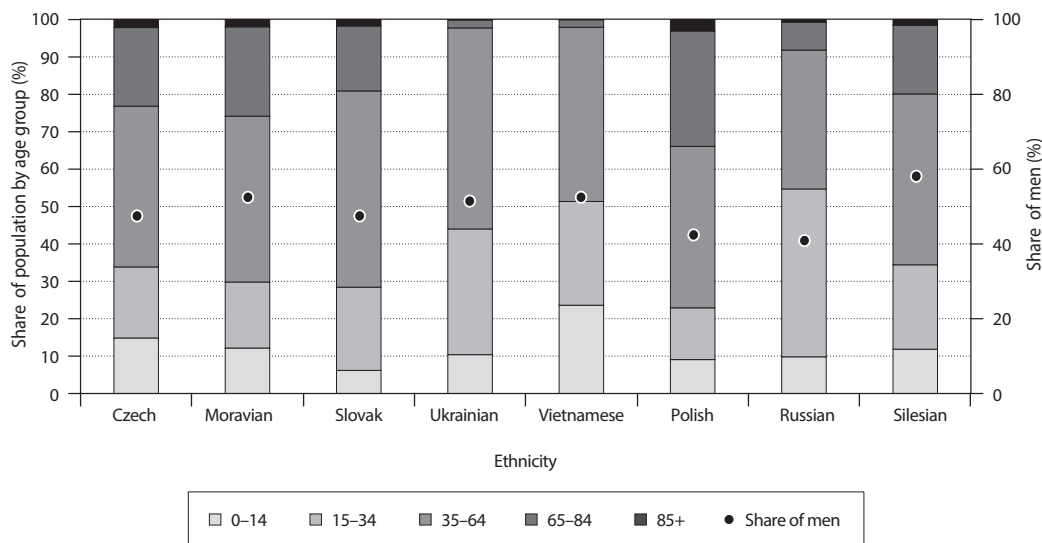
The inclusion of ethnicity combinations led to a significant increase in the number of people who declared themselves to be Europeans, which rose to 25,000 in 2021 (6.5 times more than those who declared this their exclusive ethnicity), Roma, rising to 22,000 (4.9 times more), and Germans, which rose to 25,000 (2.7 times more). If we consider only the large ethnic groups, Ukrainians relatively less often declared their ethnicity with another relatively less often (Table 6a). The same is true of Czechs, but in absolute numbers (382,000) the Czechs were the ones who declared dual ethnicity the most. The most numerous combinations of ethnicity were

Table 7 Population by ethnicity and dual ethnicity in 2021

Ethnicity	Exclusive	In combination with another ethnicity ¹⁾	Total ¹⁾
Czech	6,033,014	382,090	6,415,104
Moravian	359,621	197,020	556,641
Slovak	96,041	66,537	162,578
Ukrainian	78,068	14,824	92,892
Vietnamese	31,469	7,254	38,723
Polish	26,802	11,416	38,218
Russian	25,296	9,210	34,506
Silesian	12,451	18,850	31,301
German	9,128	15,504	24,632
European	3,741	20,835	24,576
Roma	4,458	17,233	21,691

Note: Ethnicities with more than 20,000 people in total were selected. Ranking by total. 1) Persons who stated two ethnicities are included in both ethnicities.
Source: 2021 Census.

Figure 5 Share of population of a given ethnicity by age group or sex in 2021 (%)



Note: Includes only persons with one ethnicity. Ethnicities with more than 10,000 people were selected.
Source: 2021 Census.

Czech and Moravian (180,000) and Czech and Slovak (59,000).

The Vietnamese had the largest share of children aged 0–14 in 2021 – 23.6% (Figure 5) – while the Slovaks had the smallest proportion of children in this age group (6.2%). The Russians were dominant in the 15–34 age group – 44.9% of all Russians were identified in this age group. The majority (53.8%) of Ukrainians were aged between 35 and 64. Poles were more concentrated than any other large ethnic group in the 65–84 (30.9%) and 85 and over (3.1%) age groups. By contrast, people aged 65 and over were less common among Ukrainians and Vietnamese people (around 2.0%). Men made up a significant majority in the case of Silesians (58.3%) and only a slight majority (around 52.0%) in the case of Moravians, Vietnamese, and Ukrainians. Distinctly more women were among Russians (59.2%) and Poles (57.2%). Among Czechs and Slovaks also women formed a slight majority (around 52.5%).

POPULATION BY MOTHER TONGUE

The mother tongue was defined as the language that the enumerated person spoke as a child with

his/her mother or those who raised him/her. It was possible to state two languages. In 2021, 90.3% of the population indicated only one language, while ten years ago the figure was 93.1%. Share of respondents with two mother tongues stayed the same at 2.5%. The proportion of inhabitants whose mother tongue was not identified slightly increased from 4.4% in 2011 to 7.2% in 2021.

Dual mother tongues are considered equal; the prioritisation of one over another, like in the case of citizenship, was not done. Table 8 and Figure 6 include only persons with one mother tongue. The reasoning is the same as in the case of ethnicity. Combinations of mother tongues are stated separately in Table 9.

The share of the population with Czech as their mother tongue among those whose mother tongue was identified slightly decreased from 92.9% to 92.1% (a decrease in absolute numbers of 267,000) between 2011 and 2021. The share of the population whose mother tongue was Slovak remained at almost the same level around 1.5%. A big decrease from 0.6% to 0.2% was observed in the share of people who declared Moravian as their mother tongue. The most intense relative increase in the population by mother tongue was among inhabitants who claimed English

Table 6 Population by mother tongue in 2011 and 2021

Census	Total population	Czech	Slovak	Ukrainian	Russian	Vietnamese	Polish	Moravian	English	German	Not identified
2011	10,436,560	9,263,300	154,465	48,250	31,622	30,830	33,597	62,908	7,202	14,148	464,056
2021	10,524,167	8,996,475	150,738	88,873	59,560	43,822	30,183	16,523	13,997	10,151	759,394

Note: Includes only persons with one mother tongue. Mother tongues with more than 10,000 people were selected.
Source: 2011 and 2021 Census.

(+94.3%), Russian (+88.3%), and Ukrainian (+84.2%) as their mother tongue (Table 6b). The share of those who declared Vietnamese to be their mother tongue also increased from 2011 (+42.1%). The number of persons who declared Moravian to be their mother tongue decreased to around quarter of the level it was at ten years ago.

The inclusion of combinations of mother tongues led to a substantial increase in the number/share of the population who declared their mother tongue to be Roma (6.6 times), German (3.1 times), and English (2.2 times) (Table 9). German and English overtook Moravian as mother tongues with the introduction of these combinations. Although a relatively small increase of inhabitants was identified after including combination among population with Czech mother tongue (+2.4%), absolute increase was the most numerous (by 218,000). The most frequent combinations of mother tongues were Czech

and Slovak (69,000), Czech and Roma (22,000), and Czech and German (20,000).

Inhabitants with Vietnamese as their mother tongue had the largest share of children aged 0–14 in 2021 – 17.5% (Figure 6). Conversely, the smallest proportions of children were among people whose mother tongue was German (2.9%) and Slovak (3.8%). The largest share of people who declared Russian to be their mother tongue was in the 15–34 age group. Among people who indicate their mother tongue as Ukrainian, the majority (57.1%) were between 35 and 64 years of age. In older sub-populations German and Polish were the mother tongues declared more often; 43.6% of people who claimed German as their mother tongue were in the 65–84 age category and 10.5% were aged 85 and over. Among those who claimed Polish as their mother tongue, the figure was 37.1% and 3.5% in the same age groups. Men were significantly more represented among

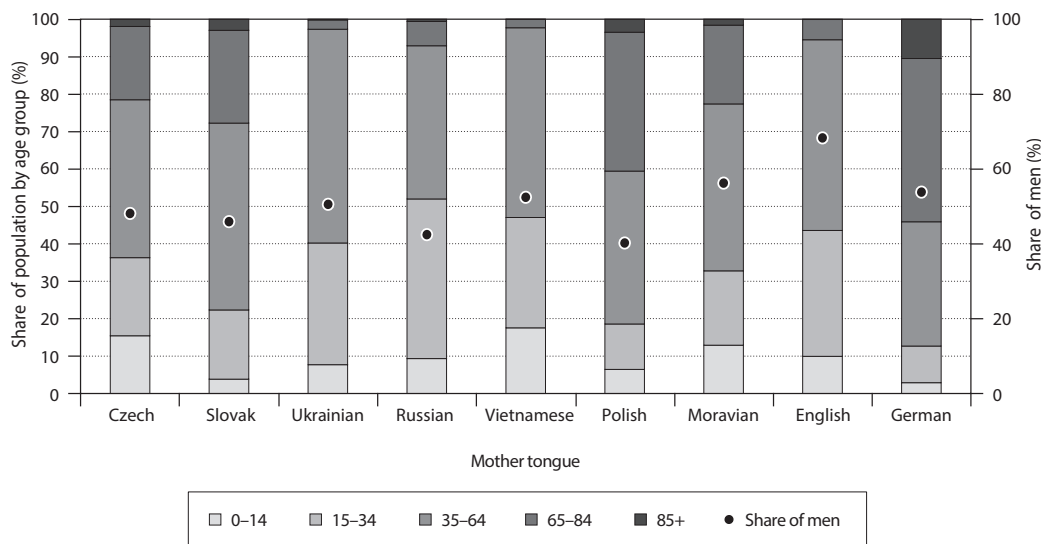
Table 9 Population by combination of mother tongues in 2021

Mother tongue	Exclusive	In combination with another mother tongue ¹⁾	Total ¹⁾
Czech	8,996,475	217,512	9,213,987
Slovak	150,738	74,508	225,246
Ukrainian	88,873	34,865	123,738
Russian	59,560	36,801	96,361
Vietnamese	43,822	13,586	57,408
Polish	30,183	19,486	49,669
German	10,151	21,605	31,756
English	13,997	16,481	30,478
Moravian	16,523	12,124	28,647
Roma	4,280	23,822	28,102

Note: Mother tongues with more than 20,000 people in total were selected. Ranking by total. 1) Persons with two mother tongues are included in both mother tongues.

Source: 2021 Census.

Figure 6 Share of the population with the given mother tongue by age group or sex in 2021 (%)



Note: Includes only persons with one mother tongue. Mother tongues with more than 10,000 people were selected.
Source: 2021 Census.

the sub-populations who declared English (68.3%) and Moravian (56.2%) as their mother tongue. In contrast, women formed the majority among inhabitants with Polish (60.0%) and Russian (57.6%) as their mother tongue.

POPULATION BY RELIGIOUS BELIEF

Providing information on one’s religious beliefs was voluntary for respondents and they were able to declare in their answer whether they were believers and indicate the religious trend, movement, church, or society to which they belonged or state that they had no religious belief. The share of people claiming they had no religious belief was almost one-half

of the population in 2021, at 47.8% (Table 10). People who specified no answer at all made up the second highest share at 30.1% (unlike other topics, no specified religious belief is a single category in this part of analysis). In the 2021 Census 13.1% of the population stated that they were believers and belonged to a church or religious society and the last 9.1% declared that they were believers but did not belong to a church or religious society.

While 30.1% of people specified no answer at all in the 2021 Census, this figure is still lower than in the 2011 Census, when the share was 44.7%. Since the 2011 Census the share of people who stated they were believers who belonged to a church or religious society decreased. If we take into account only official

Table 10 Population by religious belief in 2011 and 2021

Census	Total population	Believers who belong to a church or religious society				Believers who do not belong to any church or religious society	No religious belief	Not specified
		Total	Roman Catholic Church	Evangelical United Brethren Church	Czechoslovak Hussite Church			
2011	10,436,560	1,463,584	1,082,463	51,858	39,229	705,368	3,604,095	4,662,455
2021	10,524,167	1,374,285	741,019	32,577	23,610	960,201	5,027,141	3,162,540

Source: 2011 and 2021 Census.

registered churches, the affiliation indicated most in 2021, at 7.0% of the population, was the Roman Catholic Church. This figure was a decrease from 10.4% in 2011 (down by 341,000 in absolute numbers). Conversely, the share of people without religious belief increased significantly: from 34.5% to almost every second person at 47.8%. The proportion of believers who claimed not to belong to any church or religious society also rose slightly to 9.1% from 6.8% in 2011.

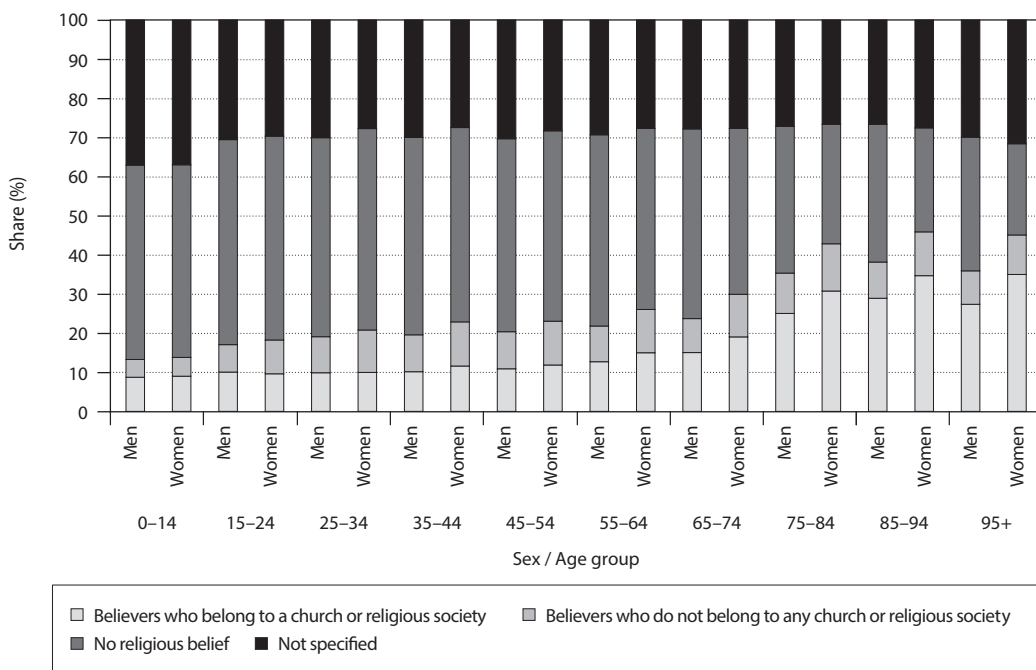
There was no big difference between men and women in terms of claiming religious belief. Women stated they were believers (both belonging or not belonging to a church or religious society) at the expense of women without religious belief slightly more often than men. More substantial differences were found between age groups (Figure 7). Among both men and women people more often claimed to be believers the older they were. The proportion of men who were believers (both belonging and not belonging to a church or religious society) in each of the three oldest groups was around 35–38%,

and the corresponding proportion of women in each of the three oldest groups was around 42–46%.

Another finding comes from examining believers who claimed to belong to a church or religious belief and specified which church or religious society. Both men and women in this group most frequently claimed affiliation with the Roman Catholic Church (54.9% of men and 58.0% of women), followed by Catholic (16.8% of men and 19.0% of women) and Christianity (5.4% of both men and women) in 2021.

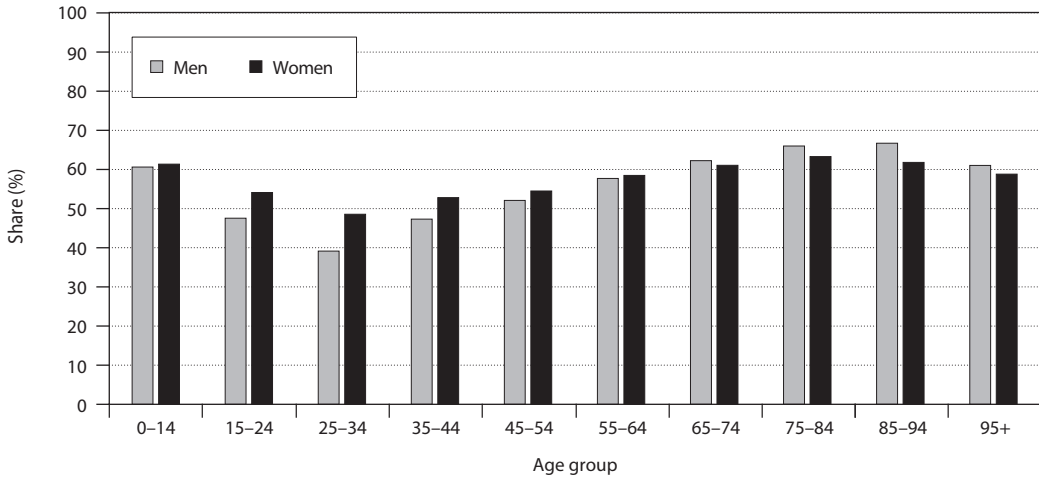
Although there were higher shares of believers among women than men and among older people than young people in general, this was not strictly true in the case of the Roman Catholic Church (Figure 8). When measured as the share of men and women who indicated affiliation with the Roman Catholic Church out of all believers who claimed to belong to a church or religious society and specified which one, there are a few characteristics differ. First, women made up the larger proportion only up to the age 55–64 years, and from the 65–74 age group the larger share were

Figure 7 Share of the population of the given sex and age group by religious belief in 2021 (%)



Source: 2021 Census.

Figure 7 Share of the population of the given sex and age group who belong to the Roman Catholic Church out of all believers who belong to a church or religious society in 2021 (%)



Source: 2021 Census.

men. Second, the discussed proportion was getting higher in association with higher ages for men and women only from age group 25–34 to 75–84 years. The lowest proportions were identified at the age group 25-34 years and it was lower than proportion at the two younger age groups. It should be mentioned, too, that it is arguable whether people aged 0–14 years can answer a question on religious belief.

FERTILITY OF WOMEN

The number of children ever born alive to women was surveyed in the census only for women aged 15 and over. This figure includes all children ever born alive up to the decisive moment (both in and outside marriage). The number also includes cases in which children may have died later on. The data provided on the census questionnaire were supplemented with information on children from administrative data sources. Women

with 2 children made up the largest group of women aged 15 and over for whom the number of children ever born alive was known. These women made up 43.2% in the 2021 Census. The next sub-populations were as follows: 0 children at 22.5%, 1 child at 18.6%, 3 children at 12.3%, 4 children at 2.5%, and 5 and more children at 0.9%. The order of these groups was the same in the 2011 Census and the shares were also very similar: they were 42.5%, 22.6%, 18.8%, 12.4%, 2.6%, and 1.1%, respectively. The number of women aged 15 or over for whom the number of children ever born alive was unknown was almost 97,000 in the 2021 Census and almost 172,000 in the 2011 Census.

The share of women by the number of children ever born alive and by age out of all women for whom the number of live births was known at a given age was unsurprisingly dependent on age (Figure 9). The share of women with no children ever born alive was higher the younger they were, except for

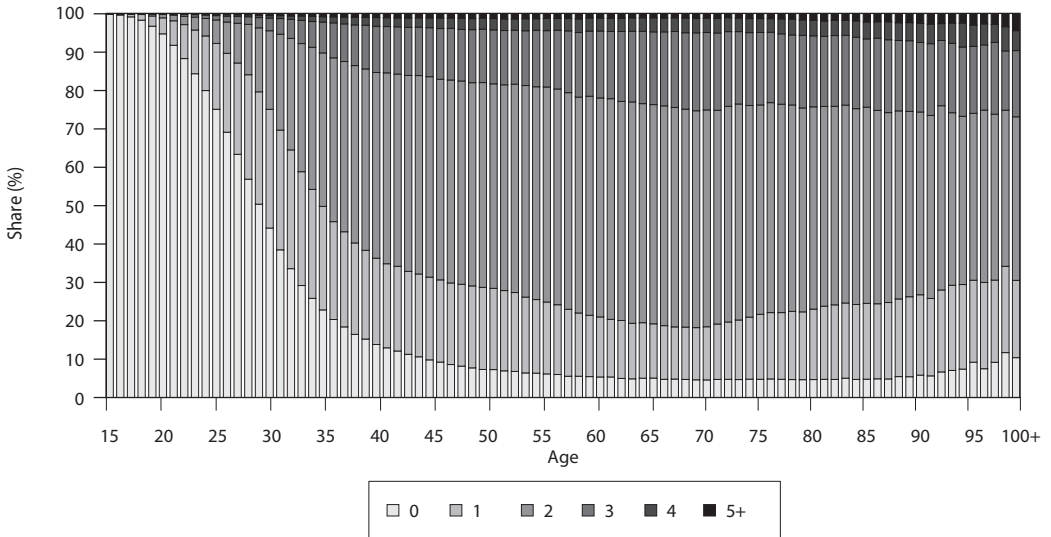
Table 11 Women by number of children ever born alive in 2011 and 2021

Census	Women aged 15 and over	By number of children ever born alive					
		0	1	2	3	4	5 and more
2011	4,586,090	995,900	831,827	1,876,181	547,155	114,700	48,597
2021	4,512,181	993,155	822,489	1,906,429	543,154	108,271	41,858

Source: 2011 and 2021 Census.

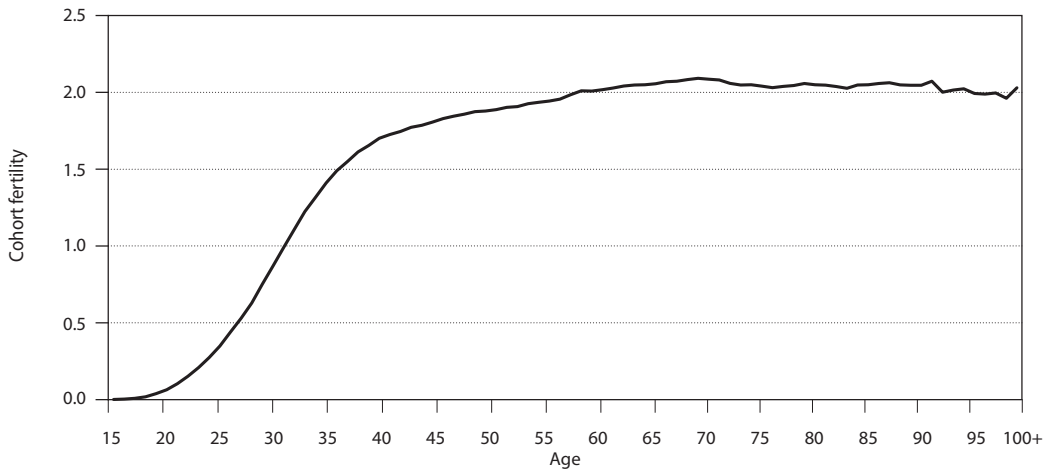
some older years. The proportion of women with 1 child was over 20% between the ages 26 and 53, with the highest share of 31.2% observed at age 31. From the age of 71 this proportion, conversely, rose

Figure 9 Share of women by number of children ever born alive in 2021 (%)



Note: Only for women with a known number of children ever born alive.
Source: 2021 Census.

Figure 10 Cohort fertility of women by age in 2021



Note: Cohort fertility is calculated as the average number of children ever born alive per woman with a known number of children.
Source: 2021 Census.

with age except in a few individual years. Women with 2 children ever born alive formed the highest proportion at age 64 and it reached 57.7%. At least half of women of a given age had 2 children between the ages of 42 and 87. The results of the 2021 Census confirm that the two-child family model that was typical of the socialist era continues to prevail (Rychtaříková, 2004). The highest share of women with 3 children ever born alive has reached 20.3% at age 70. In the case of women with 4 children it reached its highest value of 6.3% at age 99.

Cohort fertility at given age was calculated as the average number of children ever born alive to a woman of a given age with a known number of children (Figure 10). Beginning at age 50 women's fertility can be considered complete as they are outside reproductive age and will probably not have any more births.

The highest cohort fertility in 2021 was 2.09 at age 70. Women around this age started to fulfill their reproduction plans in the 1970s, when it was very common to have children at a young age, and who reached the age of 40 (and therefore had completed most of their fertility) before the overall level of fertility started decreasing quickly in the first half of the 1990s.

While women before the age 50 can still give birth to children, the vast majority of women from the age of 50 up cannot and thus can be compared. And it was actually these 50-year-old women who have, on average, given birth in their lifetime to the fewest children: 1.88 per woman. These are women who started their fertility in the first half of the 1990s, when the overall fertility level was just about to begin its very steep downswing and the mean age of mother at childbirth was, conversely, just about to begin its fast and unprecedented increase. The postponement of motherhood to an older age led to a decrease in transversal fertility levels (total fertility rate) in the 1990s. Although fertility levels recuperated to some extent later, the complete fertility of this generation was lower than in older generations (Šprocha, 2022). A fall in cohort fertility below two children per woman by the end of their reproductive span was also observed in the 2011 Census (Kurkin *et al.*, 2014).

CONCLUSION

According to the 2021 Census results, the population of Czechia rose in comparison to the 2011 Census by less than 1% or by 88,000 to reach a total of 10,524,000 inhabitants. The population is getting older – the average age of the population reached 42.7 years, while it was somewhat higher among women (44.1 years) than men (41.2 years). Since the previous census in 2011, both men and women grew older on average by 1.7 years. The population aged 65+ years amounted to 20.4% of the total population in 2021, while it was 15.8% in 2011. The share of the subpopulation aged 0–14 also rose from 14.3% to 16.1% between 2011 and 2021, while the share of those aged 15–64 declined from 69.6% to 63.5% in the same period. From the population aged 15+, the most usual marital status among men and women in 2021 was never married (48.0% and 38.2%) up by 3.1 and 2.9 percentage points from 2011. The share of divorcees also rose in a ten-year comparison, while the proportion of married decreased substantially and the share of widowed persons decreased slightly.

The percentage of the population with higher levels of education continues to increase in Czechia. The population with tertiary education accounted for 18.7% of the population aged 15 and over whose highest educational attainment was known in 2021, while the same figure was 13.2% in 2011. In the young 25–34 age group about a third of the population had completed tertiary education according to the recent census. In contrast, the share of the subpopulation with lower secondary or primary education decreased from 18.5% to 13.3%. The most common educational levels in 2021 were secondary including vocational (without the school-leaving exam; 32.9%) and upper secondary or post secondary education (32.8%).

According to the 2021 Census, 4.7% of the population were foreign nationals and 95.0% were Czech citizens. The foreign population rose by 74,000 in comparison with 2011. The share of women among foreign nationals increased from 42.6% to 45.3%. The largest number of foreign nationals were Ukrainians (151,000) and Slovaks (96,000).

Optional questions on ethnicity and religious belief had similar response rates in the 2021 Census – about 70%. However ten years ago, response rate for religious belief was lower (55%) and for ethnicity

higher (75%). More people declared two ethnicities in 2021 (420,000) than in 2011 (164,000). Among inhabitants with one ethnicity, the shares of Czechs, Moravians and Slovaks declined. On the other hand, the shares of Ukrainians, Russians, and Vietnamese were greater than in 2011. Including combinations of ethnicities led to a major increase in the number of people who claimed European, Roma, and German ethnicity. Even with the higher response rate the share of believers who claimed to belong to a church or religious society declined from 14.0% to 13.0% between 2011 and 2021. An even more profound decrease, from 10.4% was observed among those who identified with the Roman Catholic Church (still the most numerous official church). In contrast, the share of people without religious belief rose from 34.5% to 47.8%. Both men and women stated they were believers more often with rising age.

The share of the population who indicated Czech was their mother tongue out of the population whose mother tongue was identified slightly decreased between 2011 and 2021 from 92.9% to 92.1%

(or by 267,000 in absolute numbers). The population who declared Slovak to be their mother tongue remained almost on the same level at around 1.5%. A substantial decrease, from 0.6% to 0.2%, was observed in the share of people who declared Moravian as their mother tongue (to a quarter of the level recorded in 2011). Even the inclusion of combinations will not prevent from decline. The biggest relative increase of the population by mother tongue was among inhabitants with English, Russian, and Ukrainian as their mother tongue.

The results of the 2021 Census confirm that the two-child family model is still the most typical one. The share of women with two children ever born alive was 43.2%. The complete fertility of women at age 50 was 1.88 children, which is lower than for women of any other older age. It seems that the fertility rate of women born in the 1970s, who very often postponed motherhood into their late 30s, has not fully recuperated to the level of older generations, for whom it was more than two children per woman.

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Population and vital statistics of the Czech Republic: 2021, cohesion regions and regions

Cohesion region (NUTS 3) (NUTS 2)	Population 1 July	Population 31 December	Marriages	Divorces	Live births	Abortions	Deaths			Increase (decrease)			Marriages	Divorces	Live births	Deaths	Total increase	
							Total	Within 1 years	Within 28 days	Natural	Net migration	Total						per 1,000 inhabitants
Česko	10,500,850	10,516,707	46,778	21,107	111,793	27,959	139,891	246	152	-28,098	49,969	21,871	4.5	2.0	10.6	13.3	2.1	
Praha	1,267,173	1,275,406	5,704	2,404	15,157	3,242	14,460	28	16	697	15,296	15,993	4.5	1.9	12.0	11.4	12.6	
Střední Čechy	1,380,006	1,386,824	5,660	3,177	15,111	3,773	16,708	23	12	-1,597	15,833	14,236	4.1	2.3	10.9	12.1	10.3	
Jihozápad	1,213,476	1,215,754	5,310	2,425	12,632	3,217	16,262	23	14	-3,630	6,604	2,974	4.4	2.0	10.4	13.4	2.5	
Severozápad	1,083,172	1,082,108	4,929	2,252	10,505	3,820	16,367	33	18	-5,862	1,364	-4,498	4.6	2.1	9.7	15.1	-4.2	
Severovýchod	1,493,917	1,494,671	6,530	2,952	15,344	3,964	20,539	32	18	-5,195	3,726	-1,469	4.4	2.0	10.3	13.7	-1.0	
Jihovýchod	1,686,226	1,688,593	7,610	3,255	18,632	3,857	21,684	42	31	-3,052	6,425	3,373	4.5	1.9	11.0	12.9	2.0	
Střední Morava	1,196,700	1,195,362	5,446	2,324	12,434	3,256	16,546	37	27	-4,112	825	-3,287	4.6	1.9	10.4	13.8	-2.7	
Moravskoslezsko	1,180,180	1,177,989	5,589	2,318	11,978	2,830	17,325	28	16	-5,347	-104	-5,451	4.7	2.0	10.1	14.7	-4.6	
Hlavní město Praha	1,267,173	1,275,406	5,704	2,404	15,157	3,242	14,460	28	16	697	15,296	15,993	4.5	1.9	12.0	11.4	12.6	
Středočeský kraj	1,380,006	1,386,824	5,660	3,177	15,111	3,773	16,708	23	12	-1,597	15,833	14,236	4.1	2.3	10.9	12.1	10.3	
Jihočeský kraj	636,286	637,047	2,656	1,276	6,699	1,863	8,350	10	6	-1,651	2,276	625	4.2	2.0	10.5	13.1	1.0	
Plzeňský kraj	577,190	578,707	2,654	1,149	5,933	1,354	7,912	13	8	-1,979	4,328	2,349	4.6	2.0	10.3	13.7	4.1	
Karlovarský kraj	283,677	283,210	1,313	633	2,619	859	4,592	6	3	-1,973	163	-1,810	4.6	2.2	9.2	16.2	-6.4	
Ústecký kraj	799,495	798,898	3,616	1,619	7,886	2,961	11,775	27	15	-3,889	1,201	-2,688	4.5	2.0	9.9	14.7	-3.4	
Liberecký kraj	437,131	437,570	1,949	929	4,386	1,471	5,880	11	7	-1,494	1,542	48	4.5	2.1	10.0	13.5	0.1	
Královéhradecký kraj	542,892	542,583	2,272	1,068	5,537	1,284	7,668	13	7	-2,131	509	-1,622	4.2	2.0	10.2	14.1	-3.0	
Pardubický kraj	513,894	514,518	2,309	955	5,421	1,209	6,991	8	4	-1,570	1,675	105	4.5	1.9	10.5	13.6	0.2	
Kraj Vysočina	503,738	504,025	2,262	863	5,547	1,070	6,438	19	17	-891	912	21	4.5	1.7	11.0	12.8	0.0	
Jihomoravský kraj	1,182,488	1,184,568	5,348	2,392	13,085	2,787	15,246	23	14	-2,161	5,513	3,352	4.5	2.0	11.1	12.9	2.8	
Olomoucký kraj	623,686	622,930	2,795	1,237	6,394	1,722	8,562	20	15	-2,168	167	-2,001	4.5	2.0	10.3	13.7	-3.2	
Zlínský kraj	573,014	572,432	2,651	1,087	6,040	1,534	7,984	17	12	-1,944	658	-1,286	4.6	1.9	10.5	13.9	-2.2	
Moravskoslezský kraj	1,180,180	1,177,989	5,589	2,318	11,978	2,830	17,325	28	16	-5,347	-104	-5,451	4.7	2.0	10.1	14.7	-4.6	

Radek Havel

Population and vital statistics of the Czech Republic in towns with population above 50 thousands: 2021

Town	Population 1 July	Population 31 December	Marriages	Divorces	Live births	Abortions	Deaths	Increase (decrease)			Marriages	Divorces	Live births	Deaths	Total increase	
								Natural	Net migration	Total						per 1,000 inhabitants
Praha	1,267,173	1,275,406	5,704	2,404	15,157	3,242	14,460	697	15,296	15,993	4.5	1.9	12.0	11.4	12.6	
Brno	378,424	379,466	1,825	779	4,413	1,010	4,881	-468	1,690	1,222	4.8	2.1	11.7	12.9	3.2	
Ostrava	280,718	279,791	1,271	529	2,885	781	4,256	-1,371	-1,103	-2,474	4.5	1.9	10.3	15.2	-8.8	
Plzeň	168,449	168,733	795	297	1,751	398	2,342	-591	1,059	468	4.7	1.8	10.4	13.9	2.8	
Liberec	102,534	102,951	467	210	1,070	363	1,329	-259	772	513	4.6	2.0	10.4	13.0	5.0	
Olomouc	99,564	99,496	457	191	1,135	311	1,317	-182	-207	-389	4.6	1.9	11.4	13.2	-3.9	
České Budějovice	93,083	93,426	381	191	1,050	291	1,265	-215	271	56	4.1	2.1	11.3	13.6	0.6	
Hradec Králové	90,679	90,596	378	184	1,000	168	1,257	-257	-195	-452	4.2	2.0	11.0	13.9	-5.0	
Ústí nad Labem	90,481	90,378	357	196	980	327	1,321	-341	-232	-573	3.9	2.2	10.8	14.6	-6.3	
Pardubice	88,188	88,520	390	170	916	248	1,311	-395	388	-7	4.4	1.9	10.4	14.9	-0.1	
Zlín	73,021	72,973	342	142	759	183	1,017	-258	-158	-416	4.7	1.9	10.4	13.9	-5.7	
Havířov	69,541	69,084	356	157	644	213	1,199	-555	-450	-1,005	5.1	2.3	9.3	17.2	-14.5	
Kladno	67,194	66,903	282	162	648	256	982	-334	-278	-612	4.2	2.4	9.6	14.6	-9.1	
Most	63,100	62,866	281	111	578	249	986	-408	-144	-552	4.5	1.8	9.2	15.6	-8.7	
Opava	54,913	54,840	236	114	581	164	751	-170	-228	-398	4.3	2.1	10.6	13.7	-7.2	
Frydek-Místek	54,175	53,899	270	112	536	101	824	-288	-375	-663	5.0	2.1	9.9	15.2	-12.2	
Jihlava	50,002	50,108	227	101	564	113	619	-55	48	-7	4.5	2.0	11.3	12.4	-0.1	
Karviná	50,241	49,881	207	97	450	115	1,003	-553	-322	-875	4.1	1.9	9.0	20.0	-17.4	

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Abstracts of Articles Published in the Journal *Demografie* in 2022 (Nos. 1–3)

Pavol Ďurček – Lenka Gašparová

DIFFERENCES IN THE MORTALITY RATE BETWEEN URBAN AND RURAL AREAS: LOCATION AS A DIFFERENTIATION FACTOR

The main aim of the paper is to compare the mortality rate of urban and rural areas of the Slovak Republic in three time periods: 1971–1975, 1988–1992, and 2015–2019. The urban areas here are represented by the centres of functional commuter regions defined in the work of Halás et al. (2012). The rural areas are the hinterlands of these centres. Methodologically the analysis is based on the concept of relative regional differentiation. Basic measures of variability are used to monitor the overall and component unevenness of the standardised crude mortality rates. The most important findings of our study are the answers to our hypothetical questions. While the hypothesis was confirmed for the periods 1971–1975 and 1988–1992, the results did not confirm the validity of the hypothesis for the period 2015–2019. Using a regression analysis, we found that the spatial picture of the intensity of mortality did not change much between the 1970s and the present. The results of the regression analysis also show a difference in the intensity of mortality between the north and the south of the Slovak Republic.

Keywords: mortality, city, countryside, differentiation, location, regression analysis *Demografie*, 2022, **64**: 3–23
DOI: <https://doi.org/10.54694/dem.0291>

Luděk Sýkora – Otakar Bursa

YOUNG ADULTS IN THE PRAGUE METROPOLITAN REGION: A TICKING TIME-BOMB IN THE LIGHT OF METHODOLOGICAL TWISTS AND TURNS IN GEODEMOGRAPHY AND DEMOGEOGRAPHY

This article analyses the changing population of young adults aged 18–26 and its geographic distribution in the Prague metropolitan region between 2002 and 2017. It reveals a dynamically declining proportion of young adults in all parts of the metropolitan region as the result of major changes that have occurred in the general age structure of the population and age-specific migration to the suburbs. However, the number of young adults living in the Prague hinterland has increased as the result of massive suburban population growth. While young adults have been somewhat less visible until now, they will gain increasing importance in the coming decades, as the large cohorts of children born to suburbanites will gradually reach the age of young adulthood.

Keywords: young adults, suburbanisation, Prague metropolitan region *Demografie*, 2022, **64**: 24–45
DOI: <https://doi.org/10.54694/dem.0294>

Eva Waldaufová – Anna Štátná

THE ROLE OF REPRODUCTIVE AGEING IN THE INCREASE IN CAESAREAN BIRTHS IN CZECHIA

The study explores trends in the field of obstetrics in Czechia in the context of fertility postponement and attempts to identify whether and to what extent the increase in caesarean section (CS) births can be attributed to increasing maternal age and to what extent other factors play a role. The study examines the incidence of CS births using data published by the Institute of Health Information and Statistics of the Czech Republic (IHIS CR), and the detailed analysis employs anonymous individual data extracted from the National Health Information System in 2018 that cover maternal age and other characteristics relating to both mothers and newborns in Czechia. The analysis revealed that the increase in the total share of CS births between 1994 and 2018 was due both to the expansion of CS in all age groups and the change in the age structure of mothers, which accounted for 22% of the increase in the overall CS rate.

Keywords: caesarean section, labour, fertility postponement, maternal age, Czechia, ART **Demografie, 2022, 64: 91–105**
DOI: <https://doi.org/10.54694/dem.0296>

Robert Šanda

THE USE OF ADMINISTRATIVE DATA SOURCES IN POPULATION CENSUSES WITH A FOCUS ON THE CZECH 2011 CENSUS

This article summarises the use of administrative data sources in population and housing censuses. It discusses the main advantages and drawbacks of combined and fully register-based censuses compared to traditional ones. The move from traditional to register-based censuses seems inevitable given the public's decreasing willingness to participate in the traditional form of enumeration. The article also describes the methods applied in the Czech 2011 census regarding record linkage and identifying overcoverage in the population register (ISEO) and highlights the most important impacts the use of administrative data has on census results.

Keywords: Population and housing census, Czechia, administrative data sources, overcoverage **Demografie, 2022, 64: 106–123**
DOI: <https://doi.org/10.54694/dem.0298>

Jana Palonciová

FACTORS AFFECTING REPRODUCTIVE PLANS DURING THE COVID-19 PANDEMIC

This article aims to contribute to the discussion of the factors that could affect reproductive plans over the next three years. According to the results of the Contemporary Czech Family survey, which was conducted during the Covid-19 pandemic in December 2020 and April 2021, the desire to have a (or another) child in the near future is primarily influenced by the number of children a family already has and by the values associated with parenthood. Socioeconomic changes brought about by the pandemic are not yet being reflected in parental plans.

Keywords: Covid-19 pandemic, reproductive plans, Czech Republic **Demografie, 2022, 64: 124–138**
DOI: <https://doi.org/10.54694/dem.0301>

Branislav Šprocha

CHILDLESSNESS AND THE POSTPONEMENT OF FIRST BIRTHS IN THE VISEGRAD COUNTRIES

Fertility postponement and fertility ageing are the most important changes in demographic reproduction that have occurred in post-communist countries in Europe. This process has been found to have begun earlier and to be more dynamic in the Central European post-communist countries]. It turns out that fertility postponement has mainly affected first births. Closely related to this finding is the question of whether these maternal starts will be completed at an older age and what the total childlessness rates will be. Post-communist countries have long been among the countries in Europe with a relatively low rate of childlessness. The dynamic postponement of fertility and the first findings on the postponement transition among the affected cohorts suggest that this situation could change rapidly.

The main aim of the paper is to analyse the process of the postponement and recuperation of first-order fertility in Visegrad countries from a cohort perspective. Using the benchmark model, we identified the beginning, dynamics, and development of the postponement and recuperation measures and derived recuperation index from these measures. The results show that not only are there some differences between countries at the beginning of the postponement, but there are also differences in the extent of this postponement and in the success of subsequent recuperation at an older age. As a result, an intercohort deepening of differences in childlessness rates can be expected. The resulting scenarios indicate that Czech women could be the most successful in this respect, while in other countries childlessness can be expected to exceed 20%. The worst situation may occur in Poland.

Keywords: Childlessness, first births, postponement, recuperation, V4

Demografie, 2022, **64**: 139–157

DOI: <https://doi.org/10.54694/dem.0302>

David Morávek – Jitka Langhamrová

DESCRIBING MORTALITY DIFFERENTIALS FROM THE PERSPECTIVE OF VARIOUS EFFECTS ON LIFE EXPECTANCY AND LIFE DISPARITY USING DECOMPOSITION METHODS: THE CASE OF CZECHIA

The growth in life expectancy has accelerated since the 1990s in Czechia, which preceded a long period of stagnation or even a decrease during the communist era from the 1960s. This article aims to evaluate differences in mortality in terms of the impact of various effects on life expectancy and life disparity before and after the Velvet Revolution in Czechia. Three indicators were considered – life expectancy at birth, temporary life expectancy between ages 0 and 65, and the life disparity measure e_{\dagger} . In the article, we followed the decomposition method according to Arriaga (1984). Based on this method, the effect of mortality was further decomposed into an exclusive effect reflecting improved or worsened mortality in the given age group and into an interaction effect reflecting changes in mortality as a whole. Based on the results, it was found that the indirect effect prevailed in the case of life expectancy, while the direct effect dominated in the life disparity measure. Furthermore, we focused on the differences in life expectancy at birth between the sexes and between the two countries forming parts of the former Czechoslovakia – Czechia

and Slovakia. For this purpose, we followed the contour decomposition method, so that we distinguished the effect of changes in mortality corresponding to the initial period and the effect of changes corresponding to changes in mortality in terms of time.

Keywords: mortality, life expectancy, life disparity, decomposition method, contour decomposition, Czechia, Slovakia
DOI: <https://doi.org/10.54694/dem.0304>

Demografie, 2022, 64: 201–216

Ondřej Nývlt

PROJECTION OF ECONOMIC ACTIVITY OF PERSONS AGED 60 AND OVER IN THE CZECH REPUBLIC UNTIL 2050

Projections of the economic activity of persons aged 60 and over fall into the category of derived projections that are based on the general population projection. The introductory part of this article outlines the trend in economic activity among the elderly in the Czech Republic since the 1990s. This period was characterised by a steady increase in economic activity among older people. The projection in this article highlights a combination of two fundamental factors that will lead to a significant increase in the number of people who are economically active aged 60 and over. First, the effect of population ageing in the Czech Republic will become apparent after 2030, when the large birth cohorts from the 1970s will reach the age of 60 and over. The intensification of the increase in the rate of economic activity among people aged 60 and over that will result from the age of retirement being raised will be the second reason for the expected increase in the number of economically active among people aged 60 and over. Three projection variants are presented, each of which suggests a different intensity of growth in economic activity among people 60+ depending on the specific input parameters. The middle variant is based on the assumption that the intensity of the increase in economic activity will grow only as a result of the retirement age being raised. The high variant expects the intensity of economic activity to grow even after people reach the age of 65. Conversely, the low variant expects a lower rate of growth in economic activity among people just before they reach retirement age.

Keywords: economic activity, projection, retirement age
DOI: <https://doi.org/10.54694/dem.0306>

Demografie, 2022, 64: 217–234

EUROPEAN STATISTICAL SYSTEM PEER REVIEWS

Eurostat and the national statistical authorities of all the EU and EFTA countries form a partnership called the European Statistical System (ESS). Together, they produce European statistics which respect a common quality framework. One instrument that ensures the implementation of the common quality framework and thus the quality of European statistics is the so-called ESS Peer Reviews.

Code of Practice

The common quality framework of the ESS is based on the *European Statistics Code of Practice*, a set of 16 principles covering the institutional environment, statistical processes, and statistical outputs.

The principles are complemented with a set of 84 indicators of best practices and standards to provide guidance and reference for reviewing the implementation of the Code (or CoP).



ESS Peer Reviews

Quality is the trademark of European statistics and makes them more trustworthy than other data that are readily available through many channels. To guarantee the quality of their statistics, the ESS created a common quality framework. The European Statistics Code of Practice is the cornerstone of this quality framework.

The objective of the peer reviews is to assess ESS members' compliance with the principles and indicators of the Code. The subsequent recommendations should also help statistical authorities to further improve and develop their statistical systems.

All members of the ESS are reviewed, i.e. Eurostat and the national statistical authorities of the EU Member States and EFTA countries. Peer review expert teams are composed of four European experts in statistics, auditing and governance issues,



including an independent expert, to assess the national statistical authorities. An expert team from the European Statistical Governance Advisory Board (ESGAB) reviews Eurostat.

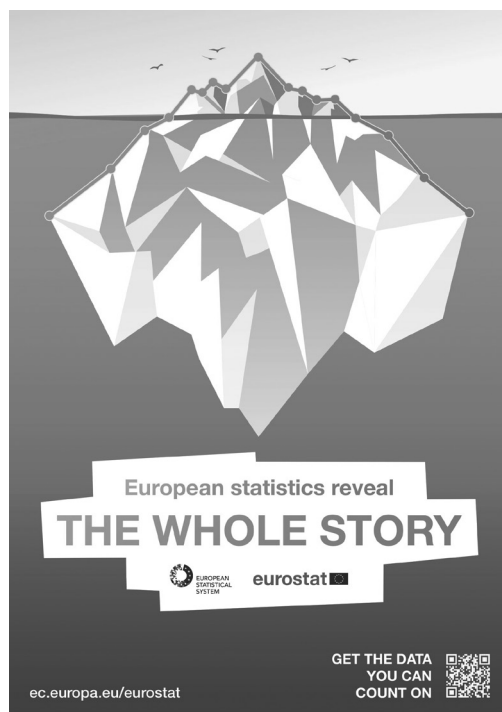
The peer reviews are carried out on a country-by-country basis according to these steps:

1. Each ESS national statistical authority assesses itself against the principles of the Code through a questionnaire and provides extensive documentation on its functioning;
2. These documents are checked and analysed by an expert team which subsequently carries out an in-country visit during which a further in-depth review is performed;
3. The expert team compiles a final report with recommendations for improvements;
4. This report is submitted to the national statistical authority for approval and the drafting of improvement actions.

The implementation of the improvement actions in the EU and EFTA countries is monitored on an annual basis by Eurostat. The implementation of the improvement actions for Eurostat is monitored by ESGAB.

Peer Review 2021–2023

Two previous rounds of Peer Reviews (2006–2008 and 2013–2015) were focused mainly on compliance with the European Statistics Code of Practice. Peer Review 2021–2023 (round III) will go further and help ESS partners to improve by making future-oriented recommendations that go beyond the current Code. In addition, future-oriented elements could help revise the Code to reflect new developments that experts will identify in this round.



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- *Potrady*. 2005. Prague: Ústav zdravotnických informací a statistiky.

Articles in periodicals

- Bakalář, E. and Kovařík, J. 2000. 'Fathers, Fatherhood in the Czech Republic.' *Demografie*, 42, pp. 266–272.

For periodicals that use consecutive page numbering within a volume it is not necessary to indicate the issue number.

Chapter contributions

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Syrovátka, A. 1962b. 'Child Mortality from Automobile Accidents in the Czech Lands.' *Czech Medical Journal*, 101, pp. 1513–1517.

In-text references

(Srb, 2004); (Srb, 2004: pp. 36–37); (Syrovátka et al., 1984).

Table and figure headings

Table 1: Population and vital statistics, 1990–2010

Figure 1: Relative age distribution of foreigners and total population of CR, 31 Dec 2009

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