

ASSESSMENT OF WELL-BEING INDICATORS AT THE REGIONAL LEVEL IN SLOVENIA

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Abstract

Recently, the concept of well-being assessment has been renewed in order to provide a comprehensive framework that incorporates also different aspects of quality of life and to ensure more precise interregional comparability. According to OECD's Your Better Life index®, Slovenia underperforms other EU countries on a substantial set of sociodemographic and economic indicators, implying higher risk for adverse outcomes related to compromised well-being. Drawing on theoretical underpinnings of OECD index and literature review, we created 16 key dimensions of well-being (housing, jobs, income, education, environment, general, occupational and neonatal health, risk behaviors, partnership relations, work-life balance, availability of social transfers, availability of health and social services, safety, development prospects, demographic profile) that rely on indicators obtained from available national statistics in the period 2006-2010 at the level of statistical regions. Given the substantial socio-economic and demographic heterogeneity of Slovene statistical regions, we aimed to compare interregional sociodemographic and economic risks which are related to well-being outcomes, such as diminished quality of life, health and occupational problems. The results revealed considerable interregional heterogeneity in terms of accessibility of social transfers, occupational health, risk behaviours, safety and economic development. Collectively, east statistical regions (Pomurska, Zasavska, Spodnjeposavska) were identified as being at the highest risk for adverse consequences of compromised well-being, while this risk was relatively small in west regions, with the most economic, health and sociodemographic assets pertaining to Osrednjeslovenska region. To conclude, the assessment of well-being dimensions proved valuable in detecting regions at risk for adverse outcomes of compromised well-being.

Keywords: *well-being, sociodemographic indicators, economic indicators, health indicators, statistical regions*

OCENA KAZALNIKOV BLAGOSTANJA NA RAVNI STATISTIČNIH REGIJ V SLOVENIJI

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V zadnjem času je prišlo do posodobitev v konceptu merjenja psihičnega blagostanja, z namenom, da se vanj vključi tudi različne vidike kvalitete življenja in tako zagotovi večjo medregionalno primerljivost. Glede na OECD Indeks boljšega življenja® se Slovenija na precejnjem naboru sociodemografskih in ekonomskih kazalnikov uvršča za ostalimi državami EU, kar prinaša tudi povečano tveganje za negativne izide, ki spremljajo okrnjeno blagostanje. Na podlagi teoretičnih izhodišč indeksa OECD in pregleda raziskav smo oblikovali 16 ključnih dimenzij blagostanja (stanovanje, zaposlenost, dohodek, izobrazba, okolje, splošno, poklicno in perinatalno zdravje, tvegana vedenja, stabilnost partnerskega odnosa, usklajenost poklicnega z zasebnim življenjem, socialna zaščita, dostopnost zdravstvenosocialnih storitev, varnost, razvojne možnosti, sociodemografski profil), ki vključujejo kazalnike iz dostopnih nacionalnih statističnih baz v obdobju 2006-2010 na ravni statističnih regij. Glede na precejšnjo socioekonomsko in demografsko heterogenost slovenskih statističnih regij je bil namen tega

prispevka med regijami primerjati sociodemografska in gospodarska tveganja, povezana z izidi na področju blagostanja, kot so slabša kvaliteta življenja, zdravstvene in poklicne težave. Rezultati so pokazali veliko heterogenost med regijami na področju socialne zaščite, poklicnega zdravja, tveganj vedenj, varnosti in razvojnih možnosti. Statistične regije v vzhodni Sloveniji (Pomurska, Zasavska, Spodnjeposavska) so imele največje tveganje za razvoj negativnih izidov kot posledic okrnjenega blagostanja, medtem ko je bilo to tveganje manjše v regijah zahodne Slovenije, med katerimi je imela Osrednjeslovenska regija največ gospodarskih, zdravstvenih in sociodemografskih prednosti. Zaključimo lahko, da ocena dimenzij blagostanja omogoča odkrivanje regij, kjer obstaja tveganje za nastanek negativnih izidov kot posledic okrnjenega blagostanja.

Ključne besede: *blagostanje, sociodemografski kazalniki, gospodarski kazalniki, zdravstveni kazalniki, statistične regije*

1 Introduction

In recent years, there is an open debate whether standard macro-economic statistics, such as Gross Domestic Product (GDP), which for a long time had been used as a proxy to well-being, could represent a true account of people's current and future living conditions and in this respect, used as a measure of national well-being, actually for something for which it was never designed (Costanza et al, 2009). The ongoing financial and economic crisis has reinforced this perception and it is now widely recognised that data on GDP provide only a partial perspective on the broad range of factors that matter to people's lives (Boarini et al, 2006).

Over the last decades, there has been a growing body of work, which evaluates human well-being based on self-reportings by individuals and groups. Generally referred to as measures of subjective well-being, these studies attempt to measure "satisfaction" with quality of life or people's moods and emotions (Diener and Suh, 1999). The purpose of research on well-being was to measure mainly the extent to which human needs are actually fulfilled. Since these measures are based on the judgments of the survey respondents rather than on more easily quantifiable inputs of money and material goods, there are several doubts that these "subjective" measures are not factually based and therefore less valid than "objective" measures like GDP. However, objective measures such as life expectancy, rates of disease, and GDP, are only proxies for well-being that have been identified through the subjective judgment of decision-makers (Costanza et al, 2007, 2009). In addition, there is also a concern that there are cultural differences that make it difficult to compare the results across different ethnic, gender, age, religion, and other cultural boundaries. In this regard, it is crucial to apply an appropriate methodology, which allows the international and cross-regional comparisons.

Many alternative approaches to measuring well-being have been suggested to overcome some of these limitations. Welfare theories take two positions with respect to subjective well-being. Welfarist theories, and in particular the "new utilitarian" approach proposed by Layard (2005), identify subjective well-being as a measure of overall well-being, for which the various dimensions of material living conditions and quality of life are simple drivers. Conversely, non-welfarist theories (so-called "resourcist theories", Fleurbaey, 2009) argue that subjective well-being represents one independent aspect of well-being alongside other dimensions, such as material living conditions, health status, human contact, etc. Implying that there is a need for extended scope of well-being measurement where a broader range of components should be included. The Organisation for Economic Cooperation and Development (OECD) approach for well-being assessment (known as OECD Better Life Index) follows this approach through putting together several indicators in a consistent framework (Hall et al, 2010).

Since well-being is a complex phenomenon and many of its determinants are strongly correlated with each other, assessing well-being requires a comprehensive framework that includes a large number of components and that, ideally, allows gauging how their interrelations shape people's lives (Fleurbaey, 2009). In terms of current well-being, "Better Life Index" considers the following 11 dimensions as being essential to well-being: 1. *Material living conditions* (Income and wealth; Jobs and earnings; Housing), 2. *Quality of life*: (Health status; Work and life balance; Education and skills; Civic engagement and governance; Social connections; Environmental quality; Personal security; and Subjective well-being) (OECD, 2011, 2011a). The tool is also available on the Web (<http://www.oecdbetterlifeindex.org/>) designed as an interactive tool that allows to visualise and compare some of the key factors – like education, housing, environment, etc. that contribute to well-being in OECD countries.

Today, "measuring well-being" is high on the statistical and political agendas at both the national and international level. During times of economic crises many countries in the European Region are facing pressure from the international financial community to reduce health and welfare budgets which will affect well-being of EU citizens and their quality of life. Evidence from past economic crises predicts what is likely to happen in the current

economic downturn (Stuckler et al, 2009; Zivin et al, 2011). Despite increased pressure on health and social services, government expenditure on health and social care will be reduced, contributing to worse health and social outcomes, household income to pay for services will decrease, insurance protection will decline, people will switch from the services that require out-of-pocket spending to less costly services, etc. Therefore, for policy makers it is important to hold a tool, which enables ongoing monitoring of trends in health, social and economic sectors, and follows more closely possible determinants of population health and social status. In this regard, the methodology of OECD "Better Life Index" could be a useful tool since it enables analysis of several risks (Poverty, poor education, deprivation, poor prenatal health, abuse, poor relationships, unemployment, job insecurity, job stress, alcohol and/or drug use, etc) and protective factors (social capital and welfare protection, healthy prenatal and childhood environment, healthy workplace and living, healthy lifestyles, etc) (Šprah et al, 2011; Šprah and Novak, 2012).

2 Aims

The aims of this study were to evaluate well-being dimensions in 12 Slovenian statistical regions and to assess the population's well-being profile according to the regional burdens of the health, sociodemographic and economic risks.

3 Methods

3.1 Procedure of Aggregating Statistical Data into Well-being Dimensions

Drawing on comprehensive literature review on a range of factors that contribute to outcomes associated with compromised well-being, i.e. diminished well-being and occupational ill-health, (Šprah et al, 2011) and methodological and theoretical underpinnings of OECD Your Better Life index (OECD, 2011), we designed 16 key dimensions of well-being. These dimensions were built upon relevant sociodemographic, economic and health indicators. The adequacy of indicators was established by following OECD's recommendations on designing internationally relevant indicators, i.e., indicators have to be unambiguous, be available as time series, be sensitive to change, be summary in nature and be capable of disaggregation by geographical regions. The indicators were based on the available regional sociodemographic, health and economic data across the period from 2006-2010. Data was collected from an online statistical source SI-STAT Data Portal, and Institute for health protection's online databases. Additional data sources were Statistical Office's publications Slovenia Regions in Figures and Statistical Yearbook, as well as Institute for health protection's Health Yearbook and Development Report from the Institute of macroeconomic analysis and development. In the next step, we applied a principal components analysis to convert the obtained statistical data into dimensions of well-being. Dimensions were created with respect to the similarity of content behind indicators. Raw values of indicators within each dimension were then given component weights, averaged across 5-year period and transformed into «sten» values of a standard scale running from 1 to 10 in order to provide both inter- and intra- regional comparability. Value 1 on a standard scale referred to the lowest sociodemographic, health or economic risk for diminished well-being outcome, and value 10 pertained to the highest possible risk.

To classify regions according to their burden with sociodemographic, health and economic risks, we averaged well-being dimensions, ranged them on a scale from 1 to 12 and arranged them into 4 categories describing great, substantial, middle and low regional burden. Cut-off points between categories were as follows: regions occupying from 10th to 12th place were assigned to a »high burden« category, regions occupying from 5th to 9th place were designated to a »considerable burden« category, regions ranging from 2nd to 4th place on the scale were included into »middle burden« category, whereas only one region that occupied the 1st place was assigned to »low burden« category. Regions pertaining to each category are displayed in Figure 1.

3.2 Indicators Behind Dimensions of Well-being

Well-being dimensions consisted of indicators that were expressed in relative units, e.g. ratio units (per 1,000 or 10,000 inhabitants), or expressed against proportion of population living in a particular region to provide interregional comparability. The structure of well-being dimensions was as follows:

Education refers to educational attainment of population aged 22-64 years, proportion of student population within work active population, share of adult population and aged 25-64 in lifelong learning.

Housing consists of average useful floor space (m^2) per person and completed dwellings (new constructions, enlargements, changes in intended use).

Income includes index GDP per capita in purchasing power standard unit, GDP per capita, net monthly salary, and net monthly salary of an employee.

Jobs describe employment population ratio, registered unemployment rate, share of unemployed with basic and with tertiary education, job vacancies, share of persons in employment aged 44-64 years, and number of active enterprises with regard to working population

Environment shows annual volume of water supplied to households from public water supply, discharge of unpurified waste water from public sewage system and estimated damage caused by natural disasters as percentages of regional GDP.

Health measures drug prescriptions per person, rates of hospital treatment of diseases, number of attendances in general practice for endocrine disease, metabolic and eating disorders, mental and conduct disorders, circulatory diseases, musculoskeletal disorders and number of cases with circulatory and digestive diseases as the most frequent causes of death

Safety provides an assessment of number of all convicted adults (known perpetrators and by criminal offense against marriage, family and youth as well as number of convicted minors (under the age of 18), and number of cases of self-harm and assault on other person.

Work and life balance comprises number of children aged 1-5 in kindergartens, number of beneficiaries to part-time work because of parenthood, number of beneficiaries to paternity leave compensation and number of marriages.

Availability of social transfers shows number of recipients of financial social assistance, recipients of scholarships among upper secondary education pupils and number of tertiary students.

Availability of health and social services includes number of physicians, number of nurses, number of hospital beds and number of beds available in retirement homes.

Risk behaviours describe number of seriously injured and killed in road traffic accidents, hospitalization rates due to suicide, number of suicides, number of attendances due to alcohol consumption and number of cases with illicit drug use in primary care.

Occupational health measures number of reported injuries at work, sick-leaves, frequency index (IF), seriousness of sick-leave (R), rate of hospital treatment of diseases and average duration of hospitalization due to illness.

Neonatal health describes stillbirths, number of women giving birth via caesarian section, and a share of newborns with low birth weight of all live-borns in the region.

Demographic profile signals population density, number of live births and deaths, total increase of population (natural and migration), coefficient of age dependency, ageing index, and number of farmers within work active populations.

Development prospects reflect development hazard index (Pečar in Kavaš, 2006), that combines information about general sociopolitical regional context, economic infrastructure, quality of life in the region, availability of information about market, technology and possibilities for financing investments across a period 2007-2013.

4 Results

In general, east statistical regions conferred higher risks for compromised well-being compared to west regions, as displayed in Figure 1. This figure depicts four most pressing risks in each statistical regions. Higher value on dimensions represents higher risk for a compromised well-being outcome.

Pomurska, Zasavska and Spodnjeposavska regions, all being located in the eastern part of Slovenia, were identified as having the highest sociodemographic, health and economic burdens and thus the greatest risk of compromised well-being among all statistical regions (Figure 1). On the contrary, Osrednjeslovenska, Goriška, Obalno-kraška and Gorenjska regions were shown to have a relatively small or even absent burden associated with compromised well-being outcome, with a particularly advanced position of Osrednjeslovenska region in this regard.

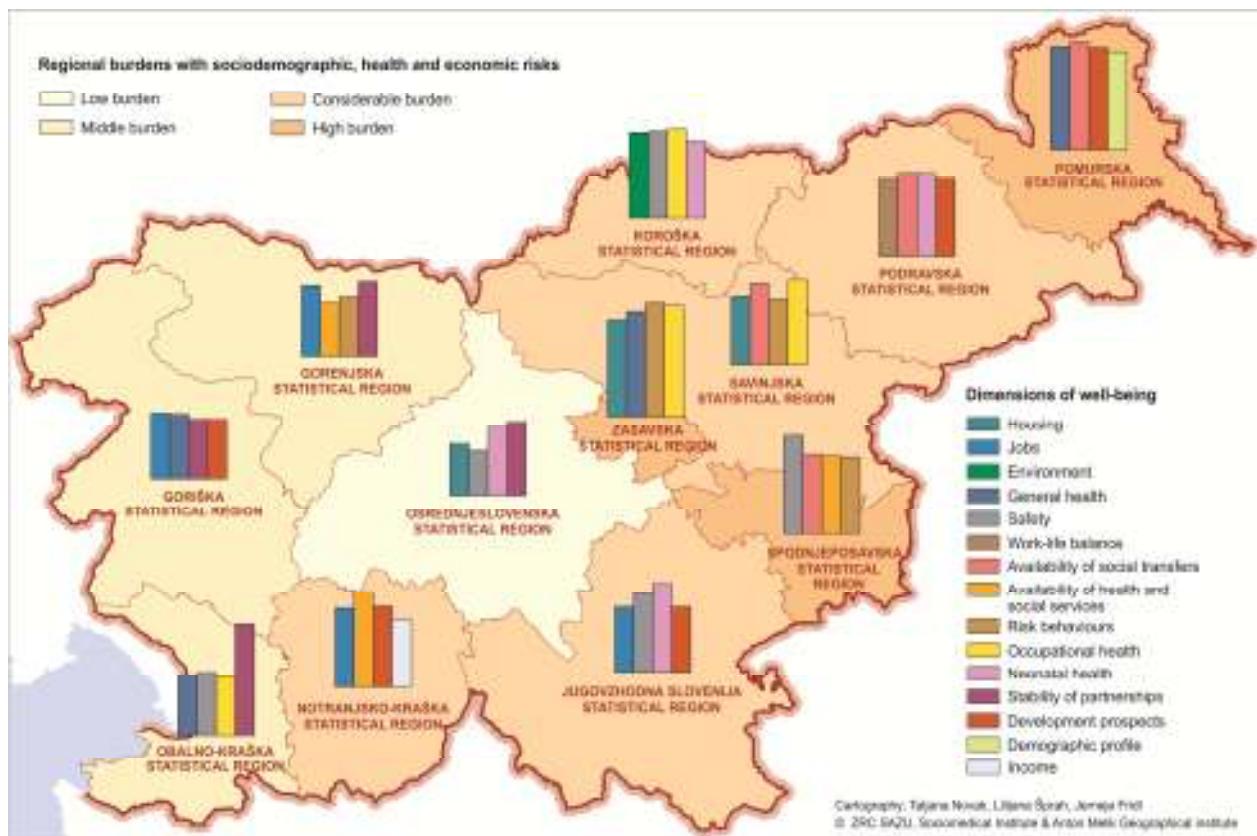


Figure 1: Regional burdens with sociodemographic, health and economic risks.

Despite pertaining to the same »high burden« risk category, regions differed considerably concerning the type of emerging risks in a particular region. Therefore, figures 2 and 3 illustrate dimensions of well-being in the two most burdened regions and for comparison, the least burdened region is portrayed in figure 4. In figures 2-4, higher score on a dimension represents better result with regard to well-being. In Pomurska region there was a substantial heterogeneity in the areas of well-being across a five-year period (Figure 2). The highest risks were identified regarding low level of availability of social transfers and poor general health of inhabitants in this region regarding morbidity and mortality due to circulatory system diseases and neoplasms. The region was also faced with negative development prospects in terms of underdeveloped economic infrastructure, low accessibility to information about market and technology and small rate of investments in infrastructure. In addition, Pomurska region was also characterized by adverse demographic profile portraying multi-annual negative natural and migration increase and high age dependency of population as well as low educational attainment, poor work-life balance and low income.

In Zasavska region multiple risks were identified across the period 2006-2010 (Figure 3). High levels of health risk behaviours as outlined in high suicide rates, addictive disorders and road traffic accidents were revealed in this region. There was also evidence of poor occupational and health status in large part due to respiratory, musculoskeletal, circular system diseases, endocrine and metabolic diseases and high mortality due to neoplasms. Additionally, poor housing conditions and environmental problems due to the presence of cement factory Lafarge were also disclosed.

In sharp contrast with the multiple risks present in Pomurska and Zasavska regions, Osrednjeslovenska region (Figure 4) displayed very few sociodemographic and health risks. Stability of partnerships along with poor neonatal health were the highest risks documented in this region, that could be explained by availability of well-developed infrastructure (courts for marital issues and highly equipped maternity hospitals) to deal with this issues and thus by a higher incidence of grave cases from other regions seeking their assistance.

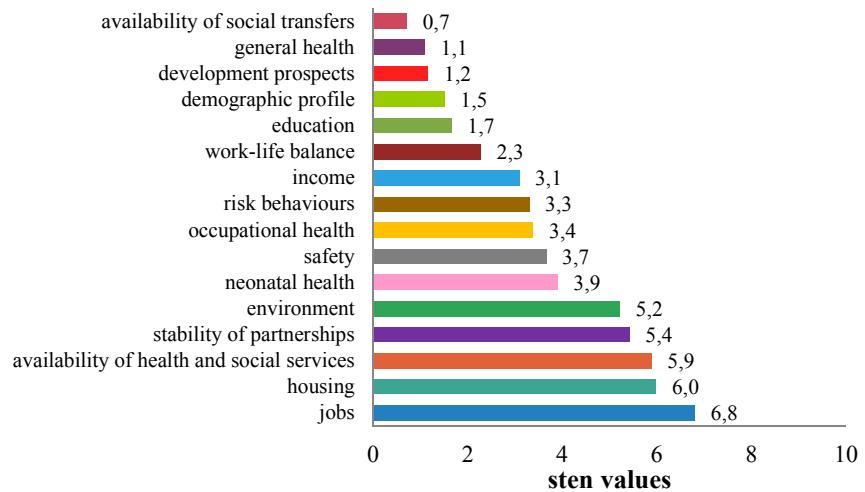


Figure 2: The well-being profile in Pomurska region.

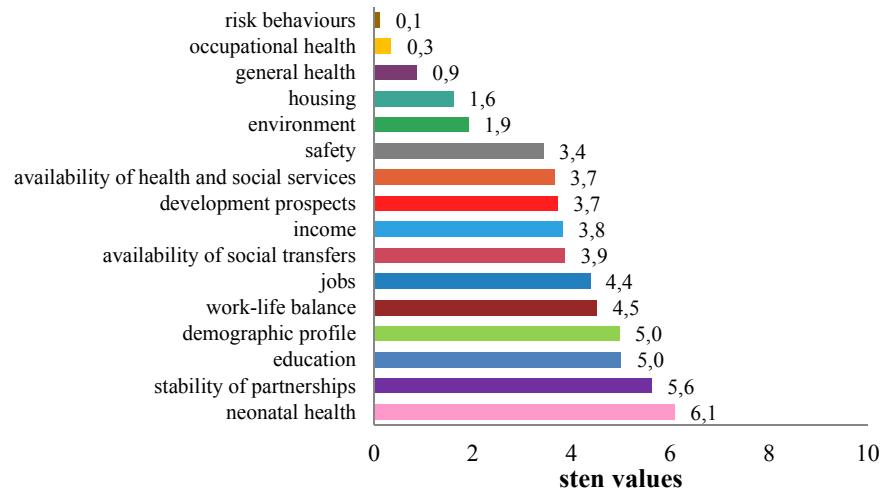


Figure 3: The well-being profile in Zasavska region.

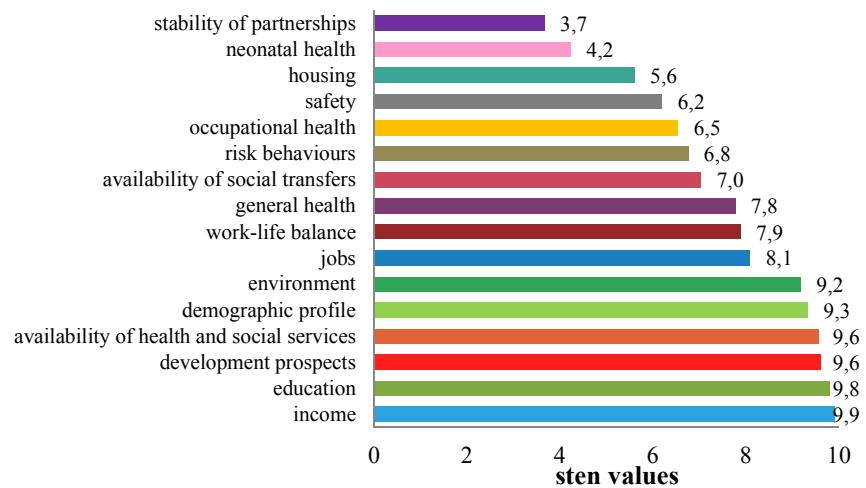


Figure 4: The well-being profile in Osrednjeslovenska region.

5 Conclusions

Relying on the available regional statistical data, we designed several well-being dimensions that are associated with an increased risk of compromised well-being outcomes, such as low quality of life, occupational ill-health, mental and physical illnesses, to estimate burdens with sociodemographic, health and economic risks in Slovene statistical regions. Regions shared some common burdens associated with high frequency of health-risk behaviours (suicidality and crime rates), poor health status, low employment rates and high prevalence of divorce. In most regions housing, environment protection, income and demographic profile appeared to be relatively well-managed. Pomurska and Zasavska regions were identified as having the highest burdens with sociodemographic, health and economic risks, while Osrednjeslovenska region together with some other west regions displayed multiple protective features that promote well-being across a five-year period. We conclude that the quality-of-life - concept-based methodology relying on assessment of well-being dimensions proved valuable in detecting regions at risk for adverse outcomes of compromised well-being, as we were able to discriminate between regions and range them according to the magnitude of burdens. Furthermore, we hope that by applying this methodology, we will strengthen the evidence-base for policy making. In this vein, we recommend that strategies that can best support societal and economic growth should better be tailored to specific well-being risks identified in particular regions rather than uniformly designed for all regions at risk.

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