

Human capital of the child population and its selected determinants: Case study of Lviv city, Ukraine

Viktoriya Pantyley^{CDFMR}

Maria Curie-Skłodowska University in Lublin, Faculty of Earth Sciences and Spatial Management, Kraśnicka 2 cd, 20-718 Lublin, Poland; phone: + 48 815 376 820; e-mail: wiktoria.pantylej@poczta.umcs.lublin.pl

How to cite:

Pantyley, V., 2017: Human capital of the child population and its selected determinants: Case study of Lviv city, Ukraine. In: Środa-Murawska, S. and Szymańska, D. editors, *Bulletin of Geography. Socio-economic Series*, No. 37, Toruń: Nicolaus Copernicus University, pp. 77–93. DOI: <http://dx.doi.org/10.1515/bog-2017-0026>

Abstract. In conditions of modern economic and political destabilisation in Ukraine, human capital of the child population is considered as the most reliable indicator of socioeconomic development of the country and its regions. The primary goal of the study is the analysis of health status as the main element of human capital among the child population aged 0–14, and external and family environmental factors influencing this population group in the city of Lviv (in the light of available statistics and materials of the author's own sociological research). Research results show a potential crisis of human capital among the child population in Lviv city. Results of own field research show a statistically important correlation between the willingness of parents to have more children and the following independent variables: number of members in the household, and the household's income. The state of health among the child population showed a significant correlation between the following variables: household's income, life satisfaction among parents, availability of healthcare in the place of residence, financial affordability of healthcare, physical activity among children, influence of noise and unpleasant scents.

Article details:

Received: 10 August 2016

Revised: 27 March 2017

Accepted: 21 June 2017

Key words:

human capital,
child population,
Lviv city,
Ukraine.

© 2017 Nicolaus Copernicus University. All rights reserved.

Contents:

1. Introduction	78
2. Conceptual framework for the analysis of human capital of the child population and its determinants	79
3. Research materials and methods	80
4. Research results and discussion	81
4.1. Brief analysis of human capital of the child population and its selected macrosocial determinants in the Lviv region	81

4.2. Human capital of the child population and its selected determinants in Lviv city in the light of own research.....	83
5. Conclusions.....	90
References	91

1. Introduction

Children and childhood studies are rather complex and multifaceted and nowadays have become an important focus for human geographers. Geographical research on children can be found in the works of W. Bunge (1973), Golledge et al. (1985), C. Ward (1978), C. Katz (1993, 1994). The new paradigm for childhood studies in the sociological and spatial context had its intellectual roots in the Ethnography of Childhood Workshops that were organised in Cambridge in the 1980s and might have come from anthropology, sociology, geography, psychology, history, social policy, public health and law (James, 2010).

Children's geography is dealing with children and youth studies in their diverse socio-spatial contexts and focusing on, and exploring, diversity among children, youth and families (Baylina, Ferret, 2010). Children's geographers have explored the spatiality of childhood, by considering schools, commercial playgrounds, and public spaces (Holloway et al., 2000; McKendrick, 2001; Doing Children's Geographies..., 2009).

The human capital of the child population is a crucial factor for the future of every country, region and the world. According to R. Jolly, "Much evidence already exists of the economic returns to investment in human resources. To fail to protect young children at the critical stages of their growth and development is to wreak lasting damage on a whole generation, the results of which may well have effects on economic development and welfare for decades ahead" (Kent, 1988: 54). The gradient for childhood inequality is one of the basic research questions in children's geography. There is compelling evidence that childhood socioeconomic inequalities are closely related to mortality and morbidity in later life (Warren, 2016: 293).

There are many papers devoted to the research on human and social capital of the child population in western Europe, the USA and Canada (Yueh

et al., 2001; Brown, 2006; Johnson et al., 2007; Wulczyn, 2008; Currie, Goodman, 2010; Österbacka et al., 2010; Almond, Currie, 2011; Aizer, Cunha, 2012; Lilleør, 2015) but hardly one paper published in Poland and in Ukraine concerning theoretical aspects of human capital of this age group of the population.

In conditions of modern economic and political destabilisation in Ukraine, human capital of the child population is considered as the most reliable indicator of socioeconomic development of the country and its regions. Twenty-five years ago, Ukraine became independent and started its way towards democratic transformations and market economy. However, political and socioeconomic reforms in the country were being conducted chaotically and slowly to some extent and did not bring about the desired results. The socioeconomic crisis that started in Ukraine in the early 1990s became a long-term one and created big obstacles on the way to achieving a higher level and quality of people's lives. The early 1990s were favourable for the emergence and rapid growth of the oligarch class. In the meantime, most Ukrainian households encountered social and economic marginalisation (in particular, households with three children and more, and households with at least one unemployed adult). The overall crisis in the state increased considerable regional disproportions of the socioeconomic, health and demographic development existing even prior to the crisis. These disproportions exist not only on the west-east and north-south direction, but also at the internal regional level (big cities – average cities and towns – rural territories). The primary goal of the study is the analysis of the health status as the main element of human capital among the child population aged 0–14, and external and family environmental factors influencing this population group in a big city (in the light of available statistics and materials of own sociological research conducted in Lviv city).

2. Conceptual framework for the analysis of human capital of the child population and its determinants

J. Heckman (2000) defined human capital as a blend of innate ability, education and skills acquired through life experience. At birth, a child is not ready because the stock of human capital is low. Through the preschool period, human capital grows as a function of inputs, such as social capital of the parents and innate abilities of the child. Growing evidence points to the important role of the conditions in early childhood in determining adult human capital and ability to learn. Studies of R. Johnson and R. Schoeni (2007) proved that poor health at birth and limited parental resources (such as low income, unwanted pregnancy) interfere with cognitive development and health capital in childhood, reduce educational possibilities and lead to worse socioeconomic and health outcomes in adulthood. Poor parental resources result in decreasing human capital of children, forming a negative intergenerational transmission of disadvantage within a family: parental socioeconomic situation influences birth outcomes, birth outcomes have long-lasting effects on health and economic status in adulthood, which in turn leads to poor birth outcomes for one's own children (Fig. 1) (The role of the family..., 2005).

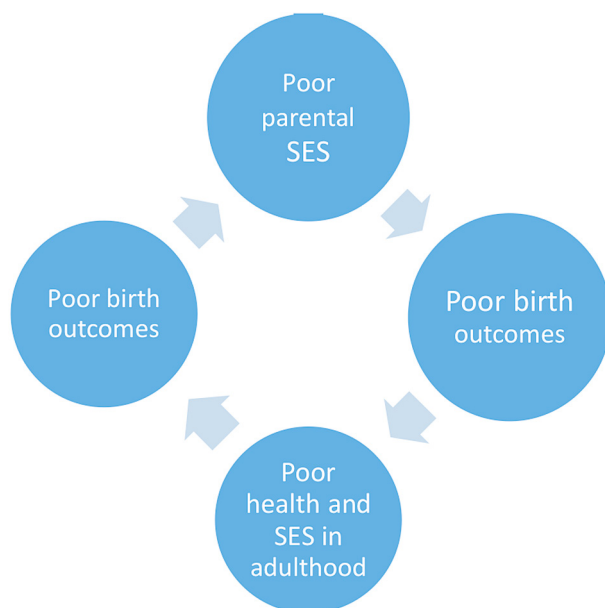


Fig. 1. Intergenerational transmission of disadvantage within a family

Source: Own elaboration based on Currie & Goodman 2010

According to F. Wulczyn (2008), the main goal for the state and child welfare agencies is to help families provide safe life to their children and increase child well-being through improving human and social capital of the child population. The Author mentioned among different forms of human and social capital such characteristics as health status, nutrition, freedom from abuse and neglect (Table 1).

P. Brown (2006) indicated that family characteristics have a stronger influence on educational achievements of children than school quality or teacher experience, particularly in the early stage of schooling. Better-educated parents allocate higher levels of goods and time to build the human capital of their child. However, better-educated parents with higher wages may spend less time with children in order to provide more goods to the family. Parental socioeconomic status may affect the human capital of children on many ways, one of which is the child's health. Grossman model (2000) describes how a child's health depends on health inputs such as medical care, food, and housing. Children of lower socioeconomic status families are likely to have lower health status at birth due to different environmental triggers that activate certain genes (Rutter, 2006). Some evidence is found in case of the influences of economic shocks on the health status of children, born at the time of shock (Lilleør, 2015). Child mental health is particularly susceptible to the effects of early deprivation. Poor child health may impact the human capital through two channels: it may damage the adult health as well as impair children educational attainment and skill acquisition. D. Barker (1998), P. Gluckman and M. Hanson (2005) affirmed that fetal conditions are related to adult risk of disease: low birth weight and poor nutrition result in lower child's cognitive development and in some health consequences in the adult life (such as coronary heart disease and stroke). Children from poor families have a high occurrence of asthma and acute illnesses (such as tooth decay and ear infections), and poor mental health (anxiety, depression, hyperactivity, behavioural disorders and learning disabilities) in comparison with other children. According to P. Almond and J. Currie (2011), the most important determinants of child human capital before the age of 5 are as follows: (a) prenatal environ-

ment (maternal health, economic shocks or periods of recession, environmental pollution etc.); (b) ear-

ly childhood environment (infections, health status, home environment, toxic exposures).

Table 1. Forms of human and social capital among the child population

Child's human capital	Social capital and other factors
Cognitive ability	Parent involvement in programs
Literacy/numeracy	Social network connectedness
Language proficiency	Number of siblings
Visual health	Spacing of children
Physical health	Earnings of the mother
School readiness skills	Assets in home (books, etc.)
Freedom from abuse and neglect	Maternal health
Freedom from domestic violence	Presence of the father
Nutrition	

Source: Wulczyn, 2008: 4

Both parents and the public sector invest during the crucial period of early childhood. S. Becker and T. Nigel (1986) proved that if parental and public investments are substitutes, parental investments will be crowded out as public investments expand. In the case when those investments are not perfect substitutes, public investments might affect parental behaviour towards children. Forming human capital of the child population typically requires both out-of-pocket expenditures on behalf of the child and inputs of parental time (shared leisure, such as cultural events, sporting activities, educational activities and/or eating time with child). The average child aged 12 or under spent about 29 hours per week on activities with parents (The role of the Family...2005). Österbacka et al. (2010) compared human capital investments in children in 3 selected countries: Finland, Germany and the USA. It was found that leisure time and eating time are the most important determinants of human capital enriching among other non-care-related parent-child time activities.

According to J. Warren (2016), there are many pathways in which socioeconomic status of the family may affect different aspects of the human capital:

- childhood socioeconomic status and children's health;
- childhood socioeconomic status and education;
- childhood socioeconomic status and cognitive and non-cognitive skills;
- childhood socioeconomic conditions and adult socioeconomic conditions;

- children's health and adult health;
- education, skills and adult socioeconomic status;
- education, skills and adult health.

As concerns European research on human capital of the child population, one should note the studies of C. Spencer and H. Wolley (2000) who analysed the life of the children in European cities: from well-being to street crime, traffic and environmental pollution. Health inequalities tend to be greater in urban areas with poor population. Even if cities offer many opportunities, medical and educational services, their density, urban segregation and a huge gap between the richest and the poorest contribute to inequalities in health, especially for vulnerable population groups, like children and the elderly.

3. Research materials and methods

The study was based on external desk research method and a questionnaire interview study of households with children aged 0–14 in Lviv city. The external desk research method involved collecting and analysing published and non-published statistical data from the Main Statistical Department of the Lviv Region, Lviv Regional Informational-Analytical Public Health Center. Taking into account the lack or incompetency of the statistical data that would reflect the peculiarities of the health condi-

tion of the child population and life conditions of households with children in Lviv city, a survey with 42 detailed questions was elaborated that enabled to estimate the situation at the micro-level (including living conditions of the households with children, children's health, nutrition quality, psychological activity of children, accessibility to education and medical service).

The questions were divided into three blocks: Part A – general characteristics of households with children (16 questions), Part B – the characterisation of children's health condition and the factors forming the child's/children's potential in a household (20 questions), Part C – social and demographic characteristics of a household respondent (of the father/mother, or guardian). The survey was carried out in May 2015 on a random sample of respondents – parents and guardians of the children in Lviv city. From all 550 questionnaires, 467 were selected for further analysis based on their completeness. The majority of surveyed people were women (83.5% of the total number of respondents), people aged between 20 and 35 (52.2% of the total number of respondents), married people (84.4%), employed in the state (52.0%) and private (24.2%) economy sectors as well as women that were on a child-care leave. The majority of surveyed households were families with one child (53.1% of surveyed respondents). The lowest percent of the surveyed households were households with four children and more (1.7% of the total number).

The collected information provided the basis for the development of a database permitting the operation of a large set of data. The collected data were processed using MS Excel and STATISTICA software. Statistical analysis in relation to the qualitative parameters was performed with the application of the chi-square test and C-Pearson contingency coefficients for the determination of correlations between the examined dependent variable – child health status – and independent variables, such as household's income, life satisfaction among parents, well-being among parents, affordability of health care at the place of residence, financial affordability of healthcare, physical activity among children, influence of noise and unpleasant scents in the place of residence.

Our study has some limitations due to the nature of the desk research method and the questionnaire

interviews study method itself. Limitations of the desk research method are as follows: collected information and statistical data may not be exactly adequate for the needs, often requires modification and testing in order for its validity and reliability to be verified. Among the limitations of the questionnaire interview study method, one should mention the low response rate, and limitations with regards to the expected outcome. Fixed-choice questionnaires generally force the respondent to answer questions based on his/her own perception and influenced by such external factors as respondent's educational and societal status, age, culture etc.

4. Research results and discussion

4.1. Brief analysis of human capital of the child population and its selected macrosocial determinants in the Lviv region

The Lviv region is a transborder region of Ukraine bordering with Poland and the European Union. It is characterised by an unfavourable socio-economic situation and one of the highest shares of child population in the total population. A likelihood that a child is healthy, happy and doing well in school becomes progressively stronger as family affluence rises (Growing up unequal..., 2016). It was proved that early socioeconomic exposures have a lasting influence on lifelong health and well-being (Repetti et al., 2002).

Among the powerful negative impact determinants for human capital among children population one should name low value (in comparison with the values for the whole Ukraine and eastern border of the EU) of income per capita in households and expenses on health care, high level of population with children living below relative poverty line, and expenses on food exceeding 50% of the total expenses of the households. In comparison, nowadays in the neighbouring Lubelskie voivodeship in Poland, income per capita in households was three times higher (in USD), expenses on health care two times higher and expenses on food, on the contrary, two times lower. In 2014, the share of the population of Ukraine with average equivalent incomes per month lower than the minimum level of sub-

sistence was 12% (with the marginal critical rate of 7% established by experts). The part of the poorest population with incomes lower than \$2.5 per day remains considerable, as is the correlation between the total income of the wealthiest and the poorest 10% of the population that amounted to 4.4 in 2014. The problem of poverty is strictly connected with the poverty of households which have children. Among the different types of households in Ukraine, the highest risk of poverty according to both absolute and relative criteria concerns the households with two children and more, with children under 3, and households with children and unemployed adults. Nevertheless, the highest risks exist for families with many children. According to self-estimation, 73.4% of families with many children consider themselves to be poor while among families with any children this rate is 66.5% (Cili rozvytku..., 2016). In fact, every third Ukrainian family with children and every fifth employed adult is poor. One child increases the risk of poverty by 17% according to the relative criterion. For three children and more, this rate equals 42%.

The number of children in households is connected with numerous factors, such as unstable political and socioeconomic situation in the state, abrupt fall in the living standard of the population, high rate of divorces, unsatisfactory condition of women's reproductive health, social tension, increasing secondary female infertility as a result of abortions, etc. According to the results of the Ukrainian national household survey conducted in

2014, low income rate as an obstacle in implementing personal reproductive plans was stated by 54% of respondents, and unsatisfactory housing conditions were stated by 39%. Family's fear that their financial situation will become worse is not ungrounded. Despite the fact that the flexible system of welfare payments after the birth of a child introduced in 2007 significantly increased birth rate in Ukraine, this was majorly applicable to rural territories (due to the values of women living in the countryside as well as income differences among Ukrainian society between urban and rural areas that leads to a more considerable role of financial support for rural people).

One of the main elements of human capital of the child population is the number of children in total population and health condition of that age group of the population. These elements were analysed in table 2 by means of the following variables: share of the child population aged 0–14 in total population, share of households with children, birth rate, infant death rate, incidence and prevalence rates for child population (form 12, code A00-T98 Ministry for Health in Ukraine). As for the Lviv region, it has one of the highest levels in the country both in terms of the percentage of households with children and percentage of the child population in total population, and birth rate, exceeding the average values for Ukraine. To compare, in the near Lubelskie voivodeship in Poland, the percentage of the child population in total population was lower (14.2%), as was birth rate at 2.7‰.

Table 2. Human capital of the child population and its socioeconomic determinants in the Lviv region and in Ukraine, 2014

Indices	Lviv region	Average for Ukraine
Share of the child population aged 0–14 in total population, %	15.7	14.0
Share of households with children, %	46.0	38.2
Birth rate, per 1,000 people	11.9	10.8
Infant death rate per 1,000 live births	8.5	7.8
Incidence rate per 1,000 of the child population	1,478.6	1,312.4
Prevalence rate per 1,000 of the child population	1,909.4	1,709.7
Share of households below relative poverty line, %	28.3	24.5
Income per capita in USD in households	125	133
Food expenses, % in general expenses of the households	51.3	47.6
Expenses on healthcare, % in general expenses of the households	2.9	3.8

Source: Own elaboration based on available statistical materials

The analysis of the dynamics of basic morbidity rates in the population of children aged 0–14 confirms a tremendous health crisis in this age group. During the period of 2000–2014, both in all of Ukraine and the Lviv region, a rapid increase was noted in incidence rates among children due to civ-

ilisation diseases – cancer, diseases of the nervous, and respiratory systems, as well as congenital developmental defects and traumas, while a decrease by 24% was noted in contagious and parasitic diseases in case of the Lviv region and by 20% in case of Ukraine as a whole (Table 3).

Table 3. Dynamic of incidence rates among the child population according to selected causes per 1,000 children aged 0–14 in the Lviv region and in Ukraine

Classes of the diseases	Lviv region		Ukraine	
	2000	2014	2000	2014
Contagious and parasitic diseases	50.8	38.4	62.3	50.0
Cancer	2.1	2.6	2.2	2.9
Diseases of blood and hematopoietic organs	15.4	13.2	19.1	14.6
Endocrine, state of nutrition and metabolic disorders	56.5	13.1	27.1	14.6
Mental illnesses and behaviour disorders	8.2	6.9	6.4	4.3
Nervous system diseases	10.2	17.4	14.8	16.8
Cardiovascular system diseases	2.7	2.7	7.7	7.3
Respiratory system diseases	872.6	1081.5	771.5	900.8
Alimentary system diseases	51.3	53.8	51.0	45.9
Diseases of the skin and subcutaneous tissue	51.9	58.6	69.2	65.5
Diseases of the osteoarticular system, muscles and connective tissue	22.6	22.6	25.1	22.6
Diseases of the urogenital system	22.3	26.6	20.4	20.2
States originating in perinatal period	21.0	6.1	33.2	9.0
Congenital developmental defects	4.1	4.2	5.8	6.6
Consequences of external factors	26.8	29.1	46.1	45.9

Source: Own elaboration based on available statistical materials

Such a situation demonstrates a rather specific process of epidemiological transformation among the child population in the Lviv region and Ukraine in general, as there is an increasing rate of the expansion of civilization diseases with a low-rate reduction of the expansion level of infectious and parasitic diseases.

4.2. Human capital of the child population and its determinants in Lviv city in the light of own research

General macrosocial factors and the family situation are among the most important factors forming the capital of the child population (Fig. 2) (The role of the Family..., 2005).

According to the results of the research, the majority of the surveyed respondents had income that

was lower or at the level of the social minimum (48% of respondents in total) that was established in Ukraine in 2014 at the level of UAH 1,176.00 per one person in a household per month, i.e. approximately 3.3 dollars per day. Particular concerns are caused by the fact that a considerable number of households (25%) have an average monthly income per one person of up to UAH 400 (less than \$15) as well as income ranging from UAH 400 to 900 (\$15–25) (Fig. 3).

Respondents were also asked about how they estimated their well-being and the fulfilment of household needs. Almost 23% stated that their income was not enough even to meet the basic needs in food, clothes, shoes and paying utility bills. The majority of respondents estimated the state of their households as average (51%) as well as low and very low (41% in total). 55% of respondents had income that was enough only to fulfil basic needs. Only 5%

of respondents could fulfil their needs and other expenses (such as travels, buying things of long-term use, financial help for their relatives and friends) as well as put aside money at the time when the survey was being conducted. Housing conditions of researched households are directly dependent on the level of their wealth. Among the surveyed house-

holds, the majority had an average living space of up to 15 square metres per one person in a household (37.7%) as well as in the range from 15 to 25 (36.6%). These numbers are considerably lower than the medical and physiological norm established at the level of 28 square metres per one person.

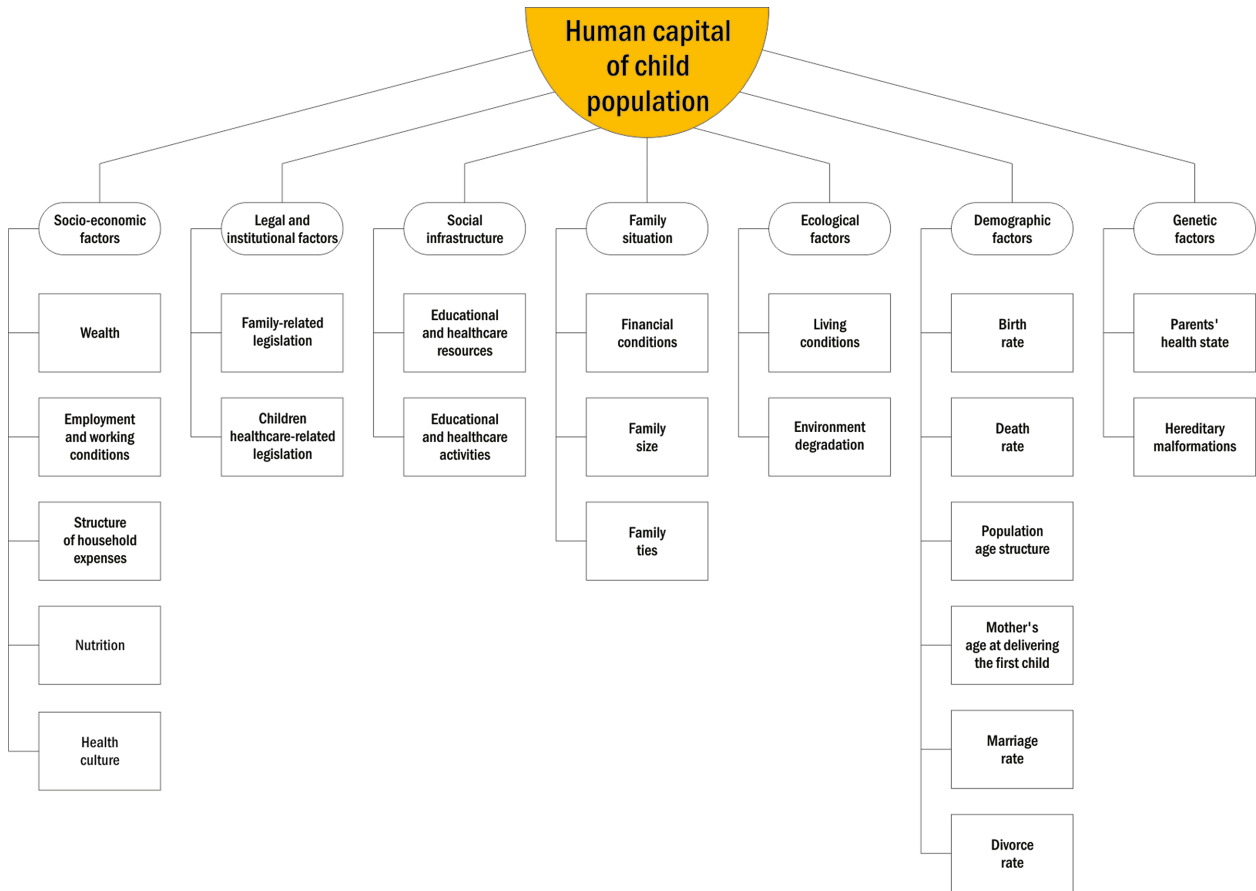


Fig. 2. Determinants of human capital of the child population

Source: Own elaboration

The level of life satisfaction in the case of parents or guardians is an important factor forming the potential of the child population. The level of life satisfaction consists of the subjective estimation of your quality of life, social situation (that is affected by the social status, education level, profession), general socioeconomic and political situation in the country or its region as well as the psychological component that is individual when considering different people. Among the surveyed Lviv residents, only 9% estimated their life satisfaction level as high and very high while almost 35% were not satisfied with their lives.

It seems that the current economic and political crisis is a leading factor limiting procreation plans of the families: almost 50.5% of the researched households do not want to have more children. Among the declared reasons one should mention poor economic condition of the family (15.6% respondents), unstable political and economic situation in the country (26.8% respondents), lack of confidence in the future (25.7%). The interesting fact is that only 3% of the respondents do not want to have more children due to the wish to live for themselves only.

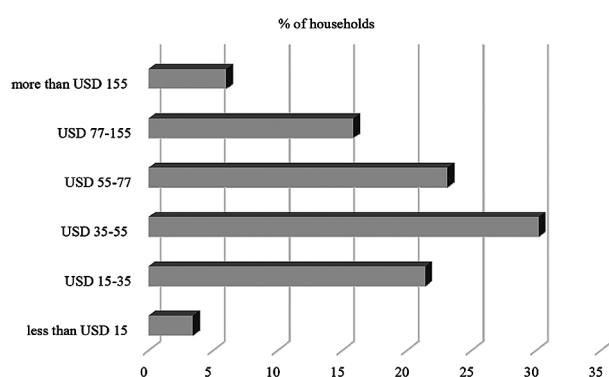


Fig. 3. Average monthly net income, in USD per 1 person in the researched households, 2015

Source: Own elaboration based on field research

The health condition of the child population is the most important element of human capital of this age group. The development of a child and its good health condition in childhood and adulthood is a means of forming health and quality of life in further years. Some diseases that appear in childhood exist throughout life: for instance, genetic diseases, type 1 diabetes. Other diseases begin in childhood (for example, osteoporosis, atherosclerosis). Respondents were asked about the health condition of their children. Almost 7.6% of the respondents estimated their children's health as bad and very bad (Fig. 4). As a comparison, the research of health condition of children aged between 0 and 14 conducted by the Central Statistical Office of Poland in 2014 demonstrated that only 1.3% of parents and guardians estimated the health condition of their children as bad and very bad (Stan zdrowia ludności..., 2016). Research conducted by Woynarowska and Oblacińska (2014) in Poland demonstrated that more than 93% of the surveyed parents of children aged between 0 and 14 thought that the condition of their health was good or very good while our research concerning Lviv showed that only 56.1% of children had a good or very good health condition.

Among the long-lasting health problems with their children (more than 6 months), the respondents mentioned hearing problems (1.4% respondents), eye defects (10.3%), speech disorders (6.4%), disorders of the musculoskeletal system (2.2%) and psychoemotional distress (4.0% of children in researched households). Among other common health problems, one should mention allergies, res-

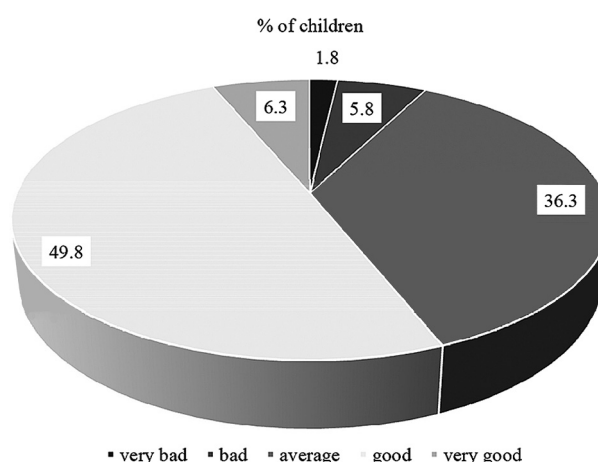


Fig. 4. State of health of children in the researched households, 2015

Source: Own elaboration based on field research

piratory and alimentary system diseases, asthma and endocrine disorders. Only 44.2% of children in the researched households were considered by their parents as practically healthy (table 4). In Poland, the share of practically healthy children according to estimations by parents or guardians equalled 49.2% (Stan zdrowia ludności Polski..., 2011), and long-term health problems of children were admitted by 16% of the surveyed parents (Babiarz, Szumilaz, 2013).

Forming human child capital requires both out-of-pocket expenditures on behalf of the child and the inputs of parental time (e.g. leisure time and eating time) (Österbacka et al., 2010). One of the important internal family factors forming potential of the child population is the amount of time spent by parents with their children (Harden et al., 2013). The majority of surveyed respondents spent only 2–4 hours per day with their child/children while 5% of parents admitted that they did not spend their spare time with their children at all. Among the forms of spending spare time with a child, the following were the most widespread ones: outdoor activity (52.9% of surveyed respondents), visiting family and acquaintances (50.7%) and time spent watching TV or on a computer. The majority of children of the surveyed respondents spend 2–4 hours per day watching TV or playing computer games (very often without parental control), 17% spend 4–6 hours and more than 4% spend more than 6 hours per day. This affects negatively the

physical and psychological health of a child causing obesity, muscular pain, low school performance and aggressive behaviour (Larson, 2001; Österbacka et al., 2010). Despite the fact that according to different data, in the last decade the time spent by children watching TV was reduced, this reduction is now compensated by the time spent with oth-

er gadgets such as smartphones, tablets and computers. Unfortunately, such forms of active leisure as reading books and doing sports are not popular among surveyed respondents: only every fourth of surveyed parents or guardians spend time with their children in such a way.

Table 4. Incidence of diseases among children in researched households, 2015

Disease classes	% of children
Allergy	19.1
Asthma	2.6
Diseases of blood and hematopoietic organs	1.5
Diseases of the osteoarticular system, muscles and connective tissues	2.4
Endocrine, state of nutrition and metabolic disorder	2.4
Alimentary system diseases	5.6
Diseases of the skin and subcutaneous tissue	0.8
Respiratory system diseases	8.6
Eye diseases	10.3
Nervous system diseases	2.4
Long-term diseases caused by trauma	1.0
Birth defects	0.7
Other diseases	9.9
Child (children) is (are) practically healthy	44.2

Source: Own elaboration based on field research

Physical activity of children is quite often constrained to physical education at school or kindergarten (12.4% of the surveyed respondents). The importance of physical exercises in forming the health potential of the child population is widely analysed in professional literature (Zdrowie dzieci i młodzieży..., 2013; Leech et al., 2014; Growing up unequal..., 2016). According to the results of the research, only 21% of the respondents' children regularly do physical exercises beyond PE classes at school (Fig. 5). The results are similar to the ones of Polish researchers, for example, Dzielska and Nałęcz (in: Zdrowie dzieci i młodzieży..., 2013), according to whom only 20% of boys and 15% of girls aged between 5 and 17 do physical exercises every day, according to the MVPA criterion (moderate-vigorous physical activity), recommended by the WHO. Children that are not physically active have a risk of overweight and obesity as well as consequences of these civilisation diseases almost twice as high as active ones.

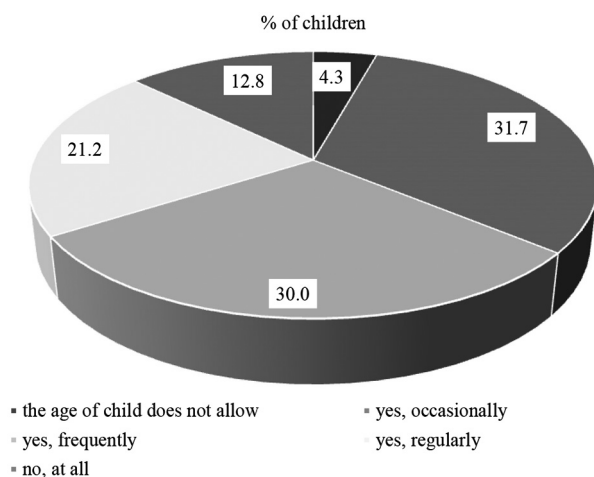


Fig. 5. Physical activity among children in the researched households, 2015

Source: Own elaboration based on field research

The quality of nutrition has indisputable effect on forming the potential of the child population. Food is not only used as a means by which adults care for children, but it is something through

which adults manage their own feelings and relationships to each other which in turn impact children's experiences (Punch, Emot, 2010). The most considerable effect on the quality of nutrition of the Ukrainian population was exhibited by the current economic crisis and population's consumption culture. The surveyed respondents were asked whether their child/children consumed such products as meat and meat products, fish and sea food, milk and milk products, fresh vegetables, fruit and juic-

es during 7 days prior to the survey. The results of the conducted research demonstrate insufficient consumption of all the products necessary for the development of children's health, such as meat and dairy products, fish and sea food, fresh vegetables and fruit as well as juices (Table 5). These data are partially confirmed by the research conducted by the WHO among children of school age and the youth in Ukraine and other countries in Europe and North America (Growing up unequal..., 2016).

Table 5. Nutritional quality of children's meals in the researched households, 2015

Kind of food	% of children who eat a food type at least once a week
Meat and meat products	72.6
Fish and fish products	29.6
Milk and milk products	73.0
Fresh vegetables	65.3
Fresh fruit	64.9
Juices	31.5

Source: Own elaboration based on field research

In order to assess the microenvironment of children's living, parents were asked questions about the effect of the following factors on their children: noise (street traffic, planes, noisy neighbours, industrial enterprises, restaurants/pubs/clubs), unpleasant scents (industrial, agricultural, toxic waste, etc.) and tobacco smoke at the place of living. Approximately half of the respondents admitted that their child/children was/were moderately affected by noise and unpleasant scents while almost every tenth child was affected by these factors considerably (Fig. 6).

Both passive and active tobacco smoking has a very high risk for human health, being most detrimental to small children if they become passive smokers. For a child, being a passive smoker can lead to immune system disorders, the development of several types of neoplasms and increased risk of behavioural disorders (Kamer et al., 2013). According to the results of the research, every fourth child was moderately or considerably affected by tobacco smoke when staying at home. 4% of children were affected by it 1–5 hours per day. Almost 22% of parents answered "yes" to the question, "In your opinion, what is the risk of your child/children having bad habits?" (high and average risk).

One of the most important macro-factors forming the potential of the child population is the quality and affordability of education services and healthcare. Respondents were asked several questions regarding the use of healthcare and education services and the level of their affordability in Lviv city. The biggest portion of the respondents estimated the affordability of healthcare, additional and main education services as average (approximately 40% of the total number of surveyed respondents). The number of respondents that estimated the affordability of services as low and very low was approximately 16% (in the case of main and additional education services) and 25% (in the case of healthcare services). Despite the right to free healthcare service at state and municipal medical institutions guaranteed by the Constitution of Ukraine, in many cases parents have to pay for healthcare services for their children themselves (doctors' appointments, medical procedures, prescription). This research demonstrated that in the case of 7% of the respondents, their financial means were not sufficient for using healthcare services for children, and financial means of 69% parents enabled them to satisfy only urgent medical needs. A similar situation concerns using additional education services

for children: for 13% of parents they are totally unaffordable, for 70% they are marginally affordable (Fig. 7). However, the majority of children of the

surveyed respondents do use additional education services such as learning foreign languages, sports, music, and painting.

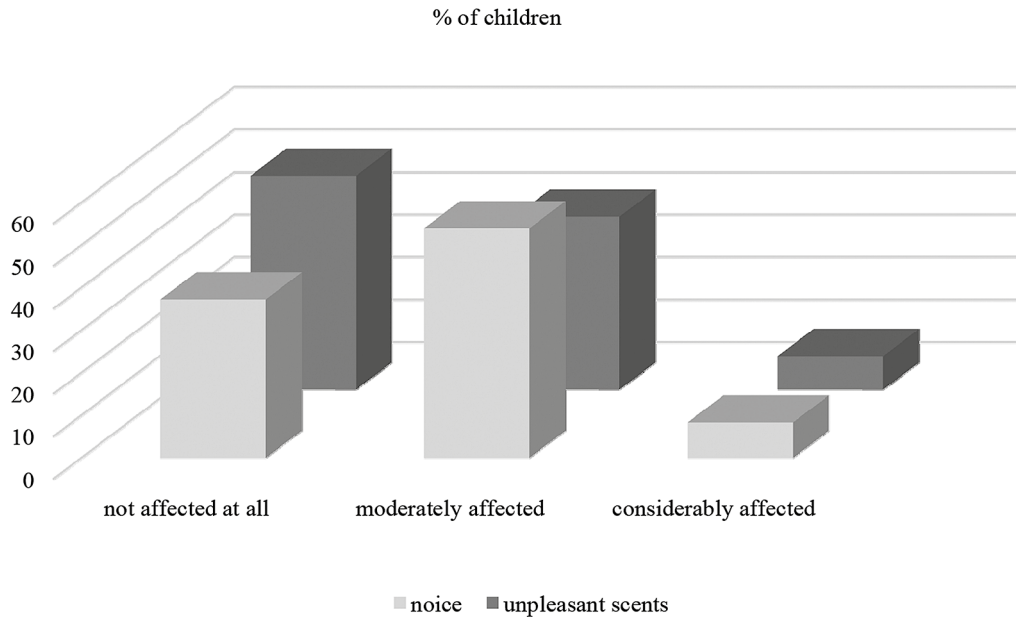


Fig. 6. Noise and unpleasant odours exposure of children in the researched households, 2015

Source: Own elaboration based on field research

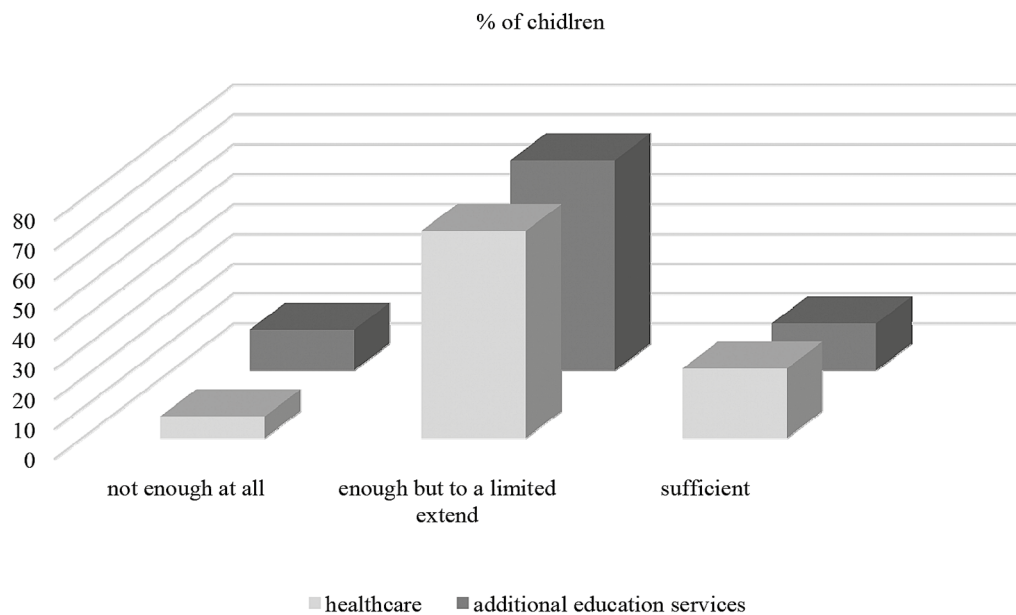


Fig. 7. Financial affordability of healthcare and additional education services for children, 2015

Source: Own elaboration based on field research

A considerable rate of corruption can be observed in state institutions of the school system. According to different sociological data, the high-

est rate of everyday corruption is observed in Ukrainian healthcare institutions and comprehensive schools: in 2011, 66% of surveyed respondents

and their family members gave bribes on request and 36% gave bribes voluntarily in healthcare institutions. The percentage of the surveyed population that encountered corruption in educational institutions was 61% in the case of bribes on request and 62% in the case of voluntary bribes (Ukrajins'ke suspilstvo..., 2013).

Every fourth parent replied “yes” to the question, “During the last 12 months, did you encounter a situation in which your child/children did not get a consultation at a doctor’s office despite a real need?” These data are similar to the results of the Ukrainian household research conducted in October 2015, according to which 29.3% of households that needed medical help were not able to get it for different reasons (Samoocinka naseleńjam stanu zdorov’ja..., 2016). According to the results of our research, the most common reasons of such a situation in Lviv city are the lack of funds and competent doctors, hopes for a child being fine without any treatment (approximately 7% of respondents for each reason) and the lack of time due to job and caring for other persons (5% of respondents). There was even a case when an ambulance did not arrive when a child needed it. Several surveyed parents during the last year before conducting the survey did not use healthcare services because of a long queue to the doctor. As far as means of treatment preferred by the respondents are concerned, it is predominantly traditional medicine (90% of respondents), while alternative medicine and homeopathic means are preferred by

only 33% of parents in total. Alternative medicine was primarily chosen by people with income lower than the social minimum (quite often due to the lack of alternatives) as well as people without higher education.

In order to capture the relationships between the human capital of children and selected factors of its development, the phi-square test and C-Pearson coefficient was used (table 6). Statistical analysis was made for such dependent variables of child human capital as the willingness of parents to have more children and state of child health. There is a statistically significant correlation ($p < 0.05$) between the willingness of parents to have more children and the following independent variables: household’s income and number of members in the household. No statistically significant correlation was observed between the parents’ willingness to have more children and such factors as the level of life satisfaction, health condition of existing children, affordability of healthcare and education services. In the case of the health condition of children, a statistically significant ($p < 0.05$) average and weak connection with the following independent variables was discovered: household’s income, life satisfaction among parents, availability of healthcare in the place of residence, financial affordability of healthcare, physical activity among children, influence of noise and unpleasant scents. In any case, there was no statistically strong relationship between independent variables and the state of health of the child population and willingness of parents to have more children.

Table 6. Relationship between human capital of the child population and selected statistically important variables in the researched area

Features	Empirical measure of the statistics	Degrees of freedom	Statistical significance	Critical value	Test probability (p level for the test)	Pearson’s C - indicator
Dependent: number of children; independent: number of members in the household	41.329	8	0.05	15.507	<0.00001	0.287
Dependent: number of children; independent: household’s income	23.101	10	0.05	18.307	0.004	0.231
Dependent: health state of the child population; independent: life satisfaction among parents	53.988	20	0.05	31.410	0.0006	0.325

Dependent: health state of the child population; independent: availability of healthcare in the place of residence	84.046	25	0.05	37.653	<0.00001	0.400
Dependent: health state of the child population; independent: financial affordability of healthcare	56.001	15	0.05	24.996	< 0.00001	0.330
Dependent: health state of the child population; independent: noise exposure	54.062	15	0.05	24.996	< 0.00001	0.325
Dependent: health state of the child population; independent: unpleasant odours exposure	47.350	15	0.05	24.996	0.00003	0.306
Dependent: health state of the child population; independent: household's income	38.856	25	0.05	37.653	0.04	0.280
Dependent: health state of the child population; independent: respondent's estimation of welfare	28.345	15	0.05	24.996	0.02	0.241
Dependent: health state of the child population; independent: physical activity among children	37.395	25	0.05	37.653	0.04	0.275

Source: Own elaboration based on field research

It seems that human capital of the child population measured by the size of the child population and its health conditions is determined by a spectrum of factors not included in the survey, e.g. genetic factors, political destabilization in the country and others.

5. Conclusions

The human capital of the child population is a crucial factor for the future of every country, region and the world. The Lviv region is a transborder region of Ukraine bordering with Poland and the European Union. It is characterised by an unfavourable socio-economic situation and one of the highest shares of child population in total population. Research results show a potential crisis of the human capital among the child population in Lviv city. It is measured by low birth rate and a poor health condition of the child population. The reasons for such a situation are quite complicated. The

obtained results allow Author to conclude that in Ukraine, the second demographic transition, resulting in decreased birth rates, is determined mainly by the current political and economic crisis in the country, contrary to developed EU countries. Results of the author's own field research show that the main determinants of child human capital in Lviv city are as follows: household's income, life satisfaction among parents, well-being among parents, affordability of health care at the place of the residence, financial affordability of healthcare, physical activity among children, influence of noise and unpleasant scents at the place of residence.

The obtained results also have some limitations, connected with the narrow spatial aspect and not considering some other determinants of human capital of the child population (such as genetic factors and others).

The results of this study could be used while establishing the strategy of sustainable development in Ukraine until 2020 and should draw more attention to such vulnerable population groups as the child population in general and families with children with low SES.

References

- Aizer, A. and Cunha, F.**, 2012: The Production of Human Capital: Endowments, Investments and Fertility. Working Paper 18429. Cambridge: National Bureau of Economic Research. Available at: <http://www.nber.org/papers/w18429>, DoA: June 2016.
- Almond, D. and Currie, J.**, 2011: Human capital before the age five. In: *Handbook of Labor Economics*, Volume 4, Part B, pp. 1315-1486. DOI:[http://dx.doi.org/10.1016/S0169-7218\(11\)02413-0](http://dx.doi.org/10.1016/S0169-7218(11)02413-0)
- Babiarz, M.Z. and Szumilaz, E.M.**, 2013: Ocena wybranych aspektów zdrowia dzieci w Polsce w perspektywie badań GUS i badań własnych (Evaluation of selected aspects of children's health in Poland GUS studies in perspective and own experience – in Polish). In: *Zdrowie i dobrostan*, Volume 1, pp. 9–32.
- Barker, D.J.**, 1998: Mothers, babies and health in later life (2nd ed.). Edinburgh: Churchill Livingstone.
- Baylina, M. and Prats-Ferret, M.**, 2010: The Second International Conference on Geographies of Children, Youth and Families, Barcelona 2009: a report. In: *Children's Geographies*, Volume 8, Issue 4, pp. 437–440.
- Becker, S.G. and Nigel, T.**, 1986: Human Capital and the Rise and Fall of Families. In: *Journal of Labor Economics*, Volume 4, Issue 3, pp. S1–S39.
- Brown, P.H.**, 2006: Parental Education and Investment in Children's Human Capital in Rural China. In: *Economic Development and Cultural Change*, Volume 54, Issue 4, pp. 759–789.
- Bunge, W.**, 1973: The geography. In: *The Professional Geographer*, Volume 25, Issue 4, pp. 331–337.
- Cili rozvytku tysjačolittja Ukrajina: 2000–2015 (Millennium development goals Ukraine: 2000-2015 – in Ukrainian), 2016. Kyjiv: PROON v Ukrajinu. Available at: <http://www.idss.org.ua/monografii/2015%20MDG%20Ukr%20Report%20DRAFT.pdf>, DoA: June, 2016.
- Currie, J. and Goodman J.**, 2010: Parental Socioeconomic Status, Child Health, and Human Capital. In: *International Encyclopedia of Education*, Volume 2, pp. 252-259. Available at: <http://scholar.harvard.edu/files/joshuagoodman/files/parentalses.pdf>, DoA: May 2016.
- Doing Children's Geographies. Methodological Issues in Research with Young People, 2009. In: van Blerk, L. and Kesby, M. editors, London and New York: Routledge, pp. 1–240.
- Gluckman, P. and Hanson, M.**, 2005: The fetal matrix: evolution, development, and disease. New York: Cambridge University Press.
- Golledge, R., Smith, T., Pellegrino, J., Doherty, S. and Marshall, S.**, 1985: A conceptual and empirical analysis of children's acquisition of spatial knowledge. In: *Journal of Environmental Psychology*, Volume 5, Issue 2, pp. 125–152.
- Grossman, M.**, 2000: The Human Capital Model. In: Culyer, A.J. and Newhouse, J.P. editors, *Handbook of Health Economics*, Volume 1, pp. 348–408.
- Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health behavior in school-aged children (HBSC) study: internal report from the 2013/2014 survey, 2016. In: Inchley, J., Currie, D., Young, T., Sambal, O., Torshheim, T., Augustson L., Mathison, F., Aleman-Diaz, A., Molcho, M., Weber, M., and Barnekow, V. editors, *Health Policy for Children and Adolescent*, No. 7, Copenhagen, WHO Regional Office for Europe, pp. 1–277. Available at: http://www.euro.who.int/__data/assets/pdf_file/0003/303438/HSBC-No7-Growing-up-unequal-full-report.pdf, DoA: May, 2016.
- Harden, J., Backett-Milburn, K., MacLean, A., Cunningham-Burley, S. and Jamieson, L.**, 2013: Home and away: construction family and childhood in the context of working parenthood. In: *Children's Geographies*, Vol. 11, No. 3, pp. 298–310, DOI:<http://dx.doi.org/10.1080/14733285.2013.812274>
- Heckman, J.J.**, 2000: Policies to foster human capital. In: *Research in Economics*, Volume 54, Issue 1, pp. 3–56.
- Holloway, S. and Valentine, G.**, 2000: Children's geographies: playing, living, learning. London: Routledge.
- James, A.L.**, 2010: Competition or integration? The next step in childhood studies. In: *Childhood*, Volume 17, Issue 4, pp. 485–499.
- Johnson, R.C., and Schoeni, R.F.**, 2007: The Influence of Early-Life Events on Human Capital, Health Status, and Labor Market Outcomes over the Life Course. Population Studies Center Research Report 07-616. University of Michigan, Institute for Social Research. Available at: <http://www.psc.isr.umich.edu/pubs/pdf/r07-616.pdf>, DoA: March 2016.
- Kamer, B., Pasowska, R., Grys, W., Socha-Banasiak, A., Kamer-Bartosinska, A., Matczak-Rynkowska, A., Kałużna-Czaplińska, J. and Rynkowski, J.** 2014: Pre- and postnatal exposure of children to tobacco smoke during the first four years of live – observa-

- tions of the authors. In: *Annals of Agricultural and Environmental Medicine*, Volume 21, Issue 4, pp. 753–759. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/25528915>, DoA: May, 2016.
- Katz, C.**, 1993: Growing girls/closing circles: limits on the spaces of knowing in rural Sudan and US cities. In: Katz, C. and Monk, J. editors, *Full Circles: geographies of women over the life course*, London: Routledge, pp. 88–106.
- Katz, C.**, 1994: Textures of global changes: eroding ecologies of childhood in New York and Sudan. In: *Childhood: a global journal of childhood research*, Volume 2, pp. 103–110.
- Kent, G.**, 1988: Children as human capital? In: *Food and Nutrition Bulletin*, Volume 10, No. 4, pp. 54–58.
- Larson, R.W.**, 2001: How U.S. Children and Adolescents Spend Time: What It Does (and Doesn't) Tell Us About Their Development. In: *Current Directions in Psychological Science*, Volume 10, Issue 5, pp. 160–164.
- Leech, R.M., McNaughton S.A. and Timperio, A.**, 2014: The clustering of diet, physical activity and sedentary behavior in children and adolescent: a review. In: *International Journal of Behavioral Nutrition and Physical Activity*, Volume 11, Issue 4, pp. 1-9. Available at: <http://www.ijbnpa.org/content/11/1/>, DoA: June, 2016
- Lilleør, H.B.**, 2015: Human Capital Diversification among Children. Copenhagen: Rockwool Foundation Research Unit.
- McKendrick, J.**, 2001: Coming of age: rethinking the role of children in population studies. In: *International Journal of Population Geography*, Volume 7, pp. 461–472.
- Österbacka, E., Merz, J., and Zick C.D.**, 2010: Human Capital Investments in Children: A Comparative Analysis of the Role of Parent-Child Shared Time in Selected Countries. IZA Discussion Papers No.5084, Forschungsinstitut zur Zukunft der Arbeit Institute for the Study of Labor. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1651709, DoA: May 2016.
- Punch, S. and Emot, R.**, 2010: Children's food practices in families and institutions. In: *Children's Geographies*, Volume 8, Issue 3, pp. 227–232.
- Repetti, R.L., Taylor S.E. and Seeman, T.**, 2002: Risky families: family social environment and the mental and physical health of offspring. In: *Psychological Bulletin*, Volume 128, Issue 2, pp. 330–366.
- Rutter, M.**, 2006: Genes and behavior: nature-nurture interplay explained. Oxford: Blackwell Publishers.
- Samooocinka naselennjam stanu zdorov'ja ta rivnja dostupnosti okremykh vydiv medyčnoji dopomogy u 2015 roci (za danymy vybirkovogo opytuvannja domogospodarstv u žovtni 2015 r.), (Self-assessment of Health Status and Availability of Selected Types of Medicaid - in Ukrainian), 2016, Kyjiv: Deržavna Služba Statystyky Ukrajinjy.
- Socialno-demografični charakterystyky domogospodarstv Ukrajinjy u 2014 roci. Statystyčnyj zbirnyk, (Social and Demographic Characteristics of Households of Ukraine - in Ukrainian), 2014, Kyjiv: Deržavna Služba Statystyky Ukrajinjy.
- Spencer, C. and Woolley, H.**, 2000: Children and the city: a summary of recent environmental psychology research. In: *Child: Care, Health and Development*, Volume 26, Issue 3, pp. 181–197.
- Stan zdrowia ludności Polski w 2014 r. (Health state of the population in Poland in 2014 - in Polish), 2016. Warszawa: GUS.
- The Role of the Family in the Production of Human Capital, 2005: National Research Council. Beyond the Market: Designing Nonmarket Accounts for the United States. Washington, DC: The National Academies Press, DOI:<http://dx.doi.org/10.17226/11181>.
- Ukrajins'ke suspilstvo 1992–2013: stan ta dynamika zmin (Ukrainian Society 1992–2013. Current State and Dynamics of Changes - in Ukrainian), 2013. In: Vorona, V. and Šulga, M. editors, *Sociologičnyj monitoring*, Kyjiv: Instytut Sociologiji NAN Ukrajinjy, pp. 1–566.
- Ward, C.**, 1978: The Child in the City. London: Architectural Press.
- Warren, J.R.**, 2016: Does Growing Childhood Socioeconomic Inequality Mean Future Inequality in Adult Health? In: *The Annals of the American Academy of Political and Social Science*, Volume 663, Issue 1, pp. 292–330.
- Woynarowska, B. and Oblacińska, A.**, 2014: Stan zdrowia dzieci i młodzieży w Polsce. Najważniejsze problemy zdrowotne (Health state of child and adolescent population in Poland. Main health problems - in Polish). In: *Studia BAS*, Volume 2, Issue 38, pp. 41–64.
- Wulczyn, F.H.**, 2008: Child Well-Being as Human Capital. Chicago: Chapin Hall Center for Children at the University of Chicago.
- Yueh, L.Y. and Hall, S.T.**, 2001: A Model of Parental Investment in Children's Human Capital. SKORE Re-

search Paper, No. 15, Oxford: ESRC funded Centre on Skills, Knowledge and Organizational Performance. Zdrowie dzieci i młodzieży w wymiarze socjomedycznym (Child and adolescent health in sociomedi-

cal dimension – in Polish), 2013. In: Szymborski, J. and Zatoński, W. editors, Zdrowie Publiczne. Monografie, Tom II, Wszechnica Polska: Szkoła Wyższa w Warszawie, pp. 1–200.



Ministry of Science
and Higher Education
Republic of Poland

The proofreading of articles, positively reviewed and approved for publishing in the 'Bulletin of Geography. Socio-economic Series', was financed from the funds of the Ministry of Science and Higher Education earmarked for activities popularizing science, in line with Agreement No 509/P-DUN/2016.

