

Exploring and monitoring change in educational level on national, regional and city level

Katja Vilkama¹ and Marja Tammilehto-Luode²

¹City of Helsinki Urban Facts, Helsinki, Finland

²Statistics Finland, Helsinki, Finland

¹Corresponding author: Katja Vilkama, email: katja.vilkama@hel.fi

Abstract

The last century has witnessed a significant rise in educational level among residents in Europe and throughout the most of the industrialised world. Despite the overall increases in the educational level, national, regional and district-level disparities still persist, and can be rather wide within and between countries. This paper explores and monitors changes in educational level in Finland on national, regional and city level. Education is known to be an important predictor of individual's life chances. For instance, it is well-known that the educational level of parents, particularly, educational achievements of a mother, predicts educational outcomes of the children. Regional disparities in educational level can therefore influence wider social development in countries. The paper draws on the high-quality Finnish population registers that enable compiling of a wide range of regional and neighbourhood-level time series on various socio-economic indicators. Unlike census data that is usually updated on five to ten year intervals, the Finnish register based statistical system is maintained and updated nowadays yearly. The aim of the paper is two-fold. The main objective is to analyse regional differences, and changes, in educational level in Finland since the 1970s to this date. The second aim is to develop and explore different ways to visualise these changes with the innovative use of GIS methods. Furthermore, a special focus is laid on the analysis of the regional differences in the educational level of the youth. The rising level of youth unemployment, and a risk of subsequent social marginalization of young adults, has raised increasing concern about the faith of the youth in many European countries. Exploring the spatial differences in the educational level of the youth, and monitoring their labour market participation, can therefore be considered important.

Key words: education, Finland, GIS-analysis, population registers, time-series, youth

1. Introduction

Education has been perceived as an important factor for the economic development of countries. High-education is often connected to innovativeness and economic competitiveness of nations. On the other hand, education is also an important predictor of individual's life chances. Having some level of secondary or tertiary education is a prerequisite for better employment opportunities in most post-industrial countries. The impacts of education may also appear inter-generationally. The educational levels of parents, particularly the educational achievements of a mother, predict educational and labour market outcomes of the children. Regional disparities in educational level can therefore have long-term outcomes influencing the wider social development in countries.

Finland is one of the Nordic welfare countries where education has been seen as a key to success. Free and uniform compulsory schooling was introduced in Finland in the 1970s, and the university network was expanded significantly. High-level state investments in the free education system have resulted in rapid increases in the overall educational level. National, regional and district-level disparities still persist, however, and are rather wide within and between the Finnish municipalities.

In this paper, we explore and monitor changes in educational level in Finland on national, regional and city level, since the 1970s to this date. We will visualise the changes, in our presentation, with the innovative use of GIS methods. Furthermore, we construct a spatial analysis of the differences in the educational level of the youth in the Metropolitan Area of Helsinki. The rising level of youth unemployment, and a risk of subsequent social marginalization of young adults, has raised increasing concern in Finland (e.g. Myrskylä 2012a), particularly in the major urban areas.

The data of the study is derived from the high-quality Finnish population registers that enable compiling of a wide range of regional and neighbourhood-level time series on various socio-economic indicators.

2. Results: Changing educational map of Finland

2.1. National and regional changes in educational level

There has been a significant change in the educational profile of Finnish residents since the 1970s to this date. In 1970, up to 74 per cent of the Finnish population, aged 25–64, had no other education than compulsory school (nowadays 9 years of compulsory schooling, in the 1970s 6–8 years). In the last four decades, the proportion of highly educated residents (holding master’s degree or higher) has significantly increased while the proportion of those not having any secondary or higher education has declined (Figure 1; see also Repo 2012). The change in the educational profile has been even more significant among women than among men. Forty years ago, 1.4 per cent of women (3.4 % of men), aged 25–64, had higher education but in 2011 the figure was already 13.2 per cent (10.7 % among men).

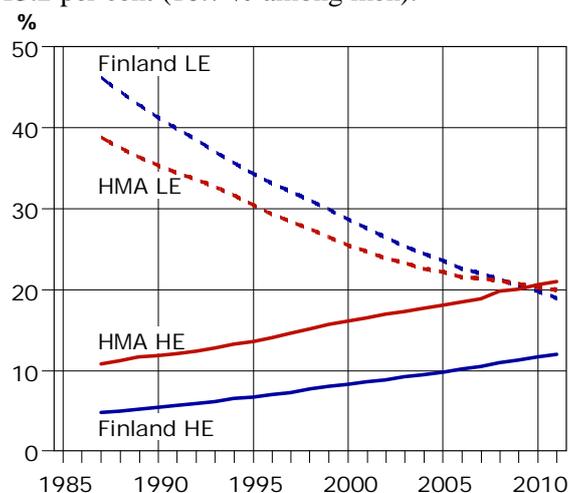


Figure 1. The proportion of low-educated (having no degree; LE) and highly-educated (holding a master’s degree or higher; HE) 25–64-year-old residents in Finland, and in the Helsinki Metropolitan Area (HMA), 1987–2011 (Source: Statistics Finland).

The education level of the Finnish regions has changed dramatically as well (Figure 2). In 1987, the proportion of highly-educated residents varied from 2.2 to 8.8 per cent, whilst in 2011 the regional differences ranged already from 6.2 to 17.8 per cent. Although the level of education has risen throughout the country, the regional differences have increased.

Figure 3 portrays the changes in educational level among the Finnish municipalities. It shows that there is wide variation in the educational level inside the different regions. The gap between the lowest and the highest proportions of highly-educated residents is wide among the municipalities: in 1987 the variation was from 1 to 24 per cent, and in 2011 already from 2 to 43 per cent.

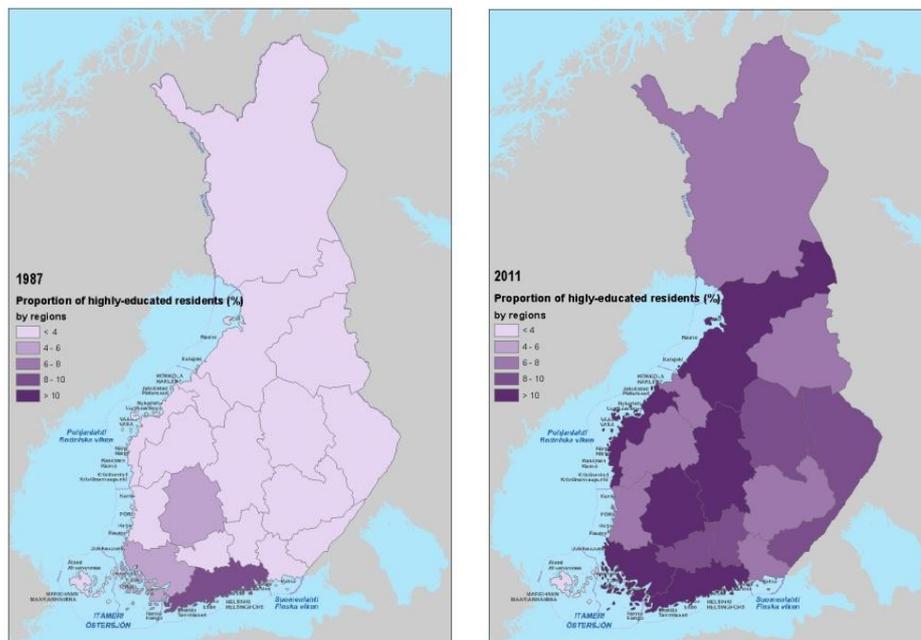


Figure 2. The proportion of highly-educated (holding a master’s degree or higher) 25–64-year-old residents in Finland by regions in 1987 and 2011 (Source: Statistics Finland).

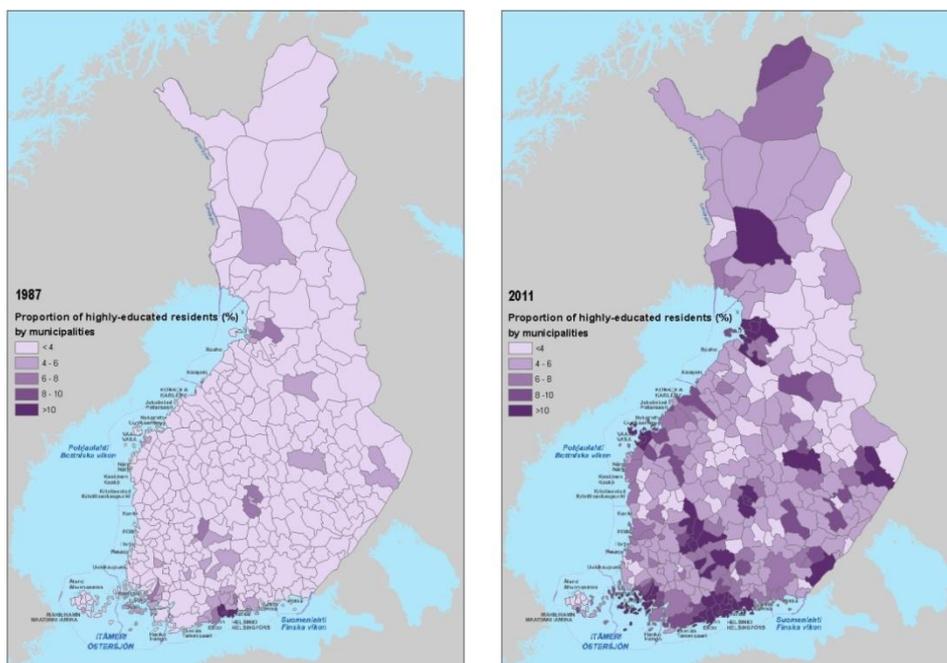


Figure 3. The proportion of highly-educated (holding a master’s degree or higher) 25–64-year-old residents in Finland by municipalities in 1987 and 2011 (Source: Statistics Finland).

2.2. Educational disparities within the Helsinki Metropolitan Area

The changes in the educational level in the Helsinki Metropolitan Area (HMA) resemble those of the whole country. The shift in the educational profile has, however, been even more dramatic (see Figure 1). The proportion of highly-educated residents exceeded the proportion of low-educated in 2010. Currently, 21 per cent of the HMA population, aged 25–64, holds a master’s or doctor’s degree, whilst 20 per cent has no former education after compulsory school. The neighbourhood-level differences remain great, however. The proportion of highly-educated residents ranges from 3 to

52 per cent, and the proportion of low-educated (having no degree) from 6 to 42 per cent.

The spatial differences in the educational level are also very clear-cut: the division between the south-western and north-eastern parts of the metropolitan area is clear and has remained rather persistent throughout the 2000s despite the overall increases in educational level (Figures 4–5). The highly-educated residents are concentrated close to the Helsinki city centre and westbound from the centre along the southern coastline (Figure 4); whereas the proportion of low-educated is highest in the high-rise suburbs in the north-eastern parts of the metropolitan area (Figure 5). The spatial pattern of the educational differences follows the historical development of the urban structure, but it has been further highlighted by the changes in the economic structures of the region (see Vaattovaara & Kortteinen 2003). During the 2000s, the neighbourhood-level differences in the proportion of highly-educated have slightly increased (Lönnqvist & Tuominen 2013), whereas the proportion of the low-educated has declined throughout the region.

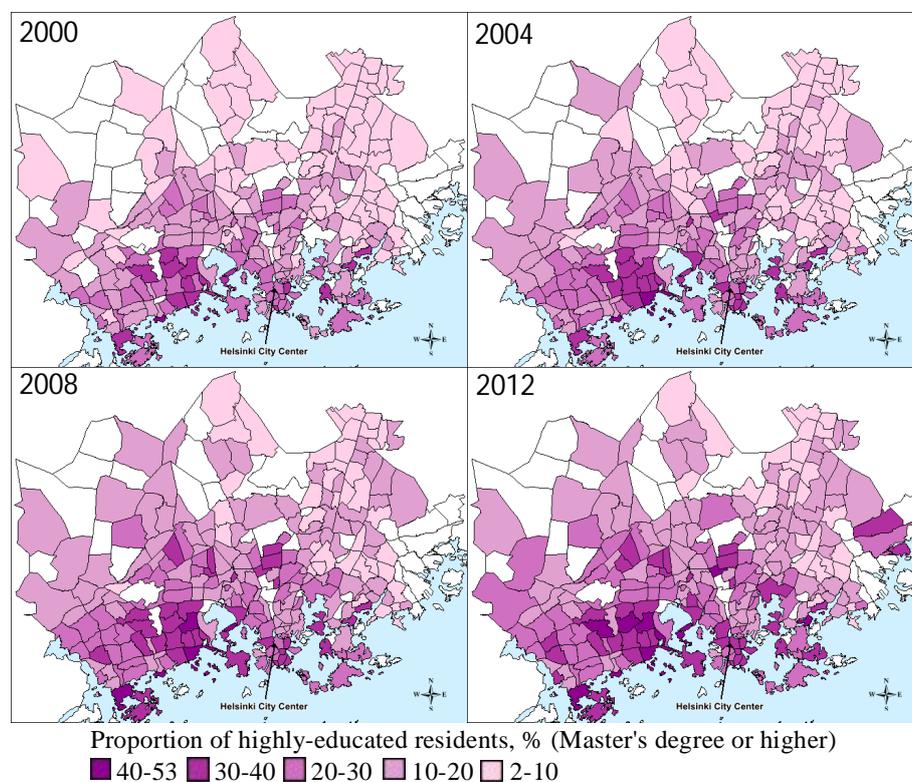


Figure 4. The proportion of highly-educated (holding a master's degree or higher degree) 25–64-year-old residents in the HMA neighbourhoods in 2000, 2004, 2008, and 2012 (Source: Statistics Finland).

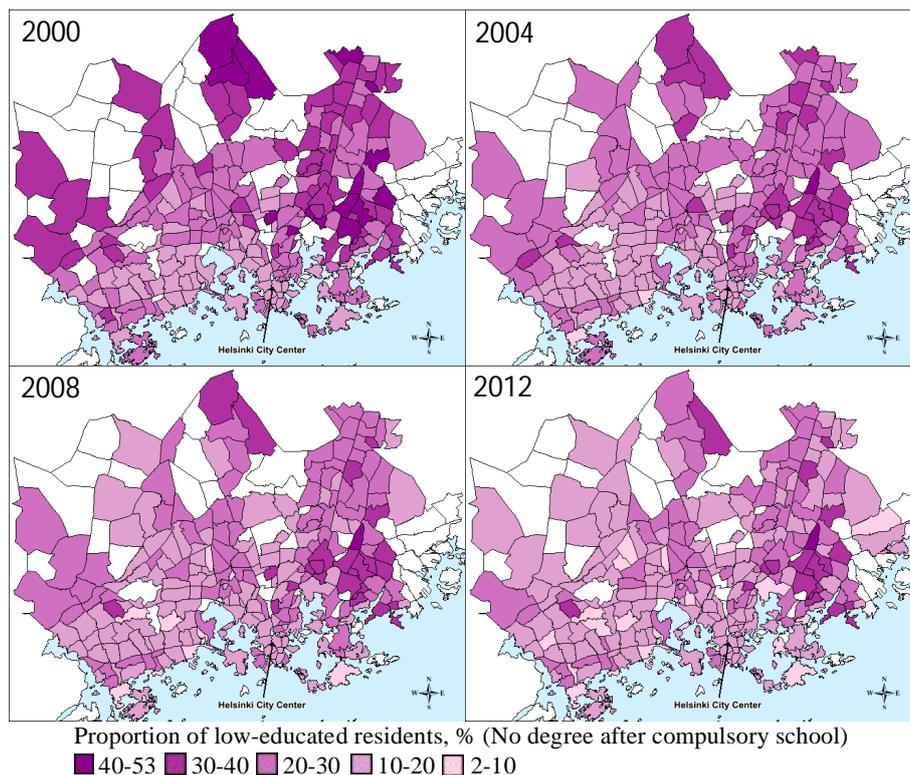


Figure 5. The proportion of low-educated (having no degree) 25–64-year-old residents in the HMA neighbourhoods in 2000, 2004, 2008, and 2012 (Source: Statistics Finland).

2.3. Youth without secondary or higher education: at risk of marginalisation?

One population group whose educational achievements are currently under careful monitoring are the youth. Having some form of post-compulsory-school education is known to ease the entry to labour market. Those not holding a secondary education degree have a much higher risk of unemployment and other forms of labour market marginalisation compared to their more educated counterparts (Myrskylä 2012a). Again, there is considerable regional and neighbourhood-level variation in the proportion of the youth, aged 15–24, who do not have secondary or tertiary education. The proportion ranges from 33 to 72 per cent between the Finnish municipalities, with the national average at 52 per cent in 2011.

In the capital city of Helsinki, the neighbourhood-level differences in the educational level of the youth are bigger than at the national level. The proportion of youth without secondary or tertiary schooling ranges between 17–91 per cent. These differences are also clearly connected to the spatial differences in the labour market participation of the youth. Although, not all young persons without secondary education are at risk of being marginalised from the labour market, there is a rather high correlation (.52) between the educational level and labour market participation of young residents at the neighbourhood-level. The proportion of the youth who are outside the labour force (not studying or working, being either unemployed, or completely outside the labour force) is higher than average in those neighbourhoods where the proportion of the youth without a secondary or higher education is also above the city average, and vice versa (Figure 6).

All in all, the risk of youth marginalisation – measured as a percentage of those 15–29-year-olds who are not employed, studying, or stay-at-home mothers, and who do not hold a secondary or higher education degree – is around 5 per cent in Finland, and at a slightly higher level in the Helsinki Metropolitan Area (6.4%) and Helsinki (6.7%) (Myrskylä 2012b). The risk of marginalisation is higher among young men

compared to young women, and among immigrant youth compared to the native youth.

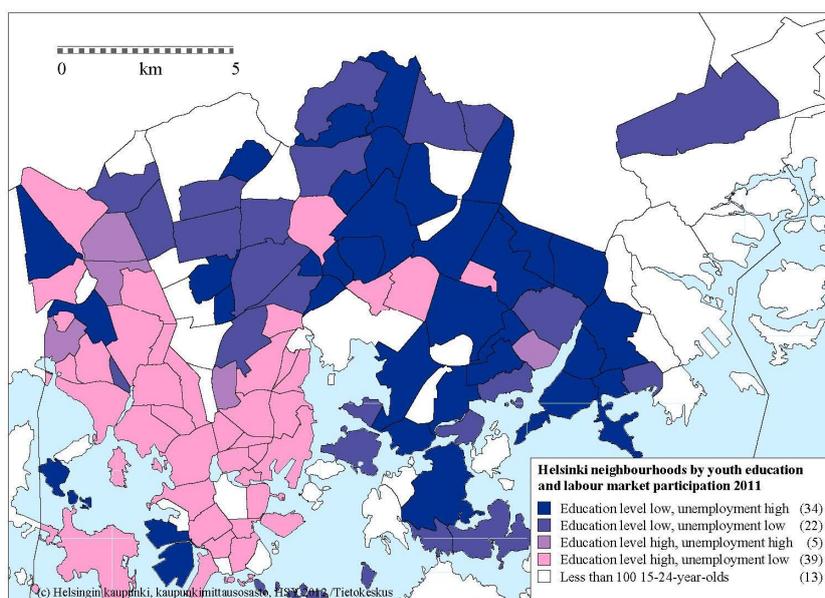


Figure 6. Helsinki neighbourhoods relative to the city's average in 2011: the proportion of low-educated youth (aged 15–24 and having no degree) vs. the proportion of the youth who are unemployed or otherwise outside the labour force (not studying) (Source: Statistics Finland).

3. Conclusions

The Finnish population registers portray a clear picture of the increasing level of education in Finland. Unlike census data that is usually updated on five to ten year intervals, the Finnish register-based statistical systems are maintained and updated yearly. This enables careful analyses of the annual changes in the population structures at various spatial levels. Merging the high-quality geo-coded statistics into a GIS data base opens up multiple possibilities for the visualisation of the population changes and their spatial patterns. In this paper, we have used GIS-methods to depict the changing educational map of Finland on national, regional, municipal-, and neighbourhood-levels. The analyses bring out two main results: on the one hand, there has been a significant rise in the educational level of Finns throughout the country from the 1970s to this date; on the other hand, there are considerable and persistent differences in the educational level at a more local level between and within the municipalities. The educational map of Finland is, thus, a mosaic of diverse municipalities and neighbourhoods that undergo constant changes. GIS-analysis, constructed at various spatial levels, makes this mosaic visible.

References

- Lönnqvist, H. and Tuominen, M. (2013) "Asuinalueiden sosiaalinen kehitys," in *Helsingin tila ja kehitys*, 171–175, Helsinki City Urban Facts, Helsinki.
- Myrskylä, P. (2012a) Hukassa – Keitä ovat syrjäytyneet nuoret? EVA-analyysi 19, Elinkeinoelämän Valtuuskunta, Helsinki. <<http://www.eva.fi/wp-content/uploads/2012/02/Syrjailyminen.pdf>>
- Myrskylä, P. (2012b) "Maahanmuutto ja nuorten syrjäytymisriskit pääkaupunkiseudulla," *Kvartti*, 2, 14–22.
- Repo, A. (2012) "Väestö entistä koulutetumpaa – alueelliset erot suurina," Statistics Finland. <http://tilastokeskus.fi/tup/v12010/art_2012-03-15_001.html>
- Vaattovaara, M. and Kortteinen, M. (2003) "Beyond polarisation versus professionalisation? A case study of the development of the Helsinki Region, Finland," *Urban Studies*, 40, 2127–2145.