D4I
Data for Integration
Recent developments in data creation, collation and analysis provide city authorities with significant opportunities to become more effective and efficient. Through the use of data, authorities can be better placed to see, understand and respond to the challenges they face. But geographically detailed data on migration is not always easily accessible, consistently collected or comparable across EU cities. The D4I initiative directly addresses this concern by bringing together data from Censuses in EU Member States. By processing data from the 2011 Census on the number of migrants by origin (country of birth and/or citizenship) in eight Member States and at the highest possible level of spatial detail, it shows how diverse datasets can be harmonised to produce valuable insights into the composition of cities. Censuses contain a wealth of relevant information which can be used to calculate residential segregation and diversity. However, this is complicated by the fact that they are structured and processed in different ways in different places. The D4I initiative has overcome this to produce detailed maps of the population of cities, including migrants, in France, Germany, Ireland, Italy, the Netherlands, Portugal, Spain and the UK. From these, subsequent analyses can shine light on the impact of migration and diversity on a range of local issues, from electoral outcomes to housing markets. D4I gives new possibilities for using data to better understand the situation within specific cities and to compare across diverse locations. The uniqueness of the dataset resides both in the high level of spatial resolution (cells of 100 by 100 m) and the large geographical coverage that includes almost 45 000 local administrative units. Such data from more EU Member States and over time will allow for even richer and broader insights to be gathered in the future.
How does migration relate to electoral outcomes in cities?

Across Europe, some political movements have sought to capitalise on negative public perceptions of migration. It is assumed that the higher the presence of migrants, the greater the backlash against migration and support for parties with anti-immigration platforms. Initial findings from the D4I initiative on migration and diversity in European cities challenge these assumptions in two respects.

First, studies on migration and elections have tended to focus on a national or regional scale but this has resulted in a loss of significant detail and nuance. The data from D4I allows for a closer look at dynamics in specific neighbourhoods and electoral districts.

Second, this closer look shows how in most cases the higher levels of support for anti-immigration parties come in areas where there is a relatively lower concentration of migrants or none. To put it simply, those who feel threatened by migrants are generally those who are not in regular contact with them.

For example, in the city of Rotterdam during the Dutch elections of 2017, the highest vote shares for the anti-immigrant PVV party came in electoral districts with a low concentration of migrants. These results are shown in the maps above, where support to the immigrant-based DENK party is also shown.

Voting behaviour is best understood through a broad set of explanatory variables, including level of education, income and cultural values. When combined with data on residential patterns at high spatial resolution such as the ones provided by the D4I, new insights can be gained on the local electoral dynamics within cities.
What impact does migration have on city housing markets?

It is widely considered that migration can have an impact on housing markets in cities. On the one hand, the inflow of migrants increases the demand for residential units, raising average house prices. On the other, the impact at neighbourhood level might not follow the general trend and lead to relative devaluation.

The initial findings from D4I unpack the complex relationship between migration and housing markets at neighbourhood level. Research analysed housing market data of Italian regional and provincial capitals at neighbourhood level in combination with D4I data at similar scale. The analysis shows that the relationship between the presence of people with migrant background and housing costs in certain urban areas is not linear. Migrant presence is associated with high prices only up to a certain degree of concentration. In neighbourhoods where more than half of the population is of migrant background, housing values become relatively lower. This might be due also to previous residents moving away, in reaction to the arrival of migrants in the neighbourhood.

The map above shows average housing prices and residential patterns of people of migrant background in Turin in 2011. The map illustrates that, in this case, migrants are concentrated (red spots) in neighbourhoods with relatively cheap housing prices. However, the relationship between the presence of migrants and housing prices does not depend only on concentration but also on composition. For example, more detailed analysis suggested that some countries of origin are associated with higher house prices. In addition, ethnically more diverse neighbourhoods are associated with relatively lower house prices.

High spatial resolution data such as the D4I dataset provides the opportunity to obtain in-depth granular knowledge on housing market dynamics. In particular, further research is needed on how patterns of migrant mobility into, within and out of neighbourhoods influence house prices.
Migration has become a structural feature of large metropolises and global cities around the world. But what about smaller towns and rural communities? Initial findings from the D4I initiative suggest that many small cities, towns and rural communities are increasingly characterised by a large concentration of migrants and high levels of socio-cultural diversity. D4I data gives a highly detailed overview of the distribution of migrants across the whole territory of eight EU Member States: France, Germany, Ireland, Italy, the Netherlands, Portugal, Spain and the UK. An examination of the data from these countries found over one thousand small local administrative units with less than 10 000 inhabitants in which more than 20 percent of the population had migrant background. These locations are signaled in blue on the map above. These insights highlight the importance of including small cities and communities when analysing, conceiving and implementing integration policies. Best practices on how to adapt to migration and the changes it brings may emerge from small cities too. Further research through D4I will provide for a better understanding of the challenges and opportunities related to the concentration of migrants outside of the largest cities.

Note: in the case of France only Local Administrative Units between 5 000 and 10 000 inhabitants are included.
Does migration inevitably lead to residential segregation?

It is often feared that rising migration leads to residential segregation as migrant communities settle in specific neighbourhoods or ‘enclaves’. However, early insights from the D4I initiative suggest that this is not a rule. Comparing the data from the 2001 and 2011 Census, researchers have examined population concentration in Italian and Dutch cities.

Results show what can be described as a process of ‘residential integration’ over time. In areas where a high proportion of the population was of migrant background in 2001, there was a decrease in the concentration of migrants between 2001 and 2011. This was observed in cities of all sizes across Italy and the Netherlands, despite an overall increasing migrant population in each country at this time.

The maps above exemplify the change in the concentration of migrants in the case of Amsterdam. The areas with a high concentration of migrants in 2001 (green on the left map) saw a negative change in the share of migrants from 2001 to 2011 (red on the right map), meaning that migrants had moved out of those areas.

A range of factors may influence this process, from the provision of public housing to patterns of socio-economic integration and increasing social mobility of migrants. Further research in the future will seek to shine greater light on these factors.
Migration and European cities: united or segregated in diversity?

The European Union’s motto ‘United in diversity’ signifies how Europeans have come together whilst being enriched by their different cultures and traditions. However, when it comes to migration, diversity is often perceived as a problem bringing about increasing levels of segregation. The D4I initiative highlights the need to bring better data into this debate.

Findings from analysis of Census data in eight EU Member States show that as migration has increased the population of European cities has become more diverse. This can result in populations which are highly diverse but also fragmented, with communities living apart in different neighbourhoods.

The maps above show the ratio of population from certain countries of origin as a share of the total population living in that area. The highest bars indicate where more than 20 percent of the population is of migrant background. These maps show the extent to which different groups cluster in specific areas of cities. To what extent and the time when clustering may turn into segregation and isolation is a question of relevance to public policy. These initial findings highlight the value of collating and analysing data at a high spatial resolution to better inform policymaking through research in the future.
D4I - Data for Integration is an initiative of the European Commission’s Knowledge Centre on Migration and Demography (KCMD - https://ec.europa.eu/jrc/en/migration-and-demography). Data on the concentration of migrants at high spatial resolution has been assembled from National Census statistics and shared with research teams from across the world. The aim is to produce new insights on the local aspects of migration in support of policymaking at EU, national and local levels. For more information on the D4I: https://bluehub.jrc.ec.europa.eu/datachallenge/ or contact fabrizio.natale@ec.europa.eu

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