

## Policy Brief

**Exploiting EU integration indicators at infra-national level: how are national-level integration policies associated with integration outcomes?**

**Pilot Report: Targeted Technical Support to Implementation of Action ‘Facilitating Evidence-Based Integration Policies in Cities’**

**Urban Agenda for the EU Partnership on Inclusion of Migrants and Refugees**

Shauni van Doren

Service carried under guidance of Migration Policy Group

Brussels, September 2021

# Table of contents

1	Introduction and objective	3
2	Results	5
3	Final recommendations	10
	Appendix 1 - Data and variables	12
	Appendix 2 - Multilevel analysis	14
	Appendix 3 - Multilevel analysis	19

## Disclaimer

This report has been delivered under the Framework Contract “Support to the implementation of the Urban Agenda for the EU through the provision of management, expertise, and administrative support to the Partnerships”, signed between the European Commission (Directorate General for Regional and Urban Policy) and Ecorys.

The information and views set out in this report are those of the authors and do not necessarily reflect the official opinion of the Commission. The Commission does not guarantee the accuracy of the data included in this report. Neither the Commission nor any person acting on the Commission’s behalf may be held responsible for the use which may be made of the information contained therein.

# 1 Introduction and objective

In this report, we build on previous insights regarding the integration of migrants at the urban-regional level. As highlighted in the previous report,<sup>1</sup> Eurostat has collected data on various (non-) EU-28 migrant integration indices at the NUTS-2 level and by 'degree of urbanisation' (cities, towns and suburbs, rural areas). This is particularly important as integration is often a process that takes place at the regional level rather than the national level. None the less, most contemporary empirical evidence regarding migrant integration utilises data at the national level. In this regard, the importance of Eurostat's efforts to disseminate data at the NUTS-2 level cannot be underestimated. The feasibility testing has resulted in the recent publication of new indicators for most classic and robust indicators as part of the Eurostat migrant integration database (employment regional series). Activity rate, employment rate, unemployment rate are now available to be disaggregated by country of birth and country of citizenship at regional level (NUTS-2) and by degree of urbanisation (cities, towns and suburbs, rural areas).

The second phase of the data feasibility regarding a new regional education series resulted in the publication of the infra-national statistics for educational attainment and young people neither in employment nor in education or training (NEET) that are now available to be disaggregated by country of birth and country of citizenship at regional level (NUTS-2) and by degree of urbanisation. Since the publication of the Options Report of the Action's Stakeholder Working Group, Eurostat has continued feasibility testing, which has resulted in the publication of LFS-based demographic data on regional level.

Building on the analyses in the previous report,<sup>2</sup> the findings presented here are a second step to showcasing the newly available comparative data on infra-national level, in making meaningful comparisons in education and labour market integration outcomes across cities and regions. The overall aim of this exercise is to understand how EU regions (NUTS-2) differ concerning integration outcomes of migrants, and how integration policies influence the migrants' integration outcomes at the regional level. We will also provide an extra layer of comparison to the findings and will make a distinction between two migrant groups: EU-28 migrants and non-EU-28 migrants. These two groups will be compared with each other and with natives of the reporting countries.

## Box 1 Rationale of the study

- Eurostat publication of existing EU integration indicators on regional level.
- Exploiting newly available comparative data on infra-national level.
- Understanding how EU regions (NUTS-2) differ concerning integration outcomes of migrants
- Exploring how national-level integration policies influence the migrants' integration outcomes at the regional level.

<sup>1</sup> Joki A.-L. (2020), Exploiting EU integration indicators at infra-national level: Which regions are comparable?, Pilot Report: Targeted Technical Support to Implementation of Action 'Facilitating Evidence-Based Integration Policies in Cities', Urban Agenda, Brussels.

<sup>2</sup> Joki A.-L. (2020), Exploiting EU integration indicators at infra-national level: Which regions are comparable?.

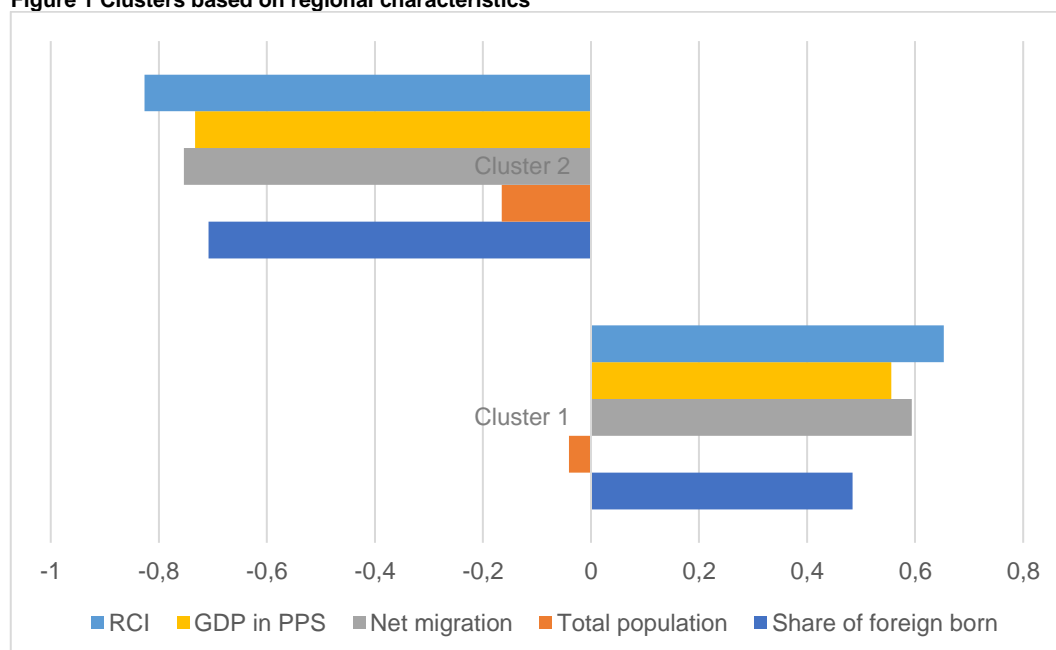
- Identifying meaningful groups/situation of NUTS2 regions - learn more easily from those that are more similar.
- Closer similarity may show regions how to achieve the changes they seek in the most efficient way.

## 2 Results

### 2.1. Regional disparities and integration outcomes

In the full report, we assessed whether integration outcomes (activity gap, employment gap, education gap) differ by regional characteristics and degree of urbanisation (urban, rural, intermediate). Five regional characteristics (GDP in PPS, net migration, population size, share of foreign born, and RCI - see also Appendix 1) were combined to identify two groups of regions: high-competitive and diverse urban regions (Cluster 1) vs. low-competitive and non-diverse rural regions (Cluster 2) – see Figure 1 below and also the full report.

**Figure 1 Clusters based on regional characteristics**



An example of NUTS-2 regions that belong to cluster 1 include, among others: Vienna, Brussels, Antwerp, Oberbayern, Berlin, Catalonia, North Holland, South Holland, and Stockholm. An example of NUTS-2 regions that belong to cluster 2 include, among others: Cyprus, Canary Islands, Southern Ireland, East and Midland Ireland, West Midlands, Inner London-East, and Outer London East.

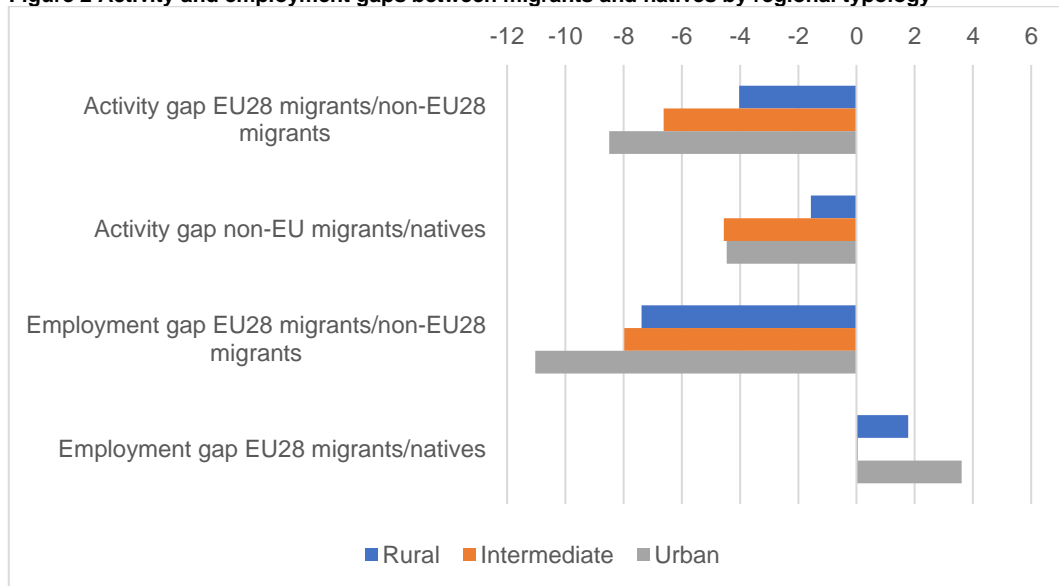
Findings show that the activity gap, and employment gap between EU-28 migrants, non-EU-28 migrants and natives differs significantly by type of region and cluster, while the education gap does not significantly vary across regions and clusters (see Figures 2 and 3):

- **Activity rate gap.** In all regions, EU-28 migrants have a greater activity rate than non-EU migrants. This gap is particularly large in urban regions as opposed to intermediate or rural regions – also evidenced by the result of cluster 1 versus that of cluster 2. Results for the activity gap between non-EU-28 migrants and natives indicates that natives have a higher activity rate than non-EU-28 migrants, particularly in intermediate and urban regions. In rural regions, the gap is much smaller – see also the result for low-competitive and non-diverse

rural regions (Cluster 2), where non-EU-28 migrants actually have a higher activity rate than natives.

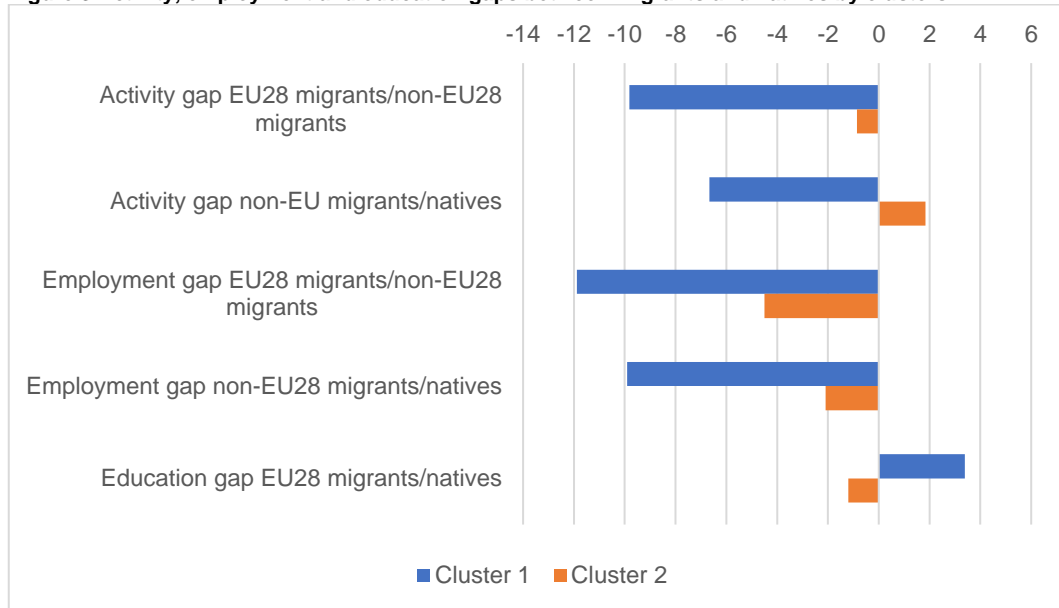
- **Employment gap.** Results show that non-EU-28 migrants have a significantly lower employment rate than EU-28 migrants in all regions. This gap is largest in urban regions, while there is little difference between rural and intermediate regions. Beyond this, we also observe a significant difference in employment between EU-28 migrants and natives by regional typology. Perhaps somewhat surprisingly, the employment rate of EU-28 migrants is higher than that of natives, particularly in urban regions. There is virtually no gap in intermediate regions, and the gap in rural regions is also limited. As for the employment gap between non-EU-28 migrants and natives, results show that natives have a significantly higher employment rate than non-EU-28 migrants between clusters. Particularly in high-competitive and diverse urban regions (Cluster 1), this appears to be the case.
- **Education gaps.** No meaningful differences emerge concerning the education gaps. The only result is that EU-28 migrants have a higher share of tertiary educated than natives in high-competitive and diverse urban regions (Cluster 1), while the opposite is true in low-competitive and non-diverse rural regions (Cluster 2).

**Figure 2 Activity and employment gaps between migrants and natives by regional typology**



Note: Only gaps with significant differences are presented.

**Figure 3 Activity, employment and education gaps between migrants and natives by clusters**



Note: Only gaps with significant differences are presented.

**Box 2 Main results**

- NUTS2 regions with different characteristics have different situations concerning migrant integration outcomes.
- Gaps in activity and employment rate between migrants and natives are smaller in predominantly rural regions than in intermediate or urban regions.
- Similarly, gaps are smaller in low-competitive and non-diverse rural regions than in high-competitive and diverse urban regions.
- Almost no difference in education gaps emerge between rural, intermediate and urban regions. As well as low-competitive and non-diverse rural regions vs. high-competitive and diverse urban regions.

**2.2. Which factors explain integration outcomes? The role of integration policies**

In order to detect differences in integration outcomes between regions, we conducted a multilevel regression analysis (see full report and Appendix 2). The analyses were conducted separately for Cluster 1 and Cluster 2.

The results reveal that national level policies do not completely fit to low-competitive and non-diverse mostly rural areas, as the effect of integration policies on integration outcomes gaps was not relevant in this kind of regions.

In high-competitive and diverse urban regions, better integration policies are associated to higher integration gaps between migrants and natives. This suggests that policy makers have implemented better policies in response to existing challenges.



The results make it clear that investing in the integration of migrants pays back: improvements in integration policies leads to improved integration of migrants (reduced gaps between migrants and natives).

More in particular:

#### **Cluster 1 – highly competitive, diverse, urban regions**

- Where integration policies have become more inclusive between 2014 and 2017, the employment gap between non-EU migrants and native was reduced.
- Regions where inclusive labour market and education policies are active, non-EU28 migrants still tend to have a lower share of tertiary educated than natives.
- Where the share of foreign born is high, EU28 migrants tend to do better than natives in terms of employment.
- In regions with high net migration, however, EU28 migrants have worse activity and employment numbers than natives.
- In regions with high net migration, non-EU28 migrants have higher tertiary education rates as opposed to natives.
- In wealthy (high GDP) and competitive regions (high RCI), non-EU28 migrants have a lower share of tertiary educated than natives.

#### **Cluster 2 – less competitive and diverse rural regions.**

- In regions where integration policies have become more inclusive between 2014 and 2017, EU28 migrants tend to have better tertiary education outcomes than natives.
- Where the total population is larger, the employment gap between non-EU migrants and native is greater.
- In intermediate regions, non-EU 28 migrants tend to have worse activity and employment outcomes than natives, while no gap exists in more rural and more urban regions.
- In more urbanised regions, EU28 migrants tend to outperform natives in terms of employment rate
- In regions with a high share of foreign born and high competitiveness, natives tend to perform better than EU28 migrants in terms of employment
- In regions with high net migration and a high population rate, non-EU28 migrants tend to perform better than natives in terms of employment, while the opposite is true for regions with high competitiveness

#### **Box 3 Main results**

- Investing in integration policies for a certain period of time leads to improved integration of migrants (reduced gaps between migrants and natives), especially in high-competitive and diverse urban regions.
- National policies do not completely fit to low-competitive and non-diverse mostly rural areas.

### **2.3. A typology of regions**

In previous section we showed the differences between different groups of regions and where and how integration policies work. Now we link regional characteristics to integration outcomes of migrants.



Regions at the NUTS-2 level have different characteristics, both regarding their overall features (e.g., degree of urbanisation and population) and integration outcomes of migrants (see Appendix 1). In the analysis we created groups of regions based on these characteristics. Regions can be categorised in four different situations (see Table 2). Most of the regions fall into the situation C, in which non-EU migrants fall behind the natives.

Regions in the same group/situation are likely to face similar challenges. For example, analyses presented in the full report show that high-competitive and diverse (higher number of migrants) urban regions (compared to low-competitive and non-diverse rural regions) are more likely to have non-EU migrants that fall behind the natives in both the labour market and in education.

To tackle these challenges, regions in the same group/situation exchange experiences, good practices, and effective tools, which are likely to be effective in similar contexts.

**Table 1 A typology of regions based on their integration outcomes and regional characteristics**

	Description	Examples <sup>3</sup>	Frequency (number and share of regions)
A	High-competitive and diverse mostly urban regions where non-EU migrants tend to be more educated and active in the labour market than natives.	Dublin, London, Nuremberg	39 (20%)
B	Low-competitive and non-diverse mostly rural regions where non-EU migrants tend to be more educated and active in the labour market than natives.	Southern Czech Republic, Estonia, northern Spain, southern Italy	23 (12%)
C	High-competitive and diverse mostly urban regions where non-EU migrants tend to be less educated and active in the labour market than natives.	Prague, Budapest, northern Italy, central Austria, northern Denmark, western Netherlands	107 (54%)
D	Low-competitive and non-diverse mostly rural regions where non-EU migrants tend to be less educated and active in the labour market than natives.	Northern Greece, central and north-east Spain, northern Croatia, southern Croatia, eastern France	27 (14%)

<sup>3</sup> See Appendix 3 for the full list of regions in each of the four groups/situations.



### 3 Final recommendations

The analyses and results presented in this paper build on earlier efforts to use the available Eurostat data on infra-national level, in line with the Partnership's stated overall goal. Using the newly available NUTS-2 data, we show how a focus on place and scale provides a more nuanced understanding of migrant integration outcomes and of the process of integration as well as the policy effect.

We showed that NUTS2 regions with similar characteristics have comparable integration outcomes by identifying meaningful groups of regions that are in similar situations. For regions in the same situation, there is strong potential for international mutual learning, exchange and comparison, especially on the policies to tackle the challenges that they face when it comes to migrant integration.

We have also been able to highlight the data's potential for assessing subnational integration outcomes in a comparative way and their usefulness for data practitioners. We have also pointed at the remaining gaps in data availability. While we have NUTS-2 level data on activity rate, employment rate, and share of tertiary educated for various groups of migrants, other potential indicators (rate of NEETs and the unemployment rate) are faced with too much missing data. Overall, no or few NUTS-2 level data were available for some (Central-Eastern European countries, mainly).

Beyond this, efforts should be made to look into collecting data at the NUTS-2 level on additional indicators for migrant integration. At the country level, Eurostat has highly relevant data on social inclusion-indicators of migrants (e.g. housing, poverty risk), active citizenship, employment conditions, etc. By being able to access these data at the NUTS-2 level, it will be possible to provide a much more fine-grained analysis of integration outcomes, rather than solely focusing on employment and education.

#### Box 4 Overall key conclusions

- NUTS2 regions with similar characteristics have comparable integration outcomes.
- Four meaningful groups/situations can be identified on the basis of regional characteristics and integration indicators with potential for international mutual learning, exchange and comparison.
- Results highlight the data's potential for assessing regional integration outcomes in a comparative way.
- Large data gaps remain concerning regions in some countries (often Central-Eastern countries) and topics (only education and employment are covered).

Based on this paper's results (see also full report), we have formulated various (policy) recommendations for national and/or regional policy makers and Eurostat/European data stakeholders and experts. These recommendations concern both the integration policies- integration outcomes nexus as well as the availability of data.

**Table 2 Policy recommendations**

National policy makers	Regional policy makers	Data stakeholders/experts
Further finetuning of national integration policies – effects do not benefit all migrant groups (e.g., EU vs. non-EU migrants) equally and non-EU-28 migrants need more support than EU-28 migrants	Ad-hoc local level policies should be designed to fill gaps from national policies, e.g., in rural areas where national policies do not completely fit	Reduce missing data – particularly in Eastern Europe – for existing NUTS-2 indicators (NEETs, unemployment)
Be mindful of regional differences in employment, and education (between migrants and natives, and between different migrant groups)	Local authorities should advocate for national policies that differentiate between different types of regions and areas	Collect data on additional integration indicators (e.g. housing, poverty risk) at NUTS-2 – currently only at NUTS-1
Gaps between migrants and natives more pronounced in urban regions in various countries – supporting these regions vital for migrant integration	Based on the four groups/situations, local authorities should exchange best policy practices with regions in the same group/situation.	Finetune the rural/intermediate/urban typology for NUTS-2 regions – currently only at NUTS-3



# Appendix 1 - Data and variables

The main data source for comparable educational attainment and employment statistics is the EU labour force survey (LFS), which is a large quarterly sample survey that covers the resident population aged 15 and above in private households.

## Integration indicators at NUTS-2-level

The integration indicators that are included in the current study are three of the official education and employment 'Zaragoza' integration indicators: activity rate, employment rate, and share of tertiary educated. These have been widely used to identify successes or challenges in the process of immigrant integration at the national level. Rather than using the overall rate of activity, employment, or tertiary education rate of migrants, we calculated the gap in rates between three groups: between EU-28 migrants and non-EU-28 migrants (positive score = non-EU-28 migrants have better integration outcomes than EU-28 migrants), between EU-28 migrants and natives (positive score = EU-28 migrants have better integration outcomes than natives), and between non-EU-28 migrants and natives (positive score = non-EU-28 migrants have better integration outcomes than natives).

## NUTS-2 descriptive variables

### Regional typology

NUTS-2 regions have been classified into 'predominantly urban', 'intermediate', and 'predominantly rural' to take into account geographical differences among them. <sup>4</sup> The regions are then classified as:

- Predominantly Urban (PU), if the share of population living in rural local units is below 15%;
- Intermediate (IN), if the share of population living in rural local units is between 15% and 50%;
- Predominantly Rural (PR), if the share of population living in rural local units is higher than 50%

### Regional gross domestic product (PPS per inhabitant in % of the EU-28 average)

GDP (gross domestic product) is an indicator of the output of a region. It reflects the total value of all goods and services produced less the value of goods and services used for intermediate consumption in their production. Expressing GDP in PPS (purchasing power standards) eliminates differences in price levels between countries.

### Net migration

Crude rate of net migration including statistical adjustment is the ratio of the net migration including statistical adjustment during the year to the average population in that year. The value is expressed per 1000 inhabitants.

---

<sup>4</sup> See also: Joki A.-L. (2020), Exploiting EU integration indicators at infra-national level: Which regions are comparable?.

### Population size

Population on 1 January should be based on concept of usual resident population, i.e. the number of inhabitants of a given area on 1 January of the year in question (or, in some cases, on 31 December of the previous year).

### Foreign-born population

This indicator is measured as a percentage of population. The foreign-born population covers all people who have ever migrated from their country of birth to their current country of residence.

### Regional Competitiveness Index (RCI)

The EU Regional Competitiveness Index (RCI) is the first composite indicator which provides a synthetic picture of territorial competitiveness for each of the NUTS 2 regions of the 28 EU Member States.

## Integration policy indicators

We used recent data from the Migrant Integration Policy Index (MIPEX) to assess migrant integration policies in 2017. MIPEX is a country-level index of migrant integration policies that simultaneously considers 50+ policy indicators from eight policy domains (healthcare, education, political participation, labour market mobility, anti-discrimination, permanent residence, access to nationality, family reunion). Scores range from 0 (critically unfavourable policies) to 100 (the best possible integration policies). Aside from using the aggregated MIPEX policy score, we will also consider two relevant integration policy strands: labour market mobility and education. Furthermore, we will also calculate to what extent policies have changed between 2014 and 2017, by subtracting the overall 2014 MIPEX score from the overall 2017 MIPEX score.

## Appendix 2 - Multilevel analysis

In order to detect differences in integration outcomes between clusters, we conducted a multilevel regression analysis, given that our NUTS-2 data were nested within 28 EU countries. The dependent variables were the nine integration outcome indicators that were presented in Table 6. As independent variables we included the integration policy indices and the regional typology (with intermediate region as reference category). Furthermore, we controlled for the five NUTS-2 variables that were discussed earlier: GDP in PPS, net migration rate, total population, share of foreign born, and RCI. All variables were z-standardised. The analyses were conducted separately for Cluster 1 and Cluster 2. We did not split the analysis by regional typology (urban, rural, intermediate) because splitting the multilevel analysis between these categories meant that there would be only a small number of NUTS-2 regions in some of the categories. Such a multilevel analysis may yield unreliable estimates, and we thus limited ourselves to presenting this for the clusters only. The regional typology is instead included as independent variable, with 'intermediate regions' as the reference category.

We constructed the models in a stepwise manner, particularly with regards to the integration policy indicators. Rather than adding all MIPEX-scores in one go, we ran each model three times: once with the overall MIPEX-score, then we swapped that indicator out with the MIPEX labour market score, and then with the MIPEX education score. The indicator regarding policy change and the control variables were included in all models.

**Table 3 A1 Multilevel regression analysis of activity gap by clusters**

	Activity gap					
	Gap EU-28 migrants/ non-EU-28 migrants		Gap EU-28 migrants/ natives		Gap non-EU-28 migrants/ natives	
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2
<b>Intercept</b>	0.17 (0.21)	-0.22 (0.32)	-0.07 (0.23)	-0.10 (0.39)	-0.22 (0.23)	-0.25 (0.29)
<b>Regional characteristics (ref. = intermediate)</b>						
Predominantly rural	-0.18 (0.16)	0.31 (0.25)	0.15 (0.21)	0.14 (0.30)	-0.09 (0.14)	<b>0.43*</b> <b>(0.18)</b>
Predominantly urban	-0.01 (0.14)	0.21 (0.33)	0.13 (0.18)	0.66 (0.39)	0.05 (0.12)	<b>0.62**</b> <b>(0.23)</b>
<b>MIPEX: Overall</b>	<b>-0.33*</b> <b>(0.14)</b>	-0.21 (0.14)	-0.01 (0.14)	0.18 (0.17)	<b>-0.33*</b> <b>(0.16)</b>	-0.11 (0.15)
<b>MIPEX: Change 2019-2014</b>	0.34 (0.18)	0.19 (0.18)	0.01 (0.18)	-0.27 (0.22)	0.39 (0.21)	0.04 (0.20)
<b>MIPEX: Labour market integration</b>	<b>-0.33*</b> <b>(0.13)</b>	-0.19 (0.16)	0.08 (0.14)	0.05 (0.20)	-0.28 (0.16)	-0.17 (0.16)
<b>MIPEX: Education</b>	<b>-0.34**</b> <b>(0.13)</b>	-0.11 (0.16)	-0.11 (0.13)	-0.05 (0.19)	<b>-0.41**</b> <b>(0.14)</b>	-0.17 (0.16)
<b>Control variables at NUTS-2 level</b>						
GDP in PPS	<b>-0.17*</b> <b>(0.08)</b>	-0.55 (0.32)	<b>0.21*</b> <b>(0.10)</b>	0.66 (0.39)	-0.06 (0.07)	-0.17 (0.24)
Net migration	<b>0.20*</b> <b>(0.08)</b>	0.16 (0.13)	<b>-0.25*</b> <b>(0.11)</b>	0.14 (0.16)	0.04 (0.07)	0.19 (0.10)

Total population	0.04 (0.08)	<b>0.30*</b> <b>(0.13)</b>	-0.08 (0.10)	0.12 (0.16)	-0.03 (0.07)	<b>0.37***</b> <b>(0.09)</b>
Share foreign born	-0.06 (0.06)	-0.06 (0.20)	0.15 (0.08)	-0.14 (0.25)	0.04 (0.06)	-0.08 (0.16)
RCI	<b>0.41**</b> <b>(0.14)</b>	-0.09 (0.25)	-0.23 (0.18)	<b>-0.73*</b> <b>(0.30)</b>	<b>0.40**</b> <b>(0.13)</b>	-0.36 (0.21)

Note: \*\*\* p < .001; \*\* p < 0.01; \* p < 0.05. Standardised coefficients presented, standard errors between brackets.

**Table 4 A2 - Multilevel regression analysis of employment gap by clusters**

	Employment gap					
	Gap EU-28 migrants/ non-EU-28 migrants		Gap EU-28 migrants/ natives		Gap non-EU-28 migrants/ natives	
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2
<b>Intercept</b>	-0.08 (0.20)	0.23 (0.36)	-0.19 (0.23)	-0.89 (0.40)	-0.18 (0.22)	-0.32 (0.28)
<b>Regional characteristics (ref. = intermediate)</b>						
Predominantly rural	-0.22 (0.16)	0.15 (0.25)	0.15 (0.20)	0.43 (0.29)	-0.12 (0.14)	<b>0.41*</b> <b>(0.17)</b>
Predominantly urban	-0.07 (0.14)	0.23 (0.33)	0.18 (0.18)	<b>0.99**</b> <b>(0.38)</b>	0.02 (0.13)	<b>0.72**</b> <b>(0.22)</b>
<b>MIPEX: Overall</b>	<b>-0.41**</b> <b>(0.12)</b>	-0.28 (0.17)	-0.08 (0.13)	0.20 (0.15)	<b>-0.44**</b> <b>(0.15)</b>	-0.17 (0.15)
<b>MIPEX: Change 2019-2014</b>	<b>0.29*</b> <b>(0.16)</b>	0.22 (0.23)	0.13 (0.17)	-0.32 (0.20)	<b>0.41*</b> <b>(0.19)</b>	0.02 (0.21)
<b>MIPEX: Labour market integration</b>	<b>-0.39**</b>	-0.27	-0.02	0.03	<b>-0.38*</b>	-0.25



	<b>(0.12)</b>	(0.20)	(0.13)	(0.18)	<b>(0.15)</b>	(0.16)
<b>MIPEX: Education</b>	<b>-0.40**</b>	-0.21	-0.20	0.05	<b>-0.49***</b>	-0.19
	<b>(0.12)</b>	(0.19)	(0.12)	(0.18)	<b>(0.13)</b>	(0.16)
<b>Control variables at country level</b>						
GDP in PPS	<b>-0.18*</b>	<b>-0.85*</b>	0.19	0.61	-0.08	-0.37
	<b>(0.08)</b>	<b>(0.33)</b>	(0.10)	(0.37)	(0.07)	(0.23)
Net migration	<b>0.23**</b>	<b>0.37**</b>	<b>-0.22*</b>	-0.09	0.09	<b>0.29**</b>
	<b>(0.09)</b>	<b>(0.14)</b>	<b>(0.11)</b>	(0.16)	(0.07)	<b>(0.10)</b>
Total population	0.08	<b>0.33*</b>	-0.11	-0.03	-0.01	<b>0.34***</b>
	(0.08)	<b>(0.13)</b>	(0.10)	(0.15)	(0.07)	<b>(0.09)</b>
Share foreign born	-0.08	0.20	<b>0.20*</b>	<b>-0.65**</b>	0.06	-0.11
	(0.07)	(0.22)	<b>(0.08)</b>	<b>(0.24)</b>	(0.06)	(0.15)
RCI	<b>0.38*</b>	0.19	-0.13	<b>-0.95**</b>	<b>0.38**</b>	<b>-0.45*</b>
	<b>(0.14)</b>	(0.27)	(0.17)	<b>(0.28)</b>	<b>(0.13)</b>	<b>(0.20)</b>

Note: \*\*\* p < .001; \*\* p < 0.01; \* p < 0.05. Standardised coefficients presented, standard errors between brackets.

**Table 5 A3. Multilevel regression analysis of education gap by clusters**

	Education gap					
	Gap EU-28 migrants/ non-EU-28 migrants		Gap EU-28 migrants/ natives		Gap non-EU-28 migrants/ natives	
	Cluster 1	Cluster 2	Cluster 1	Cluster 2	Cluster 1	Cluster 2
Intercept	-0.10	-0.12	0.06	0.01	-0.03	0.08
	(0.29)	(0.35)	(0.27)	(0.41)	(0.27)	(0.32)
Regional characteristics (ref. = intermediate)						

Predominantly rural	-0.10 (0.20)	-0.17 (0.32)	0.11 (0.21)	-0.35 (0.38)	-0.05 (0.15)	-0.58** (0.20)
Predominantly urban	-0.35* (0.18)	0.44 (0.43)	0.31 (0.19)	-0.65 (0.50)	-0.08 (0.13)	-0.01 (0.25)
MIPEX: Overall	-0.12 (0.20)	0.17 (0.12)	-0.01 (0.17)	-0.14 (0.14)	-0.22 (0.19)	0.02 (0.17)
MIPEX: Change 2019-2014	0.15 (0.25)	-0.47** (0.14)	-0.23 (0.22)	0.43* (0.16)	-0.03 (0.25)	0.08 (0.22)
MIPEX: Labour market integration	-0.35 (0.19)	0.32* (0.14)	-0.02 (0.18)	-0.07 (0.19)	-0.40* (0.17)	0.05 (0.20)
MIPEX: Education	-0.28 (0.19)	0.27 (0.16)	0.00 (0.18)	-0.09 (0.19)	-0.35* (0.17)	0.02 (0.19)
Control variables at country level						
GDP in PPS	-0.22* (0.10)	-0.78 (0.39)	0.00 (0.11)	-0.61 (0.44)	-0.24** (0.08)	-0.91* (0.35)
Net migration	0.16 (0.11)	-0.38* (0.18)	0.05 (0.12)	0.52* (0.21)	0.17* (0.08)	0.24 (0.13)
Total population	0.08 (0.10)	-0.29 (0.17)	-0.14 (0.11)	-0.30 (0.20)	-0.02 (0.08)	-0.10 (0.11)
Share foreign born	0.06 (0.09)	-0.09 (0.24)	-0.16 (0.10)	-0.30 (0.28)	-0.14* (0.06)	-0.30 (0.19)
RCI	0.17 (0.21)	0.53 (0.27)	-0.10 (0.22)	0.44 (0.30)	0.22 (0.12)	0.22 (0.25)

Note: \*\*\* p < .001; \*\* p < 0.01; \* p < 0.05. Standardised coefficients presented, standard errors between brackets.

## Appendix 3 - Multilevel analysis

Table 6 A4 - Distribution of NUTS2-regions by clusters

NUTS-2 code	Region	Typology			
		A	B	C	D
AT11	Burgenland				
AT12	Niederösterreich			X	
AT13	Wien			X	
AT21	Kärnten			X	
AT22	Steiermark			X	
AT31	Oberösterreich			X	
AT32	Salzburg			X	
AT33	Tirol			X	
AT34	Vorarlberg			X	
BE10	Région de Bruxelles-Capitale			X	
BE21	Antwerpen			X	
BE22	Limburg			X	
BE23	Oost-Vlaanderen			X	
BE24	Vlaams-Brabant			X	
BE25	West-Vlaanderen			X	
BE31	Brabant Wallon			X	
BE32	Hainaut			X	
BE33	Liège			X	
BE34	Luxembourg		X		
BE35	Namur			X	
BG31	Severozapaden				

BG32	Severen tsentralen				
BG33	Severoiztochen				
BG34	Yugoiztochen				
BG41	Yugozapaden				
BG42	Yuzhen tsentralen				
CY00	Cyprus	X			
CZ01	Praha			X	
CZ02	Střední Čechy	X			
CZ03	Jihozápad		X		
CZ04	Severozápad		X		
CZ05	Severovýchod		X		
CZ06	Jihovýchod		X		
CZ07	Střední Morava		X		
CZ08	Moravskoslezsko		X		
DE11	Stuttgart			X	
DE12	Karlsruhe			X	
DE13	Freiburg			X	
DE14	Tübingen			X	
DE21	Oberbayern			X	
DE22	Niederbayern			X	
DE23	Oberpfalz			X	
DE24	Oberfranken			X	
DE25	Mittelfranken	X			
DE26	Unterfranken			X	
DE27	Schwaben			X	
DE30	Berlin			X	



DE40	Brandenburg			X	
DE50	Bremen			X	
DE60	Hamburg			X	
DE71	Darmstadt			X	
DE72	Gießen			X	
DE73	Kassel			X	
DE80	Mecklenburg-Vorpommern				X
DE91	Braunschweig			X	
DE92	Hannover			X	
DE93	Lüneburg			X	
DE94	Weser-Ems			X	
DEA1	Düsseldorf			X	
DEA2	Köln			X	
DEA3	Münster			X	
DEA4	Detmold			X	
DEA5	Arnsberg			X	
DEB1	Koblenz			X	
DEB2	Trier			X	
DEB3	Rheinhessen-Pfalz			X	
DEC0	Saarland			X	
DED2	Dresden			X	
DED4	Chemnitz				
DED5	Leipzig				
D EE0	Sachsen-Anhalt				
DEF0	Schleswig-Holstein			X	
DEG0	Thüringen				X



DK01	Hovedstaden			X	
DK02	Sjælland			X	
DK03	Syddanmark			X	
DK04	Midtjylland			X	
DK05	Nordjylland			X	
EE00	Estonia		X		
EL30	Attiki				X
EL41	Voreio Aigaio				
EL42	Notio Aigaio				
EL43	Kriti				
EL51	Anatoliki Makedonia, Thraki				X
EL52	Kentriki Makedonia				X
EL53	Dytiki Makedonia				
EL54	Ipeiros				
EL61	Thessalia				
EL62	Ionia Nisia				
EL63	Dytiki Elláda				
EL64	Stereá Elláda				
EL65	Peloponnisos				
ES11	Galicia		X		
ES12	Principado de Asturias				X
ES13	Cantabria		X		
ES21	País Vasco			X	
ES22	Comunidad Foral de Navarra			X	
ES23	La Rioja				X
ES24	Aragón				X

ES30	Comunidad de Madrid			X	
ES41	Castilla y León				X
ES42	Castilla-La Mancha				X
ES43	Extremadura				
ES51	Cataluña			X	
ES52	Comunitat Valenciana			X	
ES53	Illes Balears			X	
ES61	Andalucía				X
ES62	Región de Murcia				X
ES63	Ciudad de Ceuta				
ES64	Ciudad de Melilla				
ES70	Canarias	X			
FI19	Länsi-Suomi				X
FI1B	Helsinki-Uusimaa			X	
FI1C	Etelä-Suomi				X
FI1D	Pohjois- ja Itä-Suomi				X
FI20	Åland				
FR10	Ile-de-France			X	
FRB0	Centre — Val de Loire				X
FRC1	Bourgogne				X
FRC2	Franche-Comté				
FRD1	Basse-Normandie				
FRD2	Haute-Normandie				
FRE1	Nord-Pas de Calais		X		
FRE2	Picardie				
FRF1	Alsace			X	

FRF2	Champagne-Ardenne				
FRF3	Lorraine				X
FRG0	Pays de la Loire				X
FRH0	Bretagne				X
FRI1	Aquitaine	X			
FRI2	Limousin				
FRI3	Poitou-Charentes				
FRJ1	Languedoc-Roussillon			X	
FRJ2	Midi-Pyrénées			X	
FRK1	Auvergne				
FRK2	Rhône-Alpes			X	
FRL0	Provence-Alpes-Côte d'Azur			X	
FRM0	Corse				
FRY1	Guadeloupe				
FRY2	Martinique				
FRY3	Guyane				
FRY4	La Réunion				
FRY5	Mayotte				
HR03	Adriatic Croatia				X
HR04	Continental Croatia				X
HU11	Budapest			X	
HU12	Pest	X			
HU21	Közép-Dunántúl				
HU22	Nyugat-Dunántúl				
HU23	Dél-Dunántúl				
HU31	Észak-Magyarország				





HU32	Észak-Alföld				
HU33	Dél-Alföld				
IE04	Northern and Western	X			
IE05	Southern	X			
IE06	Eastern and Midland	X			
ITC1	Piemonte				
ITC2	Valle d'Aosta/Vallée d'Aoste				
ITC3	Liguria			X	
ITC4	Lombardia			X	
ITF1	Abruzzo		X		
ITF2	Molise				
ITF3	Campania		X		
ITF4	Puglia		X		
ITF5	Basilicata				
ITF6	Calabria		X		
ITG1	Sicilia		X		
ITG2	Sardegna		X		
ITH1	Provincia Autonoma di Bolzano/Bozen			X	
ITH2	Provincia Autonoma di Trento			X	
ITH3	Veneto			X	
ITH4	Friuli-Venezia Giulia			X	
ITH5	Emilia-Romagna			X	
IT11	Toscana			X	
IT12	Umbria				X
IT13	Marche				X
IT14	Lazio	X			



LT01	Sostinės regionas				X
LT02	Vidurio ir vakarų Lietuvos regionas		X		
LU00	<b>Lithuania</b>	X			
LV00	<b>Latvia</b>		X		
MT00	<b>Malta</b>	X			
NL11	Groningen			X	
NL12	Friesland (NL)				
NL13	Drenthe			X	
NL21	Overijssel			X	
NL22	Gelderland			X	
NL23	Flevoland			X	
NL31	Utrecht			X	
NL32	Noord-Holland			X	
NL33	Zuid-Holland			X	
NL34	Zeeland			X	
NL41	Noord-Brabant			X	
NL42	Limburg (NL)			X	
PL21	Małopolskie				
PL22	Śląskie				
PL41	Wielkopolskie				
PL42	Zachodniopomorskie				
PL43	Lubuskie				
PL51	Dolnośląskie				
PL52	Opolskie				
PL61	Kujawsko-pomorskie				
PL62	Warmińsko-mazurskie				

PL63	Pomorskie				
PL71	Łódzkie				
PL72	Świętokrzyskie				
PL81	Lubelskie				
PL82	Podkarpackie				
PL84	Podlaskie				
PL91	Warszawski stołeczny			X	
PL92	Mazowiecki regionalny				
PT11	Norte		X		
PT15	Algarve				
PT16	Centro (PT)		X		
PT17	Área Metropolitana de Lisboa			X	
PT18	Alentejo				
PT20	Região Autónoma dos Açores				
PT30	Região Autónoma da Madeira				
RO11	Nord-Vest				
RO12	Centru				
RO21	Nord-Est				
RO22	Sud-Est				
RO31	Sud-Muntenia				
RO32	București-Ilfov				
RO41	Sud-Vest Oltenia				
RO42	Vest				
SE11	Stockholm			X	
SE12	Östra Mellansverige			X	
SE21	Småland med öarna			X	

SE22	Sydsverige			X	
SE23	Västsverige			X	
SE31	Norra Mellansverige			X	
SE32	Mellersta Norrland				
SE33	Övre Norrland			X	
SI03	Vzhodna Slovenija				X
SI04	Zahodna Slovenija			X	
SK01	Bratislavský kraj				
SK02	Západné Slovensko				
SK03	Stredné Slovensko				
SK04	Východné Slovensko				
UKC1	Tees Valley and Durham		X		
UKC2	Northumberland and Tyne and Wear	X			
UKD1	Cumbria				
UKD3	Greater Manchester			X	
UKD4	Lancashire	X			
UKD6	Cheshire	X			
UKD7	Merseyside	X			
UKE1	East Yorkshire and Northern Lincolnshire	X			
UKE2	North Yorkshire	X			
UKE3	South Yorkshire	X			
UKE4	West Yorkshire			X	
UKF1	Derbyshire and Nottinghamshire	X			
UKF2	Leicestershire, Rutland and Northamptonshire	X			
UKF3	Lincolnshire	X			
UKG1	Herefordshire, Worcestershire and Warwickshire			X	

UKG2	Shropshire and Staffordshire	X			
UKG3	West Midlands			X	
UKH1	East Anglia	X			
UKH2	Bedfordshire and Hertfordshire	X			
UKH3	Essex	X			
UKI3	Inner London — West			X	
UKI4	Inner London — East			X	
UKI5	Outer London — East and North East	X			
UKI6	Outer London — South	X			
UKI7	Outer London — West and North West	X			
UKJ1	Berkshire, Buckinghamshire and Oxfordshire	X			
UKJ2	Surrey, East and West Sussex	X			
UKJ3	Hampshire and Isle of Wight	X			
UKJ4	Kent	X			
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area	X			
UKK2	Dorset and Somerset	X			
UKK3	Cornwall and Isles of Scilly				
UKK4	Devon	X			
UKL1	West Wales and The Valleys		X		
UKL2	East Wales			X	
UKM5	North Eastern Scotland	X			
UKM6	Highlands and Islands				
UKM7	Eastern Scotland	X			
UKM8	West Central Scotland			X	
UKM9	Southern Scotland				X
UKN0	Northern Ireland	X			

	<b>Total</b>	39	23	107	27
--	--------------	----	----	-----	----

