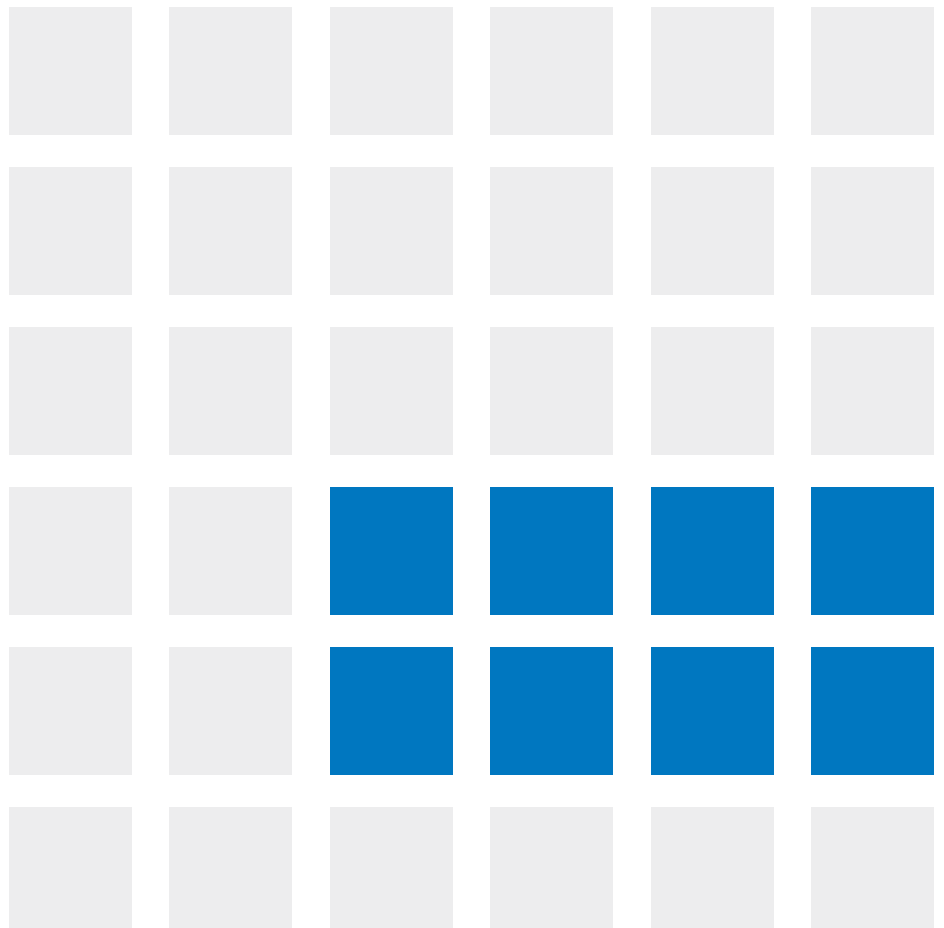


# Correlation analysis between the intercultural cities index and other data

A study for the Council of Europe

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# 1 Executive Summary

Are some cities adopting an intercultural approach more successfully than others? Do these intercultural cities achieve better economic or social results in terms of income, community cohesion, political stability, higher quality of life, educational success of their international populations, employment, etc.?

The aim of this study is to seek correlations and links between a city's intercultural approach (degree of intercultural exchange) and its economic, social or policy performance. BAKBASEL has carried out this study on behalf of the Council of Europe.

The degree of interculturalism in a city is measured through the intercultural cities index (ICC-index). Using correlation analysis between this intercultural cities index and certain policy outcomes, the 'strength' of the investigated relationships can be identified. Thus, it is possible to discover a number of variables which are closely related to the intercultural cities index. To deepen our understanding of the links between interculturalism and city performance, a multiple cross-sectional regression analysis has been conducted.

The correlation analysis has been carried out for eleven economic, social or policy areas such as composition of the population, economic performance, perception of safety and crime, perception of immigration, political stability, etc. Each area is measured using several indicators. To ensure comparable results, a sample of 21 intercultural cities in Europe is used.

The empirical analysis revealed that there are several links between cities' intercultural policies and the performance of the cities or their wider regions. These links include, for example:

- the relation between intercultural policies and safety
- the relation between policies regarding local media and discrimination
- the relation between PISA results and intercultural exchange in neighbourhoods as well as political representation
- the relation between intercultural policies in the areas of 'public services' as well as 'business and labour market' and the inhabitants' perceptions of immigration
- the relation between policy measures of the business and labour markets and political stability
- the relation between the areas of 'neighbourhood', 'public space', 'education system' and quality of life
- the relation between the intercultural city index and the national framework conditions of immigrants' integration (as measured by the MIPEX)

A deeper examination of these relations could provide interesting insights about how intercultural policies operate.

The sample of the 21 not randomly selected cities proved to be not sufficient to allow robust results regarding the investigation of the impact of the intercultural cities model on the social and economic performance of cities. However, the sample of 188 European city-regions is good and large enough and results for the ICC-dummy are interesting and would be a promising avenue for future research. A larger and more representative sample of cities (with respect to geography, size, function) which provide data for the ICC-index regardless of their commitment should provide valuable results in the future.

## 2 Introduction

The Council of Europe and the European Commission have set up a project with the goal to explore the potential of an intercultural approach to integration in communities with a culturally diverse population. The intercultural cities project stresses the importance of exchange and relationships between different cultural groups. The intercultural city has a diverse population (with varied cultural or ethnic backgrounds) in which political leaders as well as most inhabitants consider diversity an asset. The city develops policy measures to serve the needs of its diverse population, to promote cultural exchange and to combat discrimination. The intercultural model promotes the idea that different groups can learn from each other and thus new ideas and social practices can be developed. Both natives and immigrants can profit from this exchange. Intercultural cities use diversity 'as a source of dynamism, innovation, creativity and growth.' European regions should be interested in immigrants because they bring benefits such as complementary skills or access to markets and capital from their home countries.

According to this, cities which adopt an intercultural approach should be more successful than others. The objective of this study is to seek links between an intercultural approach (degree of intercultural exchange) and the economic, social or policy performance of cities. The underlying question is: Are some cities adopting an intercultural approach more successfully than others? Do these intercultural cities achieve better policy results in terms of community cohesion, social justice, policy innovation, political stability, high quality of life, educational success of the international populations, employment, etc.?

The degree of interculturalism of a city is measured through the intercultural cities index (ICC-index). Using correlation analysis between the intercultural cities index and certain policy outcomes, the 'strength' of the investigated relationships can be identified. Thus it is possible to discover a number of variables which are closely related to the intercultural cities index. To deepen our understanding of the links between interculturalism and city performance, some multiple cross-sectional regression analysis is conducted.

The remainder of this paper is structured as follows. The intercultural cities index is described briefly in section 3. Subsequently, the correlation analysis is presented in section 4, and finally regression results are provided in section 5.

### 3 The intercultural cities index

The intercultural cities index measures interculturalism using a large number of indicators which appraise different areas of intercultural exchange. Data were obtained through a questionnaire completed by city officials. The questionnaire asked the city officials two kinds of information:

- Facts: mostly quantitative background information about the city such as population, ethnic composition, GDP per capita
- Inputs: mostly qualitative data about policies, actions, authorities and structures in the city

**Tab. 1 Composition of Intercultural Cities Index**

Area	Subjects	No. of Indicators
Commitment	Public statement, city strategy, city action plan, budget, communication (speeches, webpage)	9
Intercultural lens	Education system, residential neighbourhoods, public services, business and labour market, cultural and civil life, public space	30
Mediation and conflict Resolution	Professional service for mediation, sort of mediation, organisation of inter-religious relations	3
Language	Local language courses given; financial support, image of migrant languages	5
Relations with the local media	Positive image, city's information service, support for journalists with minority background, city monitor	4
Open and international Outlook	Policy for international co-operation, financial provisions, agency, students & city life, economic relations with countries of origin of its migrant groups	6
Intelligence and competence	Information, surveys, intercultural competence of its officials	3
Welcoming new arrivals	Agency, city-specific package, different groups, public ceremony to greet newcomers	4
Governance and leadership	Right to vote, elected politicians and voters representing minorities, representing immigrants in schools and public services	4

Source: BAKBASEL, ICC-questionnaires.



The intercultural cities index is based on the second kind of information. It is, therefore, mainly a policy index. The index focuses on how many of the suggested best practice policies to encourage intercultural exchange a city has adopted.

Although a city can arrange its intercultural strategy in many ways, nine essential areas have been identified that, taken together, will affect both public policies and public perceptions. The questions on city policies and actions for intercultural exchange were split into these nine different areas and are shown in the first column of Table 1. The second column describes the different subjects of each area which resulted in the indicators shown in the third column. The indicators were grouped into 9 indices (areas). The indices have been weighted for relative importance and aggregated to the overall intercultural cities index. The best score of the index for one subject is 100%. A city which adopts all proposed best practice policy measures can reach 100%. The whole index is subdivided into the nine parts, whereas the subject intercultural lens is subdivided again into six parts.

The following 40 cities from 21 different countries have completed the ICC-questionnaire so far:

- Italy (Reggio Emilia, Lodi, Campi de Bisenzio, Senigallia, Rubicone, Torino)
- Spain (Sabadell, Cartagena, Fuenlabrada, San Sebastian, Barcelona)
- Portugal (Amadora, Lisbon)
- Cyprus (Limassol)
- Germany (Duisburg, Neukölln/Berlin, Munich, Erlangen)
- Switzerland (Geneva, Zurich, Neuchâtel)
- Belgium (Turnhout)
- Netherlands (Tilburg)
- Norway (Oslo)
- Sweden (Västerås, Gothenburg, Botkyrka)
- Denmark (Copenhagen)
- Ireland (Dublin)
- UK (Lewisham/London)
- Poland (Lublin)
- Croatia (Rijeka)
- Serbia (Subotica)
- Ukraine (Melitopol, Sechenivsky/Kiev, Pryluky)
- Russia (Izhevsk)
- Mexico (Mexico City)
- Canada (Montreal)
- France (Lyon)

## 4 Descriptive statistical analysis

### 4.1 Data and Methods

The purpose of this chapter is to carry out correlation analysis between the intercultural cities index (and its subindex) and other city performance indicators (such as GDP per capita, feeling of safety, educational attainment of immigrants, etc.)

In a first step, it was necessary to supplement the ICC-database with various social, political or economic performance indicators or city indices. For the correlation analysis, a final dataset including 44 indicators for 21 intercultural cities was constructed.<sup>1</sup> The indicators which are included in the database are listed in Table 2.

**Tab. 2 Indicators in Database**

<b>Dependent variable/Policy variable</b>	<b>Data Set</b>	<b>Indicators</b>	<b>Geographical coverage</b>
Economic performance	ICC-questionnaire, BAKBASEL	GDP per capita, GDP growth, average number of patents	City
Composition of population	ICC-questionnaire, official statistics	Percentage of non-nationals, tertiary educated workforce, non-EU workforce	City/Region
Educational success	PISA	Pisa scores for literacy, maths and sciences for native and immigrant children in 2009, score difference between immigrant and native children	Country
Employment	European Labour Force Survey	Unemployment rate of non-nationals, ratio unemployment rate non-nationals and nationals	Region
Perception of safety/crime	European Social Survey	Feeling of safety, trust in police	Region
Perception of immigrants	European Social Survey	Contribution to culture, contribution to economy, contribution to quality of life, allow many immigrants from different race/poorer countries/same race	Region
Community cohesion	European Social Survey	People act fairly, trust other people	Region
Political stability and resilience to crises	EUI	Political instability	Country
	European Social Survey	Trust in the legal system, ban political parties that wish overthrow democracy	Region
National regulations	MIPEX	MIPEX subindex (nationality, antidiscrimination, education, family reunion, labour market, residence, participation, total)	Country
Antidiscrimination	European Social Survey	Discrimination of respondent's group (colour/race, nationality, religion, language, ethnic group)	Region
Quality of life	Mercer/FdI-Benchmark	Quality of living index	City

Source: BAKBASEL.

<sup>1</sup> The data set includes the following cities: Amadora, Barcelona, Cartagena, Copenhagen, Dublin, Duisburg, Fuenlabrada, Lisbon, Munich, Neuchâtel, Oslo, Patras, Sabadell, San Sebastian, Tilburg, Turnhout, Väseras, Zurich, Gothenburg, Botkyrka and Erlangen. These cities were chosen, because all 44 indicators were available.

Most of the data collected are only available at NUTS 2 regional level which is a much higher geo-level than cities. In some cases, the city in question is the centre of the region and therefore the city's policy also counts for the region because many people living in the region work in the city. The city functions as a service centre for the whole region and it is usually the place where, for example, universities are located. Thus many issues of intercultural commitment of the city are also relevant for the region. The intercultural cities sample, however, includes more mid-sized cities which weakens the influence of the city on the wider region.<sup>2</sup> Thus, correlations between city policies (measured by the ICC-index) and indicators measuring the economic and social performance of the larger region might be weaker.

Correlation is a statistical technique that indicates whether and how strongly pairs of variables are related. After creating the database, a correlation matrix can be produced. With a correlation matrix, it is possible to find out which variables are related to each other and how strongly they are related to each other. It is then possible to identify the most important variables and which indicators are most strongly correlated with the intercultural cities index. For example, it can be assumed that cities' intercultural policies (measured through the intercultural cities index) and the feeling of safety of the cities' inhabitants (e.g. measured through the number of people feeling safe in their local area) are related. Correlation can tell you how much of the variation in the feeling of safety in the cities is related to cities' intercultural policies (ICC-index). The underlying causal relationship, however, cannot be identified through this method.

## 4.2 Findings of the descriptive data analysis

In this chapter, the results of the correlation analysis will be presented. The results will be discussed for the various areas. The indicators have been correlated with the overall ICC-index (and its subindex). A Pearson correlation coefficient near to one indicates a linear positive relationship between two variables  $x$  and  $y$ , which means that if there is an increase in the values of  $x$ , the values of  $y$  will also increase. A coefficient of  $-1$  is a sign of a perfect negative linear relationship. If there is no linear relationship between two variables, the correlation coefficient is near to 0. Usually it is assumed a correlation coefficient greater than 0.8 indicates a strong correlation, while a correlation is weak if the coefficient is smaller than 0.5. In social sciences, the boundaries are often somewhat reduced. In the tables, correlation coefficients equal or higher than 0.45 are shown in bold.

### 4.2.1 Composition of the population

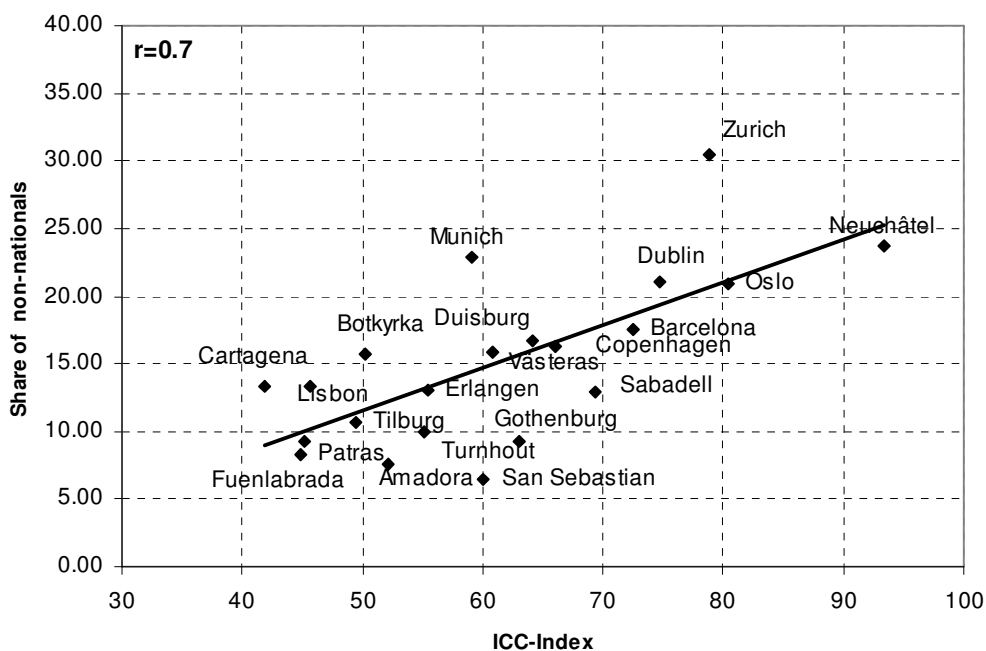
Cities' economic and social performances as well as cities' policy actions depend on, among other factors, the composition of their populations. The aim of the intercultural cities policy approach is to give cities guidelines so that 'they will be capable of managing and exploring the potential of their cultural diversity to stimulate creativity and innovation and thus generate economic prosperity and a better quality of life'.<sup>3</sup> There is neither an overall accepted definition of cultural diversity nor a widely agreed statistical measure of cultural diversity. The intercultural cities index measures mainly policy measures addressing ethnic diversity or immigrant populations. Views on the appropriate definition of immigrant populations vary from country to coun-

<sup>2</sup> Data availability for mid-sized cities is very restricted.

<sup>3</sup> [http://www.coe.int/t/dg4/cultureheritage/culture/cities/default\\_en.asp](http://www.coe.int/t/dg4/cultureheritage/culture/cities/default_en.asp)

try. Despite this, it is possible to draw an internationally comparable picture of the size of an immigrant population, based on either nationality or on country-of-birth criteria.<sup>4</sup> Although we would have preferred to use the concept of the foreign-born population, the concept of nationality was applied because many cities in this sample do not provide sufficient data according to place of birth.

**Fig. 1** Relation between the ICC-index and Non-nationals



Percentage of non-nationals  
Source: ICC-questionnaires, official statistics

Figure 1 shows the relationship between the ICC-index and the share of non-nationals for 21 intercultural cities in Europe. In general, a higher number of non-nationals corresponds with a higher value for the ICC-index. For example, 20% or more of the population are non-nationals in Dublin, Oslo, Zurich and Neuchâtel. These cities score very well on the ICC-index, too. In contrast, while Munich has a high number of foreigners, its ICC-index is not as high as it could be. Moreover, there are a number of cities with similar shares of non-nationals, but different scores on the ICC-index. Such cities include Fuenlabrada, Amadora and San Sebastian which have all very recently become regions of immigration.

Table 3 illustrates that a number of the ICC-subindices are somewhat correlated with the share of non-nationals in a city. Cities with a higher number of non-nationals seem more advanced in

<sup>4</sup> Non-nationals are people who are not citizens of the country where they live. Non-nationals still have the nationality of their home country, but live in the host country. They may have been born in the host country or in the home country. The foreign-born population of a country includes all people who live in the host country (it's their usual residence) but were born in another country.

the areas of commitment, public services, business and labour markets, mediation and conflict resolution as well as language provision (particularly of immigrant languages). There also seems to be a relation between the areas of neighbourhood and public space. Cities' policy measures and structure of its 'education system' as well as its 'relations to the local media' are not at all related to its number of non-nationals.

There is also a slight correlation between the share of tertiary educated non-nationals and the ICC-index. Interestingly, the correlation coefficient between ICC-subindex of 'welcoming new arrivals' and the share of the higher educated foreign labour force are higher than those between this ICC-subindex and the overall share of non-nationals.

**Tab. 3 Correlation Coefficients: ICC-Index and Composition of Population**

	Percentage of non-nationals	Tertiary educated foreign workforce	Non-EU labour force
I. Commitment	<b>0.54</b>	<b>0.50</b>	-0.14
II. Intercultural lens	<b>0.63</b>	<b>0.45</b>	-0.30
a) Education system	0.09	0.11	0.16
b) Neighbourhood	<b>0.60</b>	0.20	-0.18
c) Public service	<b>0.47</b>	<b>0.51</b>	0.00
d) Business and labour market	<b>0.54</b>	<b>0.57</b>	-0.18
e) Cultural and civil life	0.25	0.18	-0.28
f) Public space	<b>0.56</b>	0.23	<b>-0.54</b>
III. Mediation and conflict resolution	<b>0.71</b>	0.42	0.02
IV. Language	<b>0.54</b>	0.15	-0.11
V. Relations with the local media	0.03	0.00	-0.17
VI. An open and international outlook	0.32	-0.10	-0.06
VII./VIII. Intelligence/competence	0.18	0.16	<b>-0.48</b>
IX. Welcoming new arrivals	0.38	<b>0.45</b>	0.11
X. Governance	<b>0.49</b>	0.36	-0.41
ICC	<b>0.70</b>	<b>0.47</b>	-0.28

Note: Workers coming from countries outside the EU, Switzerland and Norway, so-called third countries  
Source: Official statistics, ICC-questionnaires, Labour Force Survey 2010, BAKBASEL.

To take the composition of the immigrant population into account, the share of the foreign workforce from outside the EU has been calculated. It becomes obvious from Table 3 that there is no relationship between the value of the ICC-index and the share of the workforce from outside the EU. There are slight negative correlation coefficients between the areas 'intelligence/competence' as well as 'public space' and the share of the workforce from outside the EU. The negative correlation coefficient in the area 'governance' may reflect the low political representation and participation rights of people who come from outside the EU.

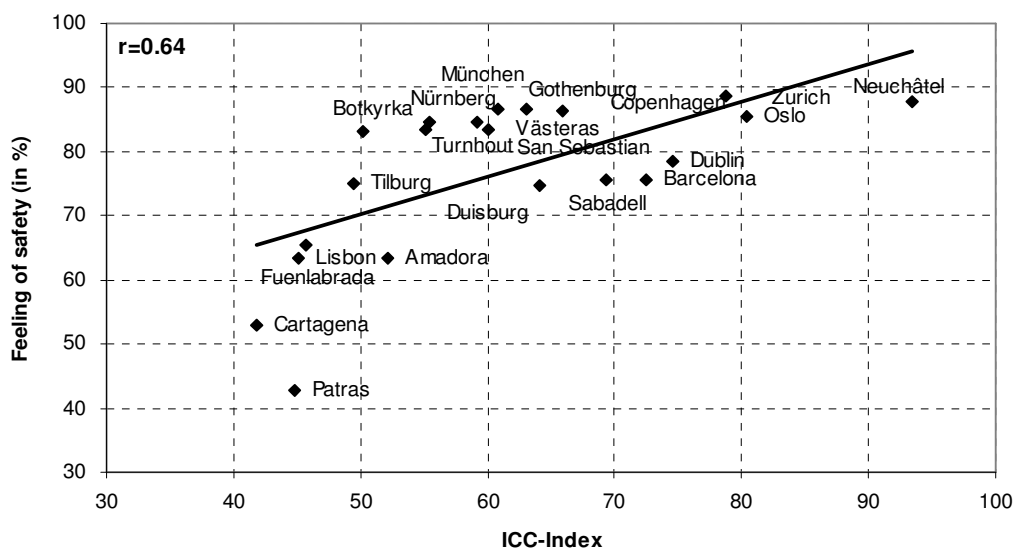
The nature of the relationship between immigration and the ICC-index cannot be addressed through correlation analysis. Either variable can determine the other. Cities with a higher share of immigrants may be more likely to adopt an intercultural city approach and may implement best practice examples. They may be more inclined to restructure their public services to serve the needs of their foreign population, to provide mediation or to implement policies against discrimination in the labour market. In the long run, intercultural cities may be more attractive to people from abroad. Thus cities which wish to attract and retain people from abroad may be more likely to commit themselves to this approach.

### 4.2.2 Safety and crime

Feeling safe is a central component of people's quality of life. Successful cities have to be attractive. To be a safe place to live and to be perceived as a safe city are important factors in making a city attractive. In public opinion, immigration and ethnic enclaves are often believed to lead to higher crime rates and to the existence of 'no-go-areas'. Intercultural exchange and well-managed neighbourhoods and public areas may increase the inhabitants' subjective feeling of safety.

The graph below illustrates the correlation between the ICC-index and the variable 'feeling of safety'. In the regions with a lower percentage of people who feel safe, cities score considerably lower in the ICC-index. However, the relationship is far from being perfect. There are a number of cities, particularly those located in Nordic countries and Germany, where the majority of the people feel safe, yet their values for the ICC-index differ considerably.

**Fig. 2 Relation between the ICC-index and Safety**



Percentage of people who feel 'safe' or 'very safe' in local area after dark  
 Source: European Social Survey 2008

A further indicator is the percentage of people who strongly trust the police. Only if people trust the police they will call them when needed. Intercultural cities should have a police force which

is able to serve its diverse populations and thus, trust in police should be high among all groups in society. As it becomes clear in Table 4, there is no association between the overall ICC-index and the variable 'trust in police'. Nevertheless, there is a slight correlation between the ICC-subindex 'business and labour market' and the percentage of people who trust the police.

Overall, the correlation results should encourage a deeper investigation of the relationship between intercultural policies and the performance of a city with respect to safety.

**Tab. 4 Correlation Coefficients: ICC-Index and Safety**

	<b>Feeling safe<sup>5</sup></b>	<b>Trust in police<sup>6</sup></b>
I. Commitment	<b>0.65</b>	0.04
II. Intercultural lens	<b>0.61</b>	0.40
a) Education system	0.22	-0.10
b) Neighbourhood	0.39	0.30
c) Public service	<b>0.57</b>	0.30
d) Business and labour market	<b>0.55</b>	<b>0.45</b>
e) Cultural and civil life	0.39	-0.06
f) Public space	0.40	0.40
III. Mediation and conflict resolution	<b>0.48</b>	0.20
IV. Language	0.33	0.23
V. Relations with the local media	0.02	-0.21
VI. An open and international outlook	-0.07	-0.04
VII./VIII. Intelligence/competence	0.21	0.09
IX. Welcoming new arrivals	<b>0.52</b>	0.07
X. Governance	<b>0.50</b>	0.28
ICC	<b>0.64</b>	0.24

Source: European Social Survey 2008, BAKBASEL.

### 4.2.3 Economic performance

The intercultural cities model assumes that a policy promoting intercultural exchange between diverse populations can lead to new ideas which can also enhance the economic performance of cities. Thus the ICC-index has been correlated with three variables measuring economic success: GDP per capita, GDP per capita growth and the number of patents. Regional GDP growth as well as the number of patents in a region is not correlated with the ICC-index levels of cities located in that region (see Table 5). There is a slight correlation between the GDP per capita of

<sup>5</sup> How safe do you – or would you – feel walking alone in this area (local area or neighbourhood) after dark (very safe/safe/unsafe/very unsafe)?

<sup>6</sup> On a score of 0-10 how much you personally trust the police (0=no trust, 10=completely trust)?

a city, its ICC-index and its ICC-subindices 'neighbourhood', 'public space', 'mediation' as well as 'governance'.<sup>7</sup>

**Tab. 5 Correlation Coefficients: ICC-Index and Economic Performance**

	<b>GDP per capita</b>	<b>GDP growth</b>	<b>Patents</b>
I. Commitment	0.43	0.06	0.00
II. Intercultural lens	<b>0.53</b>	0.01	0.02
a) Education system	0.08	-0.27	-0.23
b) Neighbourhood	<b>0.48</b>	-0.32	0.38
c) Public service	0.36	-0.10	-0.41
d) Business and labour market	0.42	-0.04	-0.01
e) Cultural and civil life	0.40	0.31	-0.04
f) Public Space	<b>0.51</b>	0.23	0.04
III. Mediation and conflict resolution	<b>0.45</b>	0.05	-0.09
IV: Language	0.32	-0.29	-0.29
V: Relations with the local media	-0.02	0.10	-0.35
VI. An open and international outlook	0.09	-0.02	-0.08
VII./VIII. Intelligence/competence	0.34	0.12	0.02
IX. Welcoming new arrivals	0.25	-0.36	0.00
X. Governance	<b>0.50</b>	0.01	-0.05
<b>ICC-Index</b>	<b>0.57</b>	-0.05	-0.13

GDP per capita on city level, in EUR, GDP growth is the average annual growth rate 200-2008 on NUTS 2 level, Patens in 2009 on NUTS 2 level.

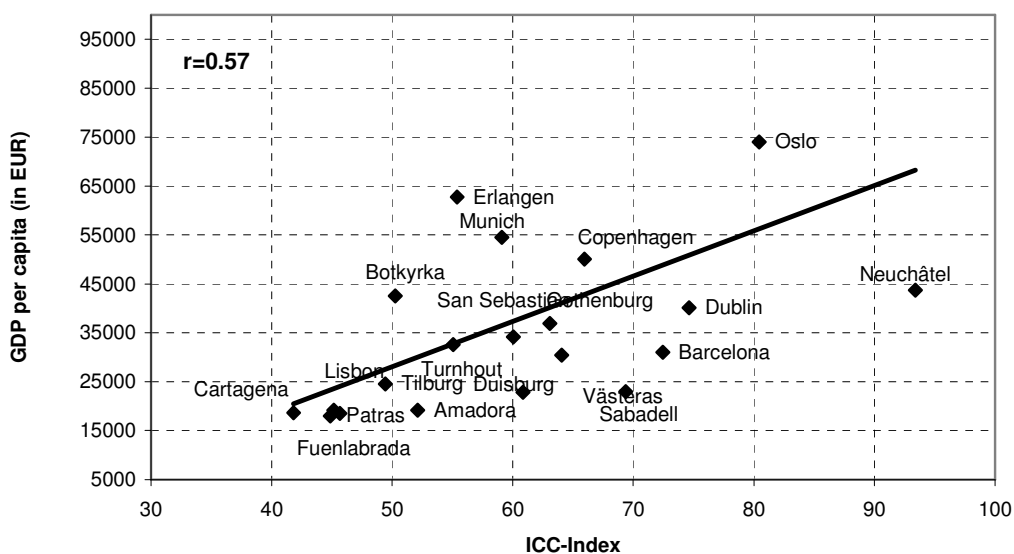
Source: ICC-questionnaires, BAKBASEL.

The correlation diagram (figure 3) gives a view of the data and the relationship between GDP per capita and the ICC-index. Thus a higher ICC-index corresponds with a higher GDP per capita and vice versa. The relationship is, however, far from being perfect. There are a number of cities which have similar values of the ICC-index, but rather different GDP per capita levels.

<sup>7</sup> Using GDP per capita data on NUTS 2 level (in EUR 2000) and PPP adjusted the correlation coefficient between GDP per capita and the ICC-index is much lower (about 0.3).



**Fig. 3 Relation between the ICC-index and GDP per capita, 2009/2010**



BIP per capita 2009/2010  
 Source: ICC-questionnaire, BAKBASEL, official statistics.

#### 4.2.4 Employment

High unemployment is a threat to the economic and social performance of a city. The intercultural cities index includes a number of best policy practices to encourage immigrant economic businesses and measures which should facilitate immigrant labour market participation. Therefore, a negative correlation between the ICC-index and the foreign unemployment rates is expected.

From Table 6, it becomes obvious that the overall ICC-index and the unemployment rates of non-nationals are not correlated. Nevertheless, there is a weak negative correlation between the ICC-subindex 'business and labour markets' which contains most of the relevant best policies facilitating immigrants' economic participation.

There is also a weak link between the ratio of unemployment rates between non-nationals and nationals and the ICC-subindex 'public service'. However, higher differences in unemployment between nationals and non-nationals appear to be associated with a higher ICC-index. Perhaps cities where the differences are higher are more likely to introduce policy measures to improve the situation.

**Tab. 6 Correlation Coefficients: ICC-Index and Unemployment**

	<b>Unemployment rate of non-nationals</b>	<b>Ratio unemployment rate non-nationals and nationals</b>
I. Commitment	-0.03	0.23
II. Intercultural lens	-0.38	0.17
a) Education system	-0.04	-0.14
b) Neighbourhood	-0.32	-0.09
c) Public service	-0.11	<b>0.47</b>
d) Business and labour market	<b>-0.48</b>	0.29
e) Cultural and civil life	-0.11	0.17
f) Public space	-0.17	0.13
III. Mediation and conflict resolution	0.16	0.20
IV. Language	0.04	0.39
V. Relations with the local media	-0.02	0.28
VI. An open and international outlook	0.07	-0.32
VII./VIII. Intelligence/competence	-0.27	0.17
IX. Welcoming new arrivals	-0.19	0.25
X. Governance	-0.38	0.37
ICC	-0.23	0.32

Source: Labour Force Survey 2010, BAKBASEL.

## 4.2.5 Educational attainment of immigrant children

The level of immigrant integration is often measured using the educational achievements of the children of immigrants. The PISA<sup>8</sup>-data allow a global comparison of the knowledge of 15-year-old students in reading, mathematics and science at the national level. Table 7 shows the correlation coefficients between the ICC-indices and the PISA scores for reading literacy, mathematics and science for natives and for immigrant children<sup>9</sup> in the year 2009. In the last three columns, the correlation coefficients between the ICC-indices and the differences in the PISA scores for the three above-mentioned subjects are displayed.

The scores of the native children are better than those of the immigrant children in all countries in the sample. An empirical study for Denmark (Jensen and Rasmussen, 2008) suggests that ethnic concentration in schools has a negative effect on reading test scores of both immigrant children and native Danish children. According to this study, the negative impact seems to be particularly virulent for native children. Given that the intercultural cities model promotes intercultural exchange particularly in schools and neighbourhoods, a positive correlation between the ICC-indices and the PISA results of immigrant children is expected.

<sup>8</sup> Programme for International Student Assessment

<sup>9</sup> Immigrant children are children whose parents were born abroad.

**Tab. 7 Correlation Coefficients: ICC-Index and PISA (2009)**

	Natives			Foreigner			Point differences		
	Literacy	Math	Science	Literacy	Math	Science	Literacy	Math	Science
I. Commitment	0.17	0.39	0.42	-0.10	0.05	0.08	0.22	0.39	0.27
II. Intercultural lens	0.37	<b>0.47</b>	0.38	0.33	<b>0.46</b>	0.37	-0.18	-0.05	-0.12
a) Education system	-0.09	0.17	0.06	0.03	0.09	0.09	-0.08	0.09	-0.05
b) Neighbourhood	0.26	<b>0.55</b>	<b>0.53</b>	0.29	0.44	0.41	-0.19	0.06	-0.04
c) Public service	0.30	0.28	0.15	0.07	0.13	0.03	0.09	0.16	0.09
d) Business and labour market	<b>0.51</b>	0.43	0.27	0.44	<b>0.49</b>	0.30	-0.22	-0.14	-0.14
e) Cultural and civil life	0.01	0.02	0.06	0.10	0.10	0.17	-0.11	-0.11	-0.15
f) Public space	0.21	0.24	0.27	0.18	0.24	0.25	-0.09	-0.04	-0.08
III. Mediation and conflict resolution	0.06	0.18	0.21	-0.15	-0.05	-0.01	0.21	0.27	0.19
IV. Language	0.10	0.25	0.14	-0.20	-0.09	-0.10	0.29	0.41	0.24
V. Relations with the local media	-0.02	-0.09	-0.19	0.10	-0.02	0.02	-0.14	-0.08	-0.20
VI. An open and international outlook	-0.11	0.16	0.20	0.18	0.18	0.33	-0.28	-0.05	-0.23
VII./VIII. Intelligence/competence	0.29	0.18	0.14	0.18	0.16	0.13	-0.05	0.00	-0.04
IX. Welcoming new arrivals	0.35	<b>0.52</b>	0.31	0.16	0.22	0.06	0.02	0.32	0.21
X. Governance	<b>0.45</b>	<b>0.45</b>	<b>0.51</b>	0.44	<b>0.48</b>	<b>0.48</b>	-0.26	-0.10	-0.14
ICC	0.32	<b>0.45</b>	0.37	0.21	0.29	0.26	-0.06	0.15	0.01

Source: OECD, BAKBASEL.

From Table 7 it can be seen that

- there is no correlation between the point differences among native and immigrant children and the ICC-indices using this city sample
- there is only a slightly positive correlation between the ICC-indices and the PISA scores in the year 2009
- the correlation coefficients are generally a little higher for native children
- the strongest correlations can be found for the subindex 'neighbourhood' and 'governance'

Overall, the link between the ICC-indices and the PISA results is not really strong. This may be partly due to the fact that there were no internationally comparable PISA data available on the level of cities or regions for immigrant children. Nevertheless, it might be interesting to have a closer look at the relationship between intercultural exchange in neighbourhoods and educational attainment of both natives and immigrants. In addition, it seems there is a slight correla-

tion between the countries' (or cities') political participation rights and educational attainment, which might also deserve a closer look.

#### **4.2.6 Perception of immigration**

Intercultural cities' policies should have a positive impact on inhabitants' attitudes towards immigration and cultural diversity. The European Social Survey provides data on how inhabitants rate the contribution of immigrants towards the culture, economy and quality of life of the country. Moreover, it contains questions related to the attitude of its citizens towards immigration policy. The following three questions were asked: Firstly, to what extent do you think the government should allow people of a different race or ethnic group to come and live here (many/some/few/none)? Secondly, to what extent do you think the government should allow people of the same race or ethnic group at most to come and live here (many/some/few/none)? Thirdly, how many people from poorer countries outside of Europe should the government allow to come and live here (many/some/few/none)?

From Table 8 it becomes obvious that there is at most a slightly positive relationship between the values of the overall ICC-indices and how the inhabitants rate the contributions of immigrants towards the economy. The association is somewhat stronger between the ICC-subindex 'public services' and populations' rating of immigrants' contributions. In cities where more best practices in the area 'public services' are implemented, the inhabitants rate the contributions of immigrants higher.

In almost all regions, most inhabitants think that many or some people of the same race can come. The acceptance is much lower for people from a different ethnic group or for people from poorer countries outside the EU. In most cases, there is no relationship between people's attitudes towards immigration and the ICC-index and its subindex. The correlation coefficients are somewhat higher for the areas 'public services', 'business and labour market' as well as 'mediation and conflict resolution'. Hence, it seems that some intercultural policy areas are linked with public opinions and attitudes towards immigration.

**Tab. 8 Correlation Coefficients: ICC-Index and Perception of Immigration**

	Contribution to Culture <sup>10</sup>	Contribution to Economy <sup>11</sup>	Contribution to Quality of life <sup>12</sup>	Different Race <sup>13</sup>	Poorer Countries <sup>14</sup>	Same Race <sup>15</sup>
I. Commitment	0.27	0.32	0.22	0.22	0.15	0.31
II. Intercultural lens	0.43	<b>0.48</b>	0.38	0.37	0.24	<b>0.52</b>
a) Education system	0.14	0.17	0.07	-0.02	-0.09	0.02
b) Neighbourhood	0.04	0.18	-0.12	-0.02	-0.11	0.20
c) Public service	<b>0.62</b>	<b>0.58</b>	<b>0.61</b>	<b>0.47</b>	0.35	<b>0.49</b>
d) Business and labour market	<b>0.54</b>	<b>0.46</b>	0.41	<b>0.40</b>	0.31	<b>0.53</b>
e) Cultural and civil life	-0.02	0.18	0.10	0.17	0.08	0.19
f) Public space	0.12	0.32	0.26	0.25	0.15	0.39
III. Mediation and conflict resolution	0.39	<b>0.48</b>	<b>0.48</b>	<b>0.45</b>	0.36	0.37
IV. Language	0.25	0.43	0.33	0.09	-0.01	0.20
V. Relations with the local media	-0.18	-0.04	-0.14	-0.23	-0.25	-0.15
VI. An open and international outlook	-0.14	0.11	-0.19	-0.09	-0.11	-0.11
VII./VIII. Intelligence/competence	-0.13	-0.07	-0.08	-0.10	-0.11	0.09
IX. Welcoming new arrivals	0.37	0.27	0.12	0.23	0.18	0.29
X. Governance	0.24	0.39	0.11	0.26	0.16	0.43
ICC	0.32	<b>0.47</b>	0.29	0.27	0.15	0.42

Source: European Social Survey 2008, BAKBASEL.

## 4.2.7 National framework conditions: MIPEX

The MIPEX (Migrant Integration Policy Index) and its subindices can be used as a measure of the legal and political framework that migrants face in varying countries. It evaluates the migration policy of about 30 countries in Europe (including Canada and the USA) according to seven dimensions: 'family reunion', 'access to nationality', 'education', 'long-term residence', 'political

<sup>10</sup> Would you say that (country)'s cultural life is generally undermined or enriched by people coming to live here from other countries?

<sup>11</sup> Would you say that it is generally bad or good for (country)'s economy that people come to live here from other countries?

<sup>12</sup> Is (country) made a worse or better place to live by people coming to live here from other countries?

<sup>13</sup> To what extent do you think (country) should allow people of the different race or ethnic group as most (country)'s people to come and live here (many/some/few/none)?

<sup>14</sup> To what extent do you think (country) should allow people from poorer countries outside of Europe as most (country)'s people to come and live here (many/some/few/none)?

<sup>15</sup> To what extent do you think (country) should allow people of the same race or ethnic group as most (country)'s people to come and live here (many/some/few/none)?

participation', 'anti-discrimination' and 'labour market mobility'<sup>16</sup>. The MIPEX uses 148 policy indicators which are designed to benchmark current laws and policies against the highest of standards in the EU. The indicator scores are then averaged together to give a dimension score.

As can be seen from the table below, the intercultural cities index is, in most cases, related slightly negatively to the MIPEX which suggests that some cities may adopt the intercultural model to counterbalance national framework conditions.

**Tab. 9 Correlation Coefficients: ICC-Index and MIPEX**

	Nationality	Antidisc.	Education	Family Reunion	Labour market	Residence	Participation	Total
I. Commitment	<b>-0.45</b>	-0.43	-0.34	-0.25	-0.26	-0.21	-0.03	-0.38
II. Intercultural lens	-0.19	-0.23	-0.08	<b>-0.52</b>	-0.28	<b>-0.51</b>	0.21	-0.33
a) Education system	-0.22	-0.17	-0.03	-0.07	0.06	-0.04	-0.07	-0.10
b) Neighbourhood	-0.38	<b>-0.50</b>	-0.40	<b>-0.52</b>	-0.34	<b>-0.49</b>	-0.07	<b>-0.52</b>
c) Public service	-0.16	-0.01	0.24	-0.16	-0.10	-0.14	0.34	-0.03
d) Business and labour market	0.06	0.09	0.26	-0.38	-0.15	-0.34	<b>0.46</b>	-0.04
e) Cultural and civil life	-0.14	-0.15	-0.13	-0.15	-0.11	-0.30	0.19	-0.16
f) Public space	-0.36	-0.44	-0.36	<b>-0.60</b>	-0.44	<b>-0.59</b>	0.08	<b>-0.53</b>
III. Mediation and conflict resolution	<b>-0.46</b>	-0.38	-0.21	-0.19	-0.11	-0.24	0.19	-0.28
IV. Language	<b>-0.53</b>	<b>-0.50</b>	-0.18	-0.29	-0.40	-0.33	-0.14	<b>-0.45</b>
V. Relations with the local media	-0.11	-0.08	-0.06	-0.14	-0.32	-0.19	0.03	-0.17
VI. An open and international outlook	-0.43	<b>-0.49</b>	-0.53	-0.27	-0.32	-0.39	-0.06	<b>-0.47</b>
VII./VIII. Intelligence/competence	-0.12	-0.19	-0.19	-0.38	<b>-0.52</b>	-0.38	0.02	-0.35
IX. Welcoming new arrivals	-0.28	-0.10	0.15	-0.15	-0.06	0.08	0.18	-0.06
X. Governance	-0.25	-0.31	-0.27	<b>-0.45</b>	-0.44	<b>-0.59</b>	0.37	-0.40
ICC	<b>-0.46</b>	-0.43	-0.22	<b>-0.48</b>	-0.43	<b>-0.50</b>	0.20	<b>-0.47</b>

Source: MIPEX 2010, BAKBASEL.

## 4.2.8 Antidiscrimination

Intercultural cities combat discrimination. Thus it is interesting to investigate whether people feel less discriminated against in cities where intercultural policies are well-established. The European Social Survey provides data on foreign-born people who feel discriminated against due to their language, their colour or race, their ethnic group or their religion. When people feel discriminated against, in most cases, it is because of their colour/race or because of their nationality. As can be seen from Table 10, there is at most a very slight negative correlation be-

<sup>16</sup> Huddleston (2011).

tween the ICC-index and the share of foreign-born people who feel discriminated against because of their nationality.<sup>17</sup>

There is also a negative relationship between the ICC-subindex 'business and labour market' and the percentage of the foreign-born population who report that they feel discriminated against because of their nationality and, to a lesser extent, because of their religion. Thus, it seems that the higher the cities score on this subindex, the lower the percentage of foreign-born people who feel discriminated against because of their nationality is. The subindex 'business and labour market' includes, in fact, several best practices related to antidiscrimination. For instance, the ICC-questionnaire asks whether or not the city has a business umbrella agency which is responsible for promoting diversity and fairness in employment and also whether or not there is a binding document against discrimination in the labour market.

**Tab. 10 Correlation Coefficients: ICC-Index and Discrimination<sup>18</sup>**

	Language	Colour or Race	Ethnic Group	Nationality	Religion
I. Commitment	<b>-0.48</b>	-0.34	0.10	0.26	-0.01
II. Intercultural lens	0.00	-0.23	0.07	-0.37	-0.20
a) Education system	0.04	-0.09	0.08	-0.23	-0.14
b) Neighbourhood	-0.14	-0.17	0.14	-0.16	-0.15
c) Public service	0.10	-0.17	-0.16	-0.33	-0.21
d) Business and labour market	0.05	-0.36	-0.18	<b>-0.57</b>	<b>-0.45</b>
e) Cultural and civil life	-0.23	-0.15	0.07	-0.19	-0.02
f) Public space	-0.23	-0.13	0.20	-0.15	0.06
III. Mediation and conflict resolution	-0.10	-0.03	0.02	0.02	0.17
IV. Language	-0.26	-0.27	-0.16	-0.19	-0.14
V. Relations with the local media	<b>-0.55</b>	<b>-0.46</b>	<b>-0.45</b>	<b>-0.53</b>	<b>-0.48</b>
VI. An open and international outlook	-0.28	0.15	-0.22	0.16	-0.03
VII./VIII. Intelligence/competence	<b>-0.50</b>	<b>-0.50</b>	-0.33	-0.44	-0.31
IX. Welcoming new arrivals	-0.08	-0.15	-0.10	-0.34	-0.19
X. Governance	-0.35	-0.31	-0.16	-0.35	-0.26
ICC	-0.37	-0.37	-0.15	-0.44	-0.26

Source: European Social Survey 2008, BAKBASEL.

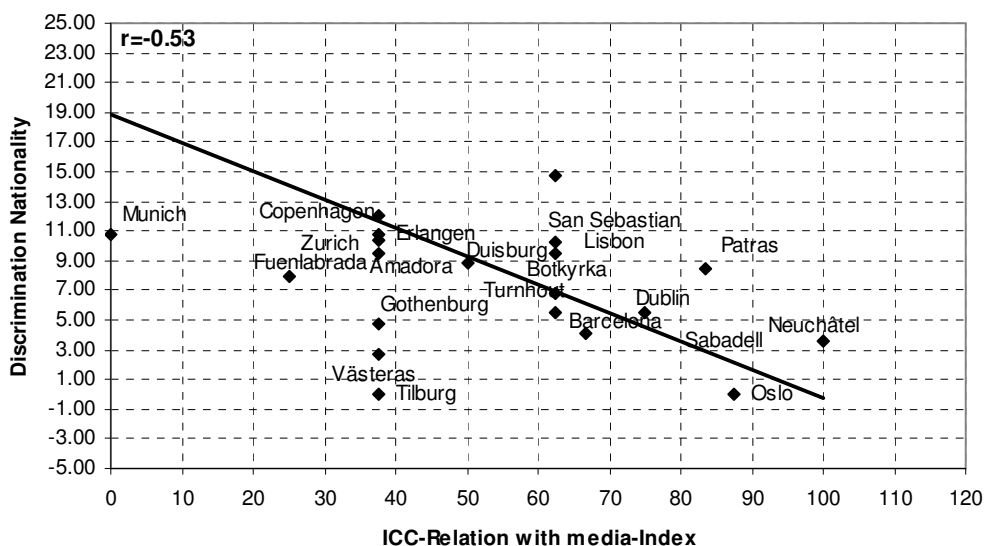
<sup>17</sup> In the sample there are very few people who feel discriminated against because of their ethnic group.

<sup>18</sup> Would you describe yourself as being a member of a group discriminated against in this country? On what grounds is your group discriminated against?

It is interesting that there is also a slightly negative relationship between the cities' policies towards the local media (measured by the ICC-subindex 'relation with local media') and the percentage of people who feel discriminated against.

The data and the relationship between the subindex 'relation with local media' and the percentage of foreign-born people who report that they feel discriminated against because of their nationality is plotted in Figure 4. It shows that in regions with cities that score higher in this subindex, the percentage of reported discrimination is lower. Local media may play a role in increasing or decreasing discrimination. Nevertheless, there are many cities with similar scores on the ICC-subindex 'relation with local media' where the level of discrimination among them varies.

**Fig. 4 Relation between the ICC-relation with media and Discrimination by nationality**



Percentage who feel discriminated against.  
Source: ICC-questionnaire, BAKBASEL.

#### 4.2.9 Political stability and resilience to crises

Is there a link between intercultural policies and political stability? Political stability is measured by three indicators. Firstly, the political instability index compiled by the EUI is used. This index indicates 'the level of threat posed to governments by social protest'. The higher the score, the more unstable the country is. Secondly, the percentage of people who strongly agree with the statement, 'Political parties that wish to overthrow democracy should be banned' is used. Thirdly, the variable 'percentage of people who trust the legal system' is applied.

From Table 11 it becomes obvious that there is just a slight correlation between all three indicators and the ICC-index. The correlation coefficients are much higher for certain ICC-subindices,



particularly for the ICC-subindex 'business and labour market' and, to a lesser extent, for the ICC-subindex 'public services'.

The indicator of political instability and the ICC-index are somewhat negatively related to each other. The relationship is stronger with the ICC-subindex 'business und labour market'. However, it should be kept in mind that the political instability index is a national indicator. Cities located in political stable countries may be more likely to implement best practice examples in the area 'business and labour market'.

**Tab. 11 Correlation Coefficients: ICC-Index and Political Stability**

	<b>Ban antidemocratic parties<sup>19</sup></b>	<b>Political Instability</b>	<b>Trust legal system<sup>20</sup></b>
I. Commitment	-0.10	-0.09	-0.01
II. Intercultural lens	<b>-0.58</b>	<b>-0.54</b>	<b>0.53</b>
a) Education system	-0.19	-0.07	-0.01
b) Neighbourhood	-0.18	-0.25	0.29
c) Public service	<b>-0.59</b>	<b>-0.58</b>	0.42
d) Business and labour market	<b>-0.80</b>	<b>-0.71</b>	<b>0.62</b>
e) Cultural and civil life	-0.24	-0.18	0.12
f) Public space	-0.24	-0.38	<b>0.52</b>
III. Mediation and conflict resolution	-0.18	-0.28	0.24
IV. Language	-0.07	-0.24	0.31
V. Relations with the local media	-0.18	0.01	0.02
VI. An open and international outlook	0.12	0.13	-0.06
VII./VIII. Intelligence/competence	-0.13	-0.12	0.19
IX. Welcoming new arrivals	<b>-0.52</b>	-0.40	0.18
X. Governance	-0.43	<b>-0.47</b>	0.34
ICC	<b>-0.47</b>	<b>-0.46</b>	0.40

Source: European Social Survey 2008, EUI, BAKBASEL.

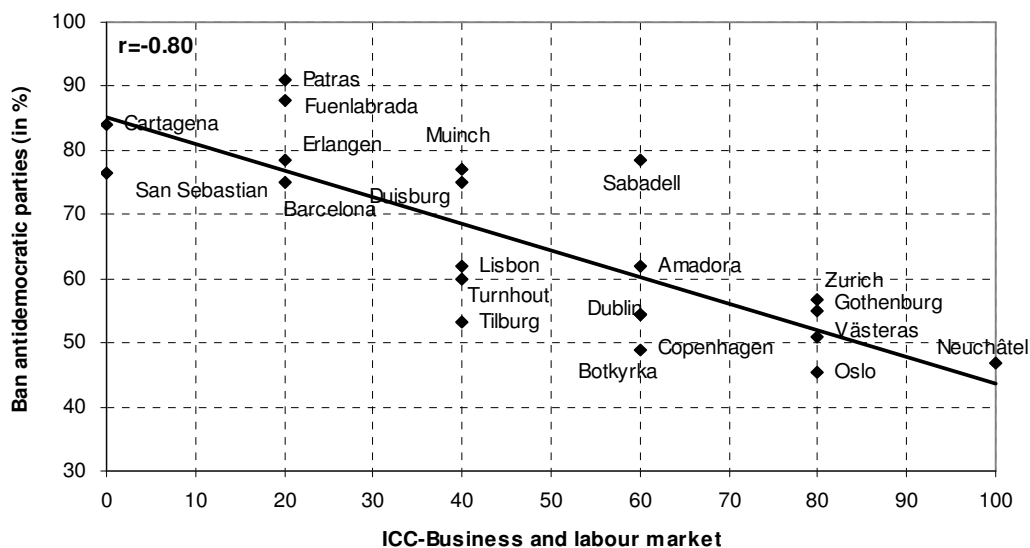
Turning to the 'percentage of people who think that anti-democratic parties should be banned' indicator, we find a correlation coefficient of -0.47 suggesting that the percentage is lower in cities which score well on the ICC-index, especially in those which score well on the ICC-

<sup>19</sup> Political parties that wish to overthrow democracy should be banned (1=agree strongly, 5=disagree strongly)

<sup>20</sup> On a score of 0-10 how much you personally trust the police (0=no trust, 10=completely trust)?

subindex 'business and labour market'. A simple correlation diagram illustrates the data and this negative association. Cities in Switzerland and in Nordic countries seem to be more inclined to adopt a higher number of best practice examples in the area 'business and labour market' than Spanish or German cities are. In contrast, the Spanish and German cities have a higher percentage of people who think that anti-democratic parties should be banned than the cities in the other countries of the sample.

**Fig. 5 Relation between the ICC- business and labour market and Ban antidemocratic parties**



Percentage of people who think the anti-democratic parties should be banned  
 Source: ICC-questionnaire, BAKBASEL.

From Table 11 it can be seen that there is also a slight relationship between the percentage of people who trust strongly the legal system and the ICC-subindices 'business and labour market' and 'public space'. The subindex 'public space' refers to measures for well-managed public spaces where different cultures can meet. In contrast, badly-managed public areas can become areas which are regarded as dangerous.<sup>21</sup>

Overall, it seems that there is some link between intercultural policies and political stability. However, to fully understand this link, the reasons behind it have to be examined in more detail.

#### 4.2.10 Community cohesion

Internationally comparable indicators measuring community cohesion are hardly available. Thus two rather general indicators from the European Social Survey are used: the percentage of people who think that other people act fairly and the percentage of people who say that most people can be trusted.

<sup>21</sup> ICC-questionnaire

From Table 12 it becomes clear that there is no relationship between these indicators and the ICC-index. Nevertheless, the correlation coefficients are higher for some subindices such as 'public services' as well as 'business and labour market'. Thus, there is a slight link between trusting other people and some areas of intercultural cities policy.

**Tab. 12 Correlation Coefficients: ICC-Index and Community Cohesion**

	Fair play <sup>22</sup>	Trust in other people <sup>23</sup>
I. Commitment	0.22	0.20
II. Intercultural lens	0.23	0.38
a) Education system	-0.06	0.07
b) Neighbourhood	-0.10	0.06
c) Public service	0.30	<b>0.48</b>
d) Business and labour market	0.20	<b>0.50</b>
e) Cultural and civil life	0.13	0.10
f) Public space	0.31	0.29
III. Mediation and conflict resolution	0.42	0.37
IV. Language	0.07	0.11
V. Relations with the local media	-0.24	-0.15
VI. An open and international outlook	-0.01	-0.19
VII./VIII. Intelligence/competence	-0.04	-0.05
IX. Welcoming new arrivals	0.20	0.42
X. Governance	0.07	0.14
ICC	0.20	0.31

Source: European Social Survey 2008, BAKBASEL.

#### 4.2.11 Quality of life

Is there a link between intercultural cities' policies as measured by the ICC-index and the quality of living in the city? To address this, we had to use a reduced sample of 13 cities for which data were available. As can be seen from Table 13, several ICC-subindices are slightly correlated with the quality of life index. For the ICC-subindices 'education system', 'neighbourhood', 'public space' and 'open and international outlook' the correlation coefficient is higher than 0.5. Therefore, there is indeed an slight association, particularly for important components of quality of life such as educational facilities and neighbourhood.

<sup>22</sup> Do you think that most people would try to take advantage of you if they got the chance or would they try to be fair? (0=take advantage, 10=most people would try to be fair)

**Tab. 13 Correlation Coefficients: ICC-Index and City data**

	Quality of Life
I. Commitment	-0.01
II. Intercultural lens	<b>0.51</b>
a) Education system	<b>0.55</b>
b) Neighbourhood	<b>0.60</b>
c) Public service	0.31
d) Business and labour market	0.12
e) Cultural and civil life	-0.08
f) Public space	<b>0.56</b>
III. Mediation and conflict resolution	0.21
IV. Language	0.20
V. Relations with the local media	0.01
VI. An open and international outlook	<b>0.61</b>
VII./VIII. Intelligence/competence	-0.15
IX. Welcoming new arrivals	0.03
X. Governance	<b>0.45</b>
ICC	0.41

Quality of life index based on Mercer QoL-Index in 2009, Number of foreign direct investments in 2009  
 Reduced sample of 13 cities  
 Source: FDI-Benchmark, BAKBASEL

#### 4.2.12 Summary

The correlation analysis revealed that there are several links between cities' intercultural policies and the performance of the city or its wider region. The ICC-index is clearly positively associated with the share of non-nationals and inhabitants' subjective feeling of safety. In addition, the varying strength of correlations between ICC-subindices and various social or policy indicators suggests that intercultural policies in certain areas matter. These include, for example:

- the relation between policies regarding local media and discrimination
- the relation between PISA results and intercultural exchange in neighbourhoods together with political representation
- the relation between intercultural policies in the areas of both 'public services' as well as 'business and labour market' and the inhabitants' perceptions of immigration
- the relation between policy measures for the business and labour market and political stability

<sup>23</sup> Would you say that most people can be trusted? (0= you can't be too careful, 10=most people can be trusted)

- the relation between the areas of 'neighbourhood', 'public space', 'education system' and quality of life
- the negative relation between the intercultural city index and the MIPEX

In nearly all cases, the correlations are not very strong. This might be due to the fact that policy measures are usually implemented by the cities, while most variables measuring outcomes refer to a larger region or even to countries. In addition, the 21 cities are a selected sample which includes many mid-sized cities where data availability and comparability is restricted constraining the overall empirical analysis. Nevertheless, further research into the above identified areas of correlation may yield interesting findings.

## 5 Regression analysis

### 5.1 Data and Methods

#### 5.1.1 Econometric method

To investigate the relationship between the intercultural cities' policies and the social or economic performance of a city (or city-region) more deeply, multiple linear regression analysis is applied.

For this statistical method, a larger sample size is preferable. Nonetheless, two OLS estimates will be carried out examining the relationship between the economic/social performance of the city using the ICC-index and other control variables. However, it should be kept in mind, that this is rather tedious with only about 20 observations possible (EU-cities).

To receive more statistically valid results, a larger sample size (of at least 50-100 cities) is required. A study using more advanced econometric methods can be carried out when enough cities have answered the intercultural cities questionnaire.

The econometric model for economic/social performance (Y) takes the following form:

$$Y = \alpha + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \gamma * Z + \varepsilon ,$$

Y is the economic/social performance of the cities/regions (e.g. safety, GDP/capita etc.).  $\alpha$ ,  $\beta$  and  $\gamma$  are fixed but unknown parameters and  $\varepsilon$  is an error term. X are social or economic variables affecting the performance of the city such as population composition or location factors (e.g. innovation, accessibility etc.). Z is the intercultural cities index (or a subindex).

The variables X and Z are used to explain the variance of performance over the different cities (city regions). In the above model, the X-variables serve as control variables, while the Z-variable deserves our full attention. We will derive hypotheses for each  $\gamma$ -parameter and test for its statistical significance in each equation. The statistical relevance of each parameter can be tested by t-statistics. The number of variables for explaining variation in performance might be reduced in some equations due to problems of multi-collinearity and the loss of degrees of freedom that will most probably lead to insignificant estimates when all variables are included in the regressions.

Most cities filled in the questionnaires once between 2009 and 2011. Only a few cities have updated their ICC-questionnaires so far. Thus, the ICC-index is only available for this time period which led to the choice of the method of cross-sectional regression.<sup>24</sup>

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<sup>24</sup> If the ICC-index had been available for several subsequent years, panel data regression would also have been possible.

## 5.1.2 Data

For the empirical analysis two data sets are applied:

- 1) a sub-set of the intercultural cities sample with 21 and 18 observations, respectively
- 2) a larger set of 188 observations for 188 European regions

The first sample has already been used for the correlation analysis. The second data set consists of 188 NUTS-2-regions from 12 countries.<sup>25</sup> The sample includes only countries where at least one intercultural city is located.

The following dependent variables are used:

- feeling of safety (see above) in the year 2009 to measure social performance
- GDP per capita (average 2000-2008) to measure economic performance (level)
- GDP per capita growth (average 2000-2008) to measure economic performance (growth)

Regional social/economic performance is determined by a large number of factors. It has been suggested that diversity is one important factor which enhances innovation and therefore economic growth. The intercultural cities model predicts that different groups (particularly different ethnic groups) can learn from each other stimulating new ideas, innovation and economic growth. Indicators which reflect immigration patterns, such as share and growth of the foreign-population or workforce (non-nationals), qualification of the foreign workforce and their economic integration (unemployment rates), serve as control variables in the intercultural cities sample.

Another independent variable is a city's share of tertiary educated workers in its labour force which can be taken as an indicator of innovation because innovation is most likely the main driver of economic growth and thus of GDP per capita or GDP growth.<sup>26</sup> The model also controls for several location factors such as global accessibility<sup>27</sup>, taxation of manpower<sup>28</sup> and labour market regulation and integration.

## 5.2 Empirical results

As outlined in chapter 4 the correlation between the intercultural cities index and the population's feeling of safety in the local area is quite strong. Thus, a multiple linear regression analysis was applied to investigate this relationship in more detail.

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<sup>25</sup> The countries are Belgium, Germany, Denmark, Spain, France, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland and the UK.

<sup>26</sup> However, this is an incomplete measure as it focuses on formal education and does not reflect hands-on experience or qualification. In addition, there are differences in educational systems which might lead to biased results. Nevertheless, it is a widely accepted indicator in international comparisons of human capital.

<sup>27</sup> A region's accessibility is a key factor in a globalised economy. Global accessibility measures how well-connected the region is with the rest of the world outside Europe which is largely determined by the travel-time proximity to one of the large airports of the world.

<sup>28</sup> The indicator of manpower taxation measures the tax burden on highly qualified employees in percentage of net income of 100,000 Euros.

To answer the question of whether or not intercultural cities' policies influence the subjective perception of safety, the following structural model is estimated<sup>29</sup>:

$$\ln(\text{SAFE}) = \alpha + \beta_1 \ln(\text{NONNAT}) + \beta_2 \ln(\text{INFLOW}) + \beta_3 \ln(\text{FUNEM}) + \beta_4 \ln(\text{FQUAL}) + \gamma \ln(\text{ICC}) + \varepsilon.$$

It is assumed that there will be a higher percentage of people who states that they feel safe in their local area if there is 'intensive' intercultural exchange. The higher the value of the ICC-index of a city, the better the intercultural exchange is in the city and in the region, respectively. Control variables are the share of non-nationals in the region (NONNAT), the annual growth rate of the non-nationals between 2000 and 2008 (INFLOW), the level of unemployment in the foreign population (FUNEM) and the qualification level (tertiary education) of the foreign workforce (FQUAL).

It is thought that the larger the percentage of non-nationals living in the region, the less safe native people feel. Further, as that percentage rises with the inflow of new immigrants, the feeling of safety declines. Similarly, higher unemployment rates among non-nationals also have a negative influence on natives' feelings of safety. Whereas, higher qualification levels among non-nationals have a positive influence on feelings of safety.

**Tab. 14 OSL estimation results for safety**

Variable	Coefficient	Statistical Significance
Constant	1.979	***
<b>ICC-Index</b>	<b>0.444</b>	<b>**</b>
Percentage of non-nationals	-0.155	**
Growth rate of non-nationals p.a.	-0.016	**
Unemployment rate of non-nationals	-0.001	
Qualification of the foreign workforce	0.276	***
R <sup>2</sup>	0.851	**

Note: Included Observations: 21

\*, \*\*, \*\*\* represent, respectively, statistical significance on the 10%, 5% or 1% error level.

Source: BAKBASEL.

Table 14 shows the regression results. As can be seen, all parameter estimates have the 'right' sign confirming predictions. The qualification of the foreign labour force has a positive and highly significant influence on the subjective perception of safety. The coefficient of the intercultural cities index is positive and statistically significant. The share of non-nationals as well as the increase of non-nationals has a negative and significant influence on the subjective perception of safety. However, the estimated coefficient of the unemployment rate of non-nationals is not statistically significant. The explanatory power of the model is high. 85% of the total variance of the dependent variable can be explained by the linear regression model.

Overall, the result of the regression suggests that intercultural exchange influences the feeling of safety of the population in the region. However, it should be kept in mind that the sample

<sup>29</sup> A log model is used because it is invariant to the scale of the variables since measuring percent changes. It gives a direct estimate of elasticity. For models with  $\gamma > 0$ , the conditional distribution is often heteroskedastic or skewed, while  $\ln(y)$  is much less so. It restricts the effect of outliers because the distribution of  $\ln(y)$  is more narrow.



size of only 21 observations is rather small. In addition, due to problems of multi-collinearity, the model is not very robust. Nevertheless, the result pinpoints the importance of intercultural exchange on the social performance of cities and regions regarding safety. It encourages further investigations into this relationship.

Does intercultural exchange enhance the economic activity of a city or region? To answer this question, the following model is employed:

$$\ln(\text{GDP/capita}) = \alpha + \beta_1 \ln(\text{AC}) + \beta_2 \ln(\text{RG}) + \beta_3 \ln(\text{TX}) + \beta_4 \ln(\text{IV}) + \beta_5 \text{GPO} + \beta_6 \ln(\text{NONNATLF}) + \beta_7 \ln(\text{NONEULF}) + \beta_8 \ln(\text{FQUAL}) + \gamma \ln(\text{ICC}) + \varepsilon ,$$

where:

GDP/capita is the economic performance of the city regions (average of GDP/capita 2000-08 in 2000 prices and PPP 1997)

$\alpha$ ,  $\beta$  and  $\gamma$  are fixed but unknown parameters,  $\varepsilon$  is an error term

AC = index of accessibility

RG = index of labour market regulation

TX = effective average tax rate for a highly qualified employees

IV = share of the tertiary educated labour force

GPO = population growth 1995-2005

NONNATLF = share of foreign workforce (non-nationals)

NONEULF = share of labour force coming from outside the EU

FQUAL = share of tertiary educated foreign labour force

ICC = Intercultural cities index

Global accessibility is a decisive location factor for a city's economic performance. It is assumed that a more liberal (less regulated) labour market also enhances economic activity. For example, unemployment rates are usually lower in more liberal labour markets. The attractiveness of a region for highly productive people depends on its tax rates for this group. A lower tax burden on high incomes should be associated with a larger number of productive people in the region enhancing the economic performance of the city. Given that innovation is driven by the ideas of the worker in modern knowledge economies, the share of the tertiary educated workforce is taken as an indicator for the innovation capacity of a city.

Immigration influences the GDP per capita of a city or region via various channels. For instance, immigration can increase the GDP per capita by relaxing labour shortages. Immigrants can bring new capital and investments. The immigration of skilled labour can increase labour productivity. In addition, it has been suggested that skilled people immigrating to other countries are more entrepreneurial.<sup>30</sup> Multi-factor productivity can increase through immigrants who share their knowledge within firms which can in turn bring about innovations. Immigrants often settle in cities which results in urban population growth and thereby strengthens the economic performance of the city via agglomeration economies. Moreover, they increase the cultural diversity of cities which is also seen as beneficial for growth.<sup>31</sup> Thus, it can be assumed that, in the long run, immigration is positively related to GDP per capita. In the short run, however, the

<sup>30</sup> Poot (2008), Ozgen, Nijkamp and Poot (2011) provide a comprehensive summary of the channels of influence of immigration on innovation and therefore on economic growth.

<sup>31</sup> Jacobs (1961), Glaeser et al. (1992).

economic impact of an influx of immigrants is less clear because immigrants may need time to re-settle and to acquire skills which are necessary in the host country.

Some of the above-mentioned positive effects don't have an immediate impact on GDP per capita. Moreover, a greater variety of individual skills increases total output as long as the productive benefits to diversity are higher than the possible costs that may arise due to difficult communication between those with different languages, cultures, etc.<sup>32</sup> An intercultural city develops and adopts policy measures to enhance the benefits of diverse populations. Thus, it is expected that the share of the foreign workforce and the share of the tertiary educated foreign workforce is positively related to GDP per capita. The population growth rate in past years is expected to be positively associated with GDP per capita, too. Policies supporting intercultural cities are likely to contribute positively to the cities' GDP per capita. The impact on economic activity of workers from non-EU countries is less clear. By increasing cultural diversity, they could have a positive influence on the economy, but because they might need more time to adopt country-specific skills which are necessary to succeed in the labour market, they might at first have a negative influence.

**Tab. 15 OLS-estimation for economic performance (GDP/capita)**

<b>GDP per capita 2000-2008</b>	<b>Coefficients</b>	<b>Statistical Significance</b>	<b>Coefficients</b>	<b>Statistical Significance</b>
Constant	6.684	***	6.325	***
Accessibility	0.601	*	0.619	*
Labour market regulation	0.043		0.061	
Share of the tertiary educated labour force	0.379	**	0.366	*
Taxation manpower	0.007		0.023	
<b>ICC</b>	<b>-0.036</b>		-	-
<b>ICC-subindex: Intercultural lens</b>	-	-	<b>0.022</b>	
Population growth 1995-2005	0.530		1.025	
Share of foreign workforce	0.260	*	0.253	
Share of foreign workforce (non-EU)	-0.244	***	-0.240	**
Tertiary educated foreign workforce	0.442	***	0.445	***
R <sup>2</sup>	0.920	***	0.919	***

Note: Included Observations: 18.

\*, \*\*, \*\*\* represent, respectively, statistical significance on the 10%, 5% or 1% error level.

Source: BAKBASEL.

Table 15 displays the regression results for the intercultural cities sample. The results show that a city's economic activity can be explained by its global accessibility, its share of tertiary educated in its workforce (total and foreign) and its share of foreigners (non-nationals) in its workforce. The coefficient of the variable 'share of the foreign workforce from outside the EU' has a statistically significant negative sign suggesting that, in the short run, immigration from outside the EU reduces the economic performance of the city. The coefficient of the variable taxation and regulation of the labour market is not statistically significant. The coefficient of the intercultural cities index is insignificant, too. Using the subindex 'intercultural lens' of the total ICC-

<sup>32</sup> Ottaviano and Peri (2004).

index including the policy measures to promote intercultural exchange in the area 'business and labour market', the regression results are similar (compare table 15, columns three and five). The intercultural cities subindex is again statistically insignificant.

To address the problem of the small sample of intercultural cities taken and to minimize the effect of the selection made, the relation between 'being an intercultural city' and economic performance for a larger sample (about 188 city-regions) should be examined. In order to do so, the econometric method of multiple OLS regressions has been applied again. The purpose of this method is to show which factors help explain the variance in economic performance among different regions under consideration. The main point of investigation is whether 'being an intercultural city' provides a statistically significant contribution towards explaining economic performance of cities and their corresponding regions over the last decade.

To explain regional economic activity, the following model is used:

$$\ln(X/P) = \alpha + \beta_1 \text{GPOP} + \beta_2 \ln(\text{AC}) + \beta_3 \ln(\text{RG}) + \beta_4 \ln(\text{TX}) + \beta_5 \ln(\text{IV}) + \beta_6 \ln(\text{MIPLM}) + \gamma D + \varepsilon ,$$

where

X/P is the economic performance of the cities (average of GDP per capita 2000-2008)

$\alpha$ ,  $\beta$  and  $\gamma$  are fixed but unknown parameters,  $\varepsilon$  is an error term

GPOP = average annual population growth rate between 1995 and 2005

D = 1 if intercultural city in the region, otherwise D = 0

AC = index of accessibility

RG = index of labour market regulation

IV = share of the tertiary educated labour force

TX = effective average tax rate for a highly qualified employee

MIPLM = MIPEX subindex: labour market mobility

D = 1 is a dummy variable which signals the commitment of the city as an intercultural city for all regions where at least one intercultural city is located; D = 0 for all other 163 randomly chosen European city-regions.

The larger regional data sample does not include data on the composition of the population or immigration. It has been assumed that in most European regions, population growth is driven by immigration. It is also assumed that immigration has a positive impact on economic activity, although there is usually a time-lag. Therefore, the average annual growth rate of the population between 1995 and 2005 has been taken into consideration. As in the model above, the location factors of accessibility and taxation, as well as the qualification of the workforce are taken into account. In addition, national regulations and policy measures regarding the integration of immigrants into the labour market are considered.

In a similar way, we can ask whether or not intercultural exchange enhances economic growth of a city or region. To answer this question, the equation is modified as follows:

$$\text{gGDP} = \alpha + \beta_1 \ln(\text{AC}) + \beta_2 \ln(\text{RG}) + \beta_3 \ln(\text{TX}) + \beta_4 \ln(\text{IV}) + \beta_5 \ln(\text{MIPLM}) + \gamma D + \varepsilon + \ln(\text{GDP in the year 2000})$$

gGDP is the average GDP growth over the period 2000 to 2008. The equation includes the variable GDP in the year 2000 which takes convergence effects into account since different countries start from different performance levels. Stronger regions usually grow at below average rates while weaker regions produce higher growth rates to catch up.

The table below shows the estimation results of the multiple OLS regression for the larger regional data sample for both the level of GDP per capita and for the growth of GDP growth.

**Tab. 16 OLS-estimation for economic performance (GDP/capita and GDP/capita growth), 2000-2008**

	Coefficients GDP/capita	Statistical Significance	Coefficients GDP/capita growth	Statistical Significance
Constant	5.344	***	0.100	***
Population growth 1995-2005	6.947	*	–	–
Accessibility	0.956	***	-0.010	
Regulation labour market	-0.093	**	-0.002	**
Taxation manpower	0.231		-0.007	*
Share of tertiary educated workforce	0.134	*	0.014	***
<b>ICC Dummy</b>	<b>0.207</b>	<b>***</b>	<b>0.000</b>	–
MIPEX labour market mobility	0.193	***	0.008	***
GDP per capita in 2000	–	–	-0.006	**
R <sup>2</sup>	0.402	***	0.397	***

Note: Included Observations: 188.

\*, \*\*, \*\*\* represent, respectively, statistical significance on the 10%, 5% or 1% error level.

Source: BAKBASEL.

The second column of Table 16 displays the results for the GDP per capita. Apart from taxation, all variables have a statistically significant influence. Earlier population growth has a positive effect on GDP per capita. The effect, however, is only statistically significant on the 10% error level. The level of regional economic activity can be explained by accessibility and the share of tertiary educated workforce. Both variables are highly significant. Higher (or less liberal) regulation of the labour market significantly reduces performance, while national regulations and policy measures to integrate foreigners into the labour market clearly have a positive impact. The effect of having an intercultural city located in the region has a highly significant positive influence on economic activity, too. The regression's overall level of explanatory power, however, is not very high. Thus, there must be missing variables which could explain regional economic performance.

The estimated coefficients of the growth regression model are smaller than those for the model explaining GDP per capita. This is caused by the fact that the mean of the dependent variable is lower in the growth regression equation. The mean of the average growth rate is 0.015.

From Table 16 column 4, the regression results reveal that economic growth can be explained by the share of the tertiary educated workforce, regulation of the labour market, the national framework conditions for labour market integration and the taxation of labour. All coefficients of these variables exhibit the expected statically significant signs. The coefficient of the convergence term (GDP per capita in 2000) shows a statistically significant negative sign implying that poorer regions grow faster than richer ones.

In contrast to the regression results for the level of economic performance, the existence of intercultural cities in a region does not affect regional GDP growth.

To sum up, the OLS estimates show that intercultural policies impact feelings of safety even after controlling for immigration patterns (share and growth rates of non-nationals, unemployment rates and education of the foreign workforce). A link between intercultural policies and economic performance could not be established using a small intercultural cities sample.

Taking a larger sample of regions (those with and without intercultural cities), a relationship between the 'commitment to being an intercultural city' and the economic activity of the region emerged. The underlying relationship, however, is less clear. Are wealthier city-regions more likely to commit to the intercultural model or do cities which commit themselves to the intercultural cities approach install policies which enhance economic activity? An explanation could be that the ICC-dummy is a proxy for 'good governance' and cities with good governance are more likely both to commit to the intercultural cities project and to be economically successful.

To conclude, the selected sample of about 20 rather heterogeneous cities is too small to produce reliable results regarding the investigation of the impact of the intercultural cities model on the social and economic performance of cities. However, the sample of 188 European city-regions is large enough and the results for the ICC-dummy are interesting and would be a promising avenue for future research.

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## 7 Appendix: Indicators: Overview

	Indicator name	Indicator (exact value)	Value	Main source	Year	Regional coverage
<b>Economic performance</b>						
1	GDP per capita	GDP per capita (in EUR, exchange rates)	Euro p.c.	ICC-Database	2007-10	City
2	GDP per capita 2000-2008	Real GDP per capita (at 2000 prices, PPP)	Euro p.c.	BAKBASEL	2000-2008	Nuts2 Regions
3	GDP growth	Average annual growth rate GDP per capita (at 2000 prices, PPP)	%	BAKBASEL	2000-2008	Nuts 2 Regions
4	Tax burden	Taxation for highly productive manpower	Index-Value	BAKBASEL, ZEW	2009	Region
5	Patents	Number of patents	No	BAKBASEL	2009	Nuts 2 Region
6	Global accessibility	Global accessibility (Index, Enlarged Alpine Space 2002 = 100)	Index-Value	BAKBASEL	2008	City
7	Labour market regulation	Index of labour market regulation (0=no regulation, 6=restrictive)	Index	BAKBASEL	2008	
<b>Composition of population</b>						
8	Stock of non-nationals	Non-nationals as a percentage of the total population	%	Statistical Office of the respective country/region	2000/2009	City
9	Change of non-national	Average annual growth rate of non-nationals	%	Statistical Office of the respective city/country	2000-2009	City
10	Educated workforce with tertiary education (non-nationals)	The foreign total labour force (age 15+) according to the highly skilled qualification level as a proportion of the total non-national labour force. The qualification level is defined as follows: high = third level. The definition follows the European Labour Force Survey.	%	European Labour Force Survey	2009	Region, mostly NUTS 2
11	Non-national work force	Total foreign labour force (age 15+) as a percentage of the total labour force	%	European Labour Force Survey	2009	Region, mostly NUTS 2
12	Non-EU workforce	Labour force from non-EU countries as % of labour force	%	European Labour Force Survey	2009	Region, mostly NUTS 2
<b>Safety and health care</b>						
13	Subjective feeling of safety	% of people who feel 'safe' or 'very safe' walking alone in a local area after dark.	%	European Social Survey 2010	2008	Region, mostly NUTS 2
14	Trust in police	Perception of trust in police by the population (10= trust completely) % of people who trust	%	European Social Survey	2008	Region, mostly NUTS 2
<b>Employment</b>						

	<b>Indicator name</b>	<b>Indicator (exact value)</b>	<b>Value</b>	<b>Main source</b>	<b>Year</b>	<b>Re-gional cover-age</b>
15	Unemployment non-nationals	Unemployment rate of non-nationals	%	European Labour Force Survey	2009	Region, mostly NUTS 2
16	Ratio of unemployment rates	Ratio of unemployment rates (nationals/non-nationals)	%	European Labour Force Survey	2009	Region, mostly NUTS 2
<b>National regulations</b>						
18	MIPEX	Migration integration policy index: 100% = best practice	%	MIPEX	2010	Country
<b>Education integration</b>						
19	PISA	Scores in reading/maths and science of native and immigrants Point differences between immigrant and native children	Scores	PISA	2009	Country
<b>Perception of immigration</b>						
20	Same race	Allow many/few immigrants of same race/ethnic group as majority: From allow many to come and live here to allow none	%	European Social Survey	2008	Region, mostly NUTS 2
21	Different race	Allow many/few immigrants of different race/ethnic group from majority: From allow many to come and live here to allow none	%	European Social Survey	2008	Region, mostly NUTS 2
22	Immigrants from poorer countries outside Europe	Allow many/few immigrants from poorer countries outside Europe: From allow many to come and live here to allow none	%	European Social Survey	2008	Region, mostly NUTS 2
23	Perception indicator of immigrants' influence on country's economy	Question: Is immigration good or bad for your country's economy? Index from 0 to 10: 0 = Is bad for the Economy; 10 = Is good for the Economy % who answer good (7-10)	%	European Social Survey	2008	Region, mostly NUTS 2
24	Perception indicator of immigrants' influence on country's cultural life	Question: Is the country's cultural life undermined or enriched by immigrants? Index from 0 to 10: 0 = Cultural Life undermined; 10 = Cultural Life enriched % who states enrich	%	European Social Survey	2008	Region, mostly NUTS 2
25	Perception indicator whether immigrants make the country a better or worse place to live	Question: Do immigrants make the country a better or worse place to live? Subjective Index from 0 to 10: 0 = Worse place to live; 10 = Better place to live;	%	European Social Survey	2008	Region, mostly NUTS 2
<b>Antidiscrimination</b>						
26	Perception indicator about discrimination	Perception of being discriminated against (due to nationality, religion, language, ethnic group or race)	%	European Social Survey	2008	Region, mostly NUTS 2
<b>Political stability</b>						
27	Trust in legal system	Perception of trust in legal system by the population (10= trust completely) % who trust	%	European Social Survey	2008	Region, mostly NUTS 2



	<b>Indicator name</b>	<b>Indicator (exact value)</b>	<b>Value</b>	<b>Main source</b>	<b>Year</b>	<b>Re- gional cover- age</b>
28	Political stability	The overall index on a scale of 0 (no vulnerability) to 10 (highest vulnerability) has two component indexes—an index of underlying vulnerability and an economic distress index.	Index	EIU	2010	country
<b>Community cohesion</b>						
28	People act fairly	Percentage of people thinking that people would try to be fair (0=take advantage, 10=most people would try to be fair)	%	European Social Survey	2008	Region, mostly NUTS 2
30	Trust other people	Percentage of people thinking that most people can be trusted (0= you can't be too careful, 10=most people can be trusted)	%	European Social Survey	2008	Region, mostly NUTS 2
<b>Quality of life index</b>						
31	Quality of life index	Quality of life for expats (New York = 100)	Index	FdI-Benchmark	2009	City