

# DOES MULTILINGUALISM PAY OFF? REFLECTIONS ON THE ECONOMICS OF LANGUAGE

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- **Basic notions**
  - language, dialect
  - multilingualism
  - prosperity
  - language economics
- **Types of multilingualism**
  - individual
  - societal (collective)
- **Empirical research**
  - states of the world vs multilingualism
  - job offers vs multilingualism
  - financial standing of individuals vs multilingualism
- **Conclusions**



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# DEFINITIONS



**Language** is one of the information subsystems, which constitute a system of state administration and management.

It enables interpersonal and social communication in the fields of administration, economy and culture; **it also builds a community of its users, its prestige and economic potential.**

For practical reasons, it was considered that only the **official or administrative languages** would be taken into account.

We used the category "**principal languages**" for specific states, according to the Ethnologue database.

No distinction has been made between language and dialect.

Linguistic diversity (“logodiversity”) of specific countries was represented by the **Language Diversity Index**, according to the definition adopted in the literature (Greenberg 1956).

"Greenberg's Diversity Index (LDI) is the probability that two people selected from the population at random will have different mother tongues" [Wikipedia]

*LDI ranges from 0 to 1.*

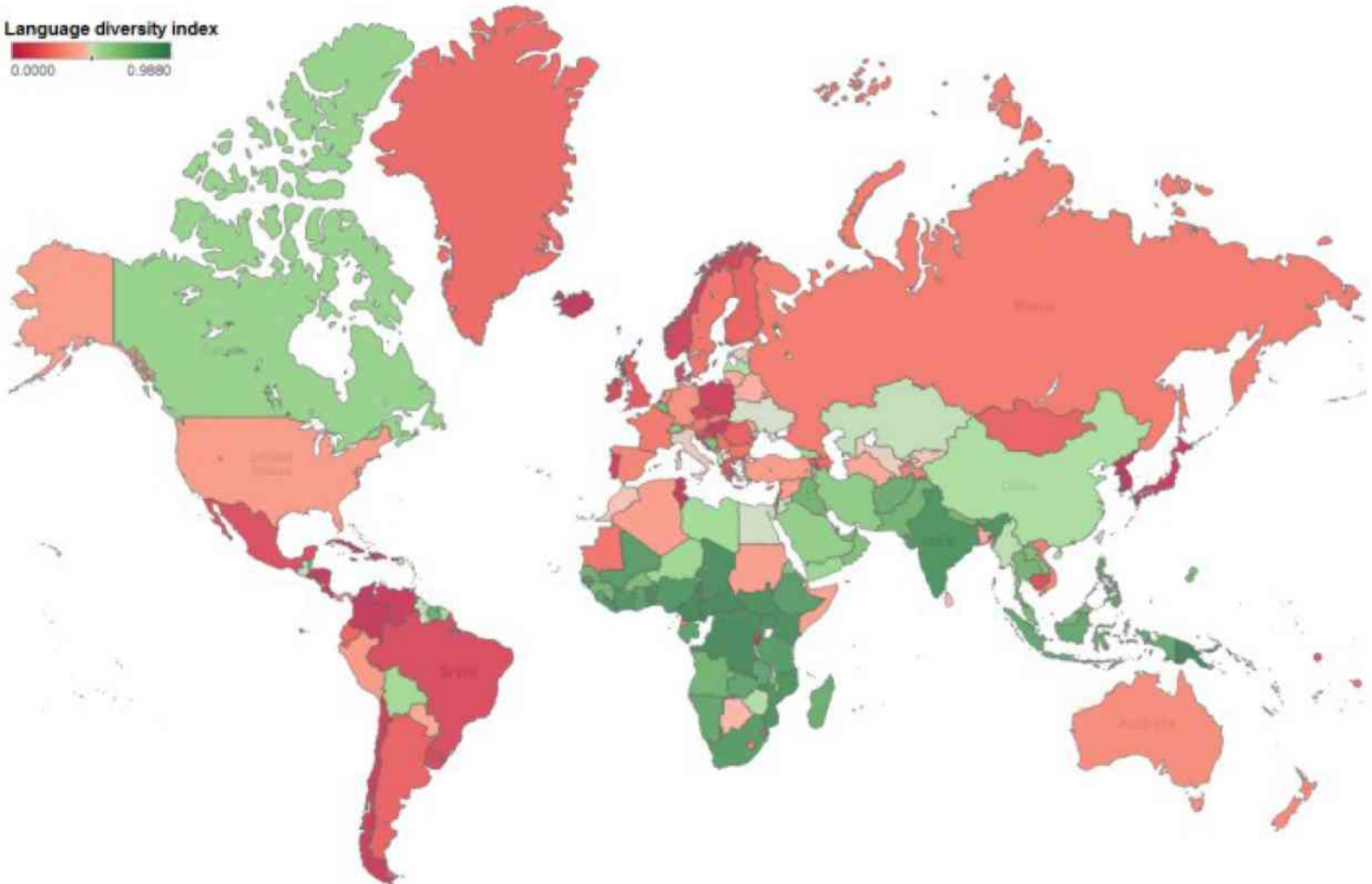
*0 means that all citizens speak the same tongue*

*1 means that every citizen speaks a different tongue*



# Dialect / Language Diversity Index

Language diversity index





## Language > Linguistic diversity index: Countries Compared

[Home](#) / [Country Info](#) / [Stats](#) / [Language](#) / Linguistic diversity index

DEFINITION: LDI.

CONTENTS MAP Q+A

### Totals

#	COUNTRY	AMOUNT	DATE	GRAPH
1	<a href="#">Papua New Guinea</a>	0.99	2009	
2	<a href="#">Vanuatu</a>	0.972	2009	
=3	<a href="#">Tanzania</a>	0.965	2009	
=3	<a href="#">Solomon Islands</a>	0.965	2009	
5	<a href="#">Central African Republic</a>	0.96	2009	
6	<a href="#">Chad</a>	0.95	2009	
7	<a href="#">Democratic Republic of the Congo</a>	0.948	2009	
8	<a href="#">Cameroon</a>	0.942	2009	





186		<a href="#">Iceland</a>	0.019	2009	
187		<a href="#">Malta</a>	0.016	2009	
188		<a href="#">Tonga</a>	0.014	2009	
189		<a href="#">Tunisia</a>	0.012	2009	
190		<a href="#">Jamaica</a>	0.011	2009	
=191		<a href="#">Maldives</a>	0.01	2009	
=191		<a href="#">Saint Kitts and Nevis</a>	0.01	2009	
193		<a href="#">Saint Vincent and the Grenadines</a>	0.009	2009	
=194		<a href="#">El Salvador</a>	0.004	2009	
=194		<a href="#">Rwanda</a>	0.004	2009	
=194		<a href="#">Burundi</a>	0.004	2009	
197		<a href="#">South Korea</a>	0.003	2009	
198		<a href="#">Samoa</a>	0.002	2009	
199		<a href="#">Cuba</a>	0.001	2009	
200		<a href="#">Haiti</a>	0.0	2009	

**Multilingualism is the ability of an individual or of a group to communicate in at least two languages.**

**Multilingualism can be seen as a feature or ability of individual speakers or as a feature of whole societies.**

**There exist many varieties of individual and societal multilingualism.**

## Types:

- voluntary multilingualism (various motivations)
- decreed (compulsory) multilingualism
- intermediate forms

**The concept has many nuances, so it needs to be described in more detail in each case. In particular one should consider:**

- number of languages
- axiology (status of every tongue, bilingualism vs diglossia)
- level of language competence (low, high, active, passive etc.)
- context of use (professional, neo-colonial etc.)
- sociological aspects (age, gender, origin)



## Legal perspective:

- voluntary multilingualism
- decreed multilingualism
- intermediate forms

## Structural perspective:

- mosaic-like multilingualism
- melting-pot multilingualism
- intermediate forms

## Aspects:

- number of languages
- axiology
- motivations of l. users
- language competence
- context of use
- sociological aspects
- mutual relations of language groups
- active / passive

**Prosperity is a complex notion (it is an euphemism).**

Financial measures of prosperity:

- GDP (biased by the size of a state)
- GDP per capita
- PPP or Purchasing Parity Power
- average / median salary

Complementary measures of prosperity:

- life expectancy
- infant mortality
- level of literacy
- substitute measures (Big Mac, clean air, 1 sq. meter of an apartment...)

**The economics of language deals with the financial aspects of managing the language system of a country.**

In particular, it answers the following questions:

- what are the financial implications of managing an official language?
- what are the financial implications of maintaining minority languages?
- what are the financial implications of developing multilingualism?
- what are the financial implications of external language promotion?

**The economics of language is closely related to language policy, however it is (or at least should be!) devoid of any reference to ideology.**

Last but not least:

**Language economics** and **language economy** are quite different issues...



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# DATA SOURCES



**We can divide accessible sources into 4 groups:**

- 1) Economic
- 2) Linguistic
- 3) General
- 4) Community-led resources

## Just a list...

- 1) World Bank
- 2) OECD [Organisation for Economic Co-operation and Development]
- 3) Central Intelligence Agency (CIA)
- 4) NationMaster [statistical database]
- 5) Eurobarometer and Eurostat
- 6) Ethnologue
- 7) SIL [Summer Institute of Linguistics]
- 8) Quora [question-and-answer website]
- 9) National statistical institutions
- 10) Wikipedia
- 11) Other social media



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# PROBLEMS, DIFFICULTIES

## 1) Incomplete, scarce data (or no data at all)

- many official statistics do not cover foreign language skills
- some countries do not create and/or publish statistics at all

## 2) No clear distinctions

- language vs dialect
- official / administrative / principal / minority language

## 3) Incompatible data and concepts

- parameter values in various countries
- countries vs dependent territories

## 4) Incomplete data on labour market

- individual income
- job offers

Akrotiri and Dhekelia	Falkland Islands	New Caledonia	Tokelau
Åland Islands	Faroe Islands	Niue	Turks and Caicos Islands
American Samoa	French Polynesia	Norfolk Island	United States Virgin Islands
Anguilla	Gibraltar	Northern Mariana Islands	Wallis and Futuna
Aruba	Greenland	Pitcairn Islands	
Bermuda	Guam	Puerto Rico	Andorra
British Virgin Islands	Guernsey	Saint Barthélemy	Liechtenstein
Cayman Islands	Hong Kong	Saint Helena, Ascension and Tristan da Cunha	Monaco
Christmas Island	Isle of Man	Saint Martin	San Marino
Cocos (Keeling) Islands	Jersey	Saint Pierre and Miquelon	Vatican City
Cook Islands	Macau	Sint Maarten	
Curaçao	Montserrat	Svalbard	

- 1) Very small size
- 2) No, partial or disputed sovereignty
- 3) Often high income (GDP)
- 4) Often no statistics
- 5) Sometimes illicit financial activities as a source of revenue (e.g. money laundering, tax avoidance assistance)

**Some researchers consider them as microlaboratories of multilingualism. I do not.**



## Austria

[Print](#)

<b>COUNTRY</b>	<b>LANGUAGES</b>	<b>STATUS</b>	<b>MAPS</b>	<b>FEEDBACK</b>
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<b>Population Full</b>	8,712,000 (2017 World Factbook)
<b>Principal Languages</b>	Standard German
<b>Literacy Rate</b>	98% (2011 USD\$)
<b>Immigrant Languages</b>	Arabic (17,600), Bosnian (34,900), Bulgarian (5,390), Chinese (9,960), Dutch (3,800), French (10,200), Greek (3,100), Iranian Persian (10,700), Italian (10,700), Macedonian (5,150), Northern Zazaki, Polish (30,600), Portuguese (3,200), Romanian (16,900), Russian (40,000), Serbian (177,000), Spanish (9,980), Swedish (2,680), Tagalog (5,580), Tosk Albanian (28,200), Turkish (197,000), Yeniche

## European Countries

Country	Official and national Languages	Other spoken Languages
Albania	Albanian (Shqip, Tosk (Toskë) is the official dialect)	Shqip-Gheg dialect (Gegë), Greek, Italian
Andorra	Catalan	French, Castilian, Portuguese
Austria	German, Slovene (official in Carinthia), Croatian and Hungarian (official in Burgenland)	



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# METHOD



**Correlation measures between  
economic prosperity  
and:**

- number of principal languages
- percentage of the population speaking English
- language diversity

No data on job offers yet (it will come).

## How can economic prosperity be measured?

- **collective statistics (GDP per capita, PPP etc.)**
- **individual statistics**
  - average income
  - average salaries
  - number of open positions (offers of employment)



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# RESULTS

## Economic prosperity vs principal languages

Scope: **entire world**

Number of countries under investigation: **185**

Average no of principal languages: **1.611**

Measure: correlation coefficient

Correlation value: **0.061**

Conclusion:

***The number of principal languages is not correlated with economic prosperity of a country***

## Economic prosperity vs percentage of English

Scope: **entire world**

Number of countries under investigation: **109**

Average percentage of population speaking English: **39,8%**

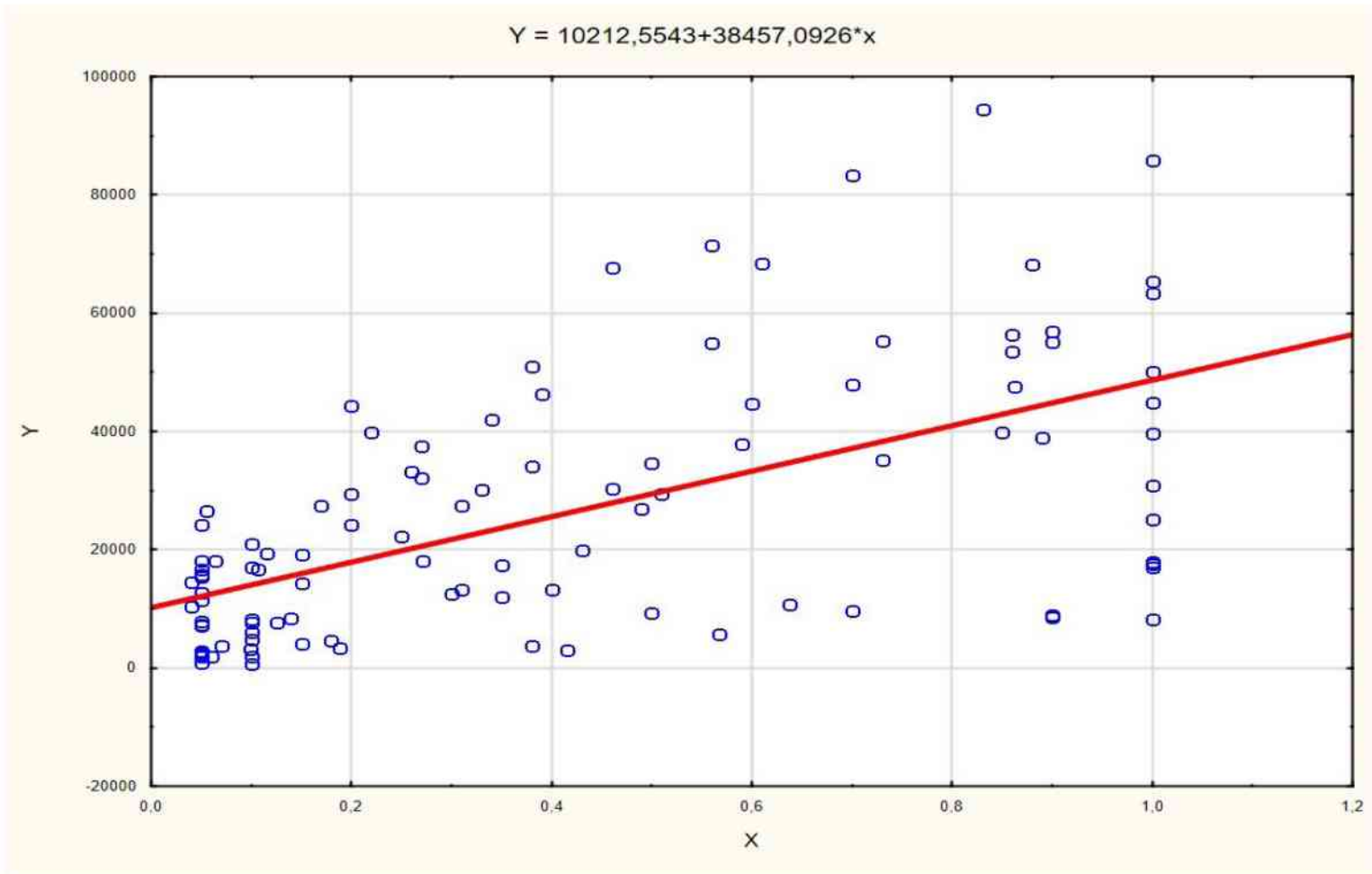
Measure: correlation coefficient

Correlation value: **0,601**

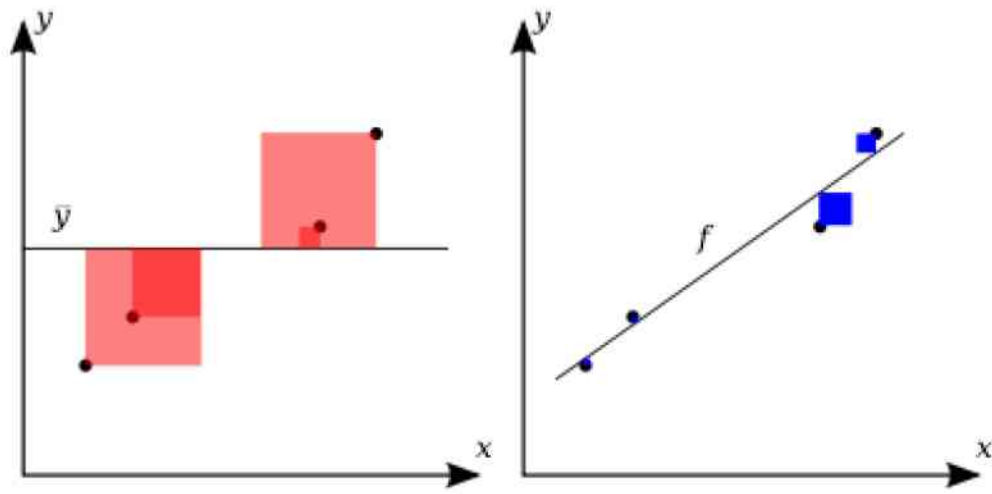
Conclusion:

***The level of English (as a 1<sup>st</sup> or 2<sup>nd</sup>) is strongly, positively correlated with economic prosperity of a country***

## Economic prosperity explained by the percentage of English



How much GDP (Y, independent variable) does EFL (dependent variable) explain?



$$A = 38457.09$$

$$B = 10212.55$$

$$R^2 = \mathbf{0.36}$$

$$\text{Error} = 300212682.55$$

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

The better the linear regression (on the right) fits the data in comparison to the simple average (on the left graph), the closer the value of  $R^2$  is to 1. The areas of the blue squares represent the squared residuals with respect to the linear regression. The areas of the red squares represent the squared residuals with respect to the average value.

## Economic prosperity vs language diversity (LDI)

Scope: **entire world**

Number of countries under investigation: **177**

Average value of LDI (language diversity): **0,452**

Measure: correlation coefficient

Correlation value: **-0,174**

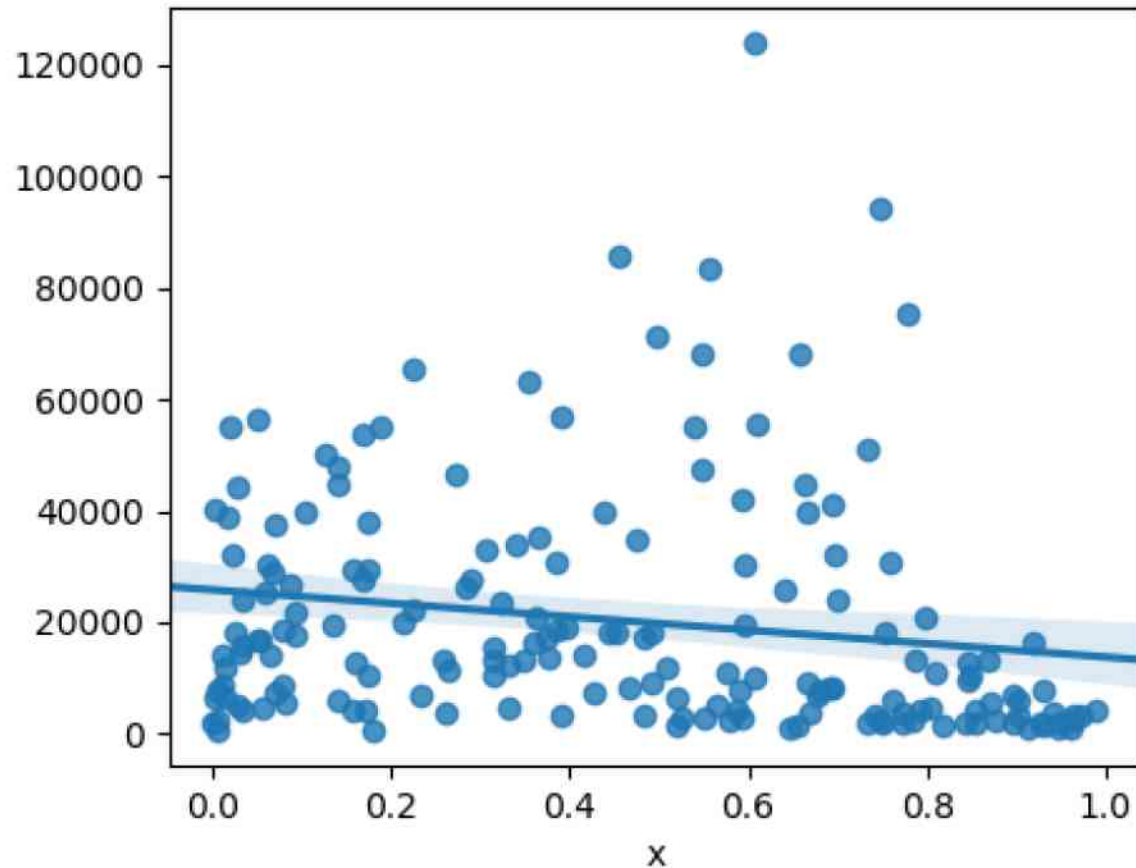
Conclusion:

*Language diversity is weakly, negatively correlated with economic prosperity of a country*



## Economic prosperity vs language diversity (LDI)

$$f(x) = -12046.1477345136x + 25808.8411159441$$



Scope: **OECD**

Number of countries under investigation: **36**

Average value of principal lang.: **1,28**

Percentage of English speaking: **55,6%**

Average value of LDI: **0,28**

Correlation values:

Principal lang. vs GDPpc: **0,214**

English speakers vs GDPpc: **0,655**

LDI vs GDPpc: **0,312**

Scope: **EU**

Number of countries under investigation: **28**

Average value of principal lang.: **1,29**

Percentage of English speaking: **53,4%**

Average value of LDI: **0,27**

Correlation values:

Principal lang. vs GDPpc: **0,089**

English speakers vs GDPpc: **0,603**

LDI vs GDPpc: **0,243**

Scope: **EUROPE**

Number of countries under investigation: **35**

Average value of principal lang.: **1,37**

Percentage of English speaking: **51,7%**

Average value of LDI: **0,29**

Correlation values:

Principal lang. vs GDPpc: **0,0**

English speakers vs GDPpc: **0,682**

LDI vs GDPpc: **0,232**

Statistics on the share of foreign language proficiency requirements in job offers.

Basic observations:

*In Poland statistically foreign languages are not required often. The pilot study showed that only about 10% of the offers contain foreign language requirements.*



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# CONCLUSIONS

- 1) Multilingualism is a complex notion, no clear definition
- 2) There is a relationship between societal and individual multilingualism
- 3) There is no correlation between prosperity and the number of principal languages in a country – conclusion:  
*societal multilingualism does not pay off!*
- 4) There is a negative correlation between prosperity and the language diversity of a country (LDI) – conclusion:  
*societal multilingualism not only does not pay off, it also costs extra*
- 5) There is a strong, positive correlation between prosperity and percentage of population speaking English:  
*societal multilingualism pays off, provided one of the spoken languages is English (also as L1)*

- 1) Societal multilingualism **IS AN ASSET** in some rich and stable countries (e.g. Switzerland or Luxembourg)
  - it supports international business (but not local businesses!)
  - it maintains neocolonial dependencies (point of view of dependent countries)
  - it contributes to the drainage of local markets (*idem*)
  
- 2) Societal multilingualism **IS NOT AN ASSET** in poor, intermediate, and even some developed countries
  - it supports deep social, ethnic and/or national divisions that weaken the integrity of the community and may even lead to total disintegration (e.g. so called ex-countries)
  - its management is costly (education, public communication etc.)
  - it encourages emigration



- 1) Individual multilingualism **IS AN ASSET** in just some contexts:
  - rich and stable countries with sound economy open to international business
  - tourism and transport
  - international politics, culture, science
- 2) Individual multilingualism is a **VALUABLE SOFT COMPETENCE** in general
  - it encourages open attitudes and helps avoid unnecessary conflicts
  - it stimulates creativity

**BUT**

Individual (and societal) multilingualism is a costly activity that only rich individuals (or societies) can afford. It has negative effects: costly education and public communication, loss of intellectual potential of individuals on studying languages...

## Why do people blindly believe in the magic power of multilingualism?

Because ordinary people listen to experts. And experts are academics, a sort of intellectual elite where multilingualism is a part of all successful curricula.

Because ordinary people from poor countries observe the wealthiest and dream of being “like them”.

They try to copy apparent reasons of their success, while real reasons are different.

# A subjective view...

In my opinion science and academia are the only fields of human activity, where multilingualism is an **unconditionally valuable and indispensable asset**.

But the same is not true outside academia.



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# THANK YOU FOR YOUR ATTENTION

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