

# Horizon2020 - Europeanisation Leading to Divergence?

## Introduction

Europeanisation is defined as the domestic consequences of the process of European integration (Töller, 2012). The latest version of the Framework Programmes for Research and Technological Development, *Horizon2020* forms a strong setting to investigate such domestic consequences. *Horizon2020* integrates the European research agenda by publishing calls for research to which any actor in society can apply and receive appropriate funding. Given the size of the programme, the budget for the 2014-2020 period sums to €77 billion (European Commission, 2019), and its well defined objectives: boosting research, science and innovation outcomes, making Europe's industry more competitive and finding solutions to key societal challenges, *Horizon2020* leaves a large impact on the European innovation scene.

*Horizon2020* fits within the larger Europe2020 strategy that focuses on “smart, sustainable and inclusive growth rooted in coordination of national and European policy” (European Commission, 2010). This strategy forms Europe's main response to increasing global competition and is necessary in order to sustain economic growth. Long-term economic growth can only result from production factors becoming more productive. The productivity of these production factors, mainly capital and labour, is in turn determined by the state of technology. Relatively developed economies, that are economies on the technological frontier, can however only become more productive through breakthrough innovations, that are radical and disruptive innovations often based on state-of-the-art technologies. In order to foster such innovations and thus economic growth, sound innovation policy is paramount. [For a more elaborate explanation see Aghion and Howitt (2009)].

Each of the 28 member-states is close to the technological frontier and thus each of these states requires a similar growth strategy. *Horizon2020* foresees in this by ensuring coherence in member-states' individual approaches and by functioning as a platform that sets common objectives, coordinates efforts, increases transparency and leads to more cooperation. Moreover, the supranational approach of *Horizon2020* mitigates member-states individual tendencies to underinvest in innovation due to the positive externalities innovation imposes on other (European) states.

Yet, despite member-states being comparable in their policy requirements, member-states substantially differ in their innovation climate as well as their level of productivity. Because the obtainment of funding in *Horizon2020* is based on competition between innovation-proposals, *Horizon2020* has the potential to affect member-states differently. Because, more developed member-states are by definition more productive and typically have a stronger innovation climate, more developed member-states might be more successful in capturing *Horizon2020*'s resources, resulting in a structural participation imbalance across member-states. This paper will therefore seek to answer whether more developed member-states participate disproportionately in the *Horizon2020* programme.

## Literature review

The European economic growth literature describes a process of club convergence in which GDP per capita is converging among groups of member-states but to different levels of GDP per capita across these groups and at different speeds (Fischer & Stirböck, 2006). Borsi and Metiu (2015) and von Lyncker and Thoennessen (2017) find the formation of these clubs to correlate heavily with geographical regions. Moreover, Bratkowska and Riedl (2012) highlight the importance of initial levels of physical and human capital in the formation of clubs. In eastern and central Europe, Eurozone membership is often found to be one of the main factors explaining clubs [Monfort et al (2013) and Kutan & Yigit (2007)]. In addition, the length of EU membership is found to have a relatively stronger effect on growth in these countries (Cuaresma et al, 2008). Yet, no convergence of these central, eastern and southern clubs is observed with northern and western European clubs. [See for instance: Amplatz (2003), Borsi & Metiu (2015), Bratkowska & Riedl (2012) and Färe et al (2006)]. The process of club-convergence implies overall divergence in GDP per capita and has profound implications for the process of Europeanisation as European policy might face ever higher levels of misfit, deteriorating socio-economic cohesion and political support for the European project.

One of the objectives of Horizon2020 is to increase the participation of less performing member-states compared to its predecessor, Framework Programme 7 (FP7) (European Commission, 2011). This stimulation might help breaking the different convergence patterns by disproportionately pushing the productivity of less performing member-states and thus their convergence point to a higher level of GDP per capita. However, countries implement national innovation policies in addition to Horizon2020 which might either complement or offset the effects of Horizon2020. The Netherlands for instance ran a strategy which complemented the objectives of Horizon2020 by its mission orientated approach and tailoring towards breakthrough innovation (Keijzer, 2019), but Horizon2020 might have crowded-out public expenditure in other member-states and thus led to a negative net-effect in some states.

To summarize the above findings, on a macroeconomic level the European Union seems to be diverging in clubs, a process that leads to ever higher policy misfit and deteriorates the stability of the union. Compared to FP7, Horizon2020 has the intention to increase participation among less performing member-states and to support a catching-up process of these less performing member-states with Europe's more developed member-states. However, a closer look at the relatively scarce literature on Horizon2020 reveals that the programme may not be very successful in stimulating participation among the less performing member-states. Enger and Castellacci (2016) find the propensity to apply for Horizon2020 funding to be increased by prior participation in the framework programmes and the existence of complementary national funding schemes. Moreover, the probability of a proposal being accepted is found to be increased by prior participation and the scientific reputation of the applicant. Enger (2017) highlights the importance of the social network of an actor and its interaction with the propensity to apply for Horizon2020. Both papers thus illustrate that it might exactly be the more resourceful countries that thrive in the Horizon2020 programme. Horizon2020 may thus be expected to be less suited to address Europe's club-convergence problem. In addition, increasing Horizon2020 funding for less developed member-states might be inefficient if those member-states are characterised by a low capability to translate research investment into research output. Increasing Structural Funds for these states would then be expected to be more fruitful (Veugelers et al, 2015).

## Method

To investigate whether more developed member-states participate disproportionately in Horizon2020, this paper introduces two hypotheses. *First*, “the stronger the innovation climate of a member-state is, the more it participates in Horizon2020”. *Second*, “the higher the productivity of a member-state is, the more it participates in Horizon2020”.

The participation of a member-state is both measured in its level and in its change compared to FP7. Composite scores are used that comprise variables capturing: the extent to which a country is successful in applying for funding, the amount of funding it receives per capita, the number of eligible proposals it submits and the number of actors with which it participates in the programme. The 27 countries in the dataset are ranked on each of these indicators. The worst scoring country receiving one point and the best scoring country receiving 27 points. Points are then summed across the four categories to form the participation score. Due to the word limit, the data-sources for each of the variables as well as the rankings and calculation of the scores, can be found in the appendix.

Innovation climate is measured by a similar composite score capturing a country’s resources to innovate: the amount of physical capital, the amount of human capital and the strength of rule of law. The second independent variable, a country’s productivity level, is measured by the output a country produces, its GDP per capita. All independent variables take their value from 2014 which is the starting year of the Horizon2020 programme (apart from the measure for wealth due to a lack of data). This to control for any effect Horizon2020 may have on states’ resources or productivity. All data as well as the calculation of the scores and sources can be found in the appendix.

In general, there is substantial correlation between the rankings each composite score comprises. Yet, in some incidences states experienced substantial fluctuations in these. Overall the correlation strengthens the confidence of having meaningful measures. Potential confounders are discussed under Table.1 (*appendix*).

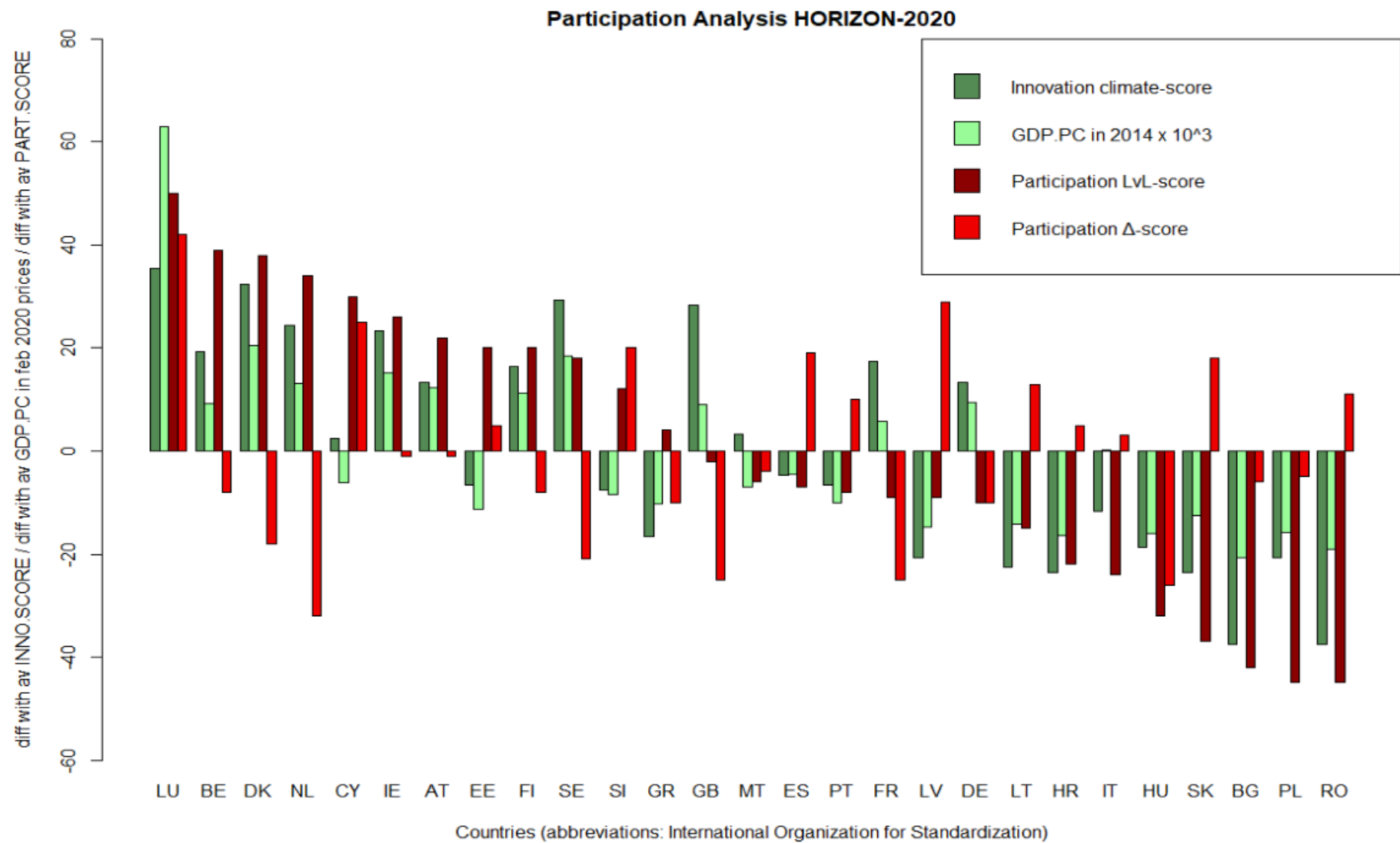


Figure 1: The bars represent the difference between a country's value for the respective variable and the 27 member-state average of the respective variable. Due to a lack of data on the dependent variable, the Czech Republic is omitted from the analysis.

## Analysis

Figure 1 plots both dependent and both independent variables in a single graph such that correlation between the four variables can be visually inspected. The countries on the x-axis are ordered based on the participation level-score in a descending order. From this histogram it becomes clear that both independent variables, innovation climate and GDP per capita, seem to be correlated with a country's participation in Horizon2020 (*see also the ranks in the appendix*). Table.1 in the appendix contains OLS-regressions belonging to the two dependent variables and illustrates that particularly a country's innovation climate correlates positively, statistically significantly and strongly with its participation in Horizon2020.

The participation change-score yields a very different picture and shows relatively many countries on the lower-half of the participation-level distribution, which happen to be Europe's lesser developed economies, to have increased their participation relative to the other states. However, this is not the case for all countries on the lower-end of the level-distribution, nor have all countries on the upper-end of the level-distribution increased their participation. It is further interesting to note that the countries that rank highest on the change variable are dispersed over the entire x-axis. Table.1 in the appendix, yields the additional insight that the innovation climate-score is negatively related to the change-score and that GDP per capita is positively related to the change-score. Both coefficients being statistically significant and the magnitude of GDP per capita now being much larger than in the first regression.

## Conclusion

The paper formed a preliminary study and illustrated that more developed member-states, as measured by their innovation climate and GDP per capita, indeed tend to participate more in Horizon2020. However, when it comes to the sustainability of this observation, the picture becomes blurred: there are low-level countries that did/did not increase their participation and there are high-level countries that did/did not increase their participation. This dynamic might be linked to the in the literature observed club-convergence. Moreover, the Baltic states, some of the central European states and some of the southern European states experienced relative, although not equally large, increases in participation which might hint at converge to some regional levels of output as well. On the other hand, northern and western European states were among the countries whose participation relatively decreased most which might hint at Horizon2020 contributing to breaking club-convergence patterns in favour of overall European convergence. Yet, it is important to note that national innovation policies are neglected in the analysis.

## Bibliography

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## Appendix

	I	II
Dependent variable: <b>Participation</b>	LvL-score	$\Delta$ -score
Model	<i>OLS</i>	<i>OLS</i>
Innovation climate-score	0.850*** (0.30)	-0.995*** (0.28)
GDP.PC x 1000	0.233 (0.37)	1.045*** (0.34)
Intercept	14.415* (7.06)	69.560*** (6.52)
<i>N</i>	27	27
<i>R</i> <sup>2</sup>	0.6604	0.3528

\*\*\* if  $p < 0.01$ , \*\* if  $p < 0.05$  and \* if  $p < 0.10$

Table 1: The intercept in the second regression is rather large due to a relatively large density in scores (see the corresponding datasheets). Standard errors are written in parentheses.

**Note:** The above regressions do not instrument the independent variables, as such the coefficients cannot be interpreted as being causal. *Potential confounding factors* relate to a variable of interests, either innovation climate of GDP per capita, as well as the dependent variable. Examples of which are: the existence of national innovation-policy measures, the general macroeconomic conditions to which a state is subject and a state's position on the business cycle.

## Innovation Ranks

Country	Corruption	Employment	Wealth	Score	Country	Ranked
Austria	18	15	22	55	Luxembourg	77
Belgium	20	22	19	61	Denmark	74
Bulgaria	1	2	1	4	Sweden	71
Croatia	5	6	7	18	United Kingdom	70
Cyprus	14	19	11	44	Netherlands	66
Denmark	27	21	26	74	Ireland	65
Estonia	16	10	9	35	Belgium	61
Finland	26	17	15	58	France	59
France	16	20	23	59	Finland	58
Germany	22	16	17	55	Austria	55
Greece	1	14	10	25	Germany	55
Hungary	7	13	3	23	Malta	45
Ireland	19	25	21	65	Cyprus	44
Italy	1	11	18	30	Spain	37
Latvia	8	7	6	21	Estonia	35
Lithuania	10	5	4	19	Portugal	35
Luxembourg	23	27	27	77	Slovenia	34
Malta	8	23	14	45	Italy	30
Netherlands	24	18	24	66	Greece	25
Poland	13	3	5	21	Hungary	23
Portugal	14	8	13	35	Latvia	21
Romania	1	1	2	4	Poland	21
Slovakia	6	4	8	18	Lithuania	19
Slovenia	10	12	12	34	Croatia	18
Spain	12	9	16	37	Slovakia	18
Sweden	25	26	20	71	Bulgaria	4
United Kingdom	21	24	25	70	Romania	4
Average						41.6

### Data:

#### Corruption

Corruption Perception Index (2014). Transparency International. Retrieved February 27, 2020

<https://www.transparency.org/cpi2014/results>

#### Employment

Employment in knowledge intensive activities as percentage of total employment (2014).

European Commission. Retrieved February 27, 2020

<https://rio.jrc.ec.europa.eu/en/stats/employment-knowledge-intensive-activities-kia-total-employment>

#### Wealth

Wealth per adult in US dollars (2019). Statista. Retrieved February 27, 2020

<https://www.statista.com/statistics/203941/countries-with-the-highest-wealth-per-adult/>



## Innovation Data

Country:	Corruption	Employment	Wealth
Austria	72	36.5	274919
Belgium	76	42.2	246135
Bulgaria	43	27.8	42686
Croatia	48	31.4	62804
Cyprus	63	39.2	116207
Denmark	92	40	284022
Estonia	69	33	78458
Finland	89	37.2	183124
France	69	39.5	276121
Germany	79	36.9	216654
Greece	43	35.4	96110
Hungary	54	34.6	44321
Ireland	74	43.2	272310
Italy	43	33.1	234139
Latvia	55	31.9	60347
Lithuania	58	30.8	50254
Luxembourg	82	60.4	358003
Malta	55	42.5	143566
Netherlands	83	38.1	279077
Poland	61	29.6	57873
Portugal	63	32	131088
Romania	43	19.5	43074
Slovakia	50	30.6	66171
Slovenia	58	34.2	122508
Spain	60	32.8	207531
Sweden	87	43.9	265260
United Kingdom	78	43.1	280049
Average	64.7	36.3	166400.4

### Data:

#### Corruption

Corruption Perception Index (2014). Transparency International. Retrieved February 27, 2020

<https://www.transparency.org/cpi2014/results>

#### Employment

Employment in knowledge intensive activities as percentage of total employment (2014).

European Commission. Retrieved February 27, 2020

<https://rio.jrc.ec.europa.eu/en/stats/employment-knowledge-intensive-activities-kia-total-employment>

#### Wealth

Wealth per adult in US dollars (2019). Statista. Retrieved February 27, 2020

<https://www.statista.com/statistics/203941/countries-with-the-highest-wealth-per-adult/>

## GDP per Capita

Country	GDP 2014	Population 2014	GDP.PC 2014	Country	GDP.PC 2014
Austria	3.33146E+11	8546356	38981.07	Luxembourg	89560.85
Belgium	4.03004E+11	11209057	35953.43	Denmark	47091.18
Bulgaria	42876100000	7223938	5935.28	Sweden	45129.81
Croatia	43407100000	4236063	10247.04	Ireland	41826.77
Cyprus	17408500000	852504	20420.43	Netherlands	39819.73
Denmark	2.65758E+11	5643475	47091.18	Austria	38981.07
Estonia	20180000000	1314545	15351.32	Finland	37882.73
Finland	2.06897E+11	5461512	37882.73	Germany	36148.92
France	2.14977E+12	66312067	32418.91	Belgium	35953.43
Germany	2.92743E+12	80982500	36148.92	United Kingdom	35760.22
Greece	1.78657E+11	10892413	16401.93	France	32418.91
Hungary	1.05912E+11	9866468	10734.55	Italy	26771.32
Ireland	1.94818E+11	4657740	41826.77	Spain	22206.08
Italy	1.62741E+12	60789140	26771.32	Cyprus	20420.43
Latvia	23654100000	1993782	11863.93	Malta	19584.27
Lithuania	36544800000	2932367	12462.56	Slovenia	18251.49
Luxembourg	49824400000	556319	89560.85	Portugal	16638.08
Malta	8510500000	434558	19584.27	Greece	16401.93
Netherlands	6.7156E+11	16865008	39819.73	Estonia	15351.32
Poland	4.11095E+11	38011735	10814.94	Slovakia	14072.86
Portugal	1.73054E+11	10401062	16638.08	Lithuania	12462.56
Romania	1.50598E+11	19908979	7564.31	Latvia	11863.93
Slovakia	76255900000	5418649	14072.86	Poland	10814.94
Slovenia	37634200000	2061980	18251.49	Hungary	10734.55
Spain	1.03216E+12	46480882	22206.08	Croatia	10247.04
Sweden	4.37584E+11	9696110	45129.81	Romania	7564.31
United Kingdom	2.31019E+12	64602298	35760.22	Bulgaria	5935.28
Average	5.16123E+11	18420426	26662.74		26662.74

### Data

GDP 2014

GDP 2014 (unadjusted) at current prices, Eurostat, 24-2-2020 14:13:08

<https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

### Population

Population in 2014, Eurostat, 24-2-2020 14:02:08

## Participation LVL Data

Country	Succes	Funding	Eligible	Participation
Austria	16.67	1593.75	15.85	41.91
Belgium	17.65	2179.99	18.42	53.65
Bulgaria	10.51	163.15	5.85	9.61
Croatia	13.82	228.44	7.02	14.43
Cyprus	13.53	1936.48	30.20	55.83
Denmark	15.48	2242.37	23.59	51.99
Estonia	13.65	1427.08	26.96	47.62
Finland	13.49	2047.82	21.01	46.68
France	15.46	830.01	5.78	19.15
Germany	15.22	917.66	5.84	18.94
Greece	13.75	1109.28	14.46	36.03
Hungary	11.98	298.09	7.13	11.85
Ireland	15.3	1813.33	20.60	44.69
Italy	11.71	695.00	8.16	20.64
Latvia	13.81	413.54	11.35	20.87
Lithuania	14.19	251.40	9.22	16.85
Luxembourg	16.72	2254.29	33.65	72.07
Malta	12.4	525.51	20.52	38.05
Netherlands	16.28	2286.57	16.22	47.67
Poland	12.58	142.11	2.91	5.48
Portugal	13.45	802.78	12.75	27.88
Romania	12.49	109.02	3.02	6.11
Slovakia	13.38	189.09	5.09	9.56
Slovenia	11.65	1346.64	29.22	52.97
Spain	12.94	984.51	10.83	29.40
Sweden	14.94	1689.06	16.64	38.89
United Kingdom	14.72	959.56	8.26	21.21
Average	13.99	1090.24	14.47	31.85

### Data

#### Success

Percentage of proposals retained for funding, European Commission (2020), Retrieved February 27 2020  
<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Funding

Amount of funding received per capita, European Commission (2020), Retrieved February 27 2020  
<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Eligible

Number of eligible proposals per 1000 inhabitants, European Commission (2020), Retrieved February 27  
<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Participation

Number of participating entities per 10.000 inhabitants, European Commission (2020), Retrieved February  
<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

## Participation LVL Ranks

Country	Succes	Funding	Eligible	Participation	Total	Country	Ranked
Austria	25	19	16	18	78	Luxembourg	106
Belgium	27	24	19	25	95	Belgium	95
Bulgaria	1	3	6	4	14	Denmark	94
Croatia	16	5	7	6	34	Netherlands	90
Cyprus	12	22	26	26	86	Cyprus	86
Denmark	23	25	23	23	94	Ireland	82
Estonia	13	18	24	21	76	Austria	78
Finland	11	23	22	20	76	Estonia	76
France	22	12	4	9	47	Finland	76
Germany	20	13	5	8	46	Sweden	74
Greece	14	16	15	15	60	Slovenia	68
Hungary	4	7	8	5	24	Greece	60
Ireland	21	21	21	19	82	United Kingdom	54
Italy	3	10	9	10	32	Malta	50
Latvia	15	8	13	11	47	Spain	49
Lithuania	17	6	11	7	41	Portugal	48
Luxembourg	26	26	27	27	106	France	47
Malta	5	9	20	16	50	Latvia	47
Netherlands	24	27	17	22	90	Germany	46
Poland	7	2	1	1	11	Lithuania	41
Portugal	10	11	14	13	48	Croatia	34
Romania	6	1	2	2	11	Italy	32
Slovakia	9	4	3	3	19	Hungary	24
Slovenia	2	17	25	24	68	Slovakia	19
Spain	8	15	12	14	49	Bulgaria	14
Sweden	19	20	18	17	74	Poland	11
United Kingdom	18	14	10	12	54	Romania	11
Average							56

### Data

#### Success

Percentage of proposals retained for funding, European Commission (2020), Retrieved February 27 2020

<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Funding

Amount of funding received per capita, European Commission (2020), Retrieved February 27 2020

<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Eligible

Number of eligible proposals per 1000 inhabitants, European Commission (2020), Retrieved February 27 2020

<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

#### Participation

Number of participating entities per 10.000 inhabitants, European Commission (2020), Retrieved February 27

<https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles>

## Participation Δ Data

Country	Success rate	Participation	Eligible	Funding
Austria	-4.83	1.53	-1.57	18.26
Belgium	-6.55	8.15	-5.48	35.33
Bulgaria	-5.79	-5.73	-0.15	16.79
Croatia	-2.68	42.86	-4.09	1.89
Cyprus	-2.27	40.98	-7.56	147.12
Denmark	-7.92	5.02	-1.91	19.89
Estonia	-7.55	12.32	-1.57	95.89
Finland	-6.71	-12.62	0.80	28.55
France	-7.34	-2.27	-1.63	6.43
Germany	-6.08	-16.27	1.32	6.44
Greece	-3.15	1.68	-10.33	16.05
Hungary	-8.22	-30.54	2.67	0.10
Ireland	-6.3	7.43	-2.13	40.16
Italy	-6.19	3.43	4.02	15.07
Latvia	-6.29	18.58	3.26	63.19
Lithuania	-5.01	10.85	-1.22	34.94
Luxembourg	-2.38	70.43	0.10	125.75
Malta	-5.6	-8.46	-0.28	20.50
Netherlands	-7.52	-3.88	-5.63	15.16
Poland	-5.72	-7.01	-1.13	22.31
Portugal	-5.05	16.45	-5.19	56.38
Romania	-3.31	8.97	-4.08	37.54
Slovakia	-4.52	4.41	1.10	34.58
Slovenia	-4.85	16.90	-1.91	62.58
Spain	-5.56	16.57	-0.48	38.97
Sweden	-7.26	-14.66	1.15	-1.87
United Kingdom	-6.58	-22.95	0.41	-9.25
Average	-5.60	6.01	-1.54	35.14

*Data (sources in addition to the LvL-data)*

Success

Percentage-point change in the percentage of proposals retained for funding compared to FP7

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Funding (percentage change in the amount of funding received per capita, compared to FP7)

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Eligible (percentage change in the ratio of eligible over total number of applications, compared to FP7)

[Number of eligible proposals per 1000 inhabitants, European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Participation (percentage change in the number of participating entities per 10.000 inhabitants, to FP7)

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

## Participation Δ Ranks

Country	Success rate	Participation	Eligible	Funding	Total	Country	Rank
Austria	21	11	12	11	55	Luxembourg	98
Belgium	9	17	4	18	48	Latvia	85
Bulgaria	14	8	18	10	50	Cyprus	81
Croatia	25	26	6	4	61	Slovenia	76
Cyprus	27	25	2	27	81	Spain	75
Denmark	2	15	9	12	38	Slovakia	74
Estonia	3	20	13	25	61	Lithuania	69
Finland	7	5	21	15	48	Romania	67
France	5	10	11	5	31	Portugal	66
Germany	13	3	24	6	46	Croatia	61
Greece	24	12	1	9	46	Estonia	61
Hungary	1	1	25	3	30	Italy	59
Ireland	10	16	8	21	55	Austria	55
Italy	12	13	27	7	59	Ireland	55
Latvia	11	24	26	24	85	Malta	52
Lithuania	19	19	14	17	69	Poland	51
Luxembourg	26	27	19	26	98	Bulgaria	50
Malta	16	6	17	13	52	Belgium	48
Netherlands	4	9	3	8	24	Finland	48
Poland	15	7	15	14	51	Germany	46
Portugal	18	21	5	22	66	Greece	46
Romania	23	18	7	19	67	Denmark	38
Slovakia	22	14	22	16	74	Sweden	35
Slovenia	20	23	10	23	76	France	31
Spain	17	22	16	20	75	United Kingdom	31
Sweden	6	4	23	2	35	Hungary	30
United Kingdom	8	2	20	1	31	Netherlands	24
Average							56

*Data (sources in addition to the LvL-data)*

Success

Percentage-point change in the percentage of proposals retained for funding compared to FP7

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Funding (percentage change in the amount of funding received per capita, compared to FP7)

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Eligible (percentage change in the ratio of eligible over total number of applications, compared to FP7)

[Number of eligible proposals per 1000 inhabitants, European Commission \(2013\), Seventh Monitoring](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

Participation (percentage change in the number of participating entities per 10.000 inhabitants, to FP7)

[European Commission \(2013\), Seventh Monitoring report](#)

[https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index\\_en.cfm](https://wayback.archive-it.org/12090/20191127213419/https://ec.europa.eu/research/fp7/index_en.cfm)

**Figure 1**

<b>Country</b>	<b>Part LvL</b>	<b>Part Δ</b>	<b>INNO</b>	<b>GDP</b>
Luxembourg	50	42	35.37	62.90
Belgium	39	-8	19.37	9.29
Denmark	38	-18	32.37	20.43
Netherlands	34	-32	24.37	13.16
Cyprus	30	25	2.37	-6.24
Ireland	26	-1	23.37	15.16
Austria	22	-1	13.37	12.32
Estonia	20	5	-6.63	-11.31
Finland	20	-8	16.37	11.22
Sweden	18	-21	29.37	18.47
Slovenia	12	20	-7.63	-8.41
Greece	4	-10	-16.63	-10.26
United Kingdom	-2	-25	28.37	9.10
Malta	-6	-4	3.37	-7.08
Spain	-7	19	-4.63	-4.46
Portugal	-8	10	-6.63	-10.02
France	-9	-25	17.37	5.76
Latvia	-9	29	-20.63	-14.80
Germany	-10	-10	13.37	9.49
Lithuania	-15	13	-22.63	-14.20
Croatia	-22	5	-23.63	-16.42
Italy	-24	3	-11.63	0.11
Hungary	-32	-26	-18.63	-15.93
Slovakia	-37	18	-23.63	-12.59
Bulgaria	-42	-6	-37.63	-20.73
Poland	-45	-5	-20.63	-15.85
Romania	-45	11	-37.63	-19.10
Average	0	0	0	0

**Table 1**

<b>Country</b>	<b>Part LvL</b>	<b>Part Δ</b>	<b>INNO</b>	<b>GDP</b>
Luxembourg	106	99	77	89560.85
Belgium	95	58	61	35953.43
Denmark	94	41	74	47091.18
Netherlands	90	29	66	39819.73
Cyprus	86	80	44	20420.43
Ireland	82	61	65	41826.77
Austria	78	56	55	38981.07
Estonia	76	60	35	15351.32
Finland	76	47	58	37882.73
Sweden	74	36	71	45129.81
Slovenia	68	71	34	18251.49
Greece	60	46	25	16401.93
United Kingdom	54	36	70	35760.22
Malta	50	48	45	19584.27
Spain	49	72	37	22206.08
Portugal	48	66	35	16638.08
France	47	34	59	32418.91
Latvia	47	84	21	11863.93
Germany	46	50	55	36148.92
Lithuania	41	70	19	12462.56
Croatia	34	61	18	10247.04
Italy	32	51	30	26771.32
Hungary	24	30	23	10734.55
Slovakia	19	73	18	14072.86
Bulgaria	14	39	4	5935.28
Poland	11	47	21	10814.94
Romania	11	67	4	7564.31
Average	56.00	56.00	41.63	26662.74