Supplementary materials

A Cummulative incidence of monkeypox in Latinamerica and the Caribbean

Table 1: Monkeypox in Latinamerica and the Caribbean: Cummulative incidence per country

Region	Country	Date of First Confirmed Case	Confirmed Cases[1]	Cummulative Incidence (per million)[1]	Income group
Caribbean	Saint Martin (French part)	2022-08-01	1	31.46	High income
	Puerto Rico	2022-06-29	99	30.44	High income
	Aruba	2022-08-22	1	9.39	High income
	Curaçao	2022-08-15	1	5.23	High income
	Bahamas	2022-06-24	2	4.88	High income
	Barbados	2022-07-16	1	3.55	High income
	Jamaica	2022-07-06	4	1.41	Upper middle income
	Dominican Republic	2022-07-06	9	0.80	Upper middle income
	Cuba	2022-08-20	1	0.09	Upper middle income
Central America	Mexico	2022-05-28	386	3.03	Upper middle income
	Panama	2022-07-05	9	2.04	High income
	Costa Rica	2022-07-20	3	0.58	Upper middle income
	Guatemala	2022-08-03	6	0.34	Upper middle income
	Honduras	2022-08-13	3	0.29	Lower middle income
South America	Peru	2022-06-26	1382	40.59	Upper middle income
	Brazil	2022-06-08	4472	20.77	Upper middle income
	Chile	2022-06-17	344	17.55	High income
	Colombia	2022-06-23	273	5.26	Upper middle income
	Bolivia	2022-08-01	53	4.34	Lower middle income
	Argentina	2022-05-27	133	2.92	Upper middle income
	Ecuador	2022-07-06	51	2.83	Upper middle income
	Guyana	2022-08-22	1	1.24	Upper middle income
	Uruguay	2022-07-29	4	1.17	High income
	Paraguay	2022-08-25	1	0.15	Upper middle income
	Venezuela	2022-06-12	3	0.11	**[2]

Note:

Data sources: Global.health Monkeypox (accessed on 2022-09-01), UN 2022 Revision of World Population Prospects, World Bank Income Classification (FY 2023)

[1] As of complete epidemiological week #34

[2] Venezuela has been temporarily unclassified as of July 2021 by the World Bank

B Cumulative incidence for all countries with confirmed cases

In the following two tables, we show the cumulative incidence up to the most current complete epidemiological week (2022W34), separating those countries with 10 or more confirmed cases in total, from those with less than 10 cases.

Table 2: Cumulative incidence per million for countries at least 10 confirmed cases

Country	**Date of first confirmed case**[13]	**Total cases**[13]	**Population (2022)**[4]	**Incidence (per million)**[3]
Africa				
Ghana	2022-06-08	56	33,475,870	1.673
Democratic Republic Of The Congo	2022-05-08	163	99,010,212	1.646
Nigeria	2022-01-31[2]	172	218,541,212	0.787
Asia				
Israel	2022-05-21	215	9,038,309	23.788
Singapore	2022-06-20	16	5,975,689	2.678
United Arab Emirates	2022-05-24	16	9,441,129	1.695
Turkey	2022-06-30	11	85,341,241	0.129
India	2022-07-14	10	1,417,173,173	0.007
Europe				
Spain	2022-05-18	6,459	47,558,630	135.811
Portugal	2022-05-17	846	10,270,865	82.369
Luxembourg	2022-06-16	50	647,599	77.208
Netherlands	2022-05-20	1,136	17,564,014	64.678
Malta	2022-05-28	31	533,286	58.130
Belgium	2022-05-19	671	11,655,930	57.567
France	2022-05-19	3,416	64,626,628	52.857
Switzerland	2022-05-21	436	8,740,472	49.883
England	2022-05-06	3,191	67,508,936	47.268
Germany	2022-05-19	3,387	83,369,843	40.626
Iceland	2022-06-15	12	372,899	32.180
Denmark	2022-05-23	171	5,882,261	29.070
Austria	2022-05-23	258	8,939,617	28.860
Ireland	2022-05-27	128	5,023,109	25.482
Slovenia	2022-05-24	43	2,119,844	20.285
Sweden	2022-05-19	156	10,549,347	14.788
Norway	2022-05-31	79	5,434,319	14.537
Italy	2022-05-19	740	59,037,474	12.534
Estonia	2022-06-28	10	1,326,062	7.541

Table 2: Cumulative incidence per million for countries at least 10 confirmed cases *(continued)*

Country	**Date of first confirmed case**[13]	**Total cases**[13]	**Population (2022)**[4]	**Incidence (per million)**[3]
Hungary	2022-05-31	67	9,967,308	6.722
Croatia	2022-06-23	26	4,030,358	6.451
Greece	2022-06-08	54	10,384,971	5.200
Czech Republic	2022-05-24	46	10,493,986	4.383
Serbia	2022-06-17	31	7,221,365	4.293
Finland	2022-05-27	22	5,540,745	3.971
Poland	2022-06-10	128	39,857,145	3.211
Slovakia	2022-07-07	12	5,643,453	2.126
Romania	2022-06-13	36	19,659,267	1.831
Scotland	2022-05-23	78	67,508,936	1.155
Wales	2022-05-26	44	67,508,936	0.652
Northern Ireland	2022-05-26	27	67,508,936	0.400
Latin America and the Caribbean				
Peru	2022-06-26	1,382	34,049,588	40.588
Puerto Rico	2022-06-29	99	3,252,407	30.439
Brazil	2022-06-08	4,472	215,313,498	20.770
Chile	2022-06-17	344	19,603,733	17.548
Colombia	2022-06-23	273	51,874,024	5.263
Bolivia	2022-08-01	53	12,224,110	4.336
Mexico	2022-05-28	386	127,504,125	3.027
Argentina	2022-05-27	133	45,510,318	2.922
Ecuador	2022-07-06	51	18,001,000	2.833
Northern America				
United States	2022-05-18	17,336	338,289,857	51.246
Canada	2022-05-19	1,228	38,454,327	31.934
Oceania				
Australia	2022-05-20	106	26,177,413	4.049

[1] Source: Global.health Monkeypox data repository

[2] Reports earlier than May 2022 are from endemic areas

[3] As of complete epidemiological week #34 of 2022.

[4] Source: UN 2022 Revision of World Population Prospects

Table 3: Cumulative incidence per million for countries with less than 10 confirmed cases

Country	Date of first confirmed case[13]	Total cases[13]	Population (2022)[4]	Incidence (per million)[3]
Africa				
Central African Republic	2022-03-04[2]	8	5,579,144	1.434
Republic of Congo	2022-04-12[2]	3	5,970,424	0.502
Liberia	2022-07-23	2	5,302,681	0.377
Cameroon	2022-02-17[2]	7	27,914,536	0.251
Benin	2022-06-14	3	13,352,864	0.225
South Africa	2022-06-22	5	59,893,885	0.083
Morocco	2022-06-02	3	37,457,971	0.080
Sudan	2022-07-31	2	46,874,204	0.043
Asia				
Cyprus	2022-08-02	4	1,251,488	3.196
Qatar	2022-07-20	3	2,695,122	1.113
Lebanon	2022-06-20	6	5,489,739	1.093
Georgia	2022-06-15	2	3,744,385	0.534
Saudi Arabia	2022-07-14	7	36,408,820	0.192
Taiwan	2022-06-24	3	23,893,394	0.126
Thailand	2022-07-21	7	71,697,030	0.098
Philippines	2022-07-28	4	115,559,009	0.035
Japan	2022-07-25	4	123,951,692	0.032
South Korea	2022-06-22	1	51,815,810	0.019
Iran	2022-08-16	1	88,550,570	0.011
Indonesia	2022-08-19	1	275,501,339	0.004
Europe				
Gibraltar	2022-06-01	6	32,649	183.773
Monaco	2022-07-21	3	36,469	82.262
Andorra	2022-07-25	4	79,824	50.110
Montenegro	2022-08-01	2	627,082	3.189
Latvia	2022-06-03	4	1,850,651	2.161
Lithuania	2022-08-03	5	2,750,055	1.818
Bosnia And Herzegovina	2022-07-13	3	3,233,526	0.928
Moldova	2022-08-08	2	3,272,996	0.611
Bulgaria	2022-06-23	4	6,781,953	0.590
Martinique	2022-07-15	2	64,626,628	0.031
Guadeloupe	2022-07-25	1	64,626,628	0.015
Russia	2022-07-12	1	144,713,314	0.007

Table 3: Cumulative incidence per million for countries with less than 10 confirmed cases *(continued)*

Country	Date of first confirmed case[13]	Total cases[13]	Population (2022)[4]	Incidence (per million)[3]
Latin America and the Caribbean				
Saint Martin (French part)	2022-08-01	1	31,791	31.455
Aruba	2022-08-22	1	106,445	9.395
Curaçao	2022-08-15	1	191,163	5.231
Bahamas	2022-06-24	2	409,984	4.878
Barbados	2022-07-16	1	281,635	3.551
Panama	2022-07-05	9	4,408,581	2.041
Jamaica	2022-07-06	4	2,827,377	1.415
Guyana	2022-08-22	1	808,726	1.237
Uruguay	2022-07-29	4	3,422,794	1.169
Dominican Republic	2022-07-06	9	11,228,821	0.802
Costa Rica	2022-07-20	3	5,180,829	0.579
Guatemala	2022-08-03	6	17,843,908	0.336
Honduras	2022-08-13	3	10,432,860	0.288
Paraguay	2022-08-25	1	6,780,744	0.147
Venezuela	2022-06-12	3	28,301,696	0.106
Cuba	2022-08-20	1	11,212,191	0.089
Northern America				
Greenland	2022-08-09	2	56,466	35.420
Bermuda	2022-07-21	1	64,184	15.580
Oceania				
New Caledonia	2022-07-12	1	289,950	3.449
New Zealand	2022-07-09	4	5,185,288	0.771

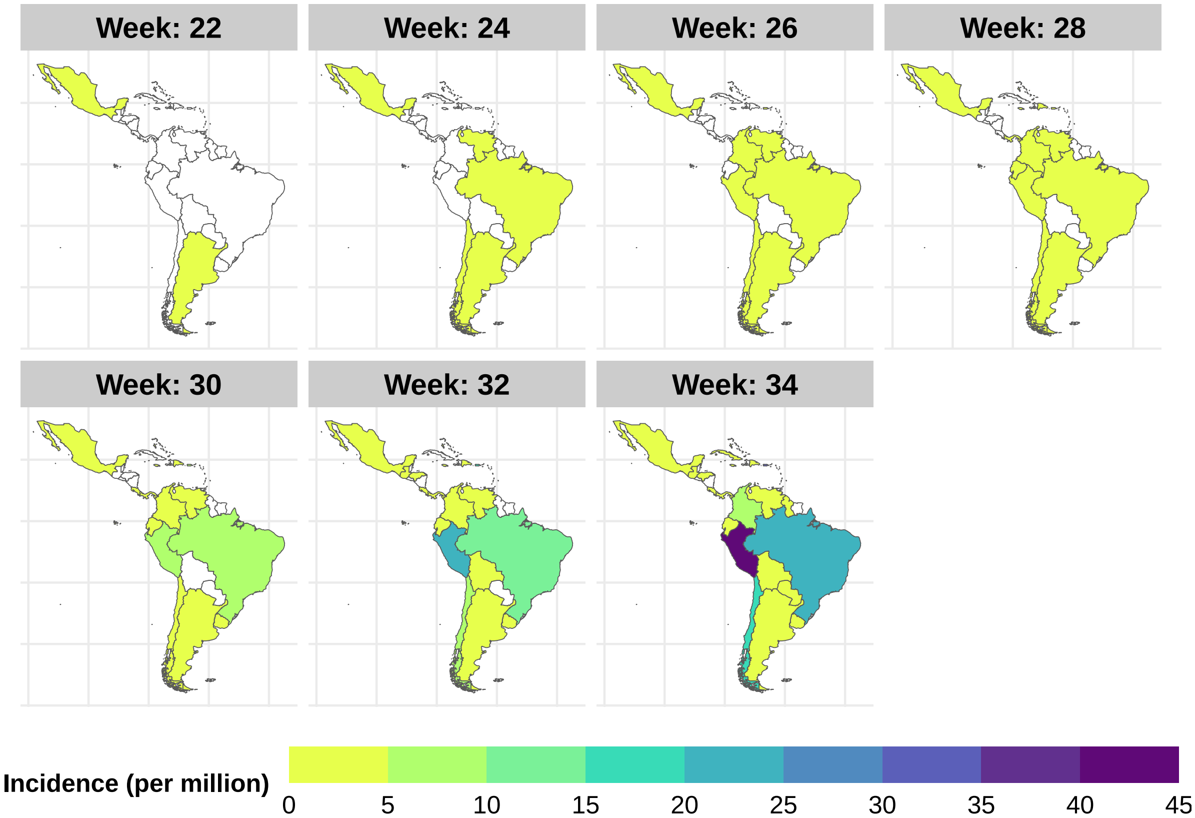
[1] Source: Global.health Monkeypox data repository

[2] Reports earlier than May 2022 are from endemic areas

[3] As of complete epidemiological week #34 of 2022.

[4] Source: UN 2022 Revision of World Population Prospects

C Evolution of monkeypox in Latinamerica and the Caribbean



D Details of the statistical analysis

We performed a descriptive analysis summarizing the monkeypox cases' demographics and clinical history with absolute and relative frequencies if categorical and their median and interquartile range if continuous. Then, we performed a graphical analysis by plotting the timeline of the 2022 monkeypox outbreak based on the first cases and deaths reported by each WHO region along with the epidemic milestones.

In addition, we graphically compared the regional cumulative Incidence worldwide using the WHO regions and the weekly cumulative Incidence across LAC countries.

For the data processing, analysis, and creation of the tables and figures, we used the R 4.2.1 (R Foundation for Statistical Computing, Vienna, Austria) and R Studio 2022.07.1+554 (Free Software Foundation, Inc., Boston, MA), and the R packages: tidyverse (version 1.3.2), lubridate (version 1.8.0), rnaturalearth (version 0.1.0), sf (version 1.0.8), and gt (version 0.6.0.9000).

Finally, we estimated the effective reproductive number (Rt) and the duplication time (T_d) for each country with at least 200 monkeypox confirmed cases worldwide. For the Td estimates, we fit a regression of the logarithm of the cumulative confirmed cases vs. the count of days since the initial date for each country.

For the R_t estimates, we use the approach described by Bonifazi et al. (2021) and the generation time reported by Guzzetta et al. (2022). The data selection, model equations, and calculation details are explained in this supplementary material

E Regression models of exponential growth

E.1 General equations

During the first part of the development of an epidemic, we can assume an exponential growth according to Equation 1

$$y = \alpha\beta^{\gamma x} = \alpha e^{(\gamma \log \beta)x} \tag{1}$$

where: $y =$ is the cumulative case count, $x =$ number of days since the start of the series

This equation can be linearized using logarithms, shown in Equation 2, and its equivalent Equation 3

$$\log y = \log \alpha + (\gamma \log \beta)x \tag{2}$$

$$\log y = A + Bx \tag{3}$$

where: $A = \log \alpha$, $B = \gamma \log \beta$

E.2 Model data selection

The MPX data obtained from the Global Health Data Science Initiative, was filtered using the following procedure:

1. Only cases with a confirmed status were kept
2. Data for which the confirmation date ranged from the epidemiological weeks 20 to 33 of 2022 were used. This allowed us to consider only cases in non-endemic countries
3. Data was combined by confirmation date at the country level, and, after ordering each country timeseries, a cumulative number of cases was calculated
4. Data from countries with 200 or more cumulative cases, up to the mos recent reported date, were considered for modeling
5. From the selected countries, we used only dates for which the number of cumulative cases was equal or greater than 10.
6. For each country timeseries, we created a days count series which reflected the difference between the earliest date in the series and the current one.

At the end of this selection procedure, we obtained the list in the following table:

Table 4: Countries selected for modeling

Country	Confirmation dates: Earliest	Confirmation dates: Latest	N° Obs.[1]
Austria	2022-06-17	2022-08-26	20
Belgium	2022-06-01	2022-08-22	15
Brazil	2022-06-22	2022-08-26	57
Canada	2022-05-23	2022-08-26	54
Chile	2022-07-04	2022-08-25	19
Colombia	2022-07-19	2022-08-22	11
England	2022-05-20	2022-08-22	33
France	2022-05-28	2022-08-23	28
Germany	2022-05-24	2022-08-25	73
Israel	2022-06-21	2022-08-23	33
Italy	2022-05-26	2022-08-26	33
Mexico	2022-06-28	2022-08-22	11
Netherlands	2022-05-25	2022-08-25	25
Northern Ireland	2022-07-04	2022-08-15	9
Peru	2022-07-04	2022-08-27	42
Portugal	2022-05-18	2022-08-24	38
Scotland	2022-06-06	2022-08-22	22
Spain	2022-05-20	2022-08-26	40
Switzerland	2022-06-07	2022-08-25	52
United States	2022-05-26	2022-08-26	79
Wales	2022-06-30	2022-08-22	13

[1] Number of days with reports of confirmed cases in the date range

E.3 Regression results

Using Equation 3, we performed a regression of the logarithm (base 10) of the cumulative number of cases versus the days counts (*vide supra*)

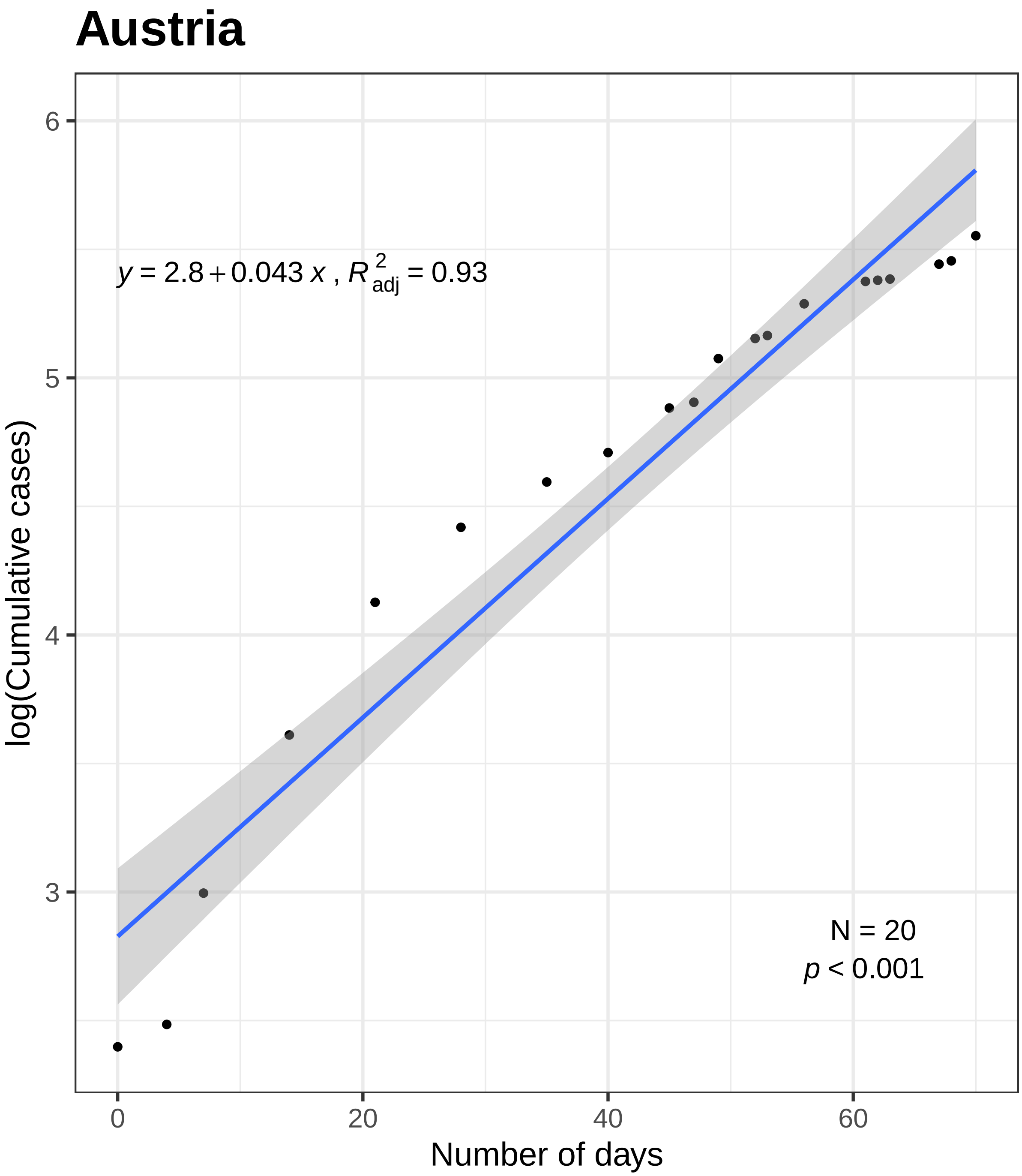
The results of the regressions can be seen in the following table

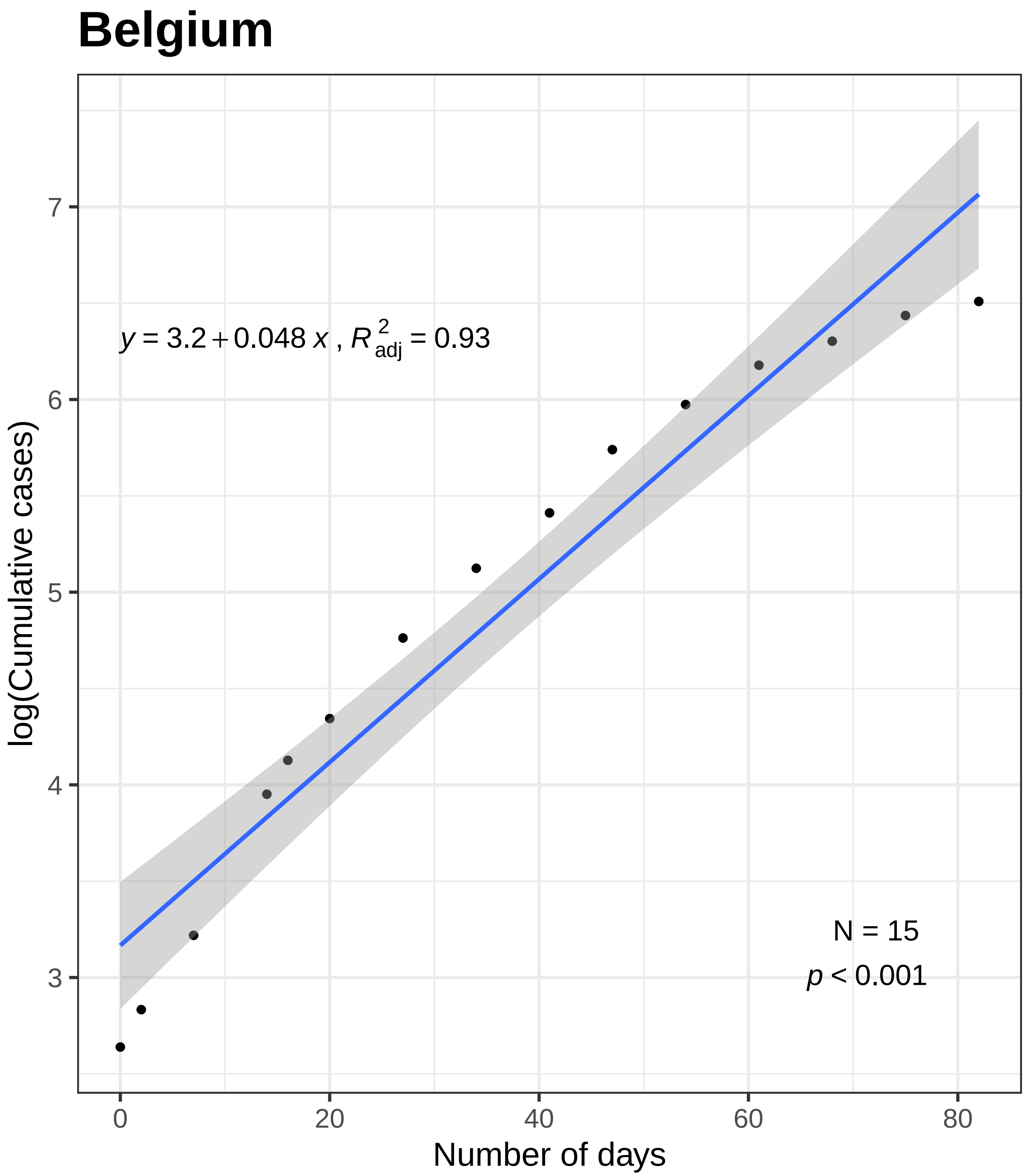
Table 5: Regression results for the selected countries

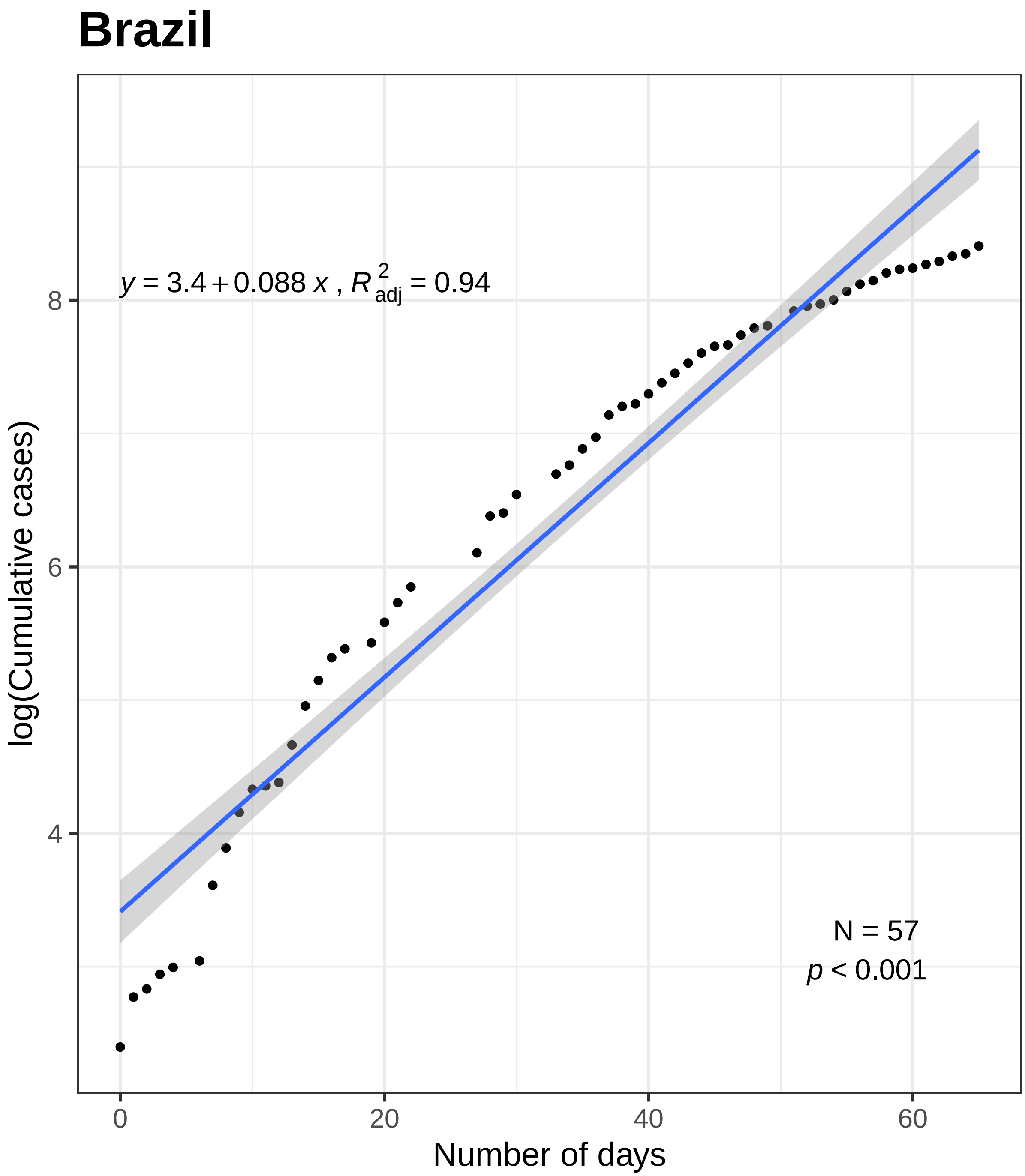
	Parameters				Statistics		
Country	Intercept	S.E.$_{inter.}$	Slope	S.E.$_{slope}$	R^2_{adj}	p-value	N° Obs.[1]
Austria	2.8272	0.1260	0.0426	0.0027	0.9311	< 0.001	20
Belgium	3.1663	0.1525	0.0475	0.0034	0.9331	< 0.001	15
Brazil	3.4136	0.1173	0.0879	0.0030	0.9381	< 0.001	57
Canada	3.9815	0.0956	0.0378	0.0016	0.9091	< 0.001	54
Chile	2.4002	0.0301	0.0662	0.0011	0.9954	< 0.001	19
Colombia	1.7509	0.1598	0.1075	0.0083	0.9435	< 0.001	11
England	4.6062	0.1568	0.0471	0.0034	0.8550	< 0.001	33
France	3.7530	0.1608	0.0591	0.0034	0.9188	< 0.001	28
Germany	4.0995	0.1530	0.0546	0.0029	0.8317	< 0.001	73
Israel	3.2286	0.0974	0.0400	0.0028	0.8670	< 0.001	33
Italy	2.9901	0.1171	0.0468	0.0024	0.9237	< 0.001	33
Mexico	2.5790	0.1108	0.0590	0.0035	0.9662	< 0.001	11
Netherlands	3.5040	0.1701	0.0479	0.0033	0.9000	< 0.001	25
Northern Ireland	2.3369	0.0621	0.0253	0.0026	0.9201	< 0.001	9
Peru	3.3460	0.0866	0.0791	0.0025	0.9599	< 0.001	42
Portugal	4.1275	0.1345	0.0357	0.0032	0.7712	< 0.001	38
Scotland	2.5953	0.0810	0.0280	0.0020	0.9036	< 0.001	22
Spain	4.2677	0.1164	0.0553	0.0023	0.9363	< 0.001	40
Switzerland	3.1928	0.0948	0.0437	0.0021	0.8907	< 0.001	52
United States	2.9365	0.0641	0.0828	0.0013	0.9821	< 0.001	79
Wales	2.6107	0.0644	0.0260	0.0023	0.9157	< 0.001	13

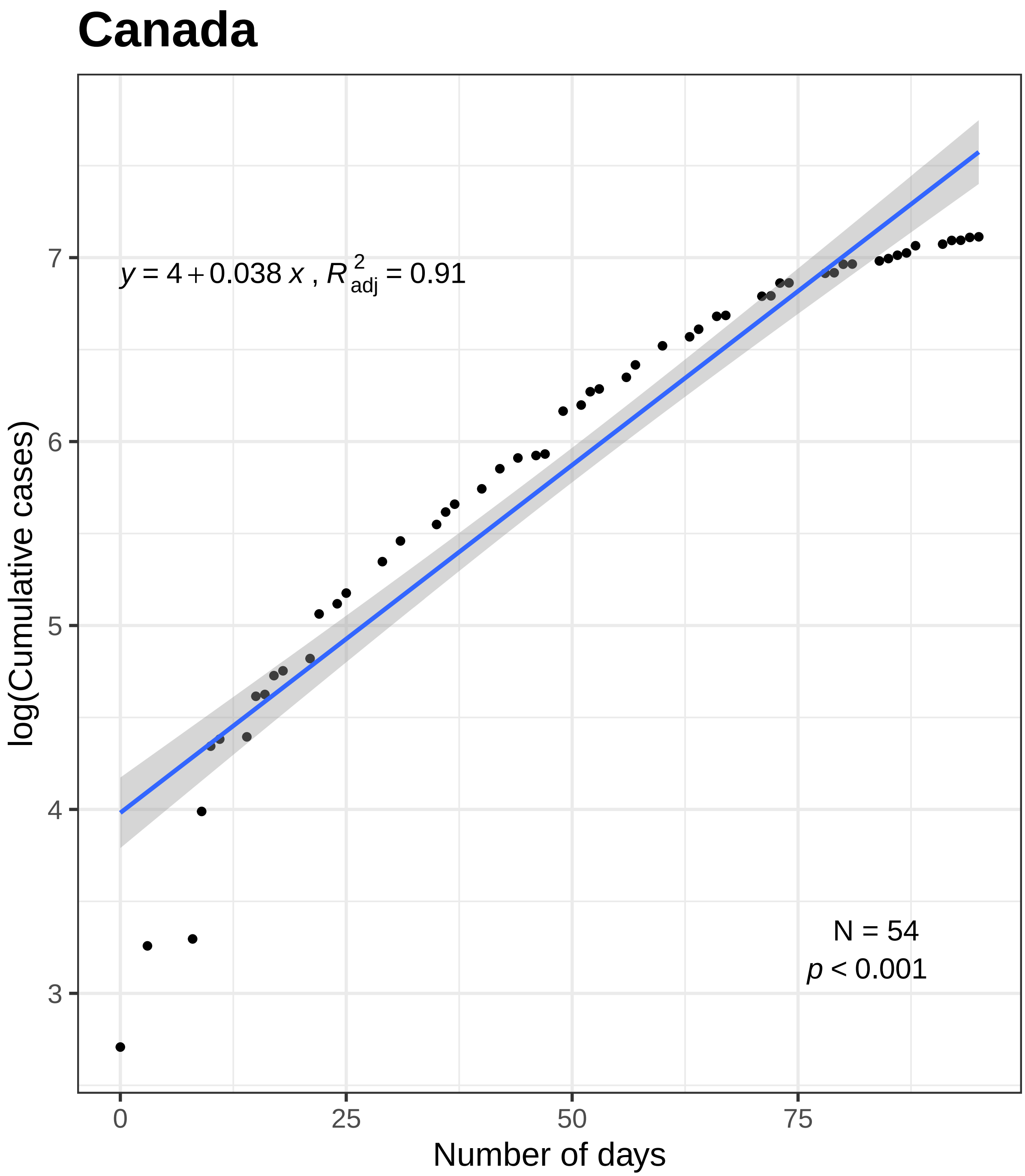
[1] Number of days with reports of confirmed cases in the date range

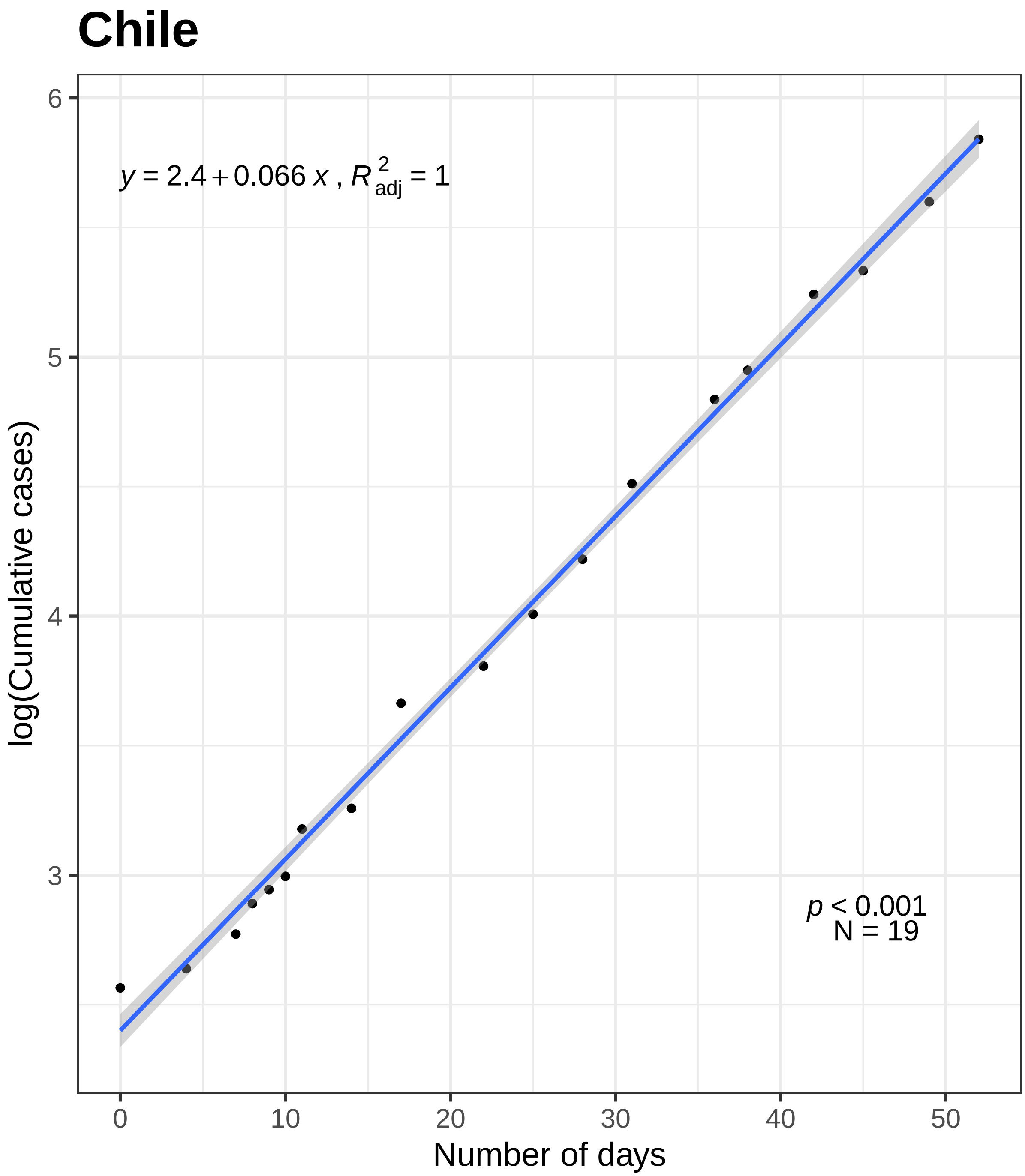
E.4 Plots of the regression results per country

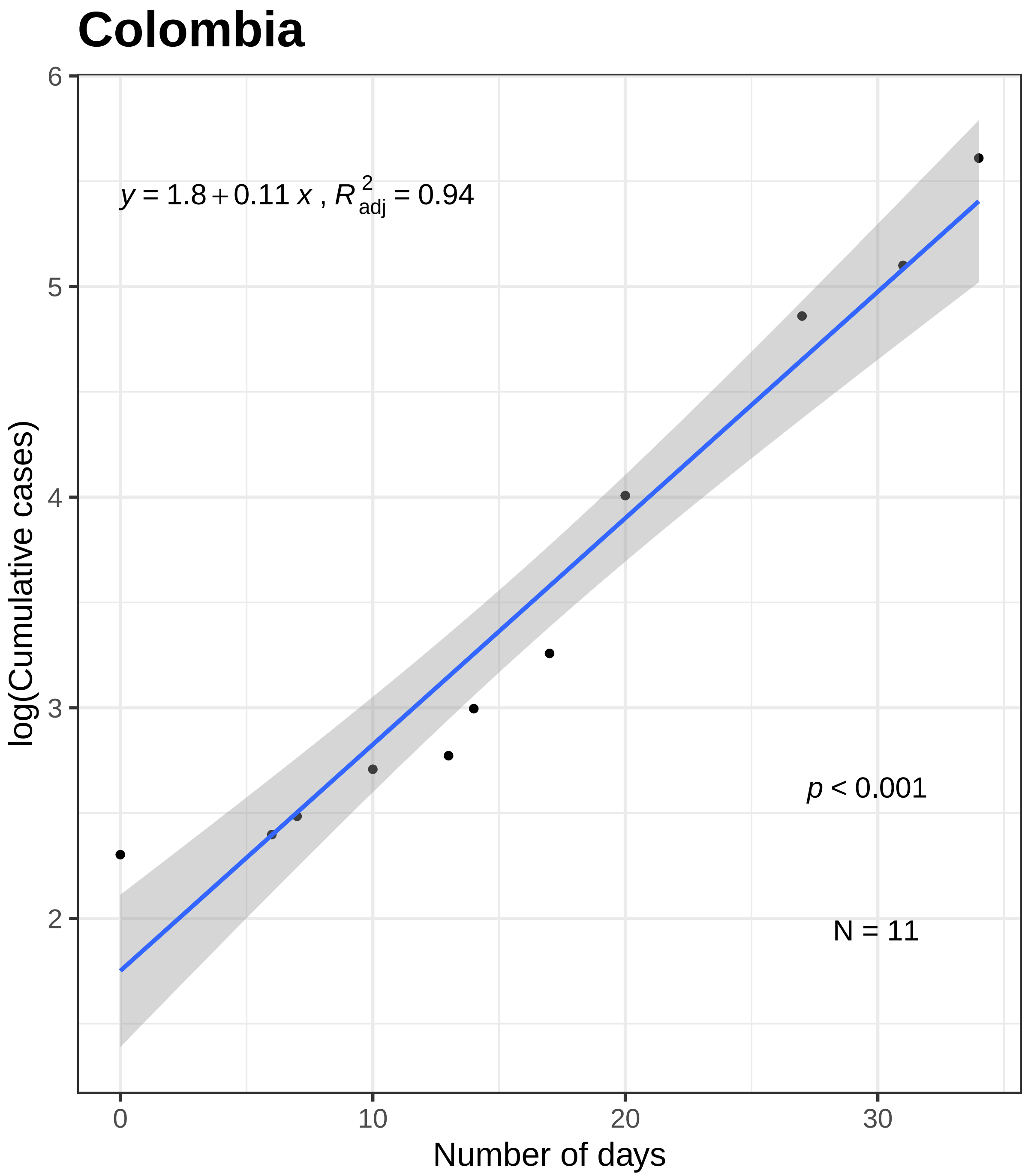



Belgium
$y = 3.2 + 0.048\,x$, $R^2_{adj} = 0.93$
N = 15
$p < 0.001$
log(Cumulative cases)
Number of days
7
6
5
4
3
0
20
40
60
80

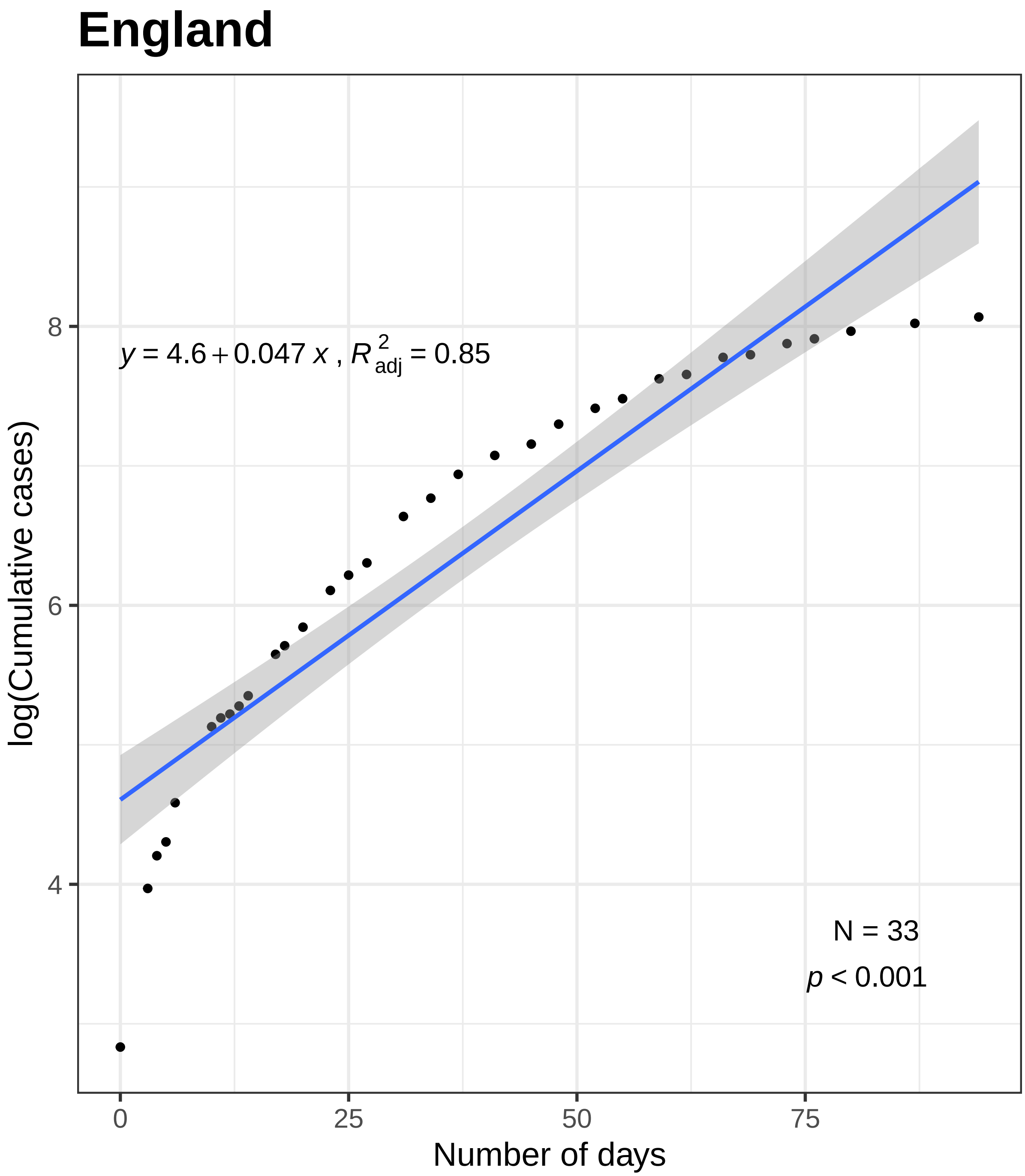

Brazil
y = 3.4 + 0.088 x , R2adj = 0.94
N = 57
p < 0.001
log(Cumulative cases)
Number of days
8
6
4
0
20
40
60

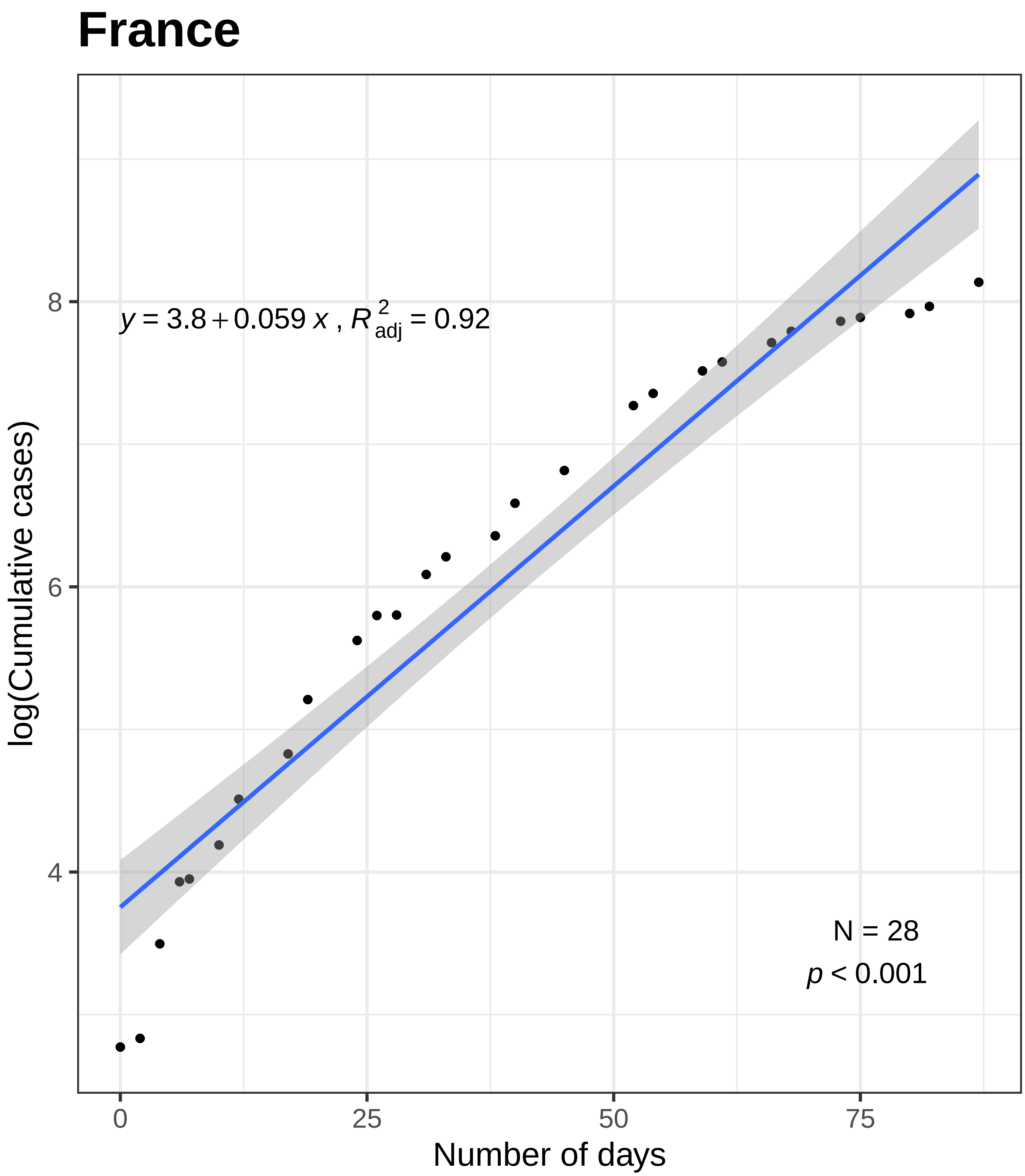

Canada
y = 4 + 0.038 x , R adj 2 = 0.91
N = 54
p < 0.001
log(Cumulative cases)
Number of days
7
6
5
4
3
0
25
50
75

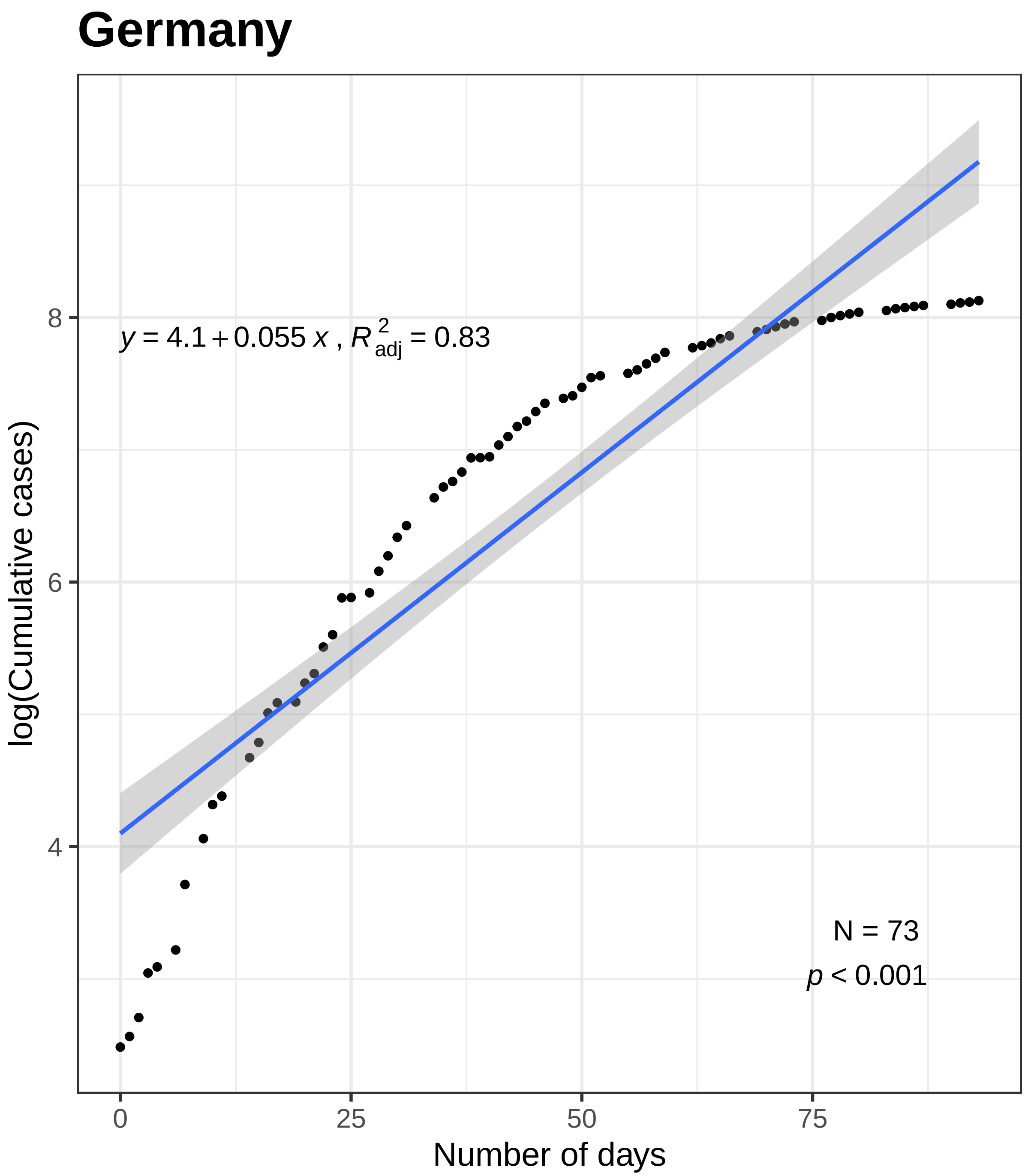

Chile
$y = 2.4 + 0.066\,x$, $R^2_{adj} = 1$
$p < 0.001$
N = 19
log(Cumulative cases)
Number of days
6
5
4
3
0
10
20
30
40
50

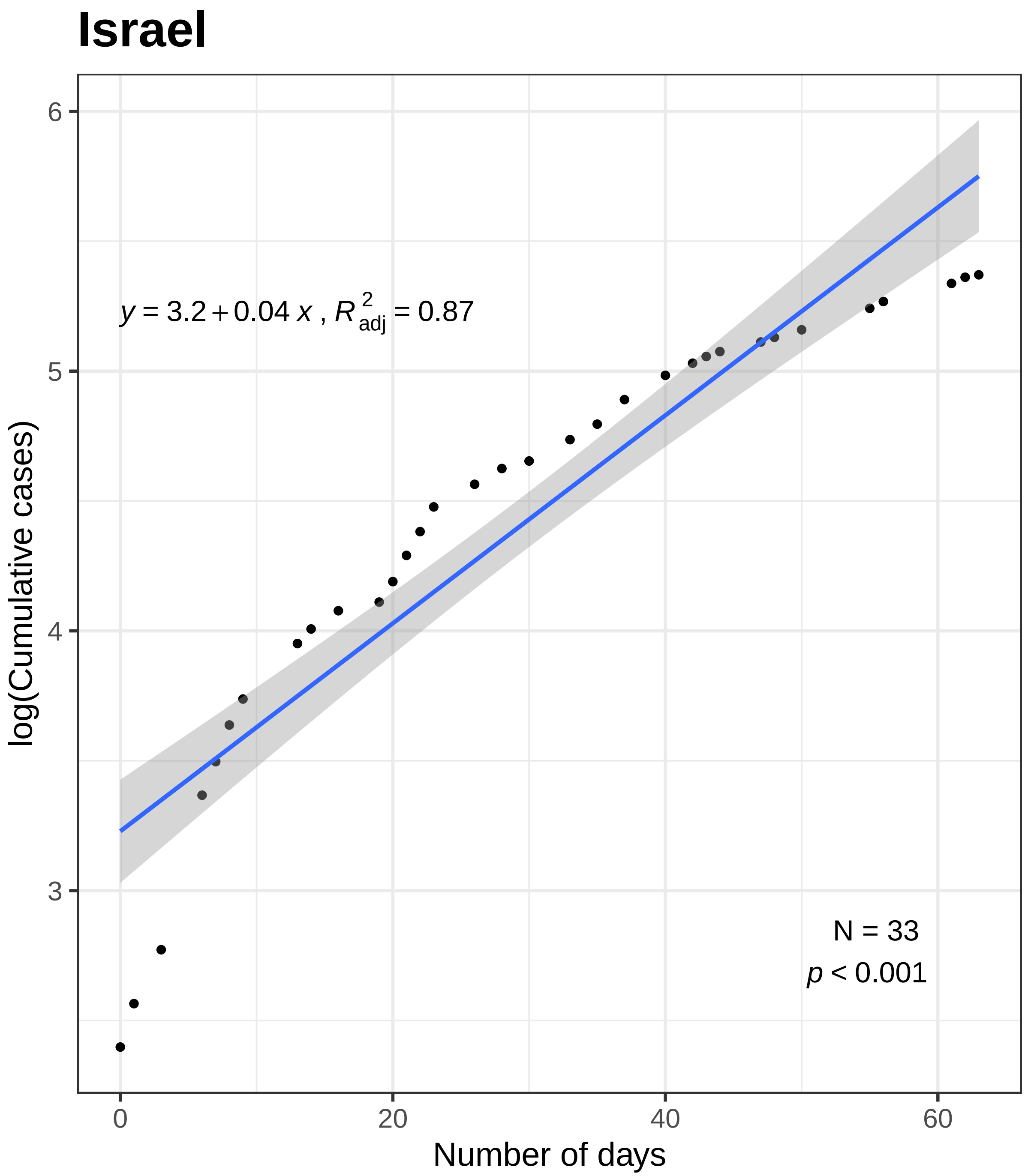


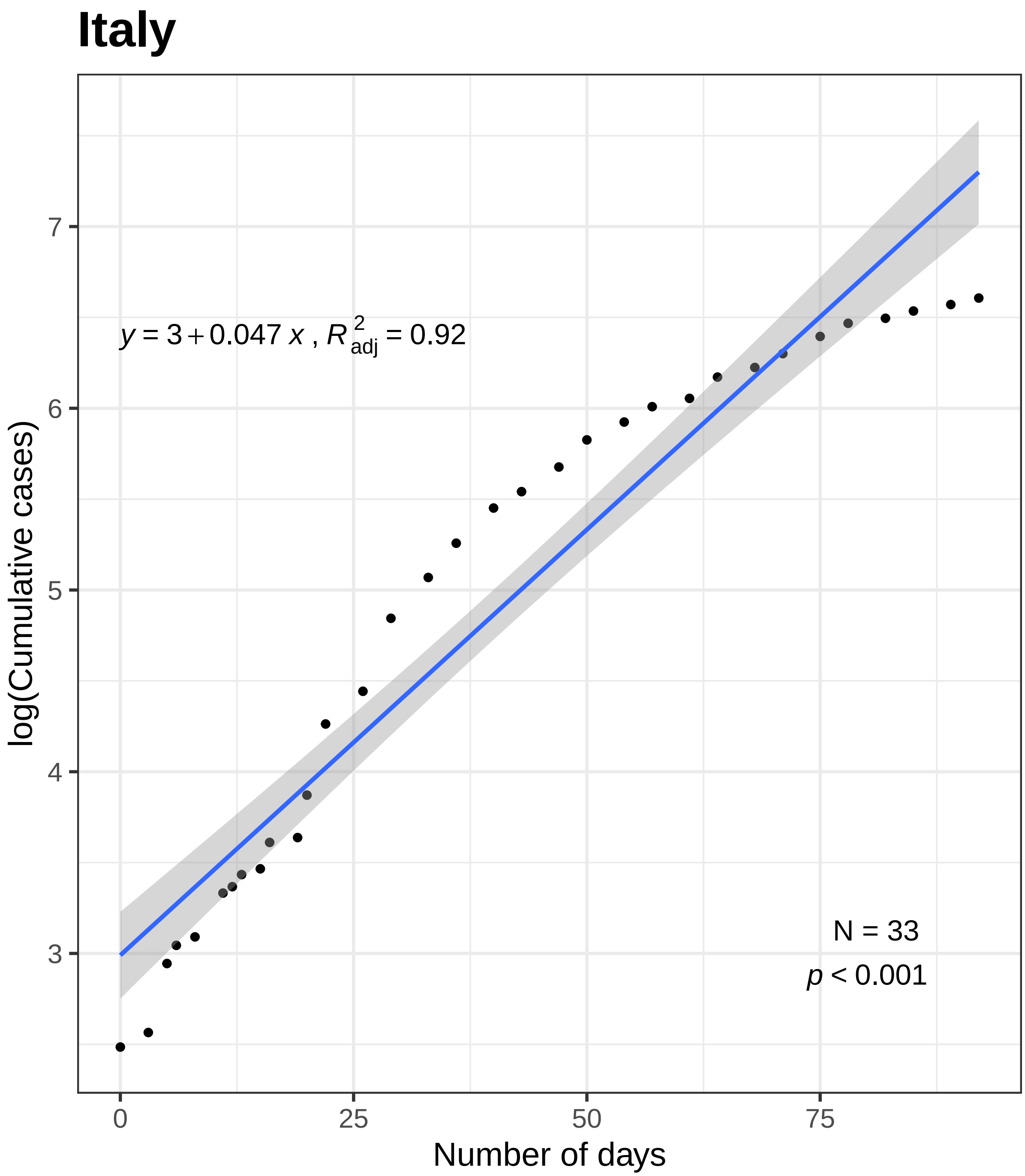
Colombia
$y = 1.8 + 0.11\,x$, $R^2_{adj} = 0.94$
$p < 0.001$
N = 11
6
5
4
3
2
0
10
20
30
log(Cumulative cases)
Number of days

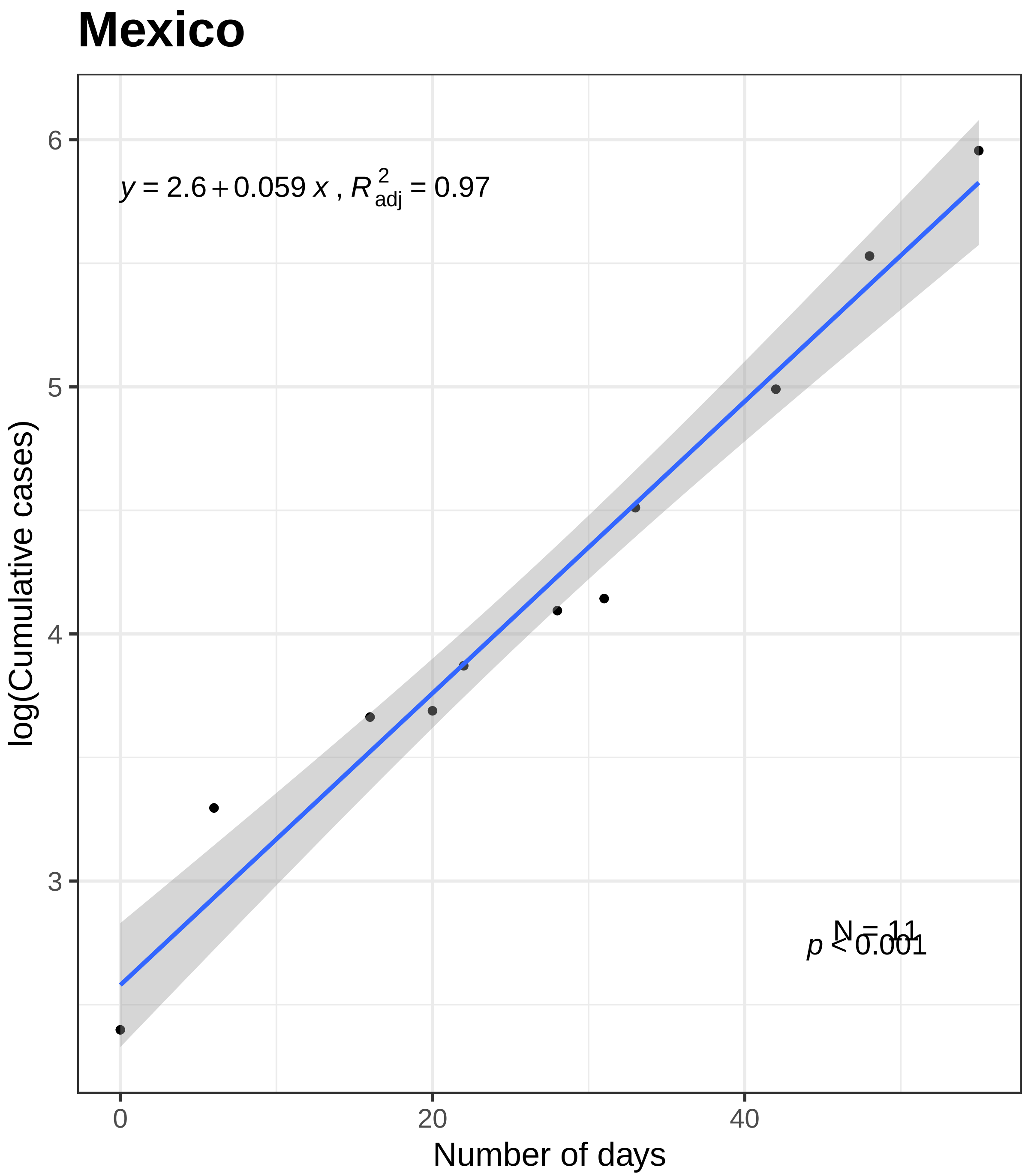

England
8
6
4
$y = 4.6 + 0.047\,x$, $R^2_{adj} = 0.85$
log(Cumulative cases)
N = 33
$p < 0.001$
0
25
50
75
Number of days

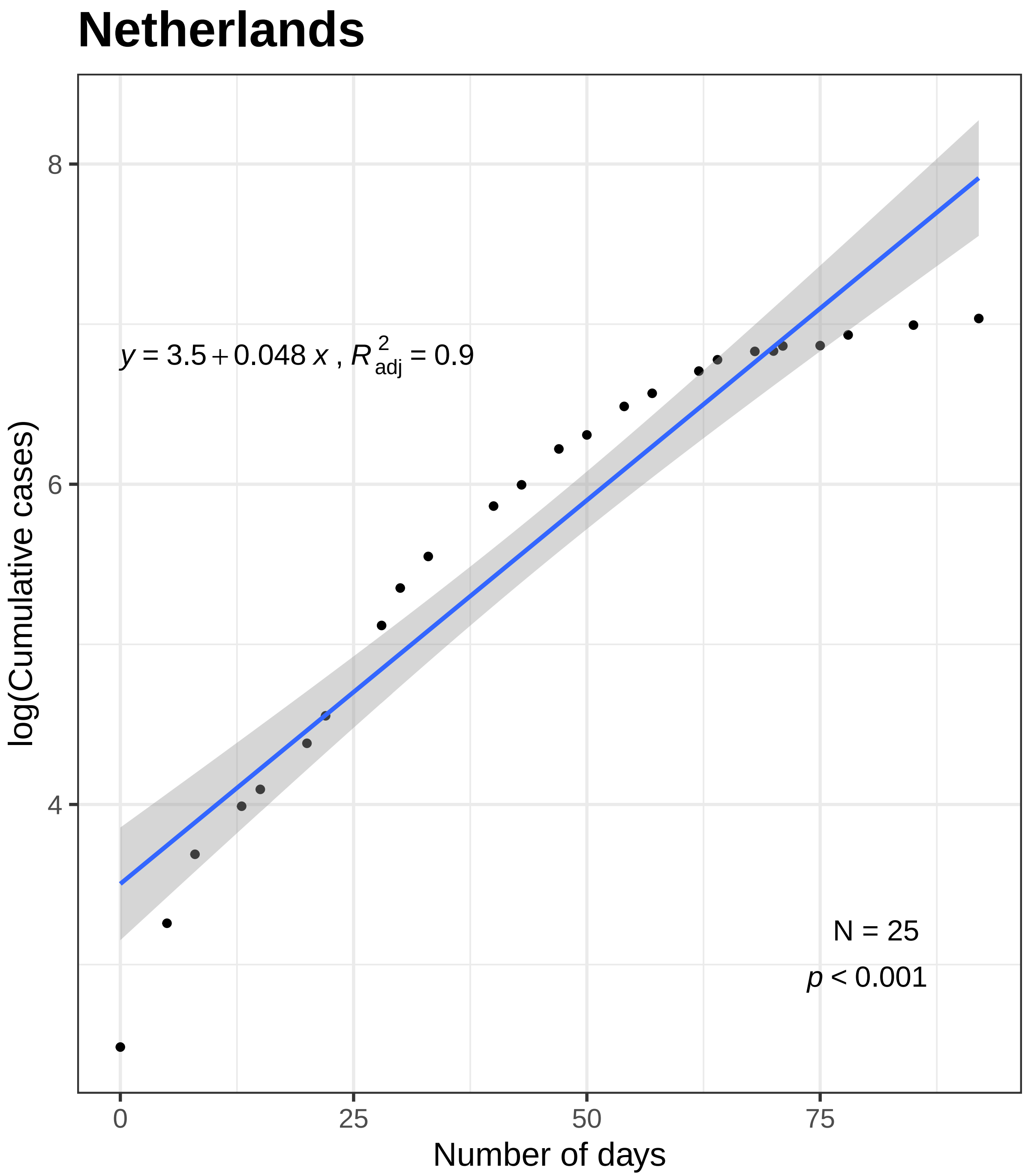

France
$y = 3.8 + 0.059\,x$, $R^2_{adj} = 0.92$
N = 28
$p < 0.001$
log(Cumulative cases)
8
6
4
0
25
50
75
Number of days

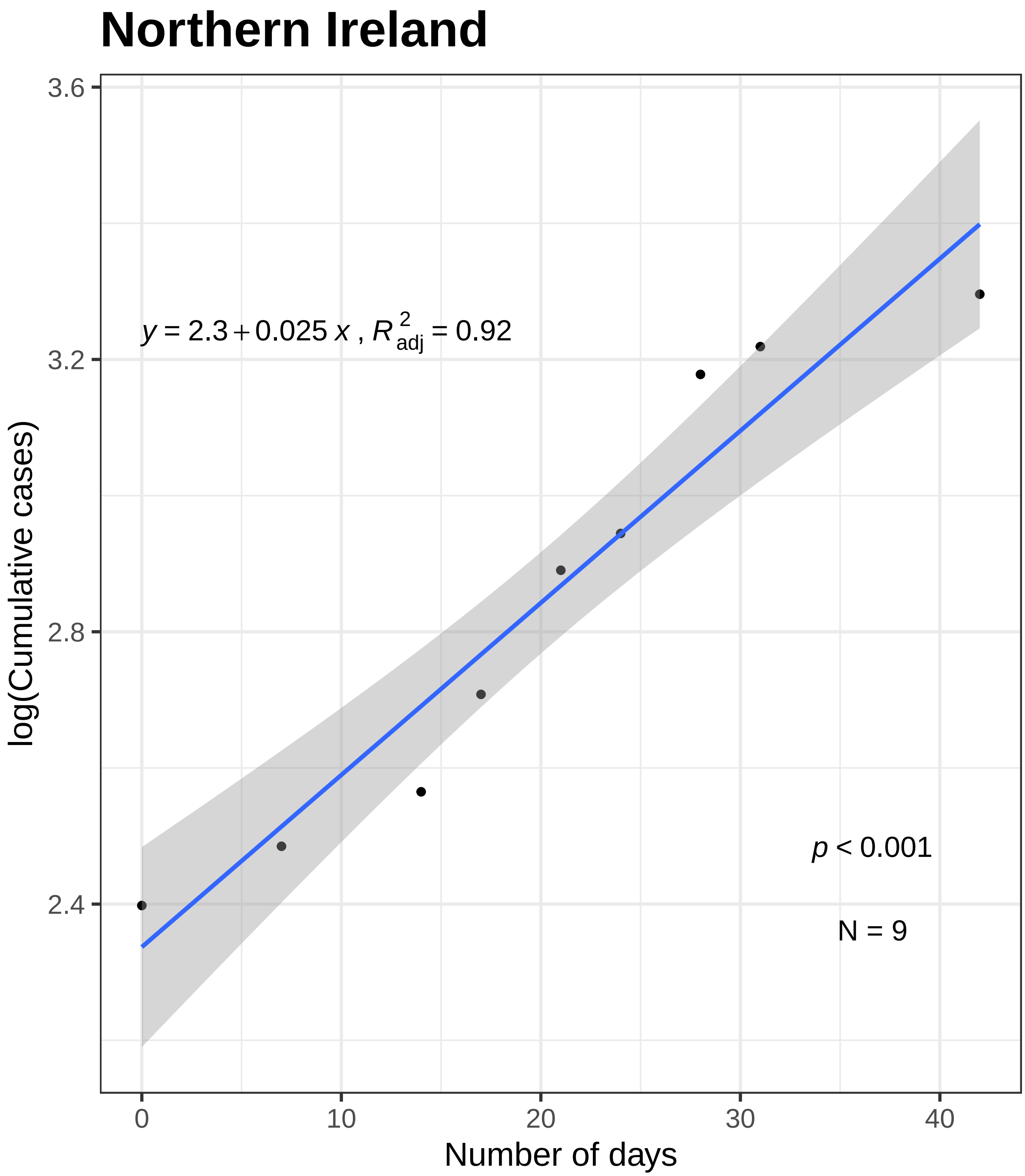

Germany
$y = 4.1 + 0.055\,x$, $R^2_{adj} = 0.83$
N = 73
$p < 0.001$
log(Cumulative cases)
Number of days
8
6
4
0
25
50
75

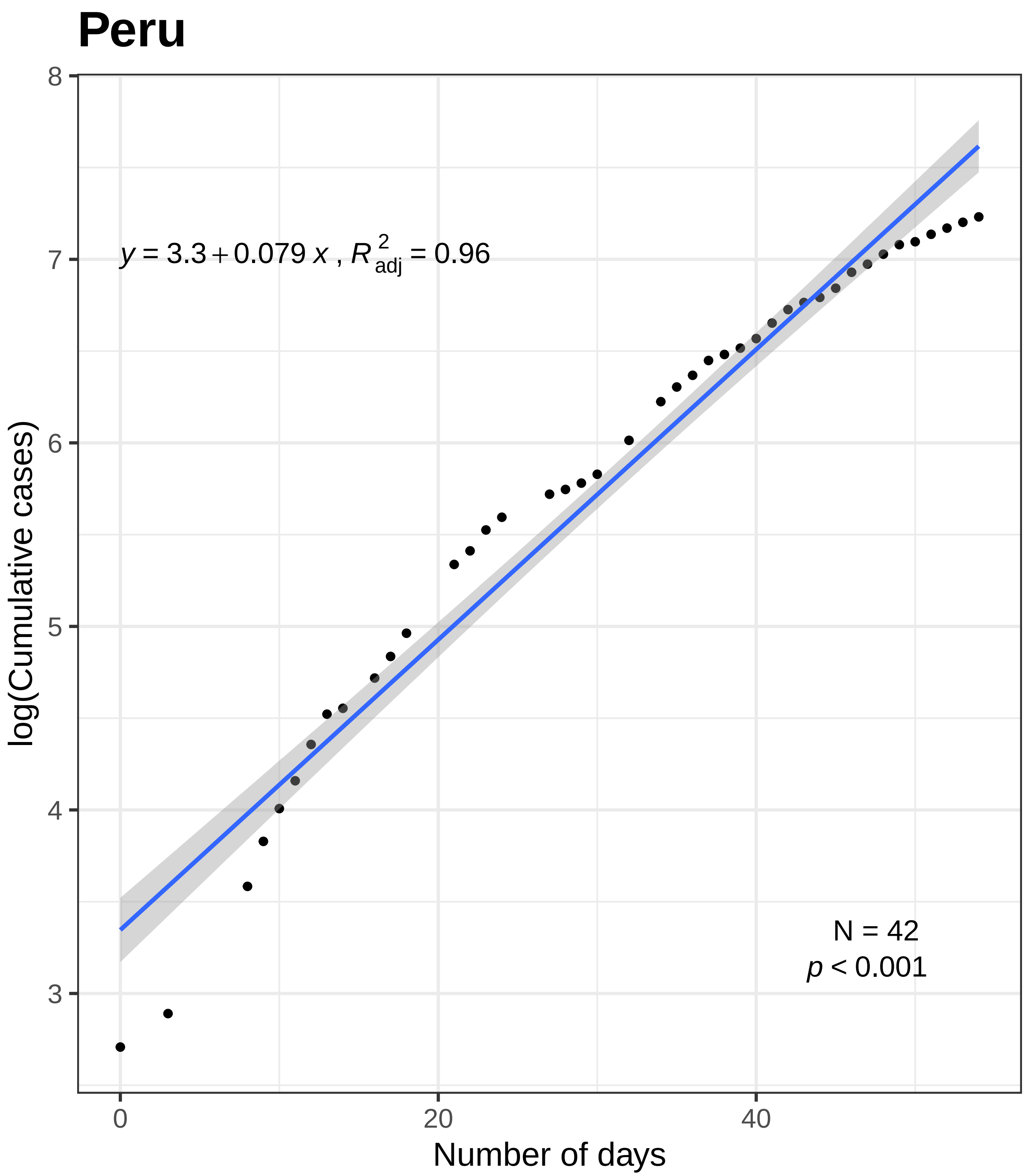

Israel
6
5
4
3
$y = 3.2 + 0.04\,x$, $R^2_{adj} = 0.87$
N = 33
$p < 0.001$
log(Cumulative cases)
0
20
40
60
Number of days


Italy
$y = 3 + 0.047\,x$, $R^2_{adj} = 0.92$
N = 33
$p < 0.001$
log(Cumulative cases)
Number of days
3
4
5
6
7
0
25
50
75

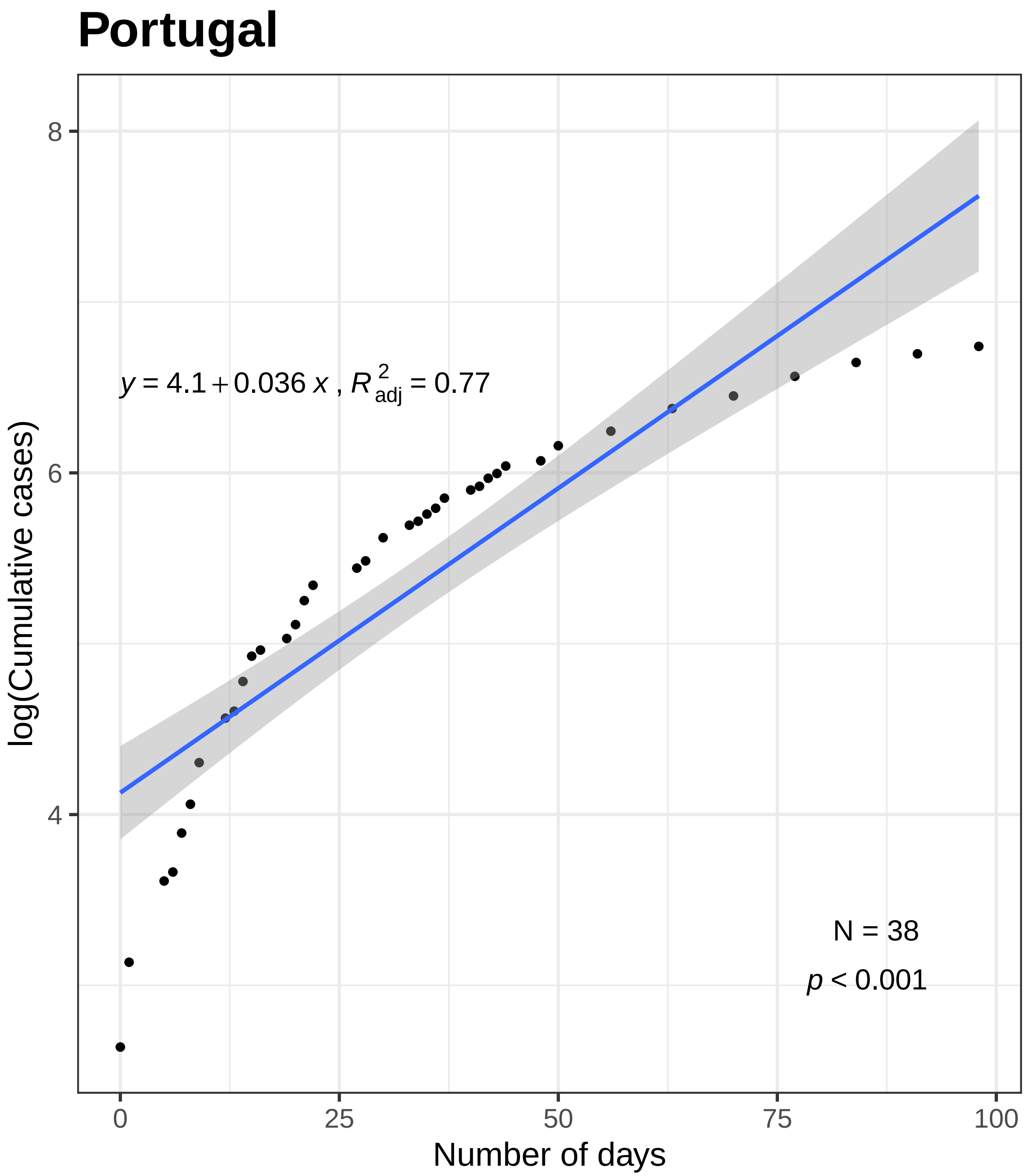

Mexico
$y = 2.6 + 0.059\,x$, $R^2_{adj} = 0.97$
N = 11
p < 0.001
6
5
4
3
0
20
40
log(Cumulative cases)
Number of days

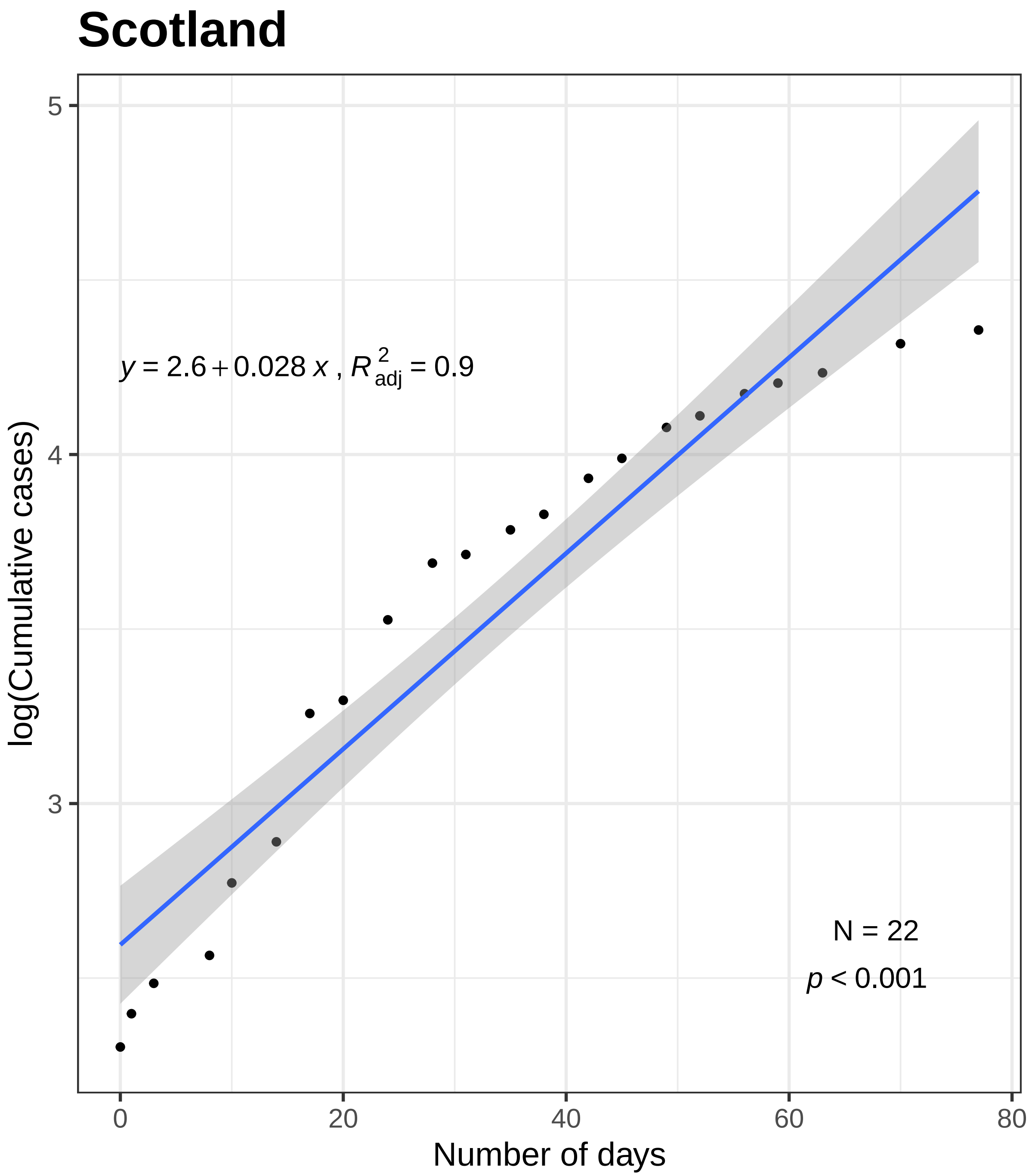

Netherlands
$y = 3.5 + 0.048\,x$, $R^2_{adj} = 0.9$
N = 25
$p < 0.001$
log(Cumulative cases)
Number of days
8
6
4
0
25
50
75

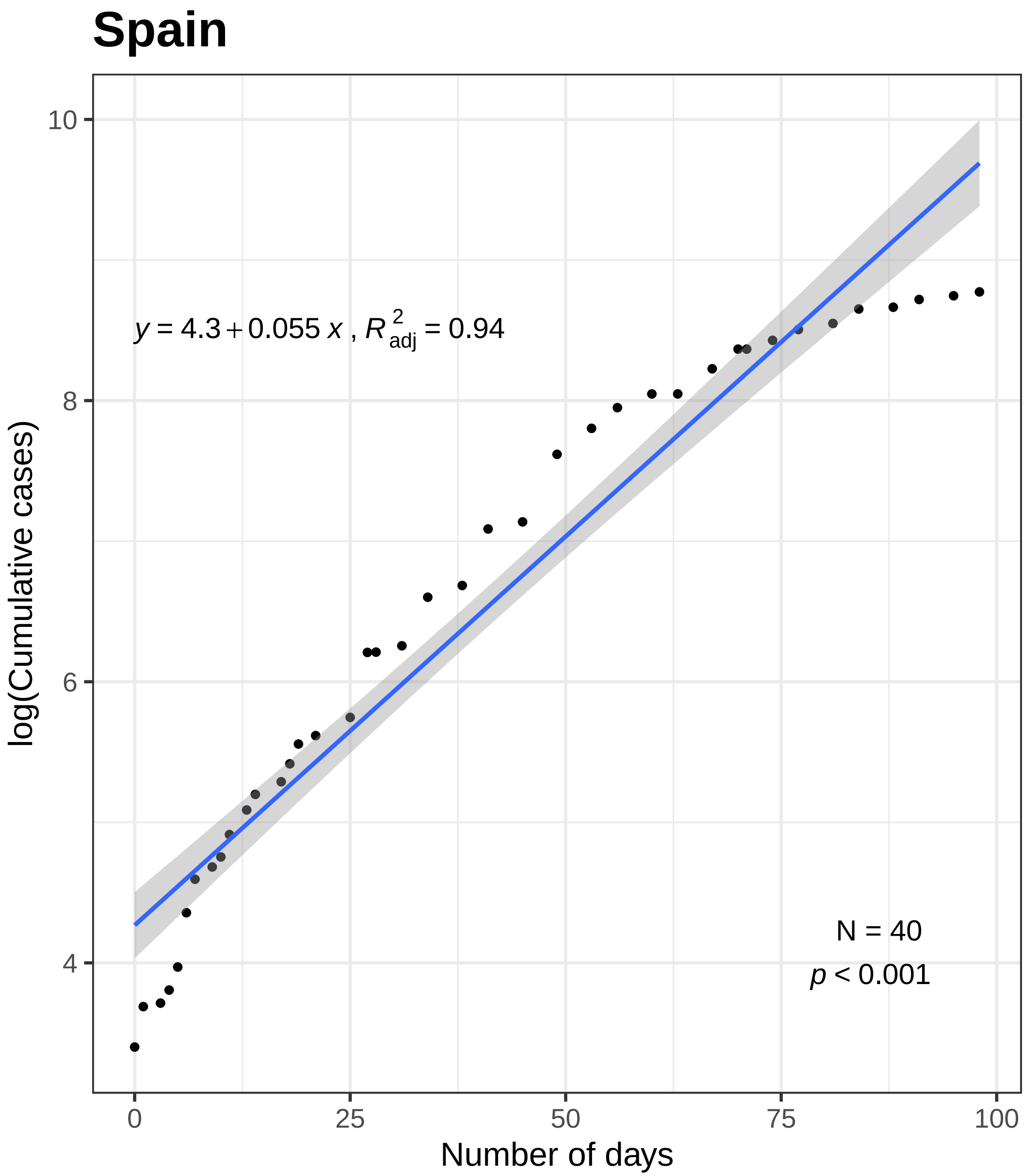

Northern Ireland
$y = 2.3 + 0.025\,x$, $R^2_{adj} = 0.92$
$p < 0.001$
N = 9
log(Cumulative cases)
Number of days
3.6
3.2
2.8
2.4
0
10
20
30
40

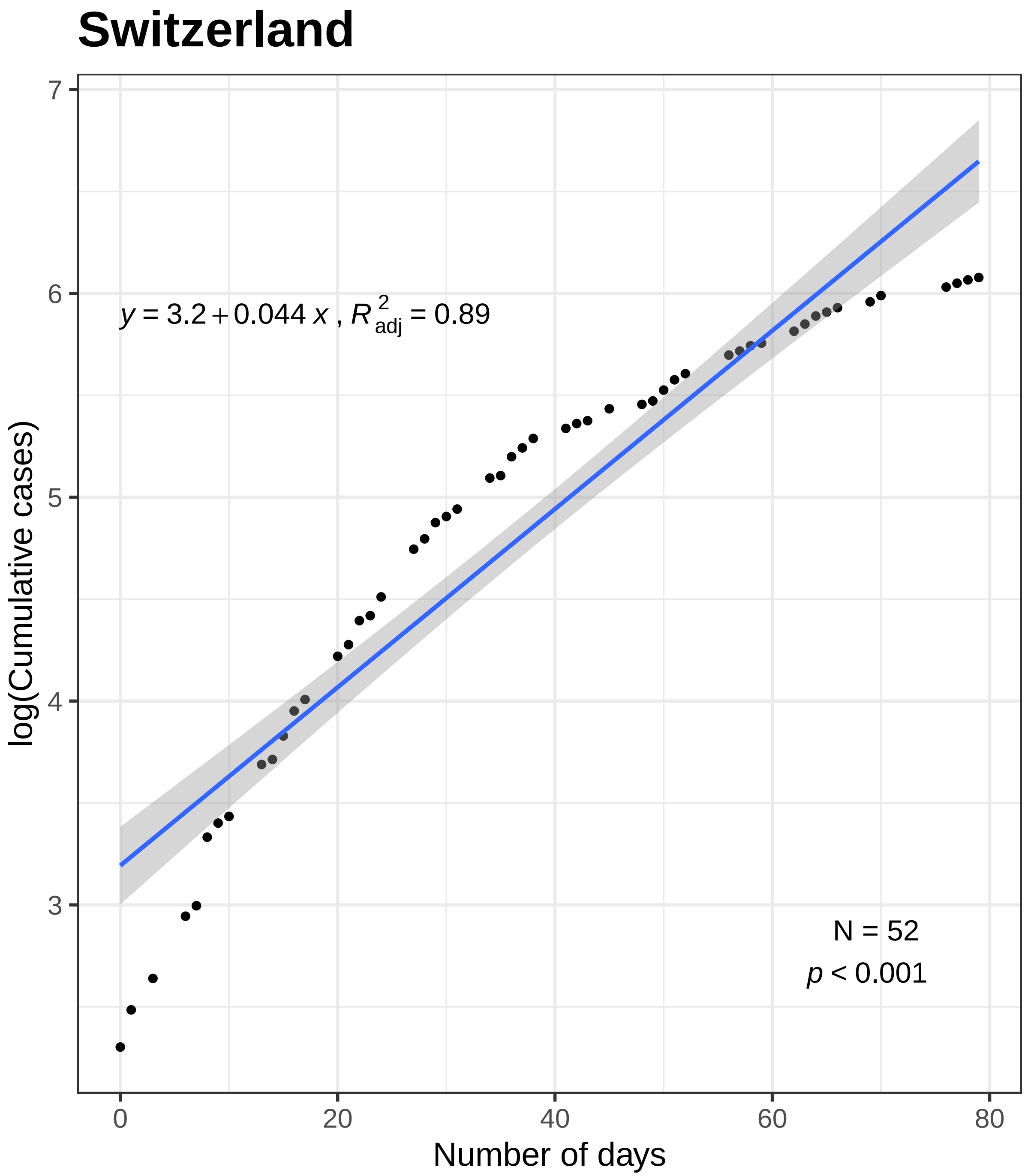


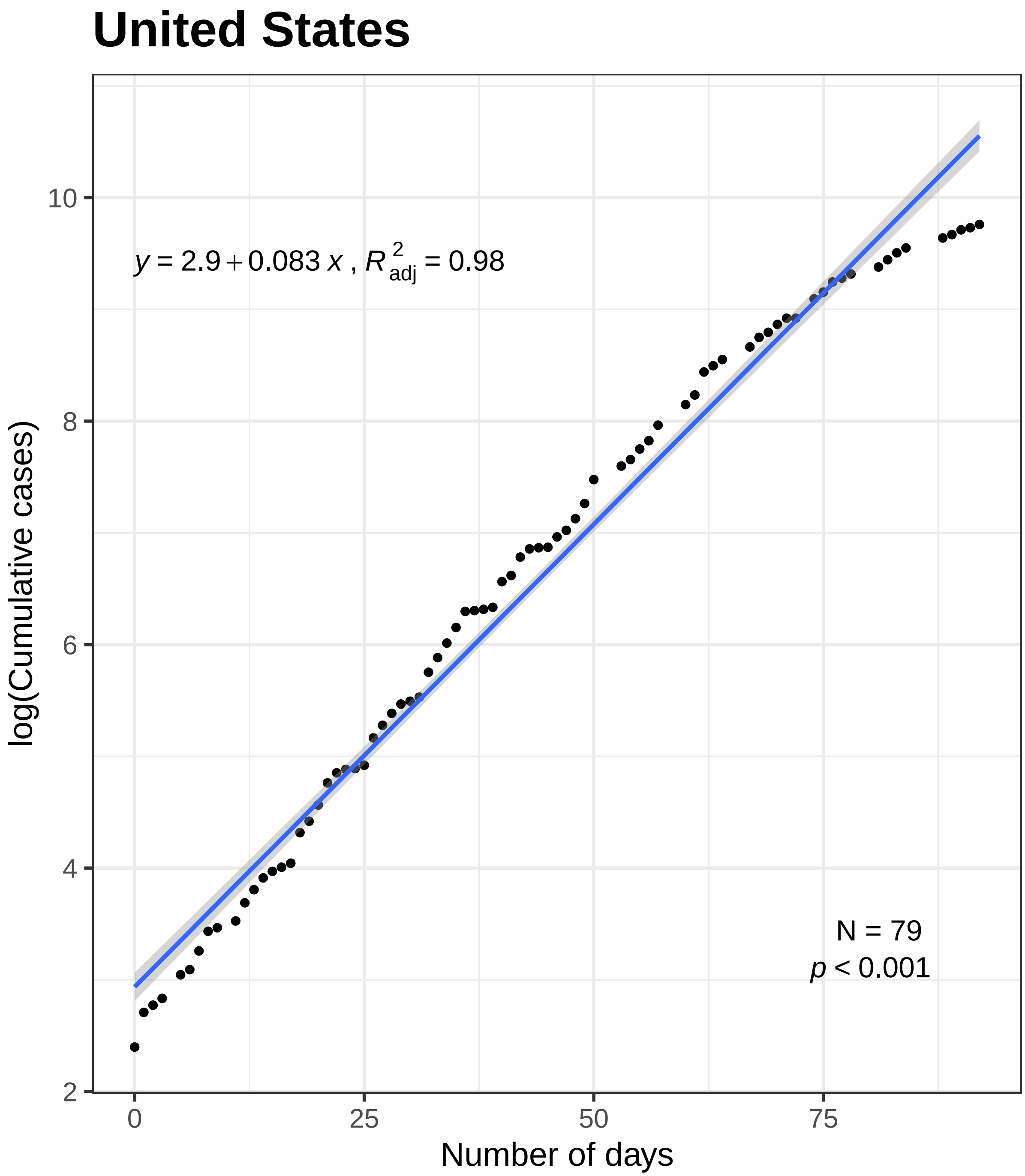
Peru
$y = 3.3 + 0.079\,x$, $R^2_{adj} = 0.96$
N = 42
$p < 0.001$
log(Cumulative cases)
Number of days
8
7
6
5
4
3
0
20
40

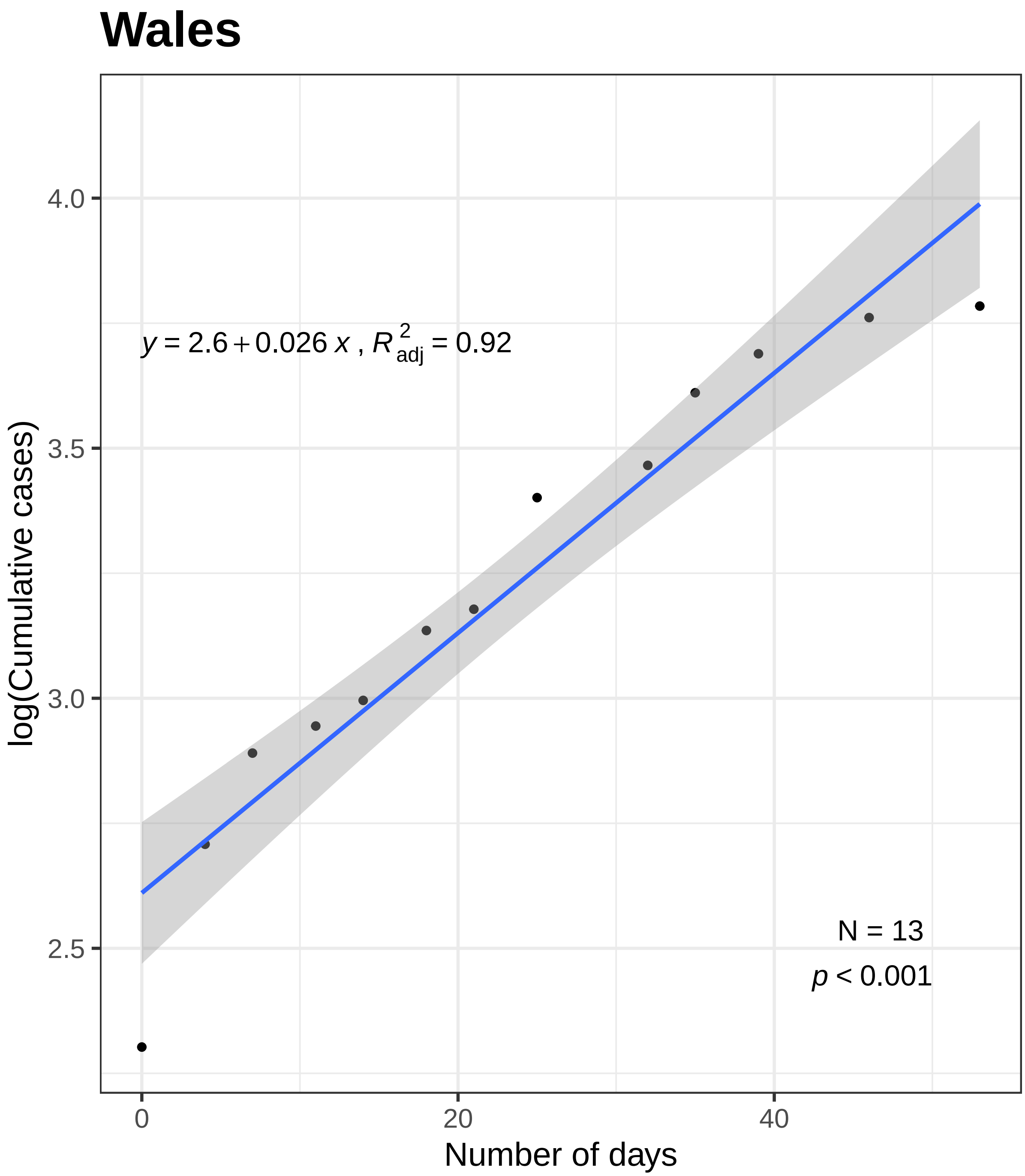

Portugal
$y = 4.1 + 0.036\,x$, $R^2_{adj} = 0.77$
N = 38
$p < 0.001$
log(Cumulative cases)
8
6
4
0
25
50
75
100
Number of days


Scotland
y = 2.6 + 0.028 x , R2adj = 0.9
N = 22
p < 0.001
log(Cumulative cases)
5
4
3
0
20
40
60
80
Number of days


Spain
$y = 4.3 + 0.055\,x$, $R^2_{adj} = 0.94$
N = 40
$p < 0.001$
log(Cumulative cases)
Number of days
10
8
6
4
0
25
50
75
100


Switzerland
y = 3.2 + 0.044 x , R2adj = 0.89
N = 52
p < 0.001
log(Cumulative cases)
Number of days
0
20
40
60
80
3
4
5
6
7


United States
y = 2.9 + 0.083 x , R²adj = 0.98
N = 79
p < 0.001
log(Cumulative cases)
Number of days
2
4
6
8
10
0
25
50
75


Wales
y = 2.6 + 0.026 x , R²adj = 0.92
N = 13
p < 0.001
log(Cumulative cases)
Number of days
4.0
3.5
3.0
2.5
0
20
40

F Estimation of the duplication time

Given two cumulative counts: C_1, C_2, obtained at two different times: t_1, t_2, their ratio Q is defined as follows:

$$Q = \frac{C_2}{C_1} = \frac{\alpha e^{(\gamma \log \beta) t_2}}{\alpha e^{(\gamma \log \beta) t_1}} = \alpha e^{(\gamma \log \beta)(t_2 - t_1)} \tag{4}$$

When $Q = 2$, then the difference $(t_2 - t_1)$ is defined as the duplication time T_d: the time it takes for the count to double in size with respect to an initial value.

Using that definition, and employing Equation 3:

$$\begin{aligned}
\log Q &= \log \frac{C_2}{C_1} &(5)\\
&= \log C_2 - \log C_1 &(6)\\
&= (A + Bt_2) - (A - Bt_1) &(7)\\
&= B(t_2 - t_1) &(8)\\
&= B(T_d) &(9)
\end{aligned}$$

Finally we can define T_d in terms of the slope (B), if $Q = 2$, then:

$$T_d = \frac{\log 2}{B} \tag{10}$$

Using the regression results of the slope and its standard error, we can calculate T_d and its C.I., obtaining:

Table 6: Duplication time estimates for selected countries

Country	N° Obs.[1]	Slope	S.E.$_{slope}$	95% CI$_{slope}$	$\widehat{T}_d$	95% CI$_{\widehat{T}_d}$
Colombia	11	0.1075	0.0083	[0.0912 - 0.1237]	6.4498	[5.6023 - 7.5993]
Brazil	57	0.0879	0.0030	[0.0820 - 0.0938]	7.8886	[7.3917 - 8.4571]
United States	79	0.0828	0.0013	[0.0803 - 0.0853]	8.3710	[8.1276 - 8.6293]
Peru	42	0.0791	0.0025	[0.0741 - 0.0840]	8.7651	[8.2493 - 9.3498]
Chile	19	0.0662	0.0011	[0.0641 - 0.0682]	10.4747	[10.1563 - 10.8138]
France	28	0.0591	0.0034	[0.0525 - 0.0657]	11.7345	[10.5529 - 13.2139]
Mexico	11	0.0590	0.0035	[0.0522 - 0.0659]	11.7391	[10.5207 - 13.2767]
Spain	40	0.0553	0.0023	[0.0508 - 0.0598]	12.5303	[11.5825 - 13.6469]
Germany	73	0.0546	0.0029	[0.0489 - 0.0603]	12.6951	[11.5015 - 14.1651]
Netherlands	25	0.0479	0.0033	[0.0415 - 0.0543]	14.4647	[12.7663 - 16.6843]
Belgium	15	0.0475	0.0034	[0.0409 - 0.0542]	14.5785	[12.7890 - 16.9503]
England	33	0.0471	0.0034	[0.0404 - 0.0538]	14.7056	[12.8734 - 17.1457]
Italy	33	0.0468	0.0024	[0.0422 - 0.0515]	14.7974	[13.4588 - 16.4317]
Switzerland	52	0.0437	0.0021	[0.0395 - 0.0479]	15.8500	[14.4612 - 17.5339]
Austria	20	0.0426	0.0027	[0.0374 - 0.0478]	16.2767	[14.5060 - 18.5398]
Israel	33	0.0400	0.0028	[0.0346 - 0.0454]	17.3160	[15.2513 - 20.0271]
Canada	54	0.0378	0.0016	[0.0346 - 0.0410]	18.3300	[16.8930 - 20.0343]
Portugal	38	0.0357	0.0032	[0.0294 - 0.0419]	19.4396	[16.5470 - 23.5577]
Scotland	22	0.0280	0.0020	[0.0241 - 0.0320]	24.7173	[21.6947 - 28.7185]
Wales	13	0.0260	0.0023	[0.0215 - 0.0304]	26.6662	[22.7720 - 32.1671]
Northern Ireland	9	0.0253	0.0026	[0.0201 - 0.0304]	27.4195	[22.7908 - 34.4076]

[1] Number of days with reports of confirmed cases in the date range

G Estimation of the effective reproduction number

According to (Bonifazi et al. 2021) there is a functional relation between the effective reproduction number (R_t), and the duplication time, of the form:

$$\widehat{R}_t = e^{(g \log 2)/\widehat{T}_d} \tag{11}$$

where: g is the generation time, and $\widehat{T}_d$ is the estimate of the duplication time.

Combining Equation 10 and Equation 11, we can derive

$$\widehat{R}_t = e^{(g \log 2)/(\log 2/B)} = e^{gB} \tag{12}$$

A recent article (Guzzetta et al. 2022), gives an early estimate for the generation time of the current MPXV outbreak of 12.5 days (95% CI: [7.5 - 17.3]). Using Equation 12, along with our estimate for the slope (B) and the published estimate for g with its 95% CI, we can compute a possible value of R_t:

Table 7: Estimates of R_t for selected countries

Country	Slope	R_t(mean)[1]	R_t(lower)[2]	R_t(upper)[3]
Colombia	0.107	3.832	2.239	6.419
Brazil	0.088	2.999	1.933	4.573
United States	0.083	2.815	1.861	4.189
Peru	0.079	2.687	1.810	3.928
Chile	0.066	2.287	1.643	3.142
France	0.059	2.093	1.557	2.778
Mexico	0.059	2.092	1.557	2.777
Spain	0.055	1.997	1.514	2.604
Germany	0.055	1.979	1.506	2.572
Netherlands	0.048	1.820	1.432	2.291
Belgium	0.048	1.812	1.428	2.276
England	0.047	1.803	1.424	2.260
Italy	0.047	1.796	1.421	2.249
Switzerland	0.044	1.727	1.388	2.131
Austria	0.043	1.703	1.376	2.089
Israel	0.040	1.649	1.350	1.999
Canada	0.038	1.604	1.328	1.924
Portugal	0.036	1.562	1.307	1.853
Scotland	0.028	1.420	1.234	1.624
Wales	0.026	1.384	1.215	1.568
Northern Ireland	0.025	1.372	1.209	1.549

[1] Using the mean estimate of 12.5 days

[2] Using the lower estimate of 7.5 days

[3] Using the higher estimate of 17.3 days

H References

Bonifazi, Gianluca, Luca Lista, Dario Menasce, Mauro Mezzetto, Daniele Pedrini, Roberto Spighi, and Antonio Zoccoli. 2021. "A Simplified Estimate of the Effective Reproduction Number R_t Using Its Relation with the Doubling Time and Application to Italian COVID-19 Data." *The European Physical Journal Plus* 136 (4): 386. https://doi.org/10.1140/epjp/s13360-021-01339-6.

Guzzetta, Giorgio, Alessia Mammone, Federica Ferraro, Anna Caraglia, Alessia Rapiti, Valentina Marziano, Piero Poletti, et al. 2022. "Early Estimates on Monkeypox Incubation Period, Generation Time and Reproduction Number in Italy, May-June 2022." arXiv. https://doi.org/10.48550/arXiv.2207.13483.