

ma615 1004

Luyin Fu

10/3/2019

question1

How many continents are included in the data set?

the number of continents in the data is 5

How many countrys are included? How many countries per continent?

142 countries are involved in the gapminder dataset

Table 1: the number of countries involved

continent	number
Africa	52
Americas	25
Asia	33
Europe	30
Oceania	2

Using the gapminder data, produce a report showing the continents in the dataset, total population per continent, and GDP per capita.

Table 2: Total Population and GDP per Capita

Year	Africa		American		Asia	
Year	Total Population	GDP Per Capita	Total Population.1	GDP Per Capita.1	Total Population.2	GDP Per Capita.2
1952	237640501	1311.221	345152446	8528.043	1395357351	806.3599
1957	264837738	1444.952	386953916	9097.793	1562780599	998.1089
1962	296516865	1540.599	433270254	9760.252	1696357182	1169.8696
1967	335289489	1774.847	480746623	11329.644	1905662900	1465.8422
1972	379879541	2063.171	529384210	12663.731	2150972248	1908.3136
1977	433061021	2244.799	578067699	14015.892	2384513556	2211.5561
1982	499348587	2295.192	630290920	14410.568	2610135582	2458.1706
1987	574834110	2180.764	682753971	16091.001	2871220762	2778.9215
1992	659081517	2071.615	739274104	16566.921	3133292191	3234.3988
1997	743832984	2098.865	796900410	18279.991	3383285500	3780.5626
2002	833723916	2201.907	849772762	19453.690	3601802203	4196.6205
2007	929539692	2560.930	898871184	21602.746	3811953827	5432.3717

Table 3: Total Population and GDP per Capita

Year	Europe		Oceania	
Year	Total Population	GDP Per Capita	Total Population.1	GDP Per Capita.1
1952	418120846	6096.659	10686006	10136.10
1957	437890351	7535.414	11941976	11191.92
1962	460355155	9057.226	13283518	12396.78
1967	481178958	10808.867	14600414	14514.50
1972	500635059	13104.843	16106100	16653.58
1977	517164531	14813.517	17239000	17948.57
1982	531266901	15782.128	18394850	19155.05
1987	543094160	17483.569	19574415	21400.54
1992	558142797	18420.192	20919651	22593.03
1997	568944148	20227.307	22241430	26014.90
2002	578223869	22644.282	23454829	29438.45
2007	586098529	25244.048	24549947	32884.56

Produce a well-labeled table that summarizes GDP per capita for the countries in each continent, contrasting the years 1952 and 2007.

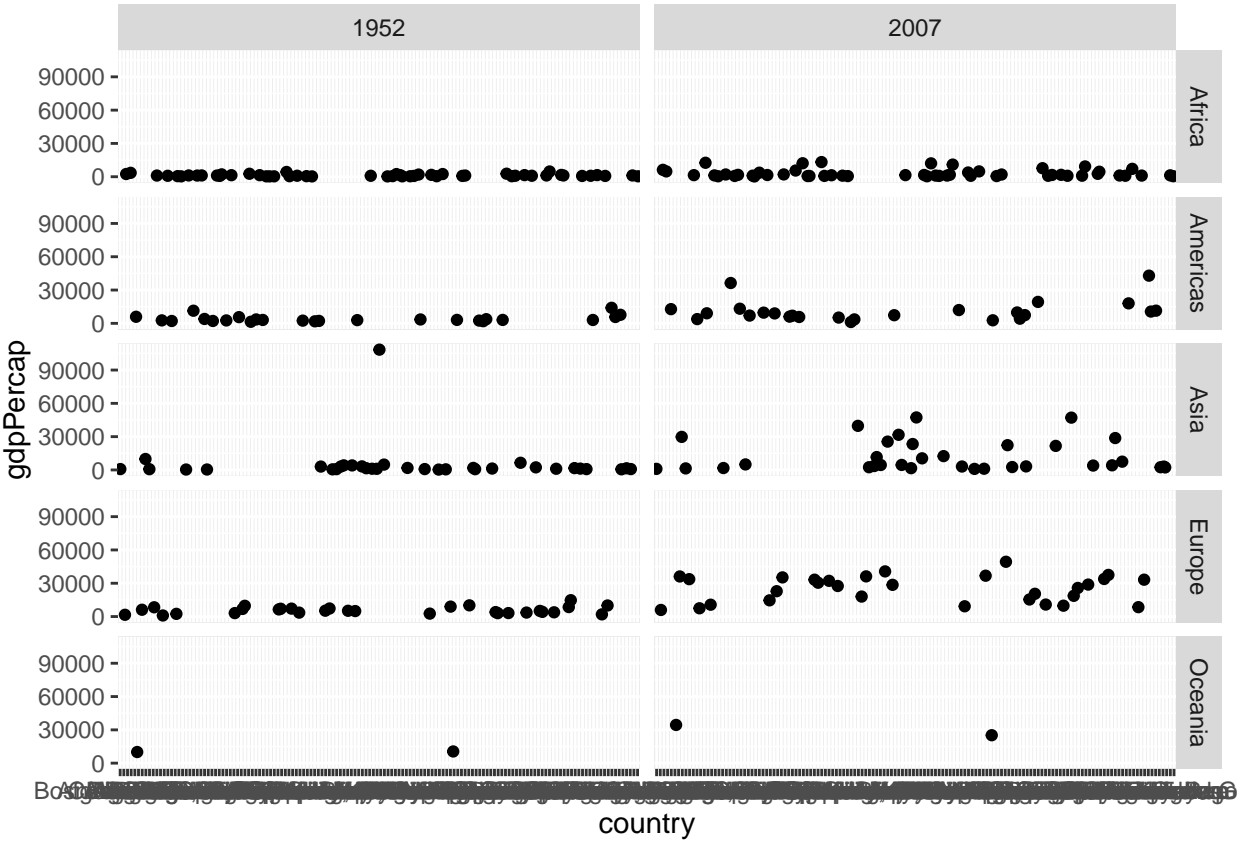
Table 4: GDP per Capita Summary 1952

continent	mean	min	max	sd
Africa	1252.572	298.8462	4725.296	982.9521
Americas	4079.063	1397.7171	13990.482	3001.7275
Asia	5195.484	331.0000	108382.353	18634.8909
Europe	5661.057	973.5332	14734.233	3114.0605
Oceania	10298.086	10039.5956	10556.576	365.5601

Table 5: GDP per Capita Summary 2007

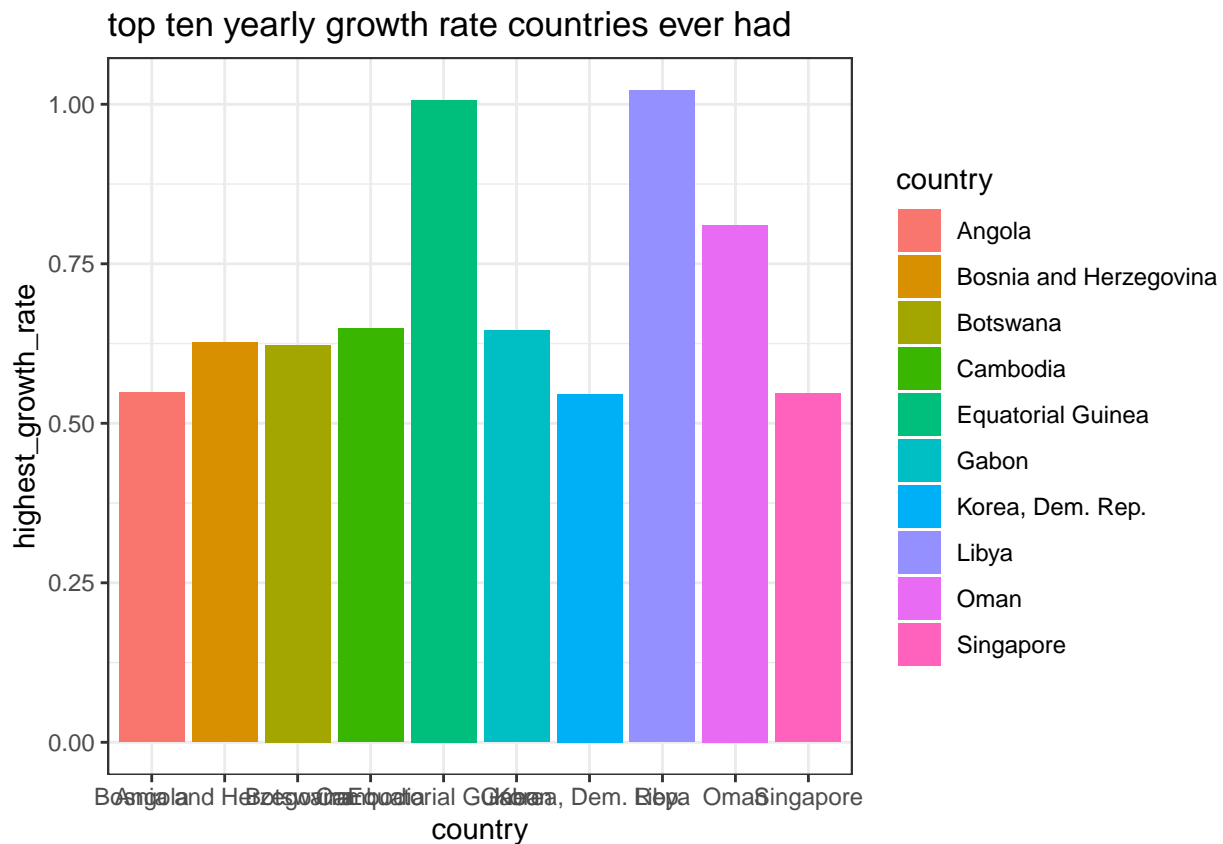
continent	mean	min	max	sd
Africa	3089.033	277.5519	13206.48	3618.163
Americas	11003.032	1201.6372	42951.65	9713.209
Asia	12473.027	944.0000	47306.99	14154.937
Europe	25054.482	5937.0295	49357.19	11800.340
Oceania	29810.188	25185.0091	34435.37	6540.991

Product a plot that summarizes the same data as the table. There should be two plots per continent.



Which countries in the dataset have had periods of negative population growth? Illustrate your answer with a table or plot.

Which countries in the dataset have had the highest rate of growth in per capita GDP? Illustrate your answer with a table or plot.



question2

There are four possible gender combinations for the first two Children. Product a plot the contracts the frequency of these four combinations.

Table 6: frequency of first two baby gender

gender1	gender2	frequency
female	female	0.239
female	male	0.246
male	female	0.248
male	male	0.266

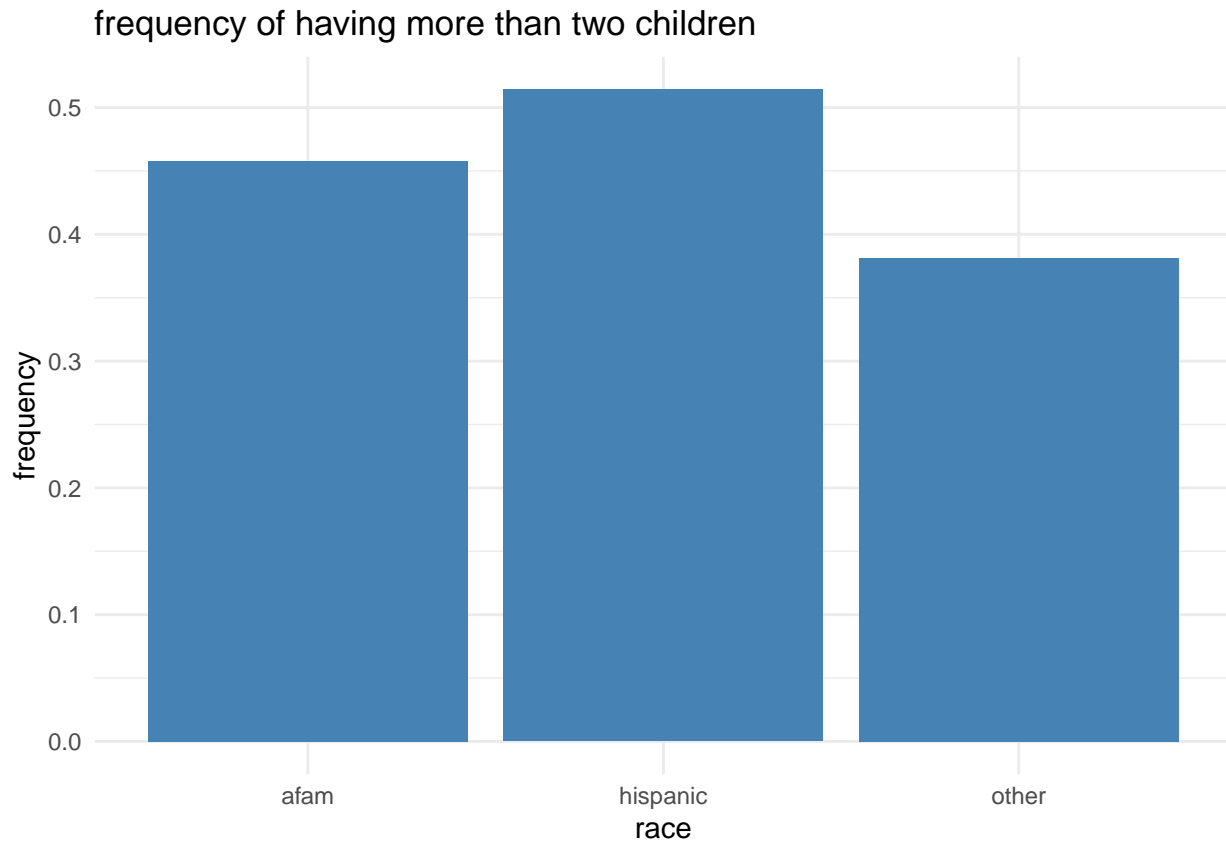
Are the frequencies different for women in their 20s and women who are older than 29?

Table 7: frequency comparison

age before 30			age above 30		
baby1 gender	baby2 gender	frequency	baby1 gender	baby2 gender	frequency
female	female	0.2380947	female	female	0.2415160
female	male	0.2470194	female	male	0.2450544
male	female	0.2489604	male	female	0.2466331
male	male	0.2659255	male	male	0.2667966

the frequencies are pretty similar

Produce a plot that contrasts the frequency of having more than two children by race and ethnicity.



question 3

How many times does the letter “e” occur in mtcars rownames?

How many cars in mtcars have the brand Merc?

How many cars in mpg have the brand(“manufacturer” in mpg) Merc?

there are 20 cars in mtcars with a ‘e’ in their names

there are 7 cars in mtcars that have the brand Merc

there are 1 cars in mpg that have the brand Merc

Contrast the mileage data for Merc cars as reported in `mtcars` and `mpg`.

Table 8: Merc cars mileage data (miles per gallon)

Merc 240D	Merc 230	Merc 280	Merc 280C	Merc 450SE	Merc 450SL	Merc 450SLC
24.4	22.8	19.2	17.8	16.4	17.3	15.2

question 4

Draw a sample of 500,000 rows from the `babynames` data

This is a glimpse of a sample of the `babynames` data

```
## Observations: 500,000
## Variables: 5
## $ year <dbl> 2001, 2014, 1947, 1942, 2014, 2000, 2003, 1992, 1931, 200...
## $ sex <chr> "M", "F", "M", "F", "F", "F", "F", "F", "M", "F", "F", "M...
## $ name <chr> "Thomson", "Ayveri", "Knute", "Teri", "Tzivy", "Temitope"...
## $ n <int> 8, 7, 6, 52, 5, 7, 16, 34, 16, 85, 16, 7, 19, 6, 18, 25, ...
## $ prop <dbl> 0.00000387, 0.00000359, 0.00000323, 0.00003740, 0.0000025...
```

Produce a `table` that displays the five most popular boy names and girl names in the years 1880, 1920, 1960, 2000.

The 5 most popular baby names for both gender is presented in the table.

Table 9: top 5 baby names

1880		1920		2000	
sex	name	sex	name	sex	name
F	Mary	F	Mary	F	Emily
F	Anna	F	Dorothy	F	Hannah
F	Emma	F	Helen	F	Madison
F	Elizabeth	F	Margaret	F	Ashley
F	Minnie	F	Ruth	F	Sarah
M	John	M	John	M	Jacob
M	William	M	William	M	Michael
M	James	M	Robert	M	Matthew
M	Charles	M	James	M	Joshua
M	George	M	Charles	M	Christopher

What names overlap boys and girls?

there are 10663 names used both for boys and girls, here are some of the names: Jaki, Riane, Dena, Rogue, Murrel, Alvina, Sehaj, Ziyah, Marcellus, Lana

What names were used in the 19th century but have not been used in the 21st century?

There are 1381 names used in 19th century but have not been used in the 21st century, such as Nannie, Hulda, Gussie, Mittie, Myrtie

Produce a chart that shows the relative frequency of the names “Donald”, “Hilary”, “Hillary”, “Joe”, “Barrack”, over the years 1880 through 2017.

