



наукові діаграми

## наочне представлення числових даних

### Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Devisé par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite. Paris, le 20 Novembre 1869

Les nombres d'hommes présents sont représentés par les longueurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en lettres des zones. Le rouge désigne les hommes qui entrent en Russie, le noir ceux qui en sortent. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Léger, de Fezonnac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps de Lénec Jérôme et du Maréchal Davoust qui avaient été détachés sur Minsk et Mielno ou un régime sur Orcha et Witebsk, avaient toujours marché avec l'armée.

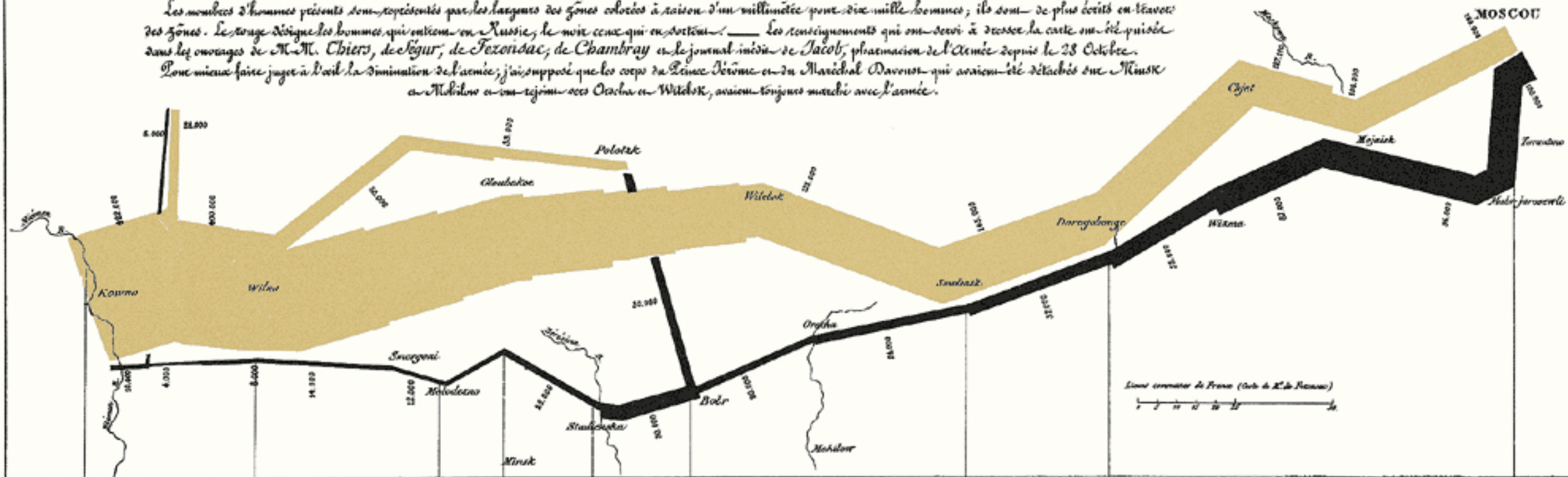
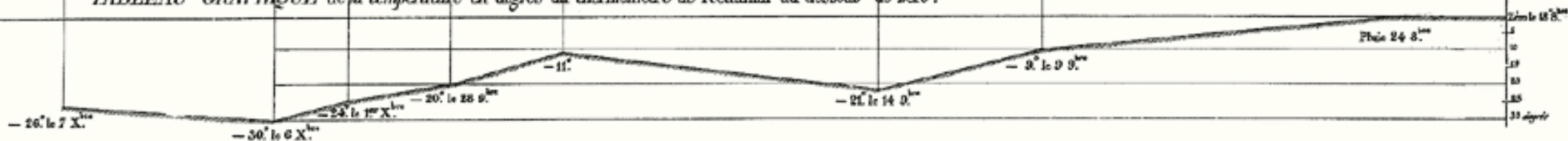


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.

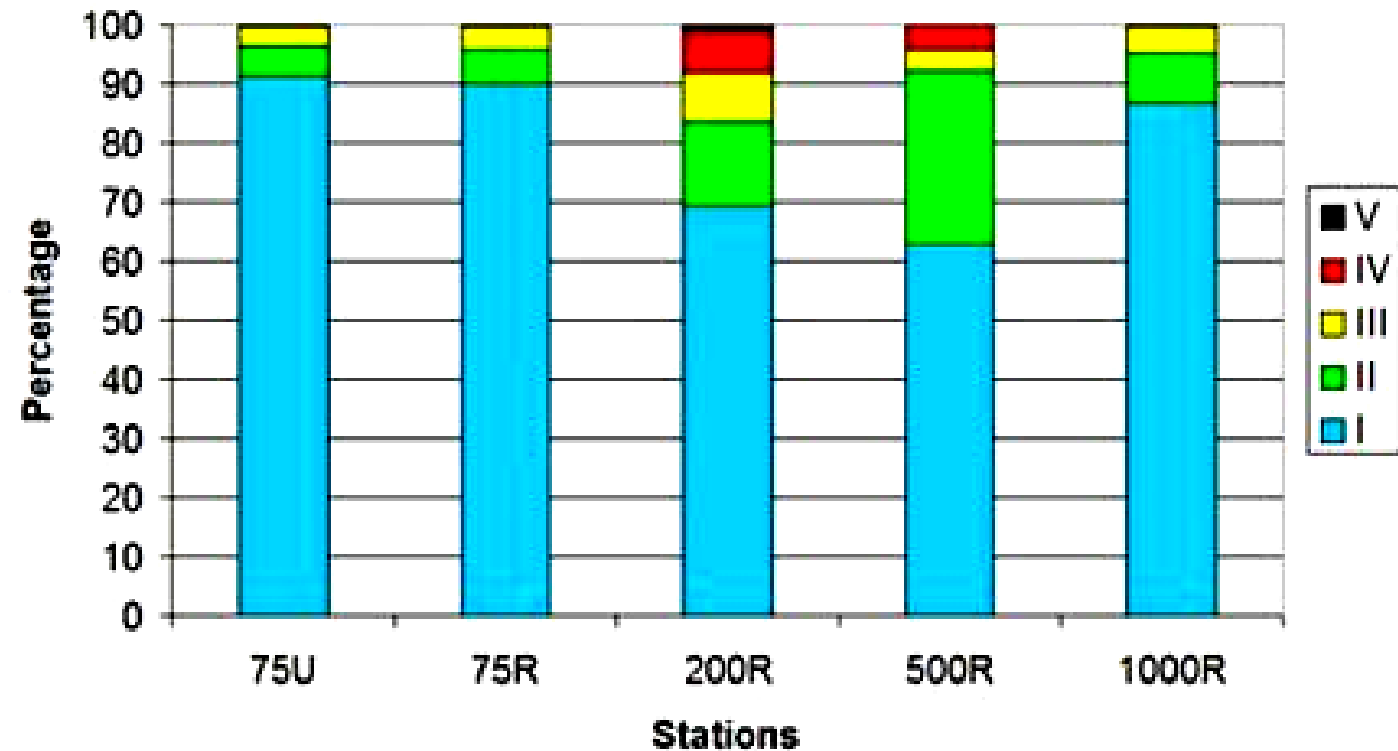
Les Cosaques passent au gélip le Nilmen, gélip.



## ECOLOGICAL GROUP

Station	I	II	III	IV	V
75U	91.3	5.3	3.2	0.2	0.0
75R	89.8	6.1	3.6	0.5	0.0
200R	69.3	14.2	8.6	6.8	1.1
500R	63.0	29.5	3.4	4.2	0.0
1000R	86.7	8.5	4.5	0.2	0.0

рисунок краще  
ніж таблиця



Depth	Gravel	Sand	Mud
5 m	3,42%	81.41%	15,17%
50 m	2,5%	58.42%	39.08%
100 m	0,0%	32.5%	67.5%

Water depth (m)	Gravel (%)	Sand (%)	Mud (%)
5	3.4	81.4	15.2
50	2.5	58.4	39.1
100	0.0	32.5	67.5

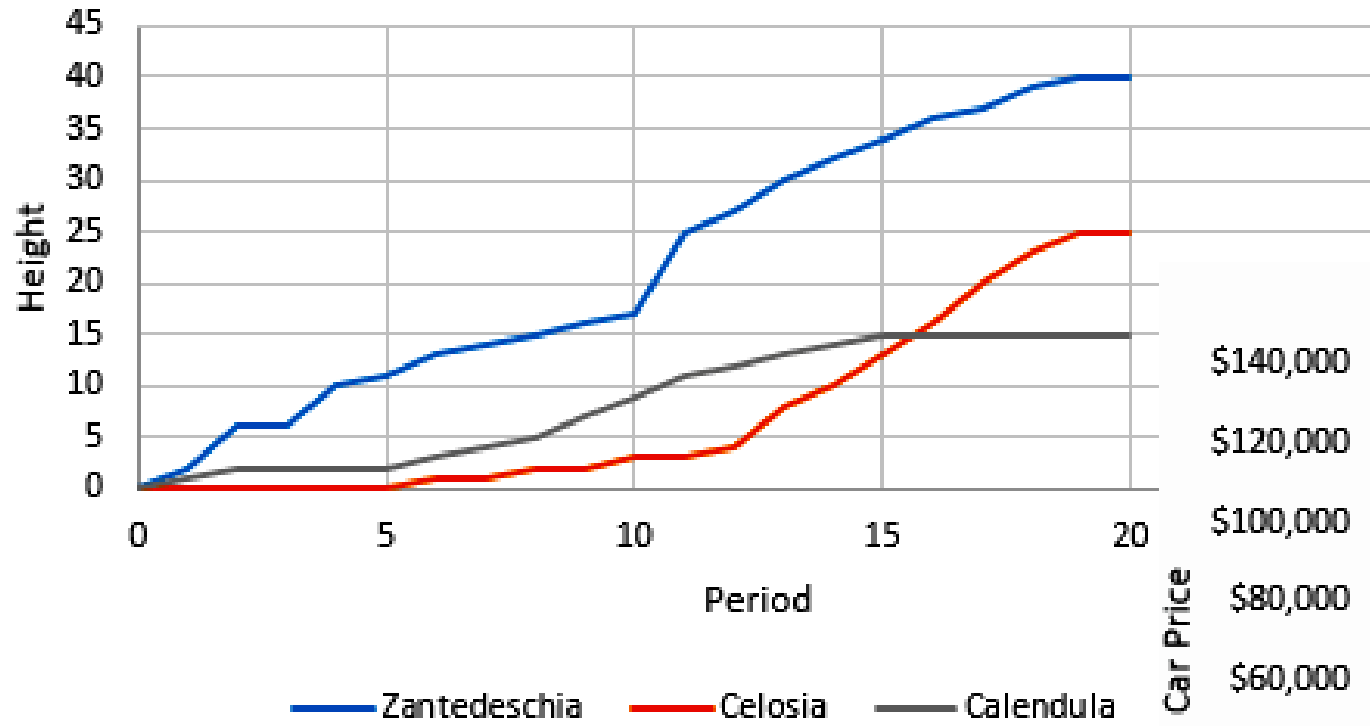
**правильно розмістити  
підписи**

	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Total</b>
<b>Americas</b>	-18%	7%	25%	2%	2%
<b>Australia</b>	47%	-7%	26%	15%	17%
<b>China</b>	15%	-5%	1%	7%	19%
<b>Europe</b>	57%	10%	-3%	7%	13%
<b>India</b>	57%	6%	-3%	8%	13%

**виділити  
важливі числа**

	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Total</b>
<b>Americas</b>	-18%	7%	25%	2%	2%
<b>Australia</b>	47%	-7%	26%	15%	17%
<b>China</b>	15%	-5%	1%	7%	19%
<b>Europe</b>	57%	10%	-3%	7%	13%
<b>India</b>	57%	6%	-3%	8%	13%

### Plant Growth

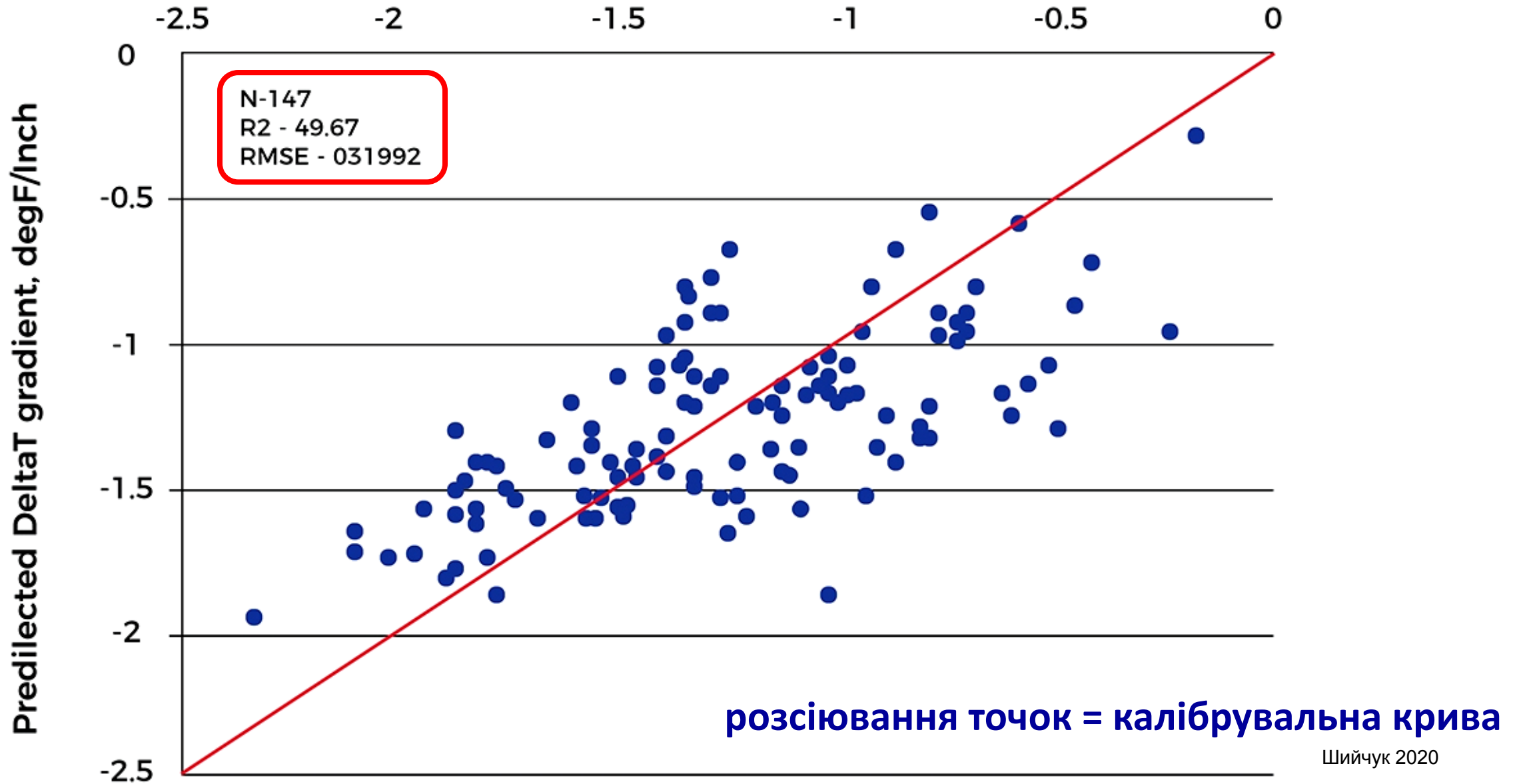


### xy chart

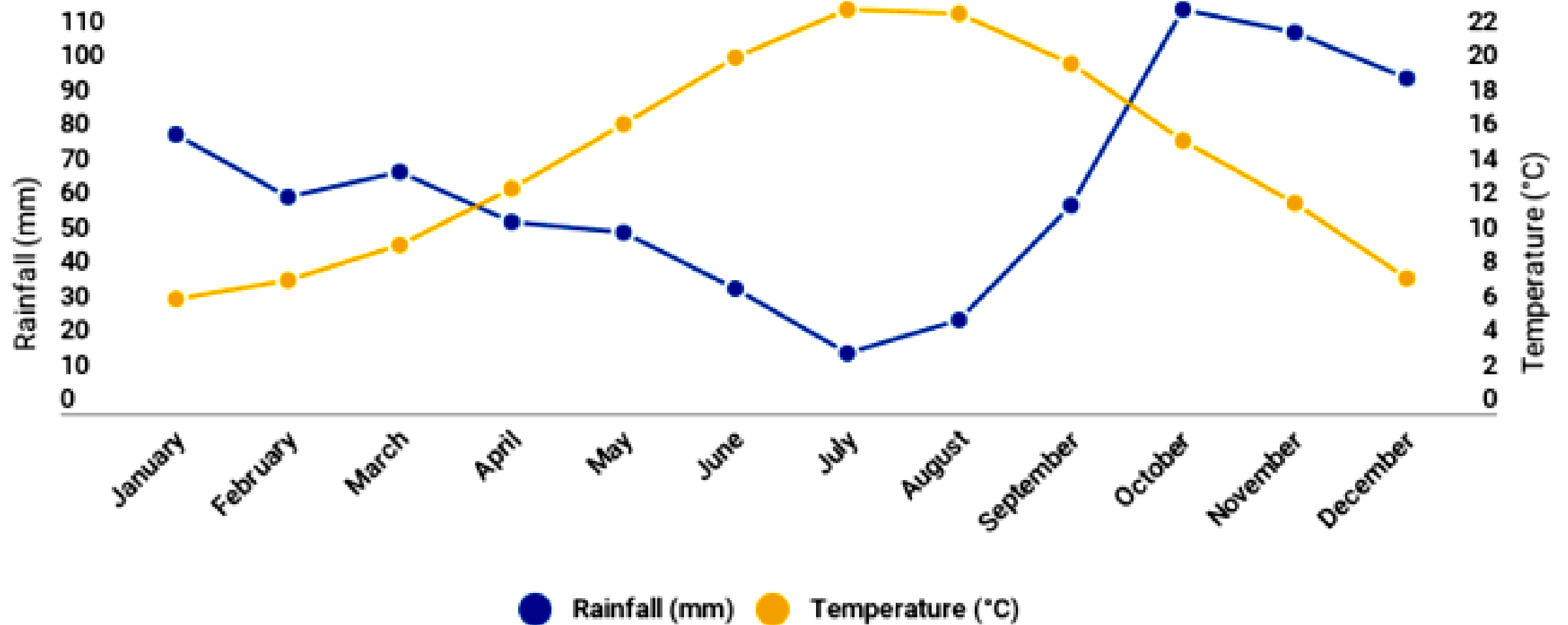
### What your Car says about your Salary



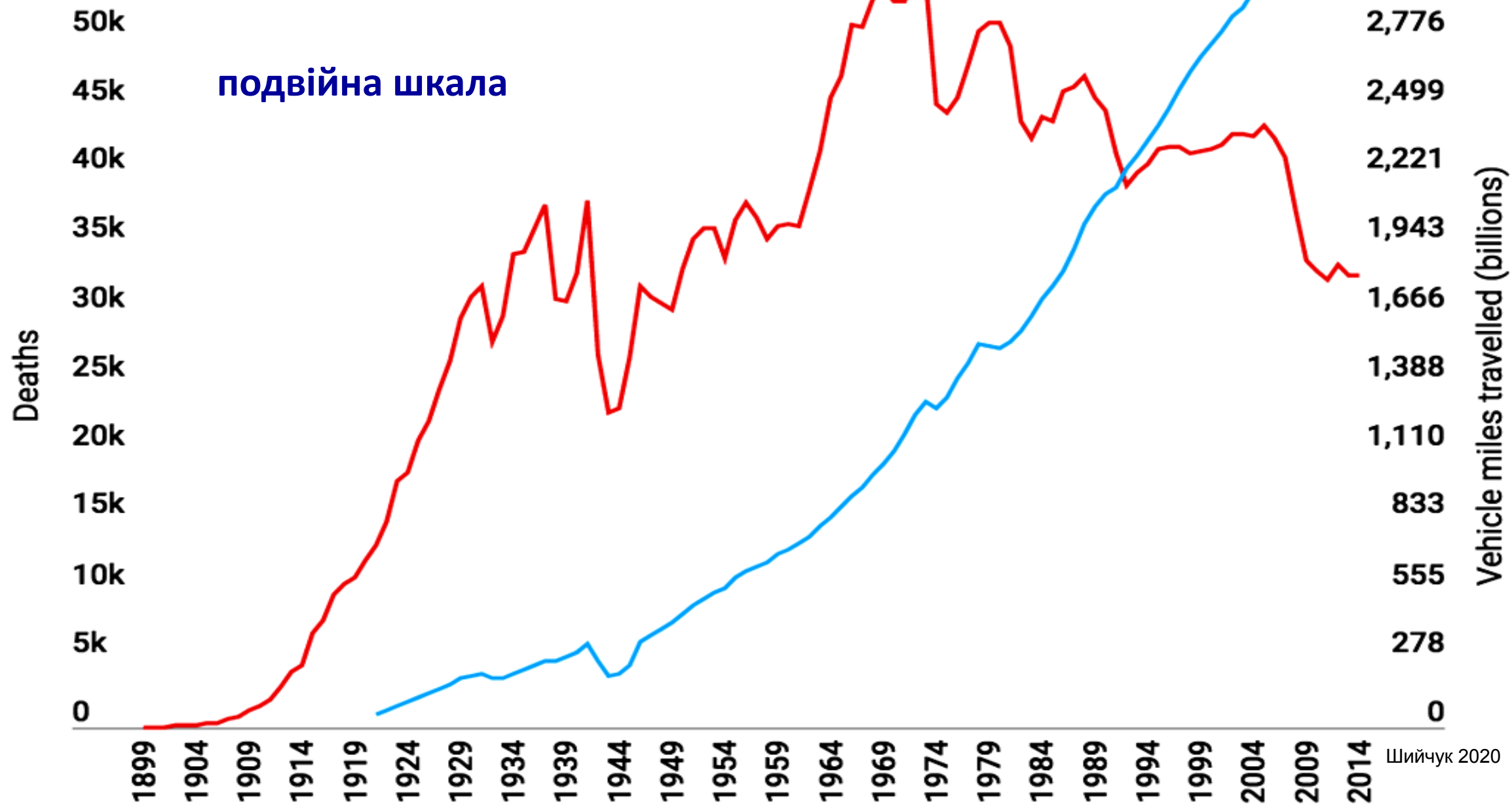
# Delta gradient estimated by matching MEPDG and field performance, deg F/Inch



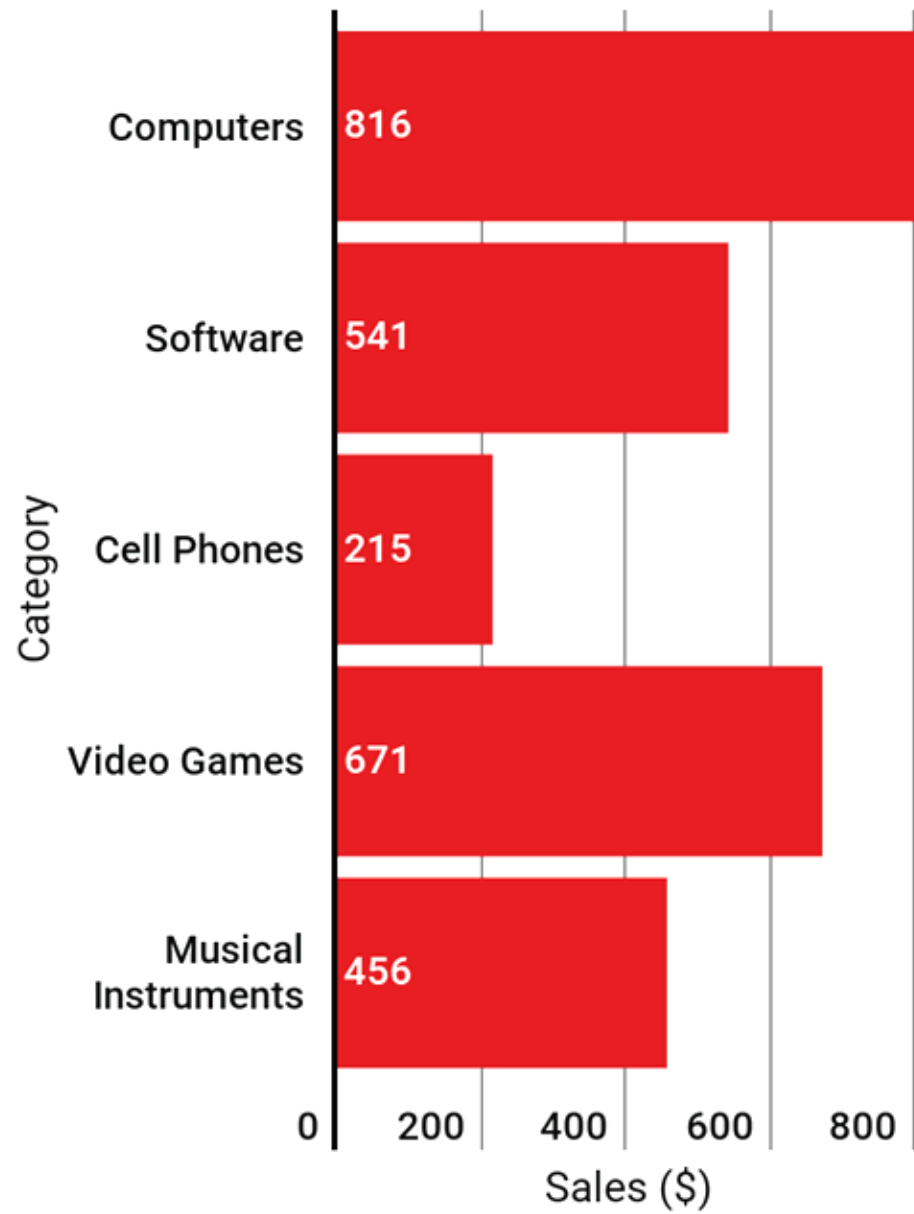
## подвійна шкала



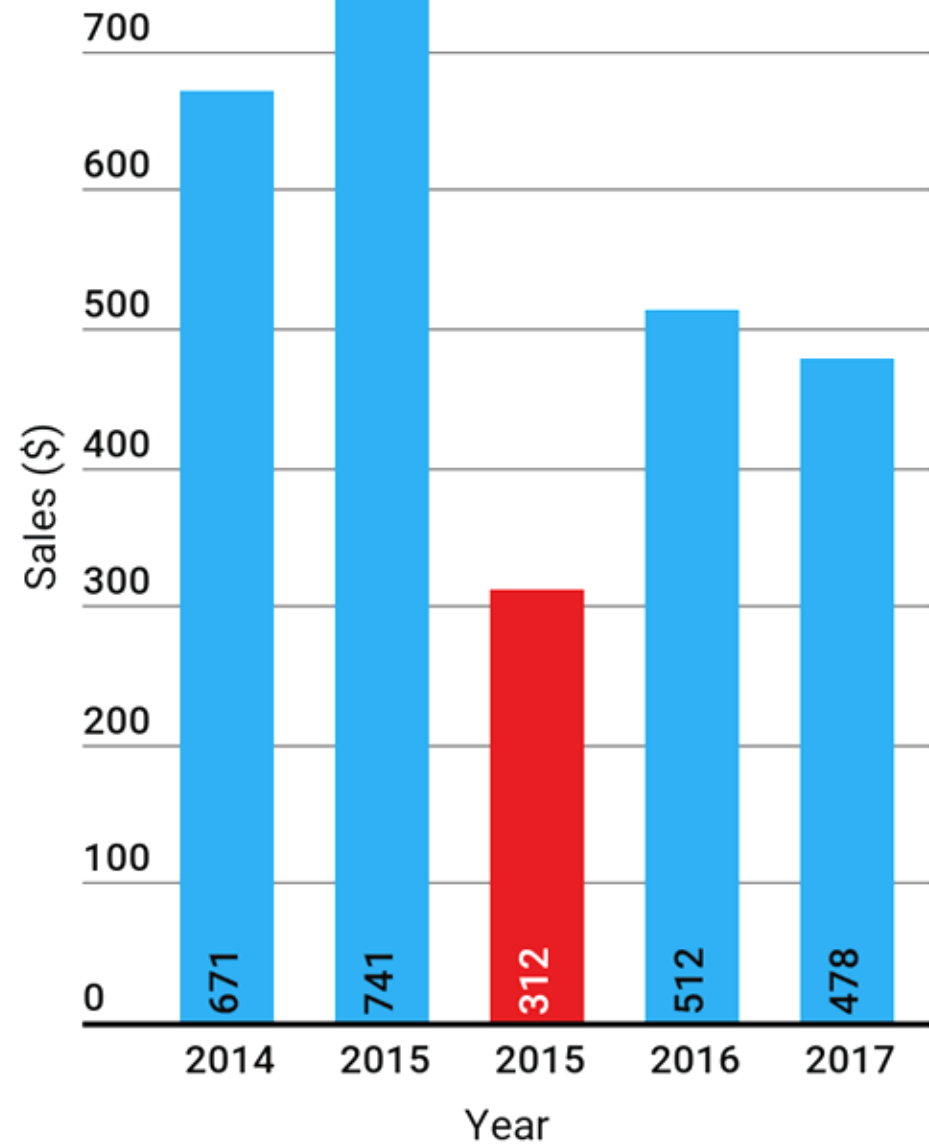




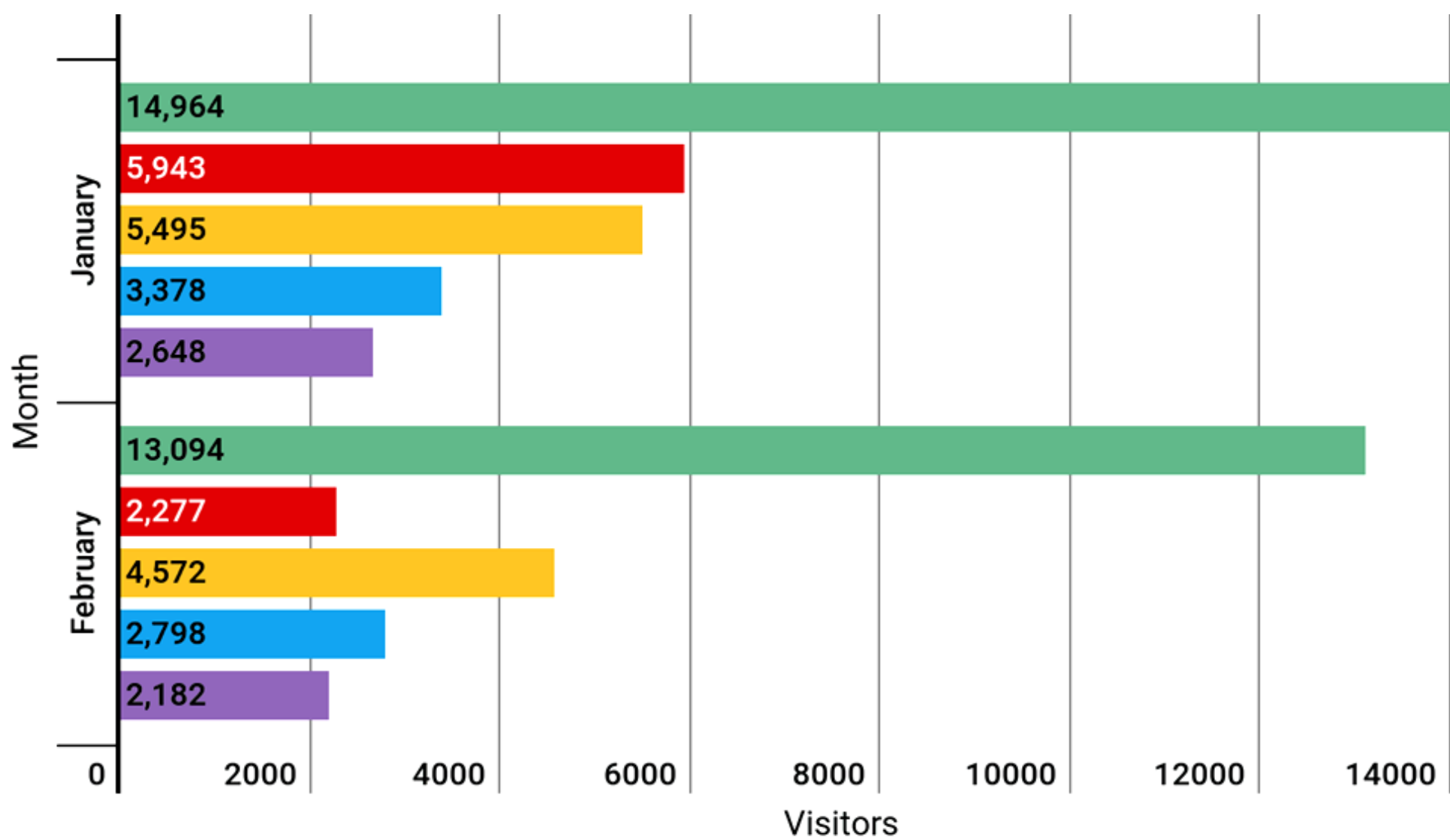




Bar Chart

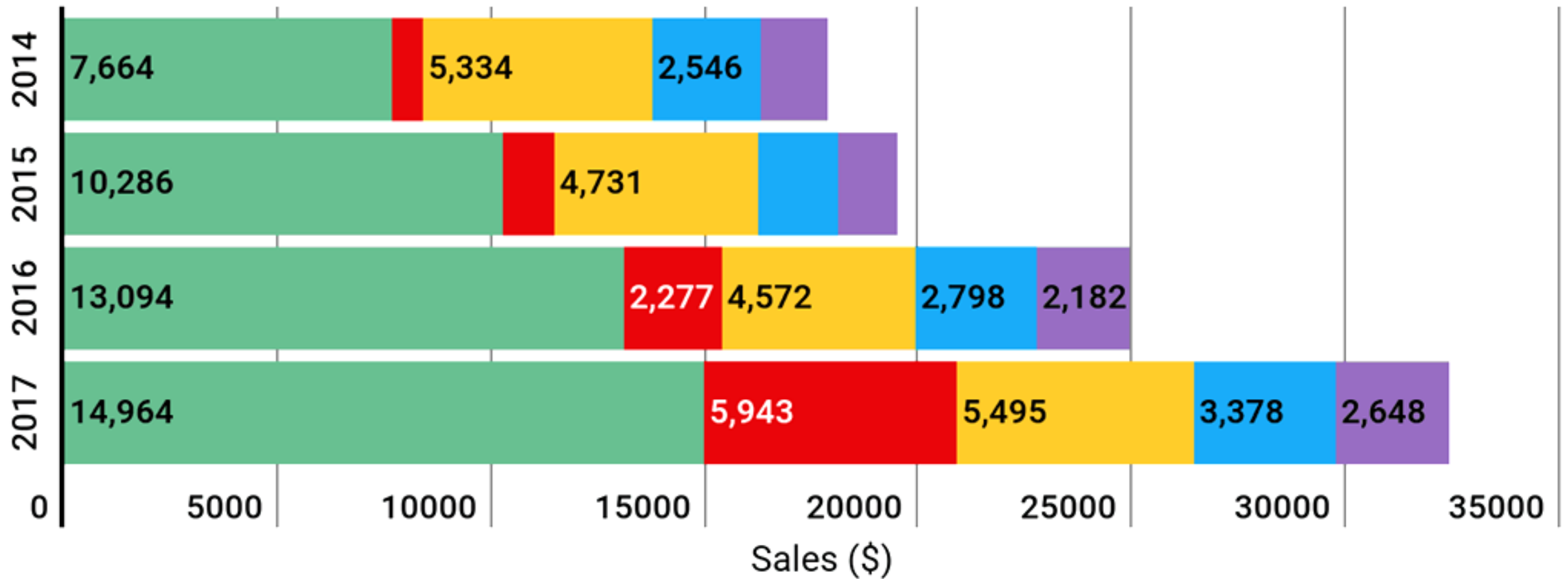


Column Chart



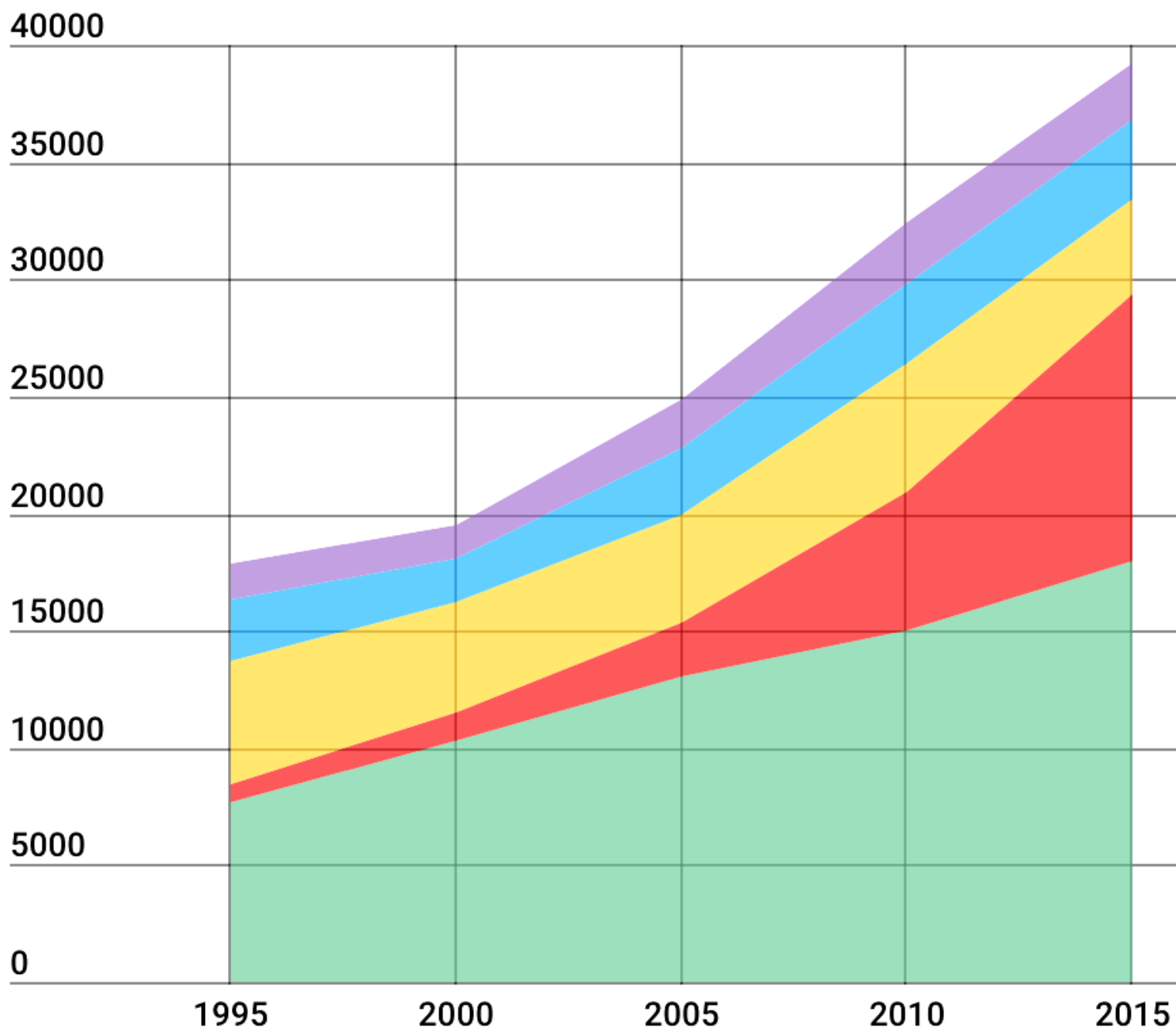
● USA ● China ● Japan ● Germany ● France

Column Chart



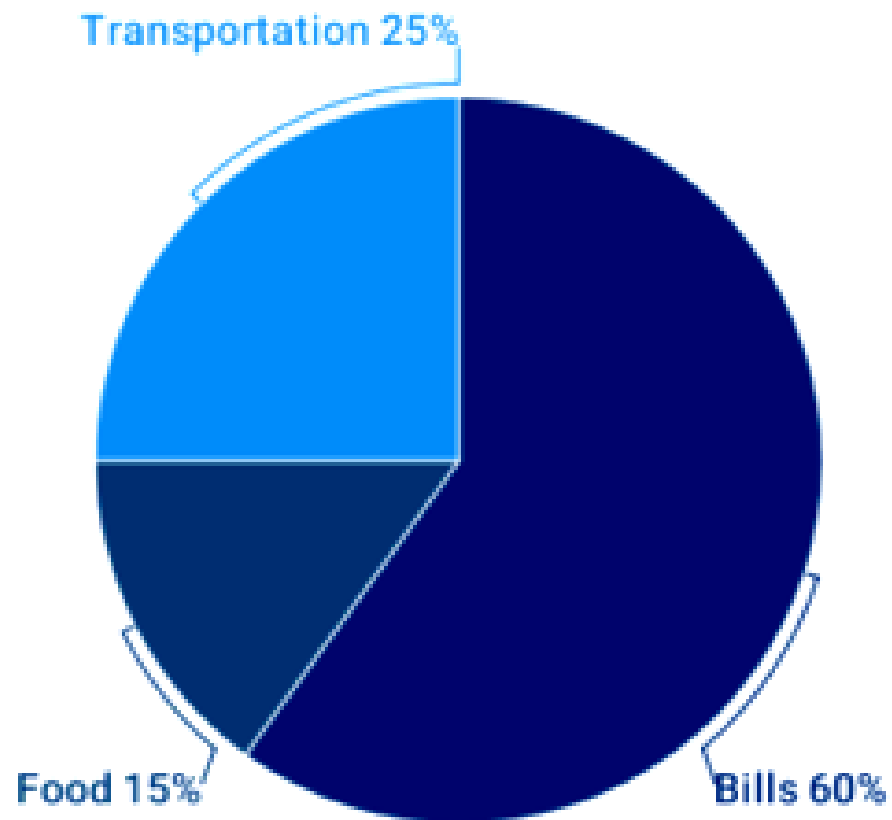
● USA ● China ● Japan ● Germany ● France

Stacked Bar Chart



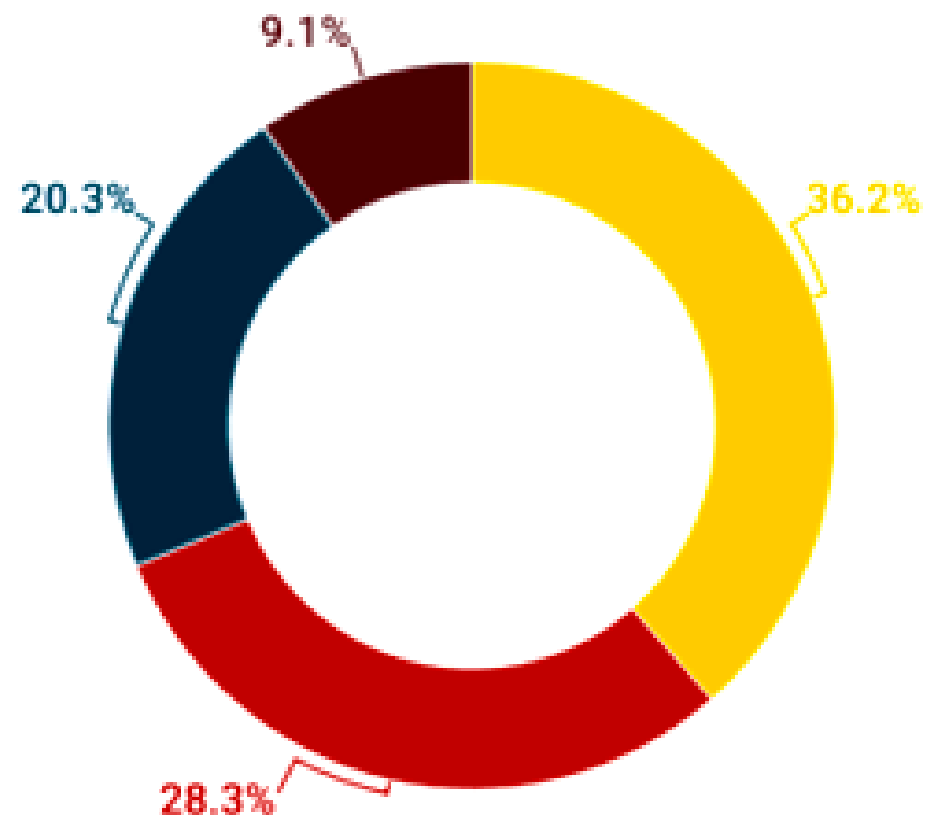
area diagram

- USA
- China
- Japan
- Germany
- France



● Bills ● Food ● Transportation

Pie Chart



● North ● South ● East ● West

Donut Chart

## Project Completion



● Blue Eagle: 25% ● Red Elephant: 75%

Radial Chart

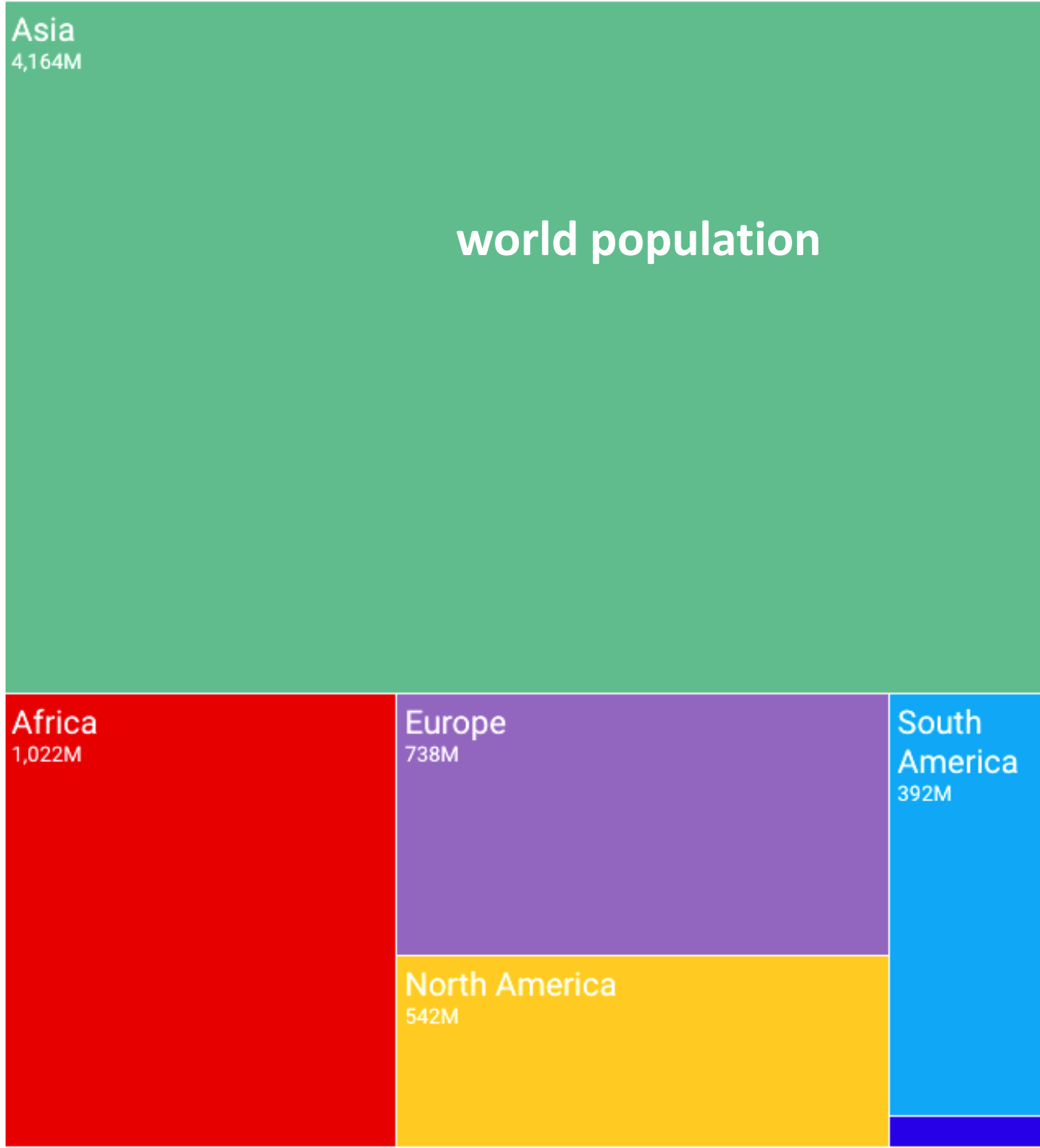
## Donation Goal



● Raised: 75%

Progress Bar

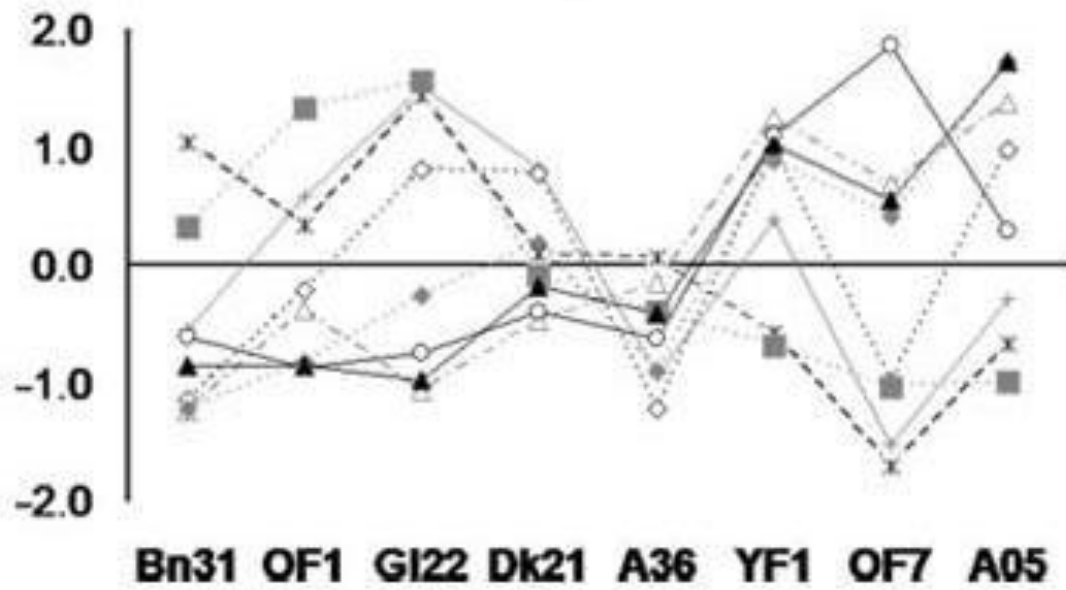




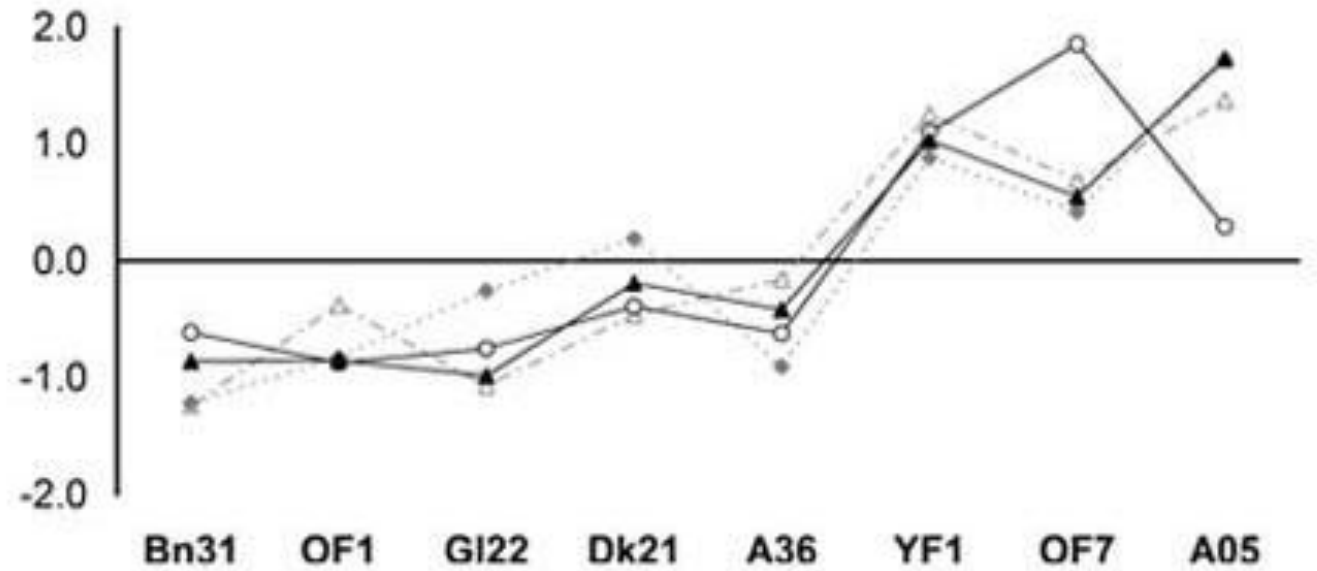
world population

tree map chart

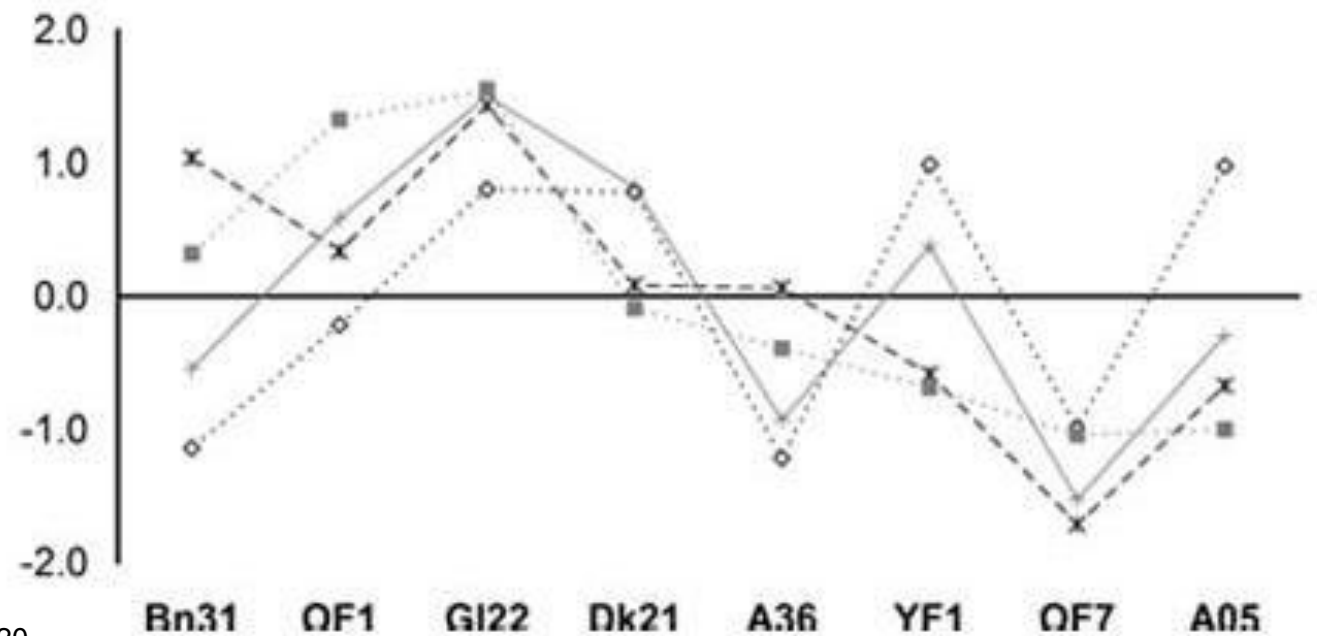
Oslofjord



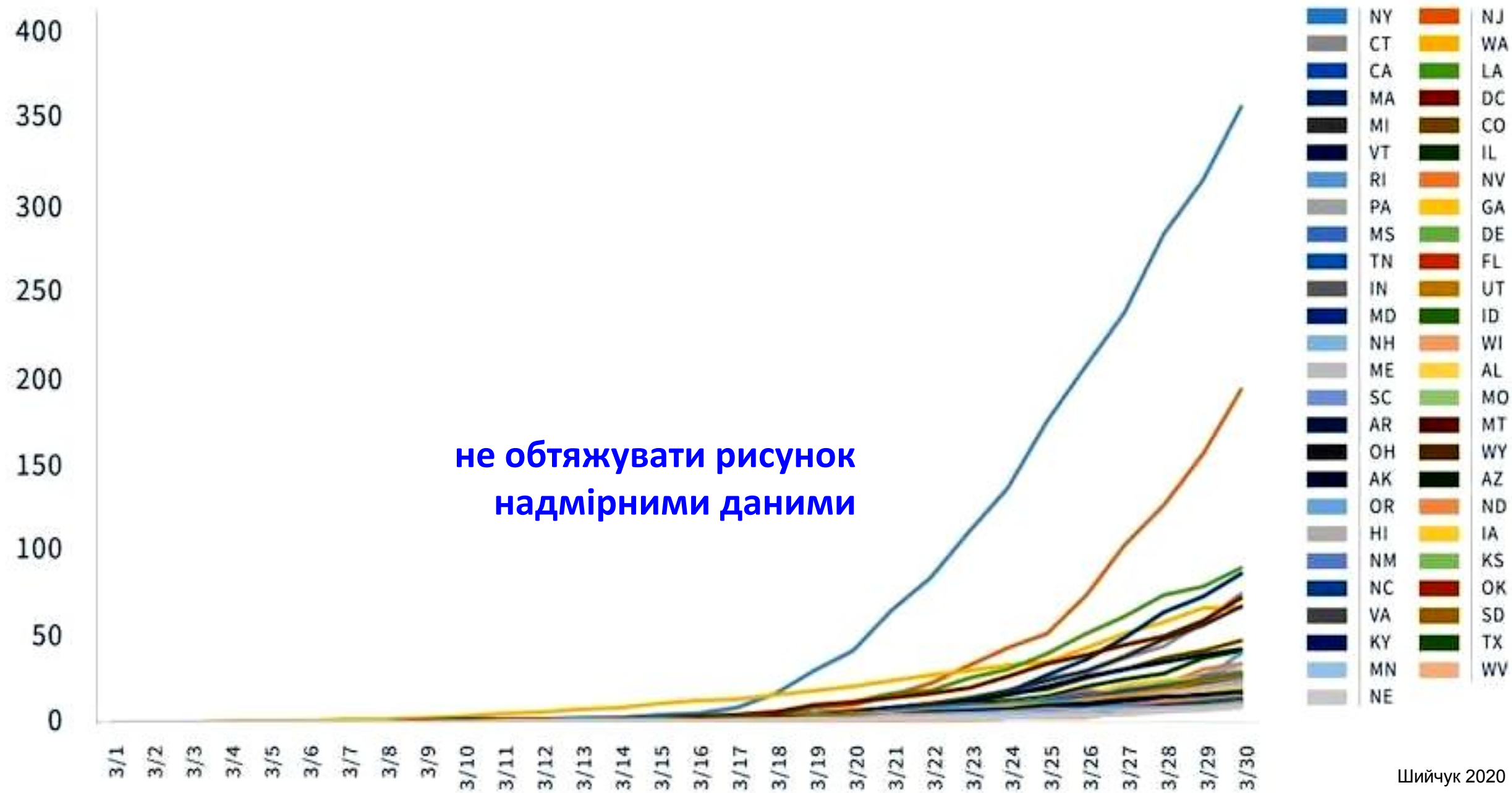
Oslofjord

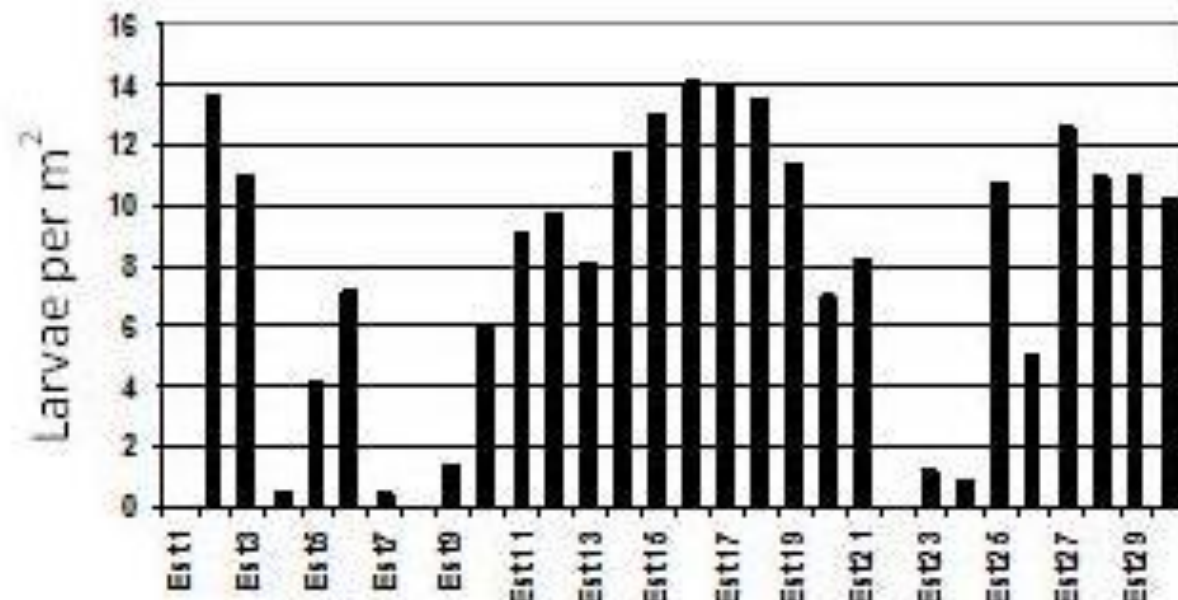
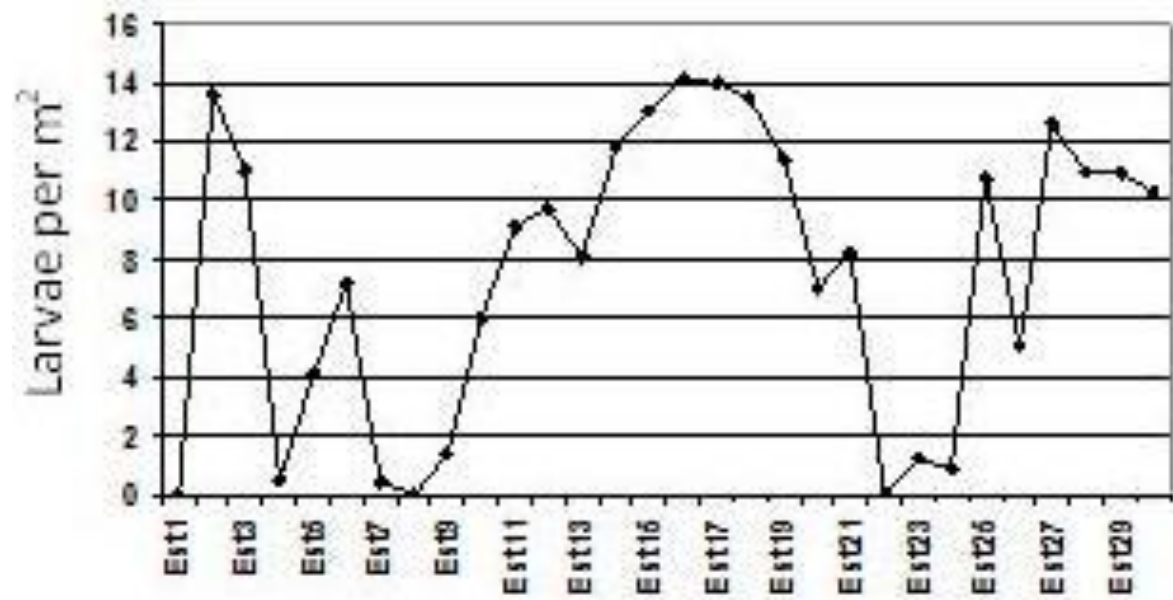


не обтяжувати рисунок  
надмірними даними

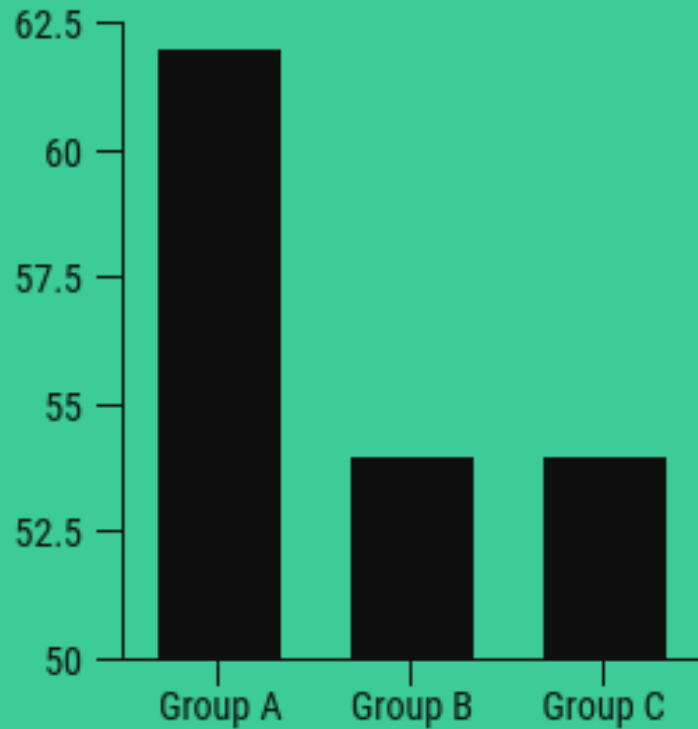


CONFIRMED CASES PER 100,000





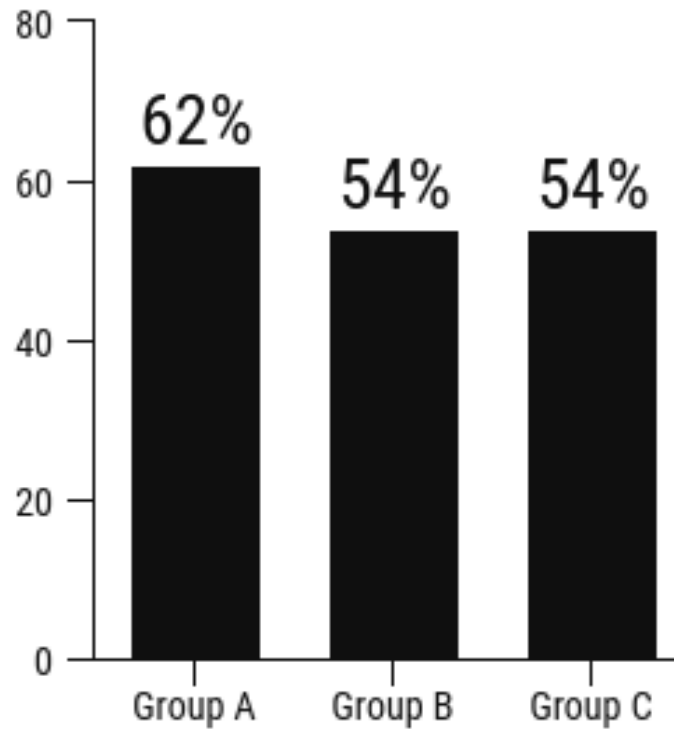
правильно вибрати тип діаграми



## MISLEADING

- Starting the vertical axis at 50 makes a small difference between groups seem massive
- Group A looks much larger than Groups B and C

VS

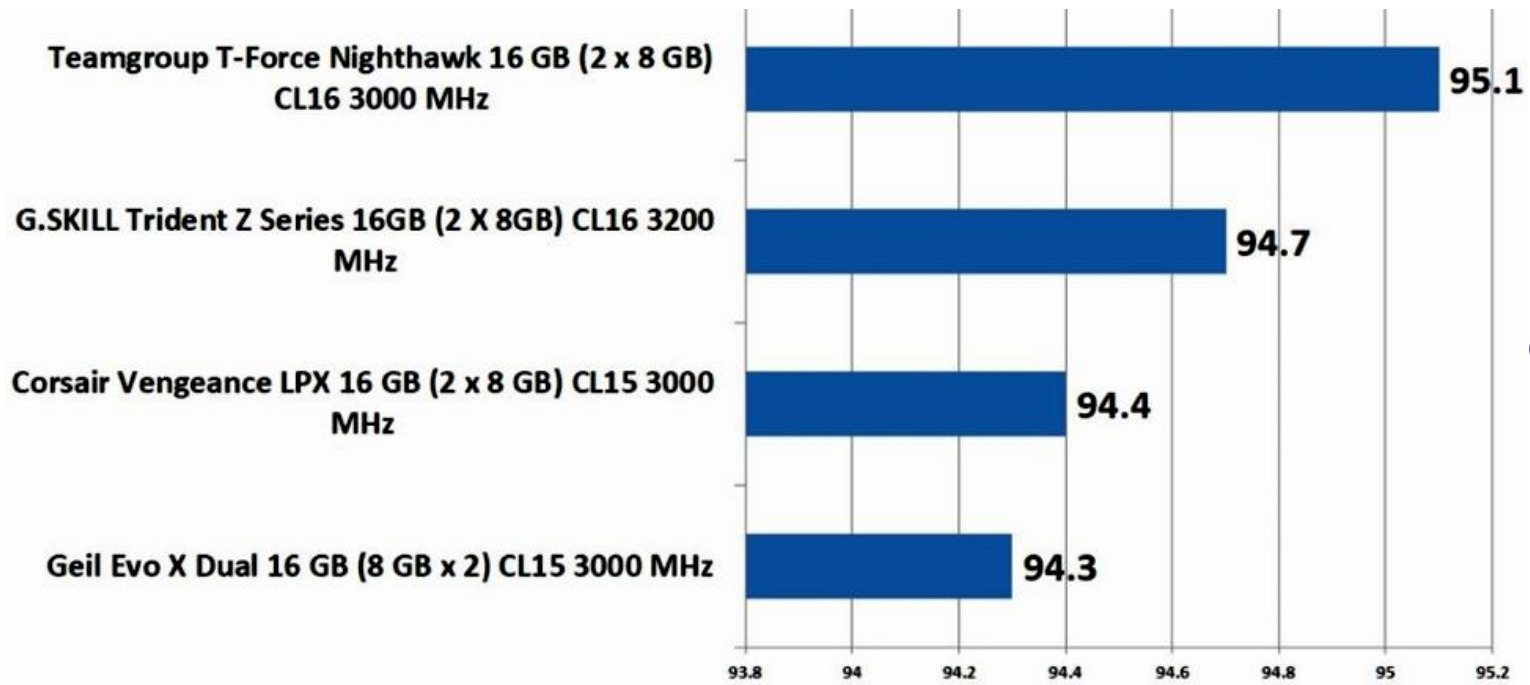


**вірно встановити шкалу**

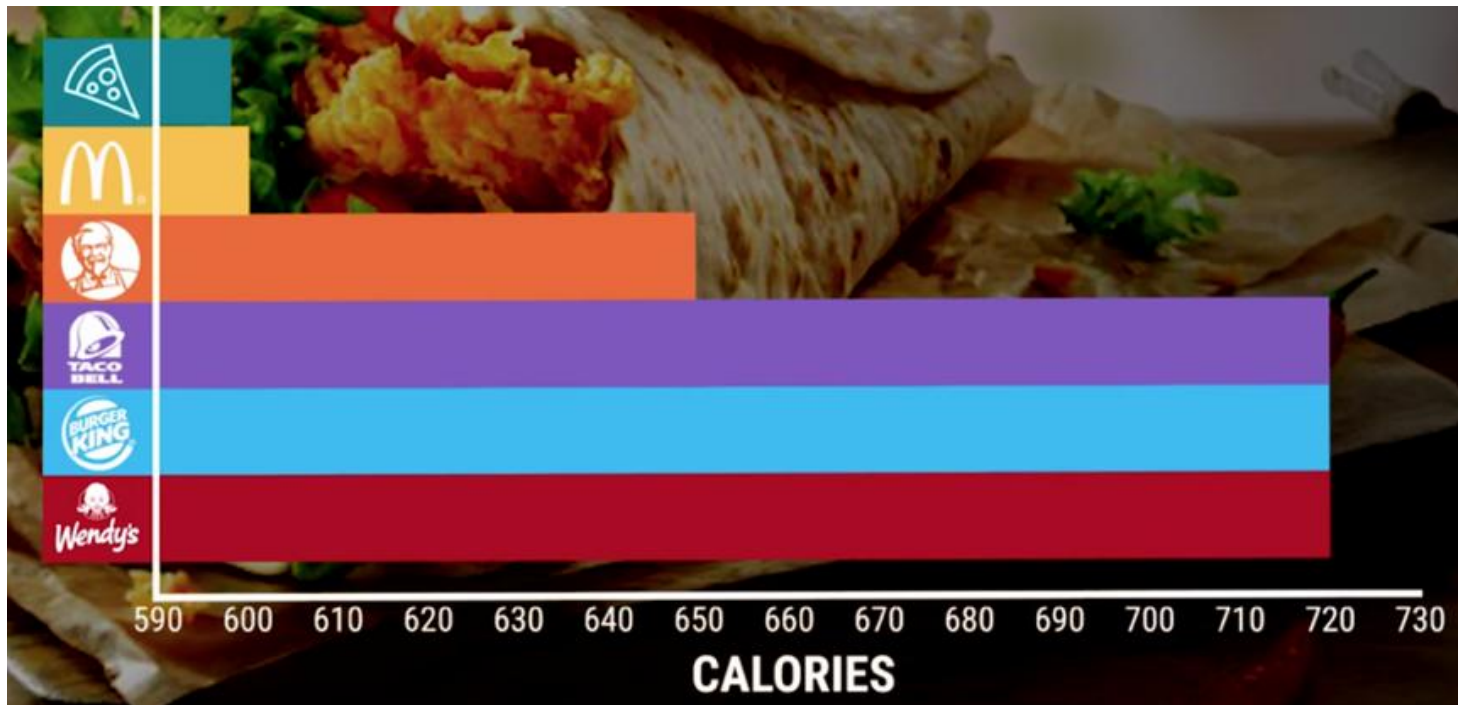
## ACCURATE



- Starting the vertical axis at 0 offers a more accurate depiction of the data
- The difference between the groups does not seem as dramatic

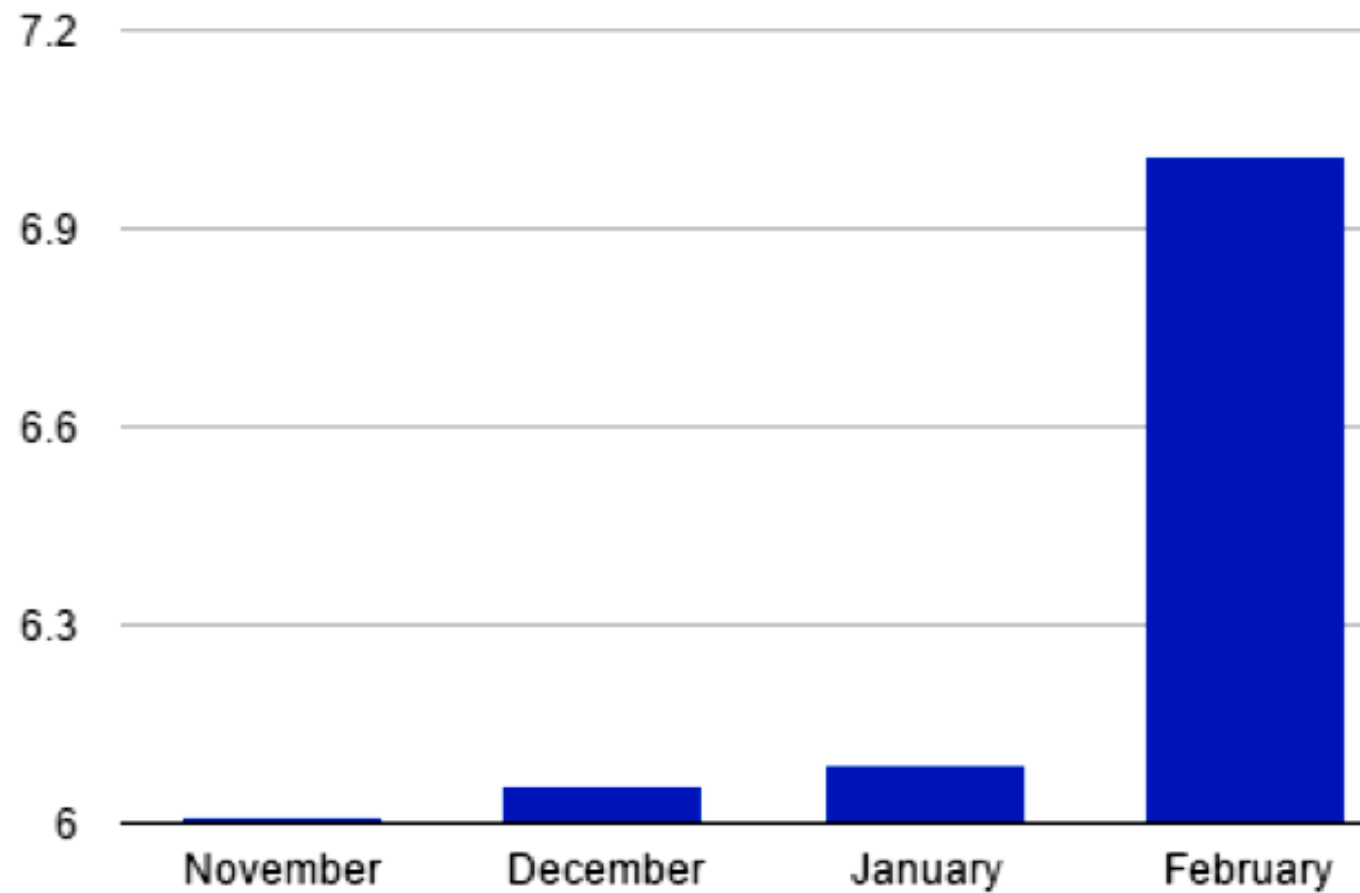


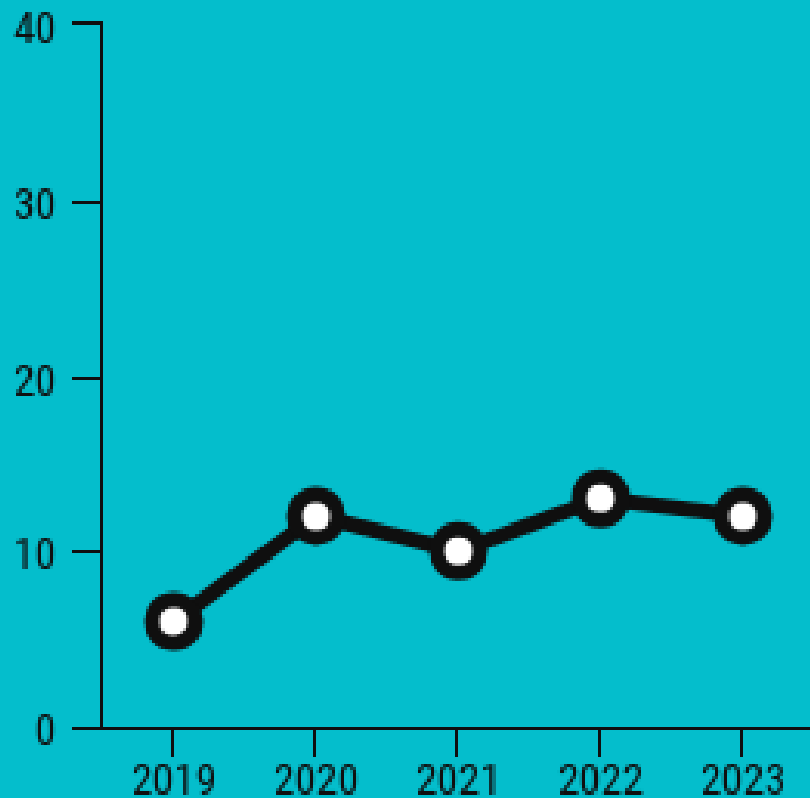
оманлива шкала



оманлива шкала

**оманлива  
шкала**

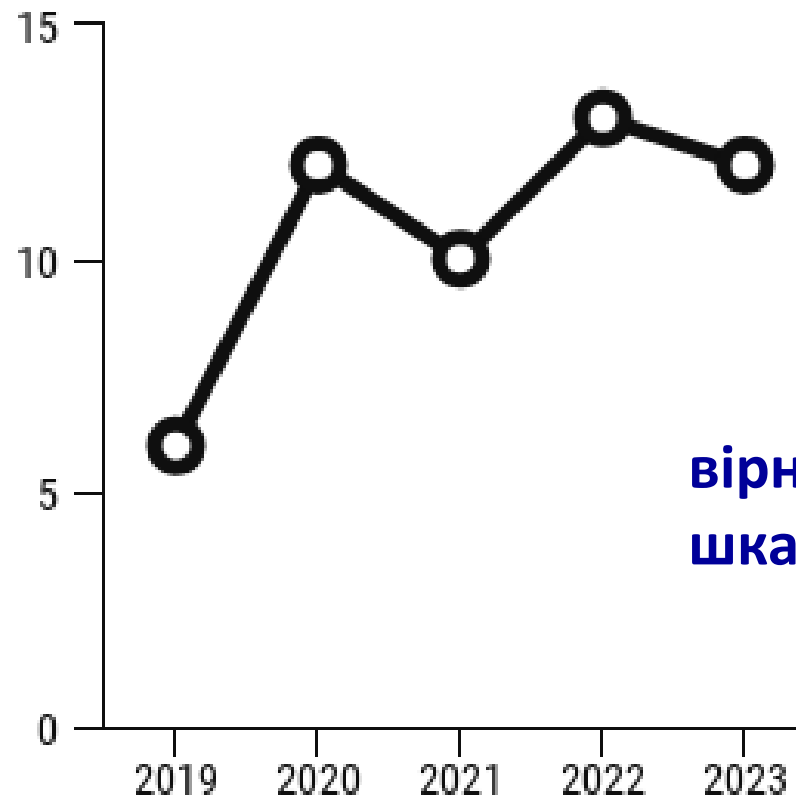




## MISLEADING

- The scale is disproportionate to the data, making the change over time seem small

VS



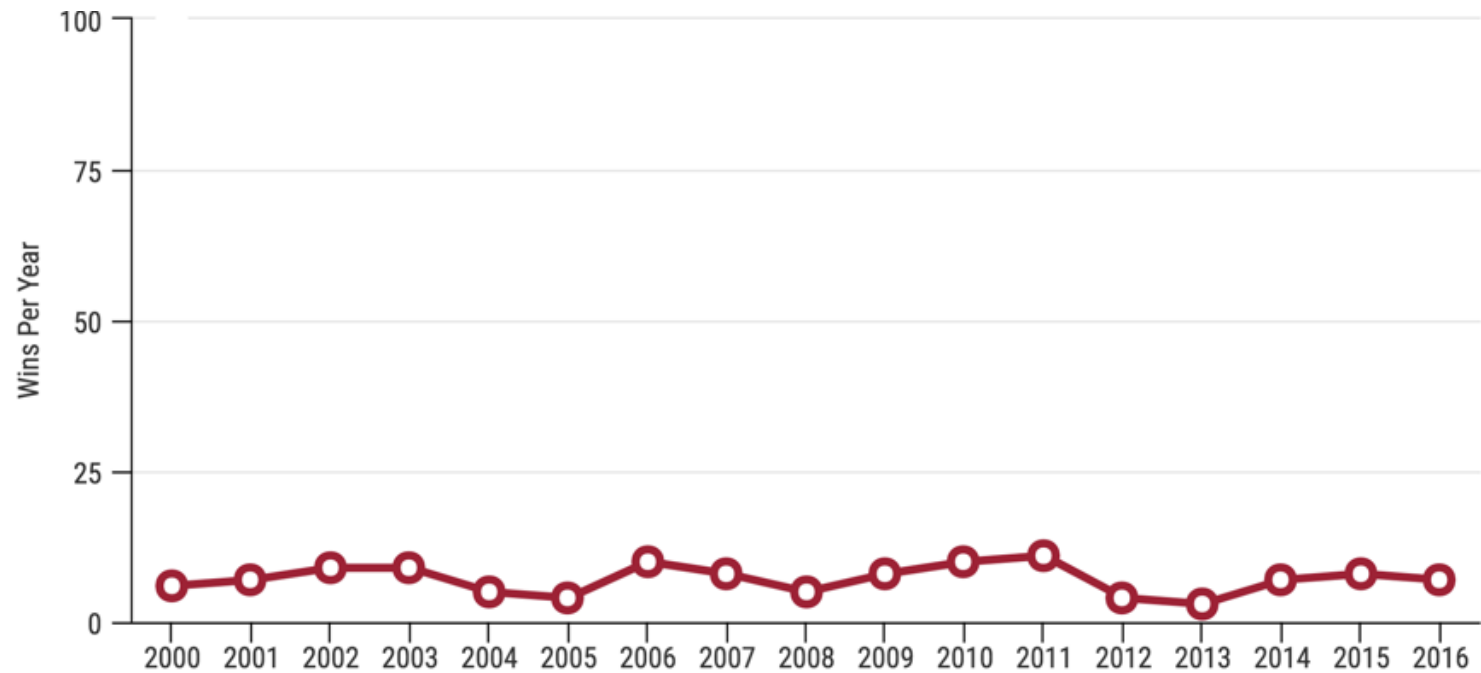
**Вірно встановити шкалу**

## ACCURATE



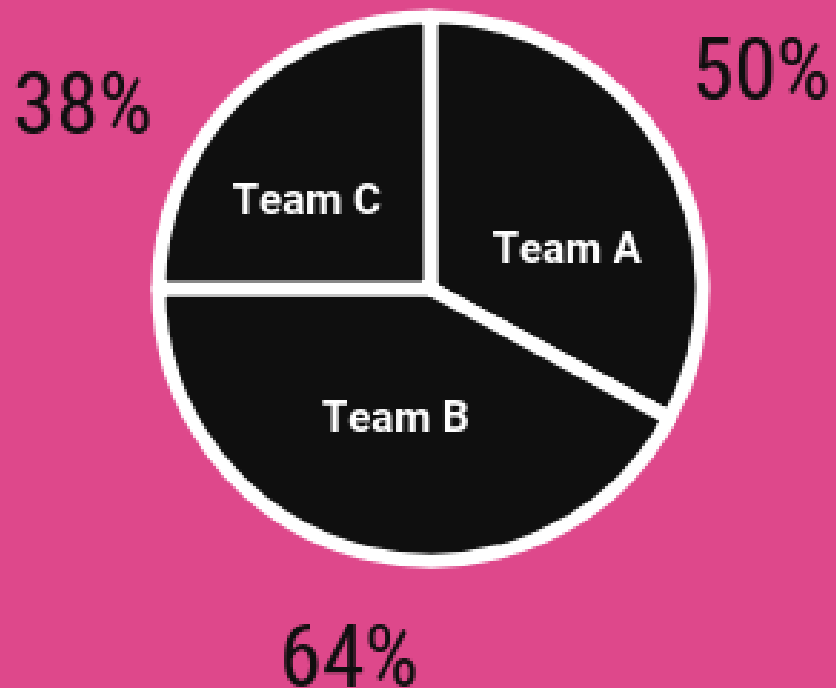
- The scale is proportionate to the data, showing a greater change over time





**вірна шкала**

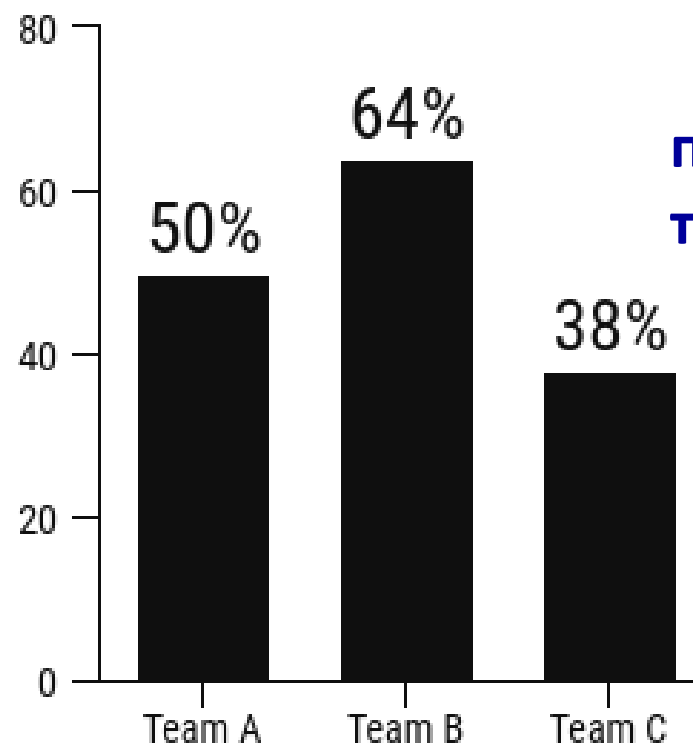




## MISLEADING

- Pie charts are used to compare parts of a whole, not the difference between groups
- A different type of graph should be used to compare the three teams

VS

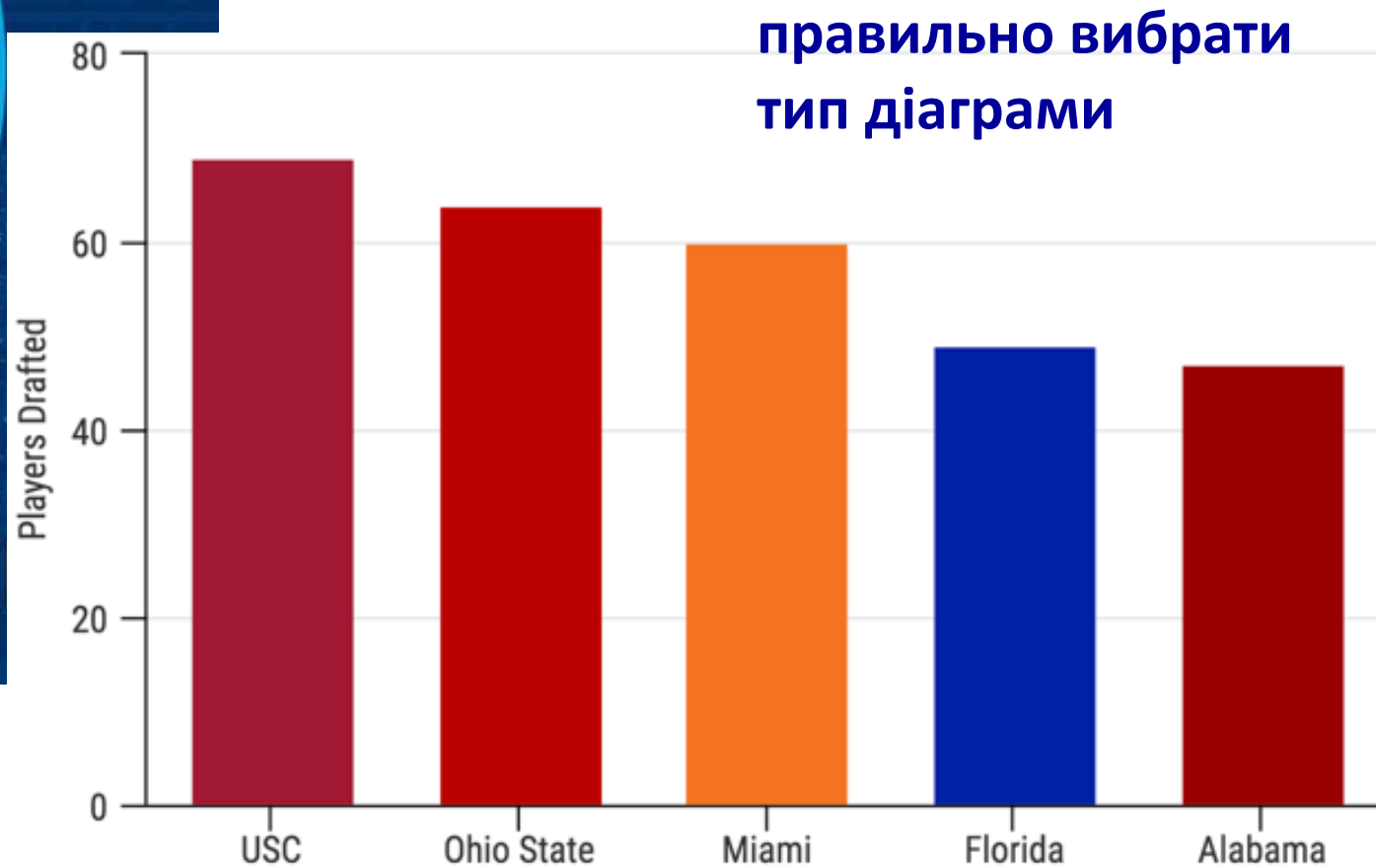
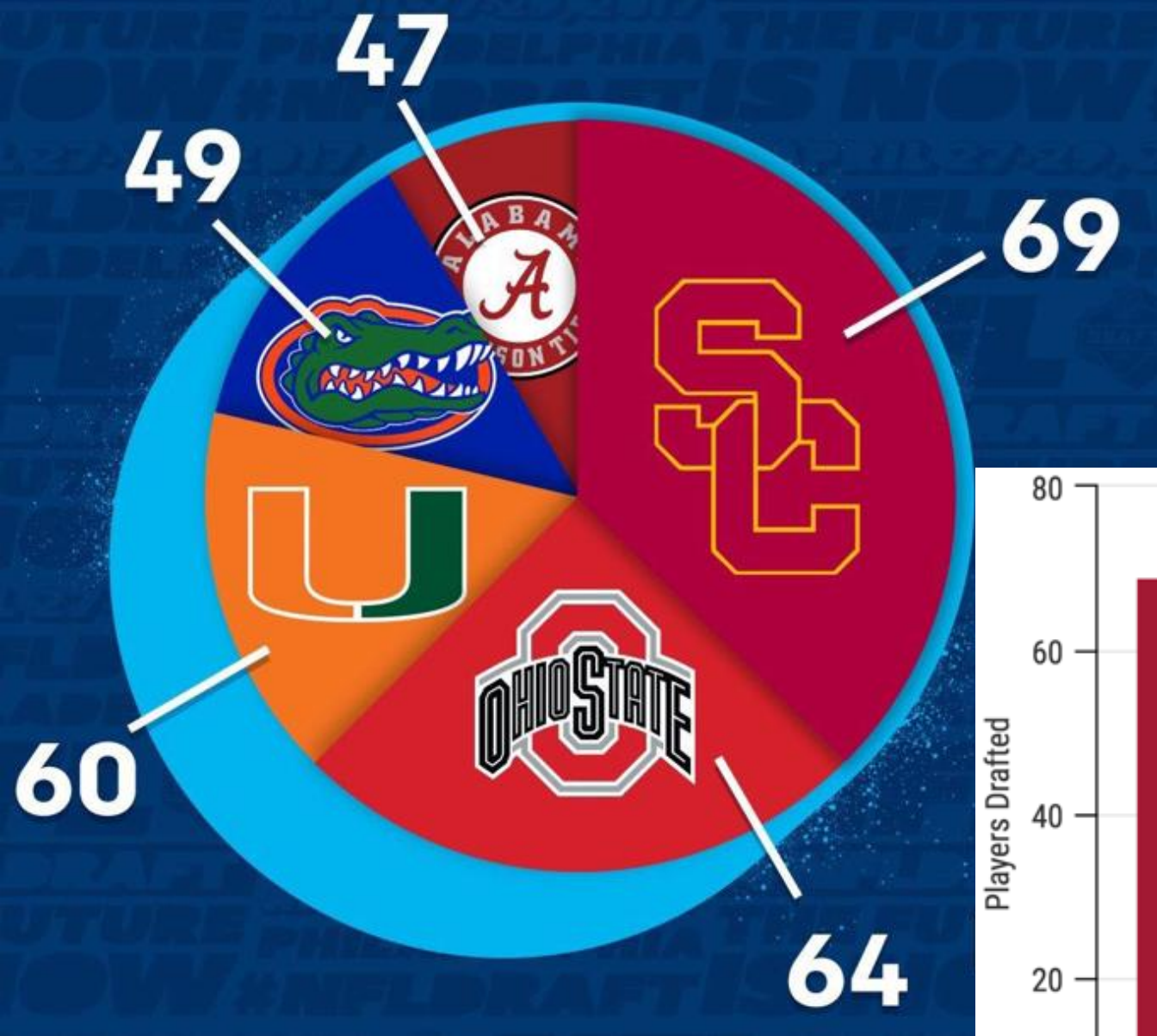


правильно вибрати  
тип діаграми

## ACCURATE



- Bar graphs are better for showing the differences between groups
- This chart is a better visualization of the data



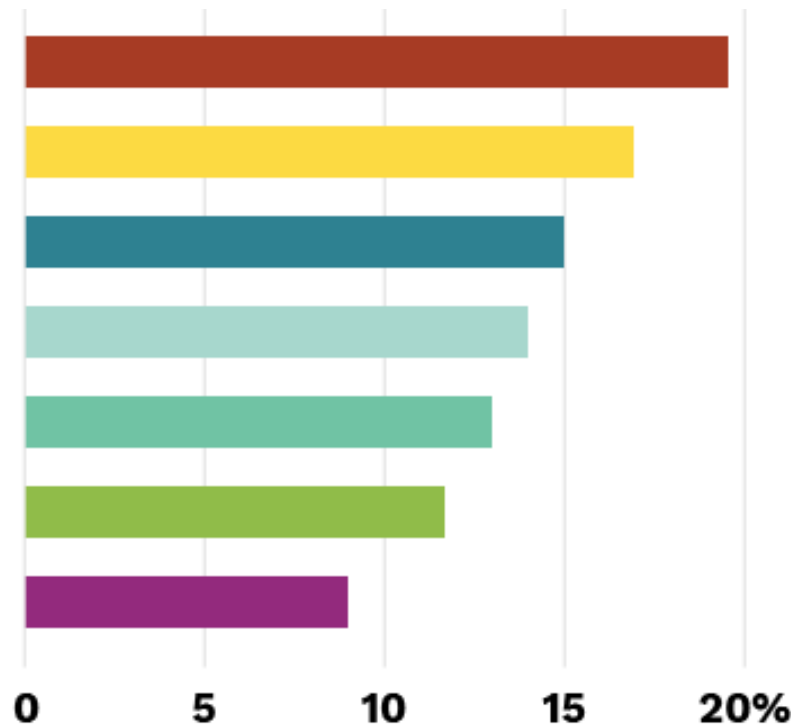
# Investment Portfolio Breakdown

Відповідний тип діаграми



- International Stocks
- Large-Cap U.S. Stock
- Bonds
- Real Estate
- Mid-Cap U.S. Stock
- Small-Cap U.S. Stock
- Commodities

International Stocks  
Large-Cap U.S. Stock  
Bonds  
Real Estate  
Mid-Cap U.S. Stock  
Small-Cap U.S. Stock  
Commodities



# Welcome to Microsoft Edge

**Faster than both Chrome and Firefox** — according to Google's benchmark.

Microsoft Edge  
Fastest

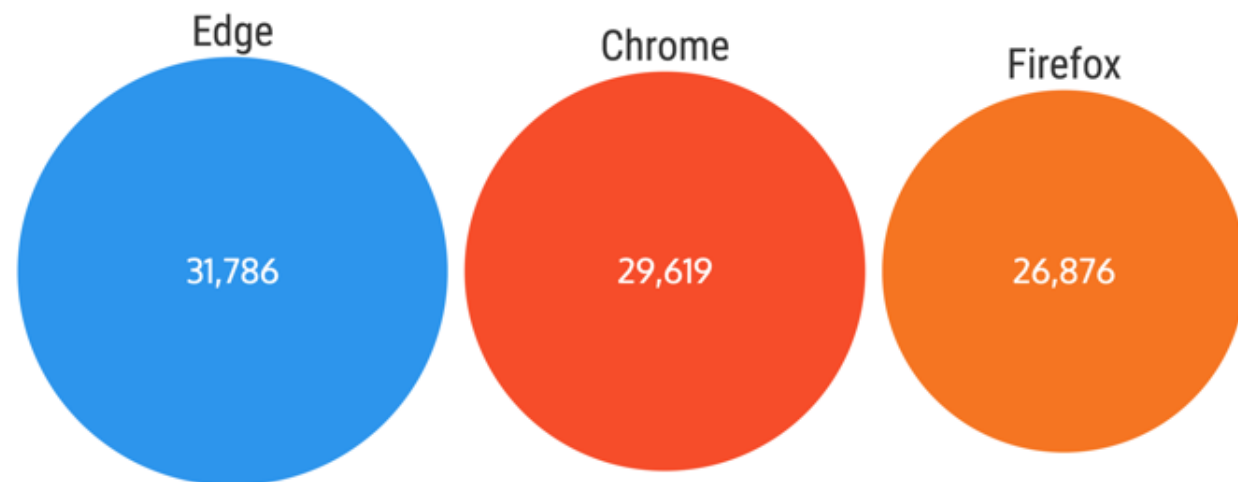
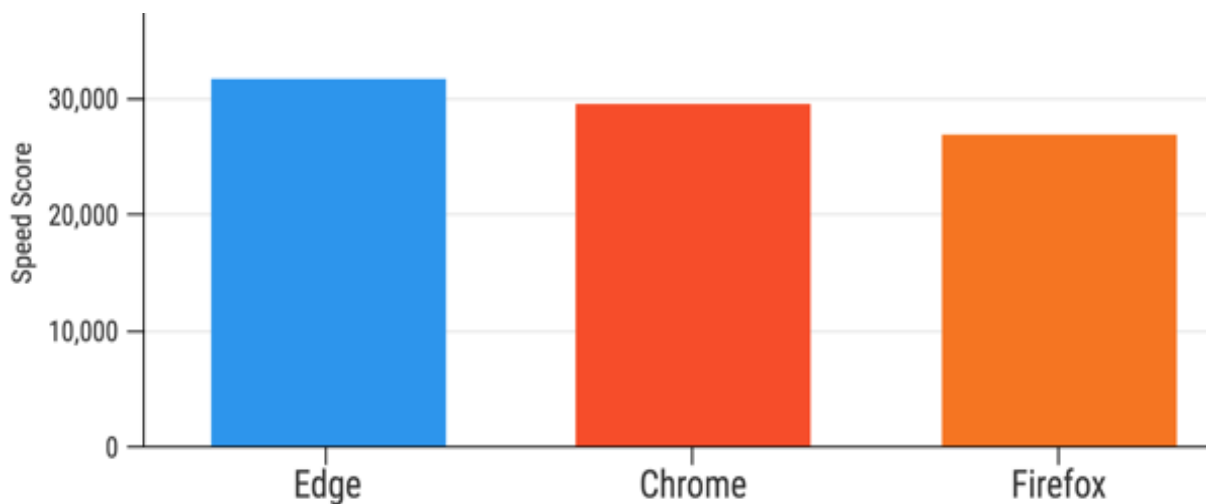
Google Chrome — 5% Slower

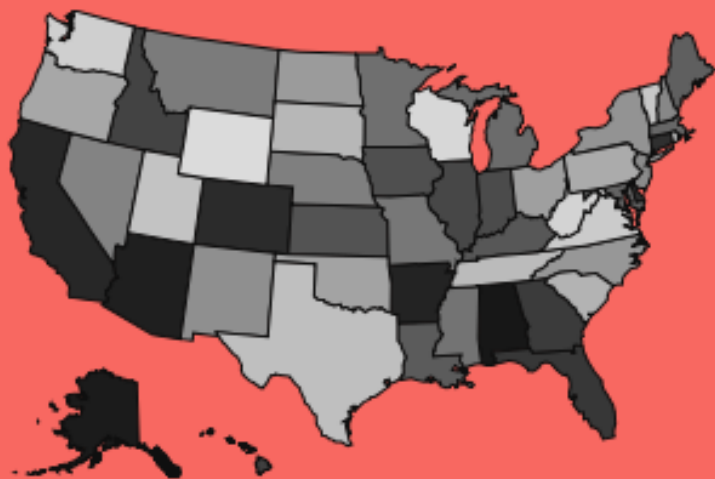


Mozilla Firefox — 9% Slower



**маніпуляція**





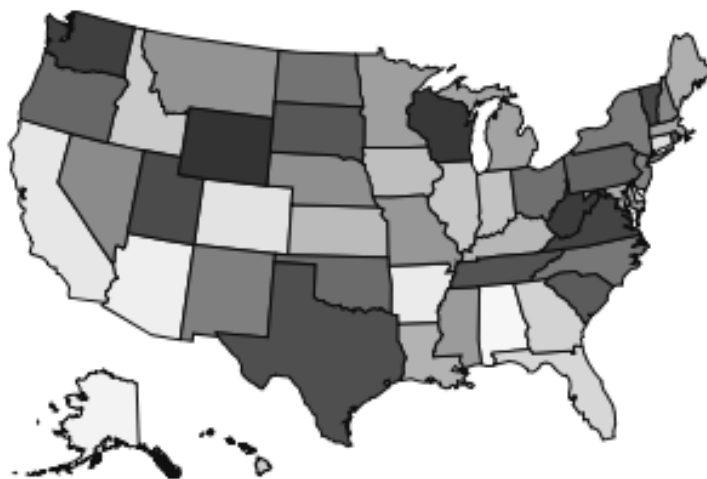
Individuals per km



## ☹️ MISLEADING

- Normally, darker shades are associated with density on a map but here, dark has been used to depict lower population density
- This graph can confuse and mislead readers, who expect dark to represent a higher population density

VS



Individuals per km



## ACCURATE ☺️

- This map follows the convention of using lighter shades for lighter density and darker shades for higher density
- Readers will intuitively know how to interpret the data

правильно вибрати колір