## Introduction

图表, 瀑布图

描述已自动生成

* **Concept Definition:** The 80-20 percent rule or **Pareto principle** states that roughly 80% of consequences come from 20% of causes for many outcomes.
* **Concept Founder:** Vilfredo Pareto first showed in his first work, [Cours d'économie politique, in 1896](https://web.archive.org/web/20221118115544/https:/www.worldcat.org/title/cours-deconomie-politique/oclc/29127729?__cf_chl_tk=kQXRHrw.Oxj9jpKgj_g9zCub3qBMP.I.NcnYA8Eh7ns-1664733226-0-gaNycGzNCL0" \t "_blank)that approximately 80% of the land in Italy was owned by 20% of the population.
* **Concept Benefit:** Understand the relation between input and output, cause and result. Knowing where to put the focus when trying to maximize the outcome.

## How to demonstrate it?

* The 20-80 rule effect was found by the Italian economist Vilfredo Pareto in 1896.
* He observed that 80% of the land in Italy was owned by around 20% of the people.
* He also witnessed the same ratio with plants in his garden.
* Around 20% of the fruits beared 80% fruit.

## Where can it be found?

* 20% of the world's income is owned by 80% of the people.
* 20% of criminals commit 80% of crimes.
* 20% of drivers cause 80% of all traffic accidents.
* 20% of a company's products represent 80% of sales.
* 20% of employees are responsible for 80% of the results.
* 20% of website generate 80% of visitor traffics.
* 20% of a plant contains 80% of the fruit.
* 20% of players result in 80% of points scored.
* 80% of the pollution originates from 20% of all factories.
* 80% of the total insurance cost is paid in the last 20%.
* 80% of the working time is on productivity, 20% are on administration.

## Why does it exist?

* **Related to Normal Distribution:** One of the most common distributions in nature is the normal distribution. A normal distribution explains the average relationship between [two independent](https://web.archive.org/web/20221118115544/https:/en.wikipedia.org/wiki/Dependent_and_independent_variables) variables, input (x-axis) and output (y-axis). Normal distributions are important in statistics and often used in the natural and social sciences to represent real-valued random variables whose distributions are unknown. In a normal distribution, roughly 20% of the x values create approximately 80% of the y values, as seen in the chart. This is why the ratio for the Pareto effect is about 20:80. This is to be understood as a rule of thumb, the numbers could sometimes also be 70-30 or 60-40. As long as the two are independent, the 20/80 rule will apply. For example, the circle scope depends on the circle radios shown by the formula **U = 2 · r · π.**The 20/80 rule does not apply in this case.

## How do I benefit from it?

* **Do:** Once understood the Pareto effect, a decision maker should leverage the most from the 20% input. For example, Jeff Bezos only puts [critical meetings in the morning](https://web.archive.org/web/20221118115544/https:/www.cnbc.com/2018/11/20/why-jeff-bezos-schedules-challenging-meetings-at-10-am.html) when his brain is the clearest and his productivity is the highest. Work smart instead of work hard, leverage the most effective 20% to produce the 80% result.
* **Don’t:** Understand that in a lot of situations, the input and output relation is non-linear. Some input causes more output and vice versa. Do not always expect linear relation as some causations are rather exponential rather than linear.