

How can I calculate Pearson's Coefficient of Skewness using Excel?

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Pearson's Coefficient of Skewness is a statistical measure used to determine the symmetry of a dataset. It is calculated by measuring the difference between the mean, median, and mode, and then dividing it by the standard deviation. This coefficient can be easily calculated using Microsoft Excel by following these steps:

1. Organize your data in a column or row in an Excel spreadsheet.
2. Use the function "`=SKEW()`" to calculate the skewness of your data. This function requires the range of cells containing the data as its argument.
3. Press Enter and the result will be displayed.
4. If the result is positive, it indicates that the data is skewed to the right, while a negative result indicates a left-skewed distribution.
5. You can also use the "Insert Function" feature in Excel to search and select the "SKEW" function to calculate the coefficient.
6. Additionally, you can use the "Data Analysis" tool in Excel to calculate the skewness and other descriptive statistics for your data.

Using Excel, you can easily and accurately calculate Pearson's Coefficient of Skewness, providing valuable insights into the distribution of your data.

Pearson's Coefficient of Skewness in Excel (Step-by-Step)

Developed by biostatistician , Pearson's coefficient of skewness is a way to measure the in a sample dataset.

There are actually two methods that can be used to calculate Pearson's coefficient of skewness:

Method 1: Using the Mode

Skewness = (Mean - Mode) / Sample standard deviation

Method 2: Using the Median

Skewness = $3(\text{Mean} - \text{Median}) / \text{Sample standard deviation}$

In general, the second method is preferred because the mode is not always a good indication of where the "central" value of a dataset lies and there can be more than one mode in a given dataset.

The following step-by-step example shows how to calculate both versions of the Pearson's coefficient of skewness for a given dataset in Excel.

Step 1: Create the Dataset

First, let's create the following dataset in Excel:

	A	B	C	D	E	F	G
1	Data						
2	3						
3	4						
4	4						
5	4						
6	7						
7	8						
8	12						
9	13						
10	13						
11	14						
12	15						
13	18						
14	22						
15	24						
16	25						
17	26						
18	26						
19	27						
20	29						
21	32						
22							
23							
24							
25							
26							

Step 2: Calculate the Pearson Coefficient of Skewness (Using the Mode)

Next, we can use the following formula to calculate the Pearson Coefficient of Skewness using the mode:

	A	B	C	D	E	F	G	H	I
1	Data								
2	3		1.295	<code>= (AVERAGE(A2:A21) - MODE(A2:A21)) / STDEV.S(A2:A21)</code>					
3	4								
4	4								
5	4								
6	7								
7	8								
8	12								
9	13								
10	13								
11	14								
12	15								
13	18								
14	22								
15	24								
16	25								
17	26								
18	26								
19	27								
20	29								
21	32								
22									
23									
24									
25									
26									

The skewness turns out to be 1.295.

Step 3: Calculate the Pearson Coefficient of Skewness (Using the Median)

We can also use the following formula to calculate the Pearson Coefficient of Skewness using the median:

	A	B	C	D	E	F	G	H	I
1	Data								
2	3		0.569	=3*(AVERAGE(A2:A21)-MEDIAN(A2:A21))/STDEV.S(A2:A21)					
3	4								
4	4								
5	4								
6	7								
7	8								
8	12								
9	13								
10	13								
11	14								
12	15								
13	18								
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27									

The skewness turns out to be 0.569.

How to Interpret Skewness

We interpret the Pearson coefficient of skewness in the following ways:

A value of 0 indicates no skewness. If we created a histogram to visualize the distribution of values in a dataset, it would be perfectly symmetrical. A positive value indicates positive skew or "right" skew. A

histogram would reveal a "tail" on the right side of the distribution. A negative value indicates a negative skew or "left" skew. A histogram would reveal a "tail" on the left side of the distribution.

In our previous example, the skewness was positive which indicates that the distribution of data values was positively skewed or "right" skewed.

Check out for a nice explanation of left skewed vs. right skewed distributions.