

PSYCHOLOGICAL MEASUREMENT

Measurement is the assignment of scores to individuals so that the scores represent some characteristic of the individuals. This very general definition is consistent with the kinds of measurement that everyone is familiar with—for example, weighing oneself by stepping onto a bathroom scale, or checking the internal temperature of a roasting turkey by inserting a meat thermometer. It is also consistent with measurement in the other sciences. In physics, for example, one might measure the potential energy of an object in Earth's gravitational field by finding its mass and height (which of course requires measuring those variables) and then multiplying them together along with the gravitational acceleration of Earth (9.8 m/s^2). The result of this procedure is a score that represents the object's potential energy.

Levels of Measurement

The **nominal level** of measurement is used for categorical variables and involves assigning scores that are category labels. Category labels communicate whether any two individuals are the same or different in terms of the variable being measured.

The **ordinal level** of measurement involves assigning scores so that they represent the rank order of the individuals. Ranks communicate not only whether any two individuals are the same or different in terms of the variable being measured but also whether one individual is higher or lower on that variable.

The **interval level** of measurement involves assigning scores using numerical scales in which intervals have the same interpretation throughout.

The **ratio level** of measurement involves assigning scores in such a way that there is a true zero point that represents the complete absence of the quantity. Height measured in meters and weight measured in kilograms are good examples. So are counts of discrete objects or events such as the number of siblings one has or the number of questions a student answers correctly on an exam.

SUMMARY OF LEVELS OF MEASUREMENTS

Level of Measurement	Category labels	Rank order	Equal intervals	True zero
NOMINAL	X			
ORDINAL	X	X		
INTERVAL	X	X	X	
RATIO	X	X	X	X

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