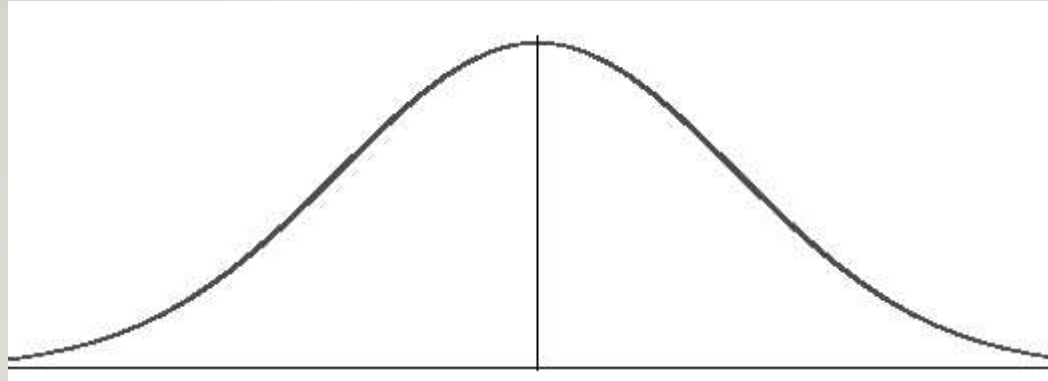


NORNAL DISTRIBUTION CURVE

UNIT 2

CHAPTER 1



1. The above bell shaped or Gaussian curve is called NPC
2. It is a probability distribution that occurs naturally in many situations example – height, traits, IQ, BP, test scores
3. It is assumed that there are 100 or 1000 or 10,000 cases in the curve
4. ORDINAL – if a perpendicular is drawn in the center of the curve, dividing the base line and curve into two equal halves, this line is called the ordinal
5. The length of the ordinal at the mean is the highest
6. THE CURVE IS SYMETRICAL – the shape ,slope and size of the curve is same on both sides
7. THE CURVE IS BILARERIAL – because the ordinal divides the curve into 2 equal halves
8. BASELINE – the line below the curve is the baseline
9. The point where the ordinal touches the baseline is indicated by 0

10. MEAN, MEDIAN, MODE COINCIDE – at point 0 on the baseline

11. The NUMBER OF CASES are divided equally on both sides of the ordinal. For eg, if there are 100 cases then 50 cases will lie on one side and 50 cases will lie on the other side of the ordinal. If there are 1000 cases 500 +500 . If there are 10,000 there are 5000 +5000

12. THE CURVE IS ASYMPTOTIC – the curve approaches but does not touch the baseline

13. The baseline is divided into SIX EQUAL PARTS ranging from -3 SD to 0 to +3 SD

14. All measure of the NPC are taken from the center outward.

15. For calculation of NPC, we refer to table A

16. In the table column $x/$ or z gives the distance on the baseline between the mean and the given point

For example mark 1.2 , -2.5, .40, -1.2

17. Formula $z = x - m/sd$

18. To determine the number of cases between each SD

a. If we draw a line from -1 sd and +1 sd the total number of cases will be

b. If we draw a line from -2 sd and +2 sd the total number of cases will be

c. If we draw a line from -3 sd and +3 sd the total number of cases will be (draw a curve for each)

19. If the mean, median, mode does not lie on the same point the curve is said to be skewed

20. The NPC is based on the elementary principle of probability

USES OF NPC pg 95

Coefficient of correlation

The goal of social science is to **understand relationship between variables** ie how the two variables co-vary with each other

“correlation is a method to indicate the relationship between two variables quantitatively’

“ is a method whereby two variables are systematically measured and the relationship between them is obtained”

“correlation is an expression of the degree and direction of correspondence between 2 variables X and Y”. This means that the coefficient of correlation is interpreted by its sign and magnitude.

PEARSON PRODUCT MOMENT CORRELATION

The range of correlation is -1 to 0 to +1

Where -1 indicates perfect negative correlation

+1 indicated perfect positive correlation



Three type of correlation

1. **Positive correlation** – if we find that the **two variables increase or decrease in the same direction**. Increase of one variable leads to the increase of the other variable. Similarly, decrease in one variable leads to the decrease of the other variable.
2. **Negative correlation** – if we find that **the two variables increase or decrease in the opposite direction**. When one variable increases the other variable decreases.
3. **No or zero correlation** - if we find that there is **no relationship** between the two variables.
4. The greater the absolute value of correlation the stronger the relationship
5. The lesser the absolute value of correlation the weaker the relationship
6. Correlation on tells the direction of relationship ,not the cause and effect relationship

Interpretation of correlation

