Choosing "tests"

1. Test for Proportion

4. Test for mean

2. Difference of two Proportion

5. Difference of two means (independent Samples)

3. Chi-sq test for independance

6. Regression Analysis

7. Difference of two means (Paired)

Three questions.

1. Data 2. Samples 3. purpose.

1. Data / Level of measurement.

Nominal or Internal Ration

↓

- Categorical
- Qualitative
- Non parametric.

e.g color, defective or not

Types of chocolate

Summary value: proportion, percentage value and frequencies.

tests: 1. 2. 3

↳ Quantitative

e.g daily sales of a product

- Weight of boxes or temperature.

common summary value is a "Mean"

tests are label 4, 5, 6 & 7

2. Samples (How many Samples):

Tests 1 & 4 1) 1 sample → Testing the relevant statistic against the hypothesized value. → e.g. compare a proportion to a mean against a g

Tests: 2, 5 2) Two samples → compared with each other or ↳ compare two different wo of people or things e.g. men & women or people from 2 various de circumference / weight.

Tests: 3, 6, 7 3) One sample, two measures e.g. colors, or grade.

→ Same sample measured twice.

↳ e.g one set of days & informat on how many ice creams are sold & what the temp was.

3. Purpose: (purpose of Analysis)?

1) Test against the hypothesized value.

2) Comparing two statistics.

Tests 3 & 6 3) Looking for a Relationship.

↳ similar and they are looking at the relationship b/w two variables.

- Difference is in the type of data.

→ summarize in a table (chi square)

→ scatter plot (Regression)

Examples

1) Mr A is selling a chocolates and was concerned whether the quantity of nuts was sufficient in her chocnutties? She took a sample of 20 packets & found the weight of nuts in each packet ?

1) Data: Weight is interval and ratio data.
2) Samples: 1 sample of 20 packets
3) Purpose: Comparing against a given value.

Test for a Mean.

2) In a promotional campaign 20% of all packets of chocnutties should include tickets for free prizes. A takes a sample of 50 packets & find 7 of them have winning tickets

1) Data: Yes/No. (Nominal)
2) Samples: One sample of 50 packets.
3) Purpose: Test against a given value. 20%

Test for Proportion

3) Bar longevity compared with nutbars, A thinks his/her Chocnutties last longer than the competitive nutbars He/She gets 36 people to eat one of each, & records their eating times.

1) Data: Time (in secs/mins) Interval/ratio
2) Samples: One samples of 36 people with 2 scores
3) Purpose: relationship (Difference in the amount of time taken for each of the bars).

Difference of two means (paired)

4. Defective wrapping from two wrapping machines, A thinks there is a difference in performance between wrapping machines in his/her factory. He/She checks 200 bars from 1 machine & 150 bars from the other. For each bar he/she is seeing if the wrapping is satisfactory or not? He/She finds that 10 out of 200 bars from the first machine & 9 out of 150 from 2nd machine are badly wrapped.

1) Data: Nominial
2) Samples: 2 samples (each from two machines)
3) Purpose: Comparing the proportions from two samples.

Test for Difference of Two proportions

5. Mr. A is exploring whether having free stickers makes a difference to sales. He/she has the sales figures for 13 days when she/she did offer free stickers & 10 days when she/he did not.

1) Data: Interval/Ratio (Sales) Summarize (Mean)
2) Samples: Two samples
3) Purpose: Comparing two statistics.

Difference two means Independent Samples