

Sampling and experimental design

Survey Methodology

Sampling

Sampling Design

Assignment

Experimental Design

Treatment

Analysis

Population



Sample



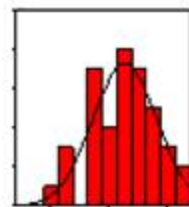
Medication



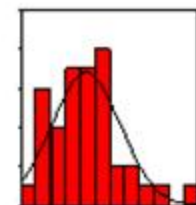
Control



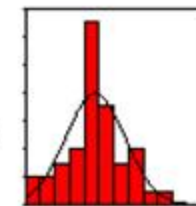
Process control (Placebo)



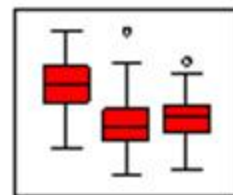
\bar{X}_1



\bar{X}_2



\bar{X}_3



Line a linear regression

Year	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)	Yield (t/ha)
1997	10.0	10.0	10.0	10.0	10.0	10.0
1998	10.0	10.0	10.0	10.0	10.0	10.0
1999	10.0	10.0	10.0	10.0	10.0	10.0
2000	10.0	10.0	10.0	10.0	10.0	10.0
2001	10.0	10.0	10.0	10.0	10.0	10.0
2002	10.0	10.0	10.0	10.0	10.0	10.0
2003	10.0	10.0	10.0	10.0	10.0	10.0
2004	10.0	10.0	10.0	10.0	10.0	10.0
2005	10.0	10.0	10.0	10.0	10.0	10.0
2006	10.0	10.0	10.0	10.0	10.0	10.0
2007	10.0	10.0	10.0	10.0	10.0	10.0
2008	10.0	10.0	10.0	10.0	10.0	10.0
2009	10.0	10.0	10.0	10.0	10.0	10.0
2010	10.0	10.0	10.0	10.0	10.0	10.0
2011	10.0	10.0	10.0	10.0	10.0	10.0
2012	10.0	10.0	10.0	10.0	10.0	10.0
2013	10.0	10.0	10.0	10.0	10.0	10.0
2014	10.0	10.0	10.0	10.0	10.0	10.0
2015	10.0	10.0	10.0	10.0	10.0	10.0
2016	10.0	10.0	10.0	10.0	10.0	10.0
2017	10.0	10.0	10.0	10.0	10.0	10.0
2018	10.0	10.0	10.0	10.0	10.0	10.0
2019	10.0	10.0	10.0	10.0	10.0	10.0
2020	10.0	10.0	10.0	10.0	10.0	10.0
2021	10.0	10.0	10.0	10.0	10.0	10.0
2022	10.0	10.0	10.0	10.0	10.0	10.0

$$F = \frac{\frac{1}{k-1} \sum_i n_i (\bar{X}_i - \bar{X})^2}{\frac{1}{n-k} \sum_i \sum_j (x_{ij} - \bar{X}_i)^2}$$

Test statistic

μ
Parameter

\bar{X}
Sample statistic

Three Sample statistics