

Home science

Research Methodology & Computer application

Unit1-Research Methodology:

- a) Meaning and concept of Research.
- b) Importance, characteristics and objectives of research.
- c) Role of research in different areas of Home-Science.
- d) Qualities of good researcher.
- e) Essential steps in research process.
- f) Meaning, Functions, Types and formulation of Hypothesis.
- g) Types of research design/Data gathering methods : Historical, case study, survey, , field studies and experiments, observation, experiments in vivo and invitro, evaluation and action research, organoleptic or sensory evaluation methods.
- h) Difference between applied and pure research.
- i) Pilot studies :Meaning, concept, importance, organization, implementation and analysis of findings.
- j) Sampling Techniques : Characteristics of good sample concepts of simple Random Sampling, stratified sampling, systematic sampling, cluster sampling, Quota sampling.

Unit II- Tools & Techniques of Research:

- a) Tools of Research - Interview, questionnaire, schedule methods,
- b) Scaling Techniques - Types of Scales - Normal, ordinal interval and ratio, scales, steps in construction of scales, Reliability and validity of scales.
- e) Preparation of project proposals and scientific report writing :
- f) Formulation of research topic- Title, Importance, Objectives, Reviews of Process of writing a research article in research journal for the publication.

Unit III -Statistical Analysis:

- a) Statistical application - Mean, Median and Mode.
- b) Measures of Dispersion - Quartile deviation, standard deviation, and their relative measures.
- c) Correlation : Concept of Correlation, Scatter diagram method, Karl Pearson's correlation coefficient.
- d) Hypothesis Testing - Concept of population, sample, Parameter, Statistic, Hypothesis, one tailed and two tailed tests. Errors in testing of Hypothesis, Critical Region, Level of significance.

e) Statistical Design & Test -

i) Test of population mean.

ii) Test of equality two population means.

iii) Test of equality of two population proportions.

f) Small Sample Test -

i) Chi-square test : Test of independence of Attributes and test of population variance.

ii) Student's 't' Test and 'Z' tests : Test of population mean, equality of two means and test of population correlation coefficient.

iii) Analysis of Variance - one way and two-way classification.

Unit IV- Computer Application in research :

a) Working with MS-word and Excel

b) formatting document and text.

c) Software used in research - Designing tables and graphs for research

d) Use of various statistical functions like, average, sum, standard deviation, correlation.

e) Slide preparation for power point presentation

f) Online research paper submission.

g) Probability and Probability distributions - Concept of Probability, Laws of Probability : Normal distribution and related examples.

Reference Books:

1. Research Methods S. R. Gupta.

2. Hand book of Research Methodology -R. P. Devdas and K. Kulandaivel.

3. Research Methodology C. R. Kothari.

4. Probability Theory and Mathematical Statistics V. K. Rohatgi.

5. Fundamentals of Statistics Vol I and II Goon, Gupta Dasgupta.

6. Fundamentals of Mathematical Statistics S. C. Gupta & V. K. Kapoor.

7. Scientific Report Writing P. O. Ingale.

8. Thesis Writing - Some Guidelines, S. Y. Kulkarni and Vandan. Mohod.

9. Guide to Thesis Writing R. Kamath and S. Udipi.

10. Statistical procedures for agricultural research K. A. Gomez and A. A. Gomez, Willily International, John Willeye sons, 1984.

11. Theory and Analysis of Sample survey Darogasingh.

12. Statistics in Psychology and Education H. E. Garret.

13. Research Methodology R. P. Misra.

