

Observational Study Design Glossary Assignment

STEP ONE: Go to the web URL <http://stattrek.com/statistics/data-collection-methods.aspx?Tutorial=Stat> . Link available on the Business Statistics Website.

Under the topic “SURVEY SAMPLING”, “SAMPLING METHODS”, review all three subsections, “*Data Collection*”, “*Data Collection Methods: Pros & Cons*”, and “*Survey Sampling Bias*”.

I. SAMPLING METHODS, Data Collection

A. METHODS OF DATA COLLECTION

1. Population
2. Sample
3. Census
4. Sample Survey
5. Experiment
6. Observational study

B. DATA COLLECTION METHODS: PROS & CONS

7. Causal Influence, Causation
8. Generalizability
9. Resources (Cost)

II. SAMPLING METHODS, Sampling Methods

A. POPULATION PARAMETER VS. SAMPLE STATISTIC

10. Parameter
11. Statistic

B. NON-PROBABILITY SAMPLING METHODS

12. Non-probability Samples
13. Voluntary Sample
14. Convenience Sample

C. PROBABILITY SAMPLING METHODS

15. Probability Samples
16. Simple Random Samples
17. Stratified Random Samples
18. Cluster Samples
19. Systematic Random Samples
20. Multistage Samples

III. SAMPLING METHODS, Survey Sampling Bias

A. BIAS DUE TO UNREPRESENTATIVE SAMPLES

21. Representative Sample
22. Undercoverage
23. Nonresponse Bias
24. Voluntary Response Bias
25. Random Sampling (Note the two mathematical characteristics)

B. BIAS DUE TO MEASUREMENT ERROR

26. Response Bias
27. Leading Questions
28. Social Desirability

C. SAMPLING ERROR & SURVEY BIAS

29. Sampling Error

STEP TWO: Go to the web URL <http://stattrek.com/statistics/data-collection-methods.aspx?Tutorial=Stat>. Link available on the Business Statistics Website.

Under the topic “SURVEY SAMPLING”, “SIMPLE RANDOM SAMPLES”, review both subsections, “*Survey Sampling*”, and “*SRS Analysis*”

IV. SIMPLE RANDOM SAMPLES, Survey Sampling

A. QUALITY OF SURVEY RESULTS

30. Accuracy
31. Precision
32. Standard Error (Click on link for more complete definition)
33. Margin of Error

B. SAMPLE DESIGN

34. Sampling Method
35. Estimator

V. SIMPLE RANDOM SAMPLES, SRS Analysis

A. ANALYSIS OF SIMPLE RANDOM SAMPLES

36. Simple Random Sampling (Include all three bullet points)

B. NOTATION

Copy the **entire chart** shown in this section. (12 symbols are defined in all).
This notation chart should be its own page, NOT MIXED WITH THE VOCAB PART OF GLOSSARY.

STEP THREE: Go to the web URL <http://stattrek.com/statistics/data-collection-methods.aspx?Tutorial=Stat> . Link available on the Business Statistics Website.

Under the topic “SURVEY SAMPLING”, “STRATIFIED SAMPLES”, review just the subsection, “*Stratified Sampling*”. **At this point, there is no need to review “Stratified Analysis”.**

VI. STRATIFIED SAMPLES, Stratified Sampling

A. ADVANTAGES & DISADVANTAGES

37a, 37b,, 37c, 37d. - List Four Advantages of Stratified Sampling

38a, 38b. - List A Disadvantage (and add a second – “Increases the potential for bias in determining strata”)

B. PROPORTIONATE VERSUS NONPROPORTIONATE STRATIFICATION

39. Proportionate Stratification (List three bullet points in your definition)

40. Homogeneous Strata

41. Sampling Fraction

42. Disproportionate Stratification (Do not list three bullet points)

STEP FOUR: Go to the web URL <http://stattrek.com/statistics/data-collection-methods.aspx?Tutorial=Stat> . Link available on the Business Statistics Website.

Under the topic “SURVEY SAMPLING”, “CLUSTER SAMPLES”, review just the subsection, “*Cluster Sampling*”. **At this point, there is no need to review “CLS Analysis”.**

VII. CLUSTER SAMPLES, Cluster Sampling

A. CLUSTER SAMPLING STAGES

43. One-stage Sampling

44. Two-stage sampling

B. CLUSTER SAMPLING: ADVANTAGES AND DISADVANTAGES

45. List One Disadvantage of Cluster Sampling

46. List One Advantage of Cluster Sampling

47. List One Way To Mitigate The Disadvantage Listed

C. WHEN TO USE CLUSTER SAMPLING

48. Natural Clusters

D. THE DIFFERENCE BETWEEN STRATA AND CLUSTERS

49a, 49b - List two ways that clusters differ.

50. Heterogeneous Clusters

STEP FIVE: Go to the web URL http://www.sciencebuddies.org/science-fair-projects/project_ideas/Soc_observation.shtml . Link available on the Business Statistics Website.

ADD THESE TEN TERMS AT THE END OF YOUR GLOSSARY WITH THEIR DEFINITION, & WRITE A BRIEF DESCRIPTION OF AN EXAMPLE FOR THE TERM USING GHCHS STUDENTS AS A POPULATION.

VIII. OTHER STUDY DESIGN TERMS

51. Natural setting
52. Contrived Setting
53. Disguised Observation
54. Non-disguised Observation
55. Human Observation
56. Mechanical Observation
57. Direct Observation
58. Indirect Observation
59. Structured Observation
60. Non-structured Observation

MR. NELSON MAY ADD A FEW TERMS TO THIS LIST IN THE COMING WEEKS. BUT THIS IS MOST OF THE TERMS YOU WILL NEED TO KNOW FOR THE SAMPLING SURVEY PROJECTS & SPRING MIDTERM #1.