FALL 2015

EXPERIMENTAL PSYCHOLOGY—PSYC 204: 911-915

Research Methods Concepts

[08/25/15]

☐ 1. hypothesis vs. theory
☐ 2. independent and dependent variables
☐ 3. conceptual vs. operational definitions
☐ 4. confounded variables
☐ 5. quantitative vs. qualitative variables

☐ 6. continuous vs. discrete (categorical) variables
☐ 7. levels of measurement (labels, nominal, ordinal, interval, ratio)
☐ 8. reliability of test scores (internal consistency, split-half, test-retest, equivalent/alternate form, intrarater, intrarater)
☐ 9. validity (of inferences from test scores; construct-related, content-related, criterion-related)
☐ 10. discriminant and convergent validity

☐ 11. face validity
☐ 12. systematic vs. random error
☐ 13. role demands
☐ 14. experimenter bias
☐ 15. research validity

☐ 16. threats to internal validity ➔ history, maturation, testing, regression to the mean, selection, attrition/mortality
☐ 17. threats to external validity ➔ other participants (population validity), other times (temporal validity), other settings (ecological validity)
☐ 18. threats to construct validity ➔ loose connection between theory and method; changes resulting from participation in study (e.g., good subject response, evaluation apprehension, etc.)
☐ 19. threats to statistical conclusion validity ➔ low power, violations of statistical assumptions, low reliability
☐ 20. double- and single-blind procedures

☐ 21. random sampling
☐ 22. random assignment
☐ 23. within- and between-subjects designs
☐ 24. pretest and posttest
☐ 25. pilot study

☐ 26. control group
☐ 27. statistical vs. practical significance
☐ 28. effect sizes
☐ 29. research setting
☐ 30. lab vs. field studies

☐ 31. probability vs. nonprobability sampling
☐ 32. deception
☐ 33. debriefing
• 34. replication
• 35. extraneous variables

• 36. multi-treatment interference
• 37. power analysis
• 38. methods of acquiring knowledge
• 39. assumptions of science
• 40. characteristics of the scientific approach

• 41. correlations
• 42. regressions
• 43. $t$-tests
• 44. analysis of variance (ANOVA)
• 45. chi-square

• 46. experimenter expectancies
• 47. experimenter effects
• 48. clinical significance
• 49. baseline
• 50. convenient samples/samples of convenience

• 51. $r_{xx}$
• 52. $r_{xy}$
• 53. median split
• 54. instrumentation of response
• 55. statistical control

• 56. nuisance variables
• 57. observational research
• 58. nonexperimental research
• 59. Solomon four group design
• 60. experimental group

• 61. dependability of treatment effects $\Rightarrow$ order and sequencing [carry over] effects
• 62. irreversibility of treatment effects
• 63. counterbalancing, reverse counterbalancing, block randomization
• 64. ceiling and floor effects
• 65. single-participant experiments

• 66. changing-criterion designs
• 67. repeated treatment designs (ABAB)
• 68. withdrawal of treatment designs (ABA)
• 69. conditions for causality $\Rightarrow$ temporal precedence, contiguity, and constant conjunction
• 70. archival research

• 71. case study
• 72. survey research and designs
• 73. response rates
• 74. response styles vs. sets
• 75. sampling $\Rightarrow$ uncontrolled, haphazard, purposive, convenience, probability, systematic, simple, stratified, cluster, multi-stage sampling, oversampling
76. quasi-experimental design
77. delayed control group design
78. interrupted time-series design
79. multiple time-series design
80. non-equivalent control group design
81. cross-sectional vs. longitudinal
82. meta-analysis
83. animal rights vs. animal welfare
84. informed consent
85. ethics in research truth in reporting; treatment of research participants; internal vs. external controls and checks
86. experimental control
87. control experiment
88. manipulation
89. manipulation check
90. factorial designs
91. main effects and interactions
92. correlational designs
93. moderators
94. mediators
95. mixed factorial designs
96. extreme groups analysis
97. IRB
98. test and measurement validity
99. predictive, concurrent, and postdictive designs
100. primary and secondary research designs
101. condition – experimental and control
102. observational designs
103. levels of observation
104. margin of error
105. simple factorial designs
106. \( n \times n \) factorial
107. \( n \) of conditions
108. balanced vs. unbalanced designs
109. \( n \)-way interactions
110. highest order interaction term
111. lowest order interaction term
112.
113.
114.