SPRING 2016

EXPERIMENTAL PSYCHOLOGY—PSYC 204: 901-905, and 906-910

Research Methods Concepts

[01/16/16]

☐ 1. hypothesis vs. theory
☐ 2. independent and dependent variables
☐ 3. conceptual vs. operational definitions
☐ 4. quantitative vs. qualitative variables
☐ 5. continuous vs. discrete (categorical) variables

☐ 6. levels of measurement (labels, nominal, ordinal, interval, ratio)
☐ 7. measurement error
☐ 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. deception
☐ 22. debriefing
☐ 23. multi-treatment interference
☐ 24. random sampling
☐ 25. random assignment

☐ 26. probability vs. nonprobability sampling
☐ 27. convenient samples/samples of convenience
☐ 28. within- and between-subjects designs
☐ 29. pretest and posttest
☐ 30. baseline
31. pilot study
32. statistical vs. practical significance
33. effect sizes
34. clinical significance
35. research setting

36. lab vs. field studies
37. replication
38. extraneous variables
39. nuisance variables
40. confounded variables

41. methods of acquiring knowledge
42. assumptions of science
43. characteristics of the scientific approach
44. experimenter expectancies
45. experimenter effects

46. power analysis
47. regressions
48. t-tests
49. analysis of variance (ANOVA)
50. chi-square

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

56. statistical control
57. observational research
58. noneperimental research
59. Solomon four group design
60. experimental group

61. control group
62. dependability of treatment effects $\rightarrow$ order and sequencing [carry over] effects
63. irreversibility of treatment effects
64. counterbalancing, reverse counterbalancing, block randomization
65. ceiling and floor effects

66. single-participant experiments
67. changing-criterion designs
68. repeated treatment designs (ABAB)
69. withdrawal of treatment designs (ABA)
70. conditions for causality $\rightarrow$ temporal precedence, contiguity, and constant conjunction
71. archival research
72. case study
73. survey research and designs
74. response rates
75. response styles vs. sets
76. sampling ➔ uncontrolled, haphazard, purposive, convenience, probability, systematic, simple, stratified, cluster, multi-stage sampling, oversampling
77. quasi-experimental design
78. delayed control group design
79. interrupted time-series design
80. multiple time-series design
81. non-equivalent control group design
82. cross-sectional vs. longitudinal
83. meta-analysis
84. animal rights vs. animal welfare
85. informed consent
86. ethics in research ➔ truth in reporting; treatment of research participants; internal vs. external controls and checks
87. experimental control
88. control experiment
89. manipulation
90. manipulation check
91. factorial designs
92. main effects and interactions
93. correlational designs
94. moderators
95. mediators
96. mixed factorial designs
97. extreme groups analysis
98. IRB
99. test and measurement validity
100. predictive, concurrent, and postdictive designs
101. primary and secondary research designs
102. observational designs
103. levels of observation
104. margin of error
105. simple factorial designs
106. condition – experimental and control
107. \( n \times n \) factorial
108. \( n \) of conditions
109. balanced vs. unbalanced designs
110. \( n \)-way interactions
111. highest order interaction term
112. lowest order interaction term
113.
114.
115.