Exercises

# Chapter 2: Methods of Quantitative Empirical Investigation

For each of the research ideas listed below, use the information provided in the description of the idea, the insights gained from the discussion of this chapter and Chapter 1, and your own imagination, knowledge, and judgment to construct a research proposal by specifying the following project design parameters:

1. the phenomenon of interest to be observed (said to be the *unit of analysis*);
2. the properties of interest and the type of each property (“qualitative,” “ordinal,” or “scale”);
3. the purpose of the study (“exploratory,” “descriptive,” or “explanatory”);
4. the focus of the study (“applied” or “pure scientific”);
5. the scope of the study (“case” or “estimation”);
6. the investigation type (“quantitative” or “qualitative”);
7. the method of investigation (“experimental” or “observational”); and
8. if the property of interest involves an individual’s thoughts or opinions, what type of instrument is to be used to assess the property, or properties, of interest (“closed-ended” questions, “open-ended” questions, or a “focus group”).
   * + 1. A campaign researcher is interested in the opinions of potential voters regarding national security. She has chosen to identify those opinions as “Strong unilateral defense,” “Combination of defense and International cooperation,” and “Reliance on International Cooperation.” She is also interested in the party affiliation (“Democrat,” “Republican,” “Independent,” or “Other”) of those voters.
9. **Typical voter;**
10. **“opinion on national security” (ordinal) and “party affiliation” (qualitative);**
11. **“explanatory;”**
12. **“applied;”**
13. **“estimation;”**
14. **“quantitative;”**
15. **“observational;” and**
16. **“closed-ended” questions.**
17. A business manager is interested in the aptitude test scores of her workforce.
18. **Typical worker in the company;**
19. **skills aptitude (scale);**
20. **“descriptive;”**
21. **“applied;”**
22. **“case;”**
23. **“quantitative;”**
24. **“observational;” and**
25. **“closed-ended” questions.**
26. A school superintendent is interested in the SAT® scores of the students in her district relative to that of the students in the entire high school population of the United States.
27. **District student;**
28. **SAT® score intended to represent scholastic aptitude (scale);**
29. **“explanatory” (comparing district students to students as a whole);**
30. **“applied;”**
31. **“case;”**
32. **“quantitative;”**
33. **“observational;” and**
34. **not applicable.**
35. A sociologist wants to understand the overall life experiences of inhabitants of a small, rural town in Kansas.
36. **Small town resident;**
37. **reflections on life experiences (qualitative);**
38. **“descriptive;”**
39. **“applied;”**
40. **“case;”**
41. **“qualitative;”**
42. **“observational;” and**
43. **“open-ended” questions or a “focus group.”**
44. A teacher is interested in the learning styles (“auditory,” “visual,” or kinesthetic”) of her students.
45. **Student;**
46. **learning style (qualitative);**
47. **“descriptive;”**
48. **“applied;”**
49. **“case;”**
50. **“quantitative;”**
51. **“observational;” and**
52. **“closed-ended” questions and a score.**
53. An educational psychologist is interested in the learning styles (“auditory,” “visual,” or kinesthetic”) and SAT® scores of the students in her school district.
54. **Student;**
55. **SAT® score (quantitative) and learning style (qualitative);**
56. **“explanatory;”**
57. **“applied;”**
58. **“case;”**
59. **“quantitative;”**
60. **“observational;” and**
61. **not applicable.**
62. An educational psychologist is interested in the SAT® scores and self-reported preparation times of the students in her school district.
63. **Student;**
64. **preparation time (scale) and SAT® score (scale);**
65. **“explanatory;”**
66. **“applied;”**
67. **“case;”**
68. **“quantitative;”**
69. **“observational;” and**
70. **preparation time self-report based on open-ended question.**
71. A business analyst is interested in the budgeted and actual costs of each of the capital programs initiated by her company over each the past 5 years.
72. **Capital program;**
73. **actual cost (scale), budgeted cost (scale), and year (scale);**
74. **“descriptive” or “explanatory;”**
75. **“applied;”**
76. **“case;”**
77. **“quantitative;”**
78. **“observational;” and**
79. **not applicable.**
80. A city manager is interested in the vehicle ages of the truck fleet of her public works department.
81. **Public works truck;**
82. **age (scale);**
83. **“descriptive;”**
84. **“applied;”**
85. **“case;”**
86. **“quantitative;”**
87. **“observational;” and**
88. **not applicable.**
89. A policy analyst is interested in the vehicle ages of the truck fleets for all of the public works departments in her state.
90. **Public works truck;**
91. **age (scale) and municipality (qualitative);**
92. **“descriptive” or “explanatory;”**
93. **“applied;”**
94. **“case;”**
95. **“quantitative;”**
96. **“observational;” and**
97. **not applicable.**
98. A public health analyst is interested in the birth weight, gender, and maternal age of each of the infants born in a particular hospital in a high-income neighborhood over a 2-year period.
99. **Birthed infant;**
100. **weight (scale), gender (qualitative), maternal age (scale), year (scale);**
101. **“descriptive” or “explanatory;”**
102. **“applied;”**
103. **“case;”**
104. **“quantitative” or “qualitative;”**
105. **“observational;” and**
106. **weight assessed directly, gender assessed directly, and maternal age assessed by self-reported open-ended question.**
107. A business planner interested is of the return on investment percentages of the ongoing projects initiated by a particular division of her company over a 5-year period.
108. **Project;**
109. **return on investment percentage (scale) and year (scale);**
110. **“descriptive” or “explanatory;”**
111. **“applied;”**
112. **“case;”**
113. **“quantitative;”**
114. **“observational;” and**
115. **not applicable.**