Statistics 467/567: Scientific/ Proposal/ Journal Article Writing   July 15, 2020

1) Introduction: Literature review
    a. Find one or two articles as a model to replicate and/or extend
    b. Cite relevant articles when making an assertion
    c. Background for hypothesis testing refers to previous studies
2) Voice/Tone - Active Voice i.e. use of "we" or "I" not the standard rather Passive Voice
    Examples are: "It is observed" or "It is postulated"; "Methods selected are ..." Analyses were
    performed in R"; or "The   graph shows" or "The results indicate"
3) Diction/Grammar
    a. Same word repeated within sentence and paragraph multiple times – using identical term to
       define the concept - find synonyms
    b. Affect – verb; Effect – noun
    c. Present tense or past perfect (i.e. "studies have shown" or "research has demonstrated")
4) Variable – Synonyms
    a. Predictor (x)
    b. Factor (x)
    c. Determinant (x)
    d. Attribute (x)
    e. Explanatory variable (x)
    f. Independent variable (x)
    g. Response variable (y)
    h. Dependent variable (y)
    i. Outcome (y)
5) Paragraph Construction (standard minimum 5 sentences)
    a. Introduction
    b. Three (3) sentences of exposition
    c. Clincher – leads into next paragraph
6) Formatting
    a. Double space between sections
    b. Indent paragraphs
    c. Indent second line of citations in bibliography
    d. Capitalize the word "Table" in the text of the paper
    e. Spell out the word "Figure" (capitalize)
    f. Citation (either number in superscript or Author's Name, year or if 3 or more Authors, then
       standard is: Smith, Brown, White et al, 2014)
7) Methodology
    a. Univariate: Measures of Dispersion – Mean, Media, Mode (Confidence Intervals for Means)
    b. Univariate: t-tests (Pick one)
       i. Pooled
       ii. Non-pooled
       iii. Paired differences
    c. Bivariate: Correlation Table
    d. Bivariate: Chi-Square

     e. Bivariate/Multivariate: ANOVA (MANOVA)\
     f. Bivariate:Residual Analysis (Normality test and Normal Probability Plot)
     g. Bivariate: Scatter Plot
     h. Multivariate: Regression Analysis

8) Results
     a. Table Construction: Rows and columns (programming code not needed)
     b. If used method not required, define and explain relevance to analysis

9) Discussion/Conclusion
     a. Discuss findings vis-à-vis existing literature
     b. Research – replicates and/or extends
     c. Study conducted addresses a gap
     d. Limitations - what is lacking in the current study
     e. Broader impact - additional analyses to be explored
     f. Policy implications - how does the research from this paper translate into implementation for improvement on large scale (of services, unmet need, protective and preventive measures)

10) References
     a. No more than 50% citations older than 5 years
     b. Formatting – consistent structure, either American Psychological Association or American Medical Association
     c. Spell out names of Journals
     d. Underline or italicize journal name or book title

11) Follow Instructions
     a. Ensure all components are included in report as requested
     b. Meet the criteria as specified (format and content)

12) Overall goal:
     a. Step 1: Use quantitative methods to understand distributions, i.e. define variables and their shape (univariate)
     "Letter of Intent"
     b. Step 2: Apply mathematical formulas to examine relationships (bivariate)
     "Reports with graphical analysis intended for broad audience "
     c. Step 3: Use multiple models to test causal inferencing and directionality i.e. affect of x on y (multivariate)
     "Rigorous papers for scientific community"
     d. Step 4: Consider results in the context of existing body of knowledge (narrative or text)
     "Executive summaries and testimonies for policymakers and legislators"