Assignment 2: Sampling & Data Analysis (Group Assignment)

Objectives: After completing this assignment, you will be able to

- Explain the sampling and data analysis procedures used in research reports
- Determine whether the researcher wants to generalize his/her ***specific findings and/or conclusions*** to a group of people larger than those included in the sample and evaluate the degree to which a given sample is adequate for generalizing ***findings and/or conclusions*** beyond the participants
- Identify and interpret the results of statistical analyses presented in research reports
- Explain the techniques used in qualitative data analysis and assess whether the researcher moved beyond description to analysis
- Evaluate the degree to which a study provides reliable and generalizable results or findings
- Assess the degree to which the results or findings support (or warrant) the claims that the researcher makes, the conclusions that s/he draws, and the implications or recommendations for practice that the researcher makes
- Assess the contribution of a piece of research to the body of knowledge

Your Tasks and How I Will Assess Your Work

This is a group assignment. I will assign the members. Your grade will be a group grade.

You will analyze two articles. There are two components to the assignment. (1) One is the Flow Chart for Articles You Read for both the List A and List B articles you select to analyzed. Do not spend too much time on this. The total points for your work on the flow chart are 40 out of 200. The purpose of the flow chart is for you to have all information needed based purely on what the authors say in the article. (2) The second and most important component is your responses to the discussion questions. These responses account for 160 of 200 points. I will grade your work on the List A and List B articles separately, scoring each on the basis of 200 points. I average the two scores to produce a group grade for the assignment as a whole.

There is a discussion board for each group on canvas. You can use this space to share documents and work together on the assignment. It's the best tool to use for collaboration in terms of getting input and assistance from me and to be able to share documents during class meetings when you get time to work on the assignment in class. However, you can use other collaborative platforms like Teams (Microsoft) or Google Docs. I will not be able to routinely check those –would not have access at all unless you give me access to each folder that you set up. To be quite honest, I do not want the all folders on multiple platforms with multiple passwords, etc. that I would have to manage for the 8 groups that will be working on this assignment (there are two sections to the class). However, I do not want to force you to use Canvas either. You will have some time in class to work on the assignment on October 08 and October 22. You must have boxes 1-3 of the flow chart for each other posted to your team's weekly discussion board on October 8. You must have boxes 4-8 posted by October.

Submission of the Assignment

ONE member of your team should submit the assignment. Do not submit multiple versions. You will upload **four** Word documents**,** two for each article using the document file name given in the table below. The document "Flow Chart for Articles You Read" is linked through home page: Click on Documents by Swisher and you will find the link to this document in the second row of the table

(Finding, Selecting & Reading Research Literature). Use the following file names for your submissions, listing list the names of your team members by last name only in alphabetical order.

Document to Submit	File Name of Document
Completed flow chart for articles you read – List A article	LastName1_LastName2_LastName3_A3_Article_A_Flow
Responses to discussion questions – List A article	LastName1_LastName2_LastName3_A3_Article_A_Discuss
Completed flow chart for articles you read – List B article	LastName1_LastName2_LastName3_A3_Article_B_Flow
Responses to discussion questions – List B article	LastName1_LastName2_LastName3_A3_Article__Discuss

Assessment of Your Work

There are two tables at the end of this document that delineate my assessment procedures. The first one is a general set of assessment criteria, specific to this assignment. This is the tool I use to assign points to each component of your work. The second table provides the detailed factors I use in deciding how many points to award for each component in the general assessment. I use a qualitative approach for each factor – rating your responses as excellent, satisfactory or needs improvement. I then consider the overall pattern of response to determine the numerical score for the first table. I provide the first table and comments for each assignment.

Completing the Flow Chart

I would encourage each member of the group to develop a flow chart for both the List A and the List B article, using the template for **Flow Chart for ARTICLES YOU READ.** However, I understand the time limitations that we all face and if your team decides that this is not feasible, at least two people should develop a flow chart for each article. This is important because there will be time in class for you to compare your flow charts and develop a single chart based on group consensus. This chart provides the basis for your responses to the discussion questions. It is important not make mistakes about the basic content of the article. Therefore, multiple versions are much better than only one.

I provide an example of a **Completed Flow Chart for Articles you Read**. Provide enough detail in the flow chart for me to understand how well you grasp the material in the article and your ability to apply what we are learning in this class to your work on this assignment. If you provide "super short" answers of a couple of words on the flow chart, I will not be able to assess whether you understood the article and were able to identify the specific components in the article that you have to address in this assignment. Do **not write paragraphs or long discussion, but do not be vague: specific but brief answers.** For example, for sampling do not say something like "random sample" – specify the specific type of random sample, e.g., systematic random sample.

Please take care to make sure that you do not misstate the author's objectives, research question, and theoretical hypotheses. If you get these wrong, everything else in your analysis is likely to be wrong. For example, your assessment of the adequacy of the sample will depend on whether the sample was "good enough" to answer the research question. If you misunderstand or misstate the research question, you will not be able to assess the adequacy of the sample. You may not like the author's objectives or question. You may think s/he should have asked a different or

broader question. However, the researcher determines the question and objectives – not the reader. One very common error is to confuse the problem the author wants to address or the potential uses of the new knowledge s/he creates with the research question and objectives. In one article that I have used for the example of a flow chart (not this year) I have seen students say that the author's objectives are to *improve people's stress management skills or to improve women's stress management skills*. It is true that the author of this article does want to improve workplace stress management for employees and he is specifically concerned about stress management for women because of the dual family & workplace stress many women experience. However, research deals with creating knowledge that we can then use to solve problems. So his objective here is not to implement some training or "fix" the problem through some program. He has two main objectives: (1) determine if training actually does improve stress management and (2) if gender affects response to training. A training program is his *intervention or treatment* in a quasi-experimental study. It is NOT the objective of his research.

Responding to the Discussion Questions

Discussion Questions are THE CORE OF THE ASSIGNMENT. You will provide a description of what the author *did* in the flow chart. In answering the discussion questions, you will *assess the quality* of the procedures used and the overall value of the work. Do not repeat what you said in the flow chart. Concentrate on evaluating what the author(s) did. Answer the discussion questions in narrative form**.** I suggest you use very short paragraphs with each paragraph making a separate point – sort of "elaborated" bullet points. *Start each paragraph with a key sentence in bold typeface that states clearly the point you want to make*. Long rambling paragraphs filled with unsubstantiated statements will convince me that you do not understand the key concepts we discuss in this class and that you did not use the research design literature to assess the article. Here is an example of a paragraph that would be appropriate as part of an answer to Q3 about qualitative data analysis:

> **Overall, the authors were not specific about the analytic procedures used.**
>
> (1) **The authors do not include any details about the specific steps they used to reach conclusions, saying only that they used a "grounded theory" approach in their work.** Saini & Shlonsky (2012, p. 116) argue that "…regardless of the epistemological or ontological assumptions guiding a particularly qualitative study, the 'story' should be told in a consistent, transparent way and should adhere to the highest standard of methods associated with the philosophical traditions the investigators purportedly draw from." Simply saying "grounded theory" fails to meet this kind of standard.
> (2) **Their view of grounded theory as an approach to qualitative data analysis seems to ignore its similarities to other ways of conducting qualitative analyses.** Renne (2000) reflects what we found in our analysis of this study: "… we view most core methodological writings on grounded theory as rather insular, placing too little emphasis on making connections with other traditions of qualitative inquiry and ways of conceptualizing, justifying and practicing social science research."
> (3) **The authors of our article make no attempt to explain which of the many approaches to grounded theory they believe they used in this study, leaving us uncertain of the reliability of the very interesting conclusions they reached**.
> (4) **In their final discussion, the authors employed none of the four kinds of questions that researchers should address when they use qualitative analysis identified by Patton (2002, p.467).** Two of these were, in our view, particularly important omissions. The authors provided no discussion of the degree to which their findings are supported by previous research (qualitative or quantitative in nature), nor did they discuss the degree to which their findings are new, or innovative.

Develop your responses to the **Discussion Questions** as a group process. Do **NOT** try to "divide up" the work. That always fails because the answers are not consistent. E.g., one team member discusses the sample as though it is a probability sample and another member discussing generalization makes comments that are applicable only to non-probability samples. Each of you should decide your answer first independently. Write down your ideas – a phrase or a few words are all you need. You can then have a fruitful team meeting to reach agreement.

Practice critical thinking, not criticism. Be neither over critical nor too willing to accept "pretty much anything." I am not upset if you give answers that are "kind of yes and kind of no" – as in we thought maybe the sample was adequate because…. But then we also thought there were some problems with the sample because… I want to know how well you understand the principles of research design. **It's all about your explanations – how sophisticated they are and whether they show a good grasp of the materials we have covered.**

Consider multiple perspectives about research design in your response. For example, you will find that disparate view about the value of case study designs in the literature. If you are discussing a case study design, I want to see that you understand these differences. Use the research design literature abundantly – above and beyond required readings.

Focus on showing that you can think about design in a sophisticated way. There are no "right" and "wrong" answers to the discussion questions**.** You may have actual "wrong things" on the flow chart – but here I want to see your thought processes. I'm not looking for a single "right" answer. There isn't one. You have to demonstrate what you've learned. In fact, as you answer the discussion questions you may spot errors in the flow chart. Do not spend time changing the flow chart. Rather use this as an opportunity to demonstrate that you thought about your responses carefully. Draw attention to the error, explain what is "wrong" with your comment on the flow chart and explain what you now think is a better interpretation of the material in the article.

se, cite and reference materials about research design. Do not try to do the assignment first and then add some references. I expect you to indicate how you used the reference in your responses to the discussion questions. Use the required materials and ***additional materials*** indicated at the course website as well as materials that you find for yourself. Use, cite and reference all materials consulted.

State responses to all questions in your own words, including what you put in the flow chart. Do not "copy and paste" from the article. I base my assessment of your comprehension and ability to apply key concerns in large part on your ability to state things in your own terms. When you can explain things in your own words, I know whether you understand the concepts or not. Your task is to apply what you have learned – not rote repetition.

DISCUSSION QUESTIONS

1. ***What is your assessment of the degree to which the features of the design were adequate to answer the <u>researcher's question </u>and respond to his/her hypotheses or propositions in a convincing way?*** This refers to the confidence (internal validity) that one can have in the conclusions reached by the author. Show that you have a good understanding the relationships between the research question, the author's hypotheses or propositions and the sampling and analysis procedures the author employed – and how all of these together, as a system, affect the confidence that we can have in the conclusions (or claims) that the author makes. A good approach to answering this question is to identify both the strengths and weaknesses in the study. For example, one can use statistical methods to account for unexplained variance, which can improve both internal and external validity. Using multiple comparison groups greatly improves ability to

reach conclusions about causal relationships. Think about all of the components of the design. Consult, cite and reference the research design literature. Go beyond the required readings. Make extensive use of the literature as you answer this question

2. ***Which, if any, of the conclusions do you think the author can generalize <u>in the way that s/he wanted to generalize them</u>?*** Distinguish between theoretical and statistical generalization. An author may want to generalize theoretically, for example, but be relatively uninterested in statistical generalization – or vice versa. Consider all aspects of the study as you answer this question. For example, even though we rarely get the "perfect" sample, there ways to offset the impact of a "less than perfect" sample – like carefully defining the theoretical population to reduce inherent variance that would have to be taken into account in a sample of the "general population" of some city, state or nation. Refer to the research question as you think about this. For example, there are some instances in which the ability to generalize will depend greatly on having a probability sample. Do you think the researcher needed a probability sample? If the researcher needed and/or tried to get a probability sample*,* did the sample meet all requirements for a true probability sample? If you think the sample failed to meet all requirements, what aspects of the sampling procedure do you think violated the requirements? One way to think about this is to ask yourself if the sample is "representative enough" to achieve the kind of generalization the author wants to make.

3. ***What is your assessment of the explanatory power of this study?*** Explanatory power refers to our ability to add to the body of knowledge. I know that you may not know much about the theory or the topic of the study and I am not grading this based on your expertise in that regard. Make sure you specifically comment on the degree to which the author (1) expanded the empirical evidence in the literature, (2) added to our overall understanding of the phenomenon of interest, such as new or novel explanations for how and why it occurs, and (3) added to theory through theory-testing, theory-building or both. Remember, research does not have to produce "earthshaking" results to be good, solid work that contributes. However, not all research really adds much to what we know. To answer this question, you need to assess the overall "quality" of the research question, examine the degree to which the researcher draws conclusions (moves beyond results), and the degree to which the design decisions about sampling and design affect explanatory power.

Assignment 2 Assessment Criteria

Assessment Criteria	Possible Points	Your Points
FLOW CHART	**40**	
Identified and described key components of the study accurately Provided enough detail to show thorough understanding – for example, did not just say "probability" sample but rather identified the specific characteristics of the probability sample, listed every hypothesis represented by statistical tests Stated and interpreted the researcher's question and intended contributions to the body of knowledge correctly Distinguished between the theoretical or research hypotheses and the statistical hypotheses (if used) Distinguished between results and conclusions and stated each accurately	40	
DISCUSSION QUESTIONS	**160**	
Research Question & Design Explained the degree to which **this specific design** depended on an **intervention** or external event (a poke), **temporal effects**, and/or **comparison groups** to warrant claims of causality and make comparisons Explained how the authors controlled for non-experimental (or non-study) factors and gave specific examples Correctly distinguished between causality and direct cause and effect Assessed the adequacy of the author's procedures used to eliminate, account for, or test alternative explanations other than the proposed (theoretical, hypothesized) explanation in the study and gave examples Identified most or all of the relevant **specific** aspects of the design that enhanced or weakened the internal validity of the conclusions reached Explained why or how the **specific** design features you identified strengthened or weakened external validity Correctly identified the most important specific features of the design that contributed to the explanatory power this contribution (study) makes to the body of knowledge Formulated a well-balanced (not super-critical, not "anything is fine") assessment of the quality of the author's research question and his/her contribution to the body of knowledge based on your considerations	40	
Sampling Your task is to identify specific aspects of the sampling approach and procedures that *strengthened* or *weakened internal validity, external validity and explanatory power – focus on these considerations in your answers* Explained specifically why (or why not) the sampling approach was appropriate for answering the question based on the nature or type of questions the authors posed Adequately assessed the degree to which the sample is representative of the theoretical population Used specifics and provided examples to show how the strengths and weaknesses of the sampling approach and procedures used affect the	40	

degree to which the conclusions can be generalized theoretically and statistically Made a "fair and reasonable" assessment of the responsiveness of the conclusions to the research question		
Analysis Your task is to identify the specific components in the data analysis and discuss whether they are ***appropriate and adequate to address the research question with regard to internal validity, external validity and explanatory power*** – focus on the logic of the relationship between research question, sampling, and data analysis in the article Identified both advantages and disadvantages of the data analysis techniques based on the nature of the research question and the authors' objectives Explained why specific statistical data analyses were used and interpreted the results correctly If qualitative data analysis was used, assessed the rigor of the approach and was able to distinguish between descriptive analysis and analytic or explanatory analysis Correctly identified and stated the results of the analyses	40	
Research Design Literature Used **extensive** materials about research design to develop your responses to the discussion questions including materials about sampling, design choice, and analysis Includes materials other than the required readings Consistently explained how you used the information in each resource to reach conclusions Cited all materials you use in the responses to the discussion questions in APA format Included full references for all materials consulted When appropriate, cited materials with opposing or conflicting perspectives and explained which perspective you employed in your responses and why you chose those perspectives Based your responses on a ***critical realist perspective of scientific knowledge and research***	40	
Total	**200**	

Performance Standards – Assignment 2

Excellent	Satisfactory	Needs Improvement
Identify & Describe the Components in the Article (Mostly Based on the Flow Chart)		
Correctly identified all components and accurately described what the author(s) did, even components that were unclear or erroneously stated in the article	Identified most components correctly and only occasionally distorted or misunderstood what the author(s) did not explain unclear or confusing components well	Consistently misidentified components or misstated what the author(s) die and failed to explain any but the most straightforward and clear components of the article
Correctly stated and interpreted the researcher's intent and question	Correctly stated but failed to interpret the researcher's intent and question	Stated the researcher's intent and question incorrectly
Correctly distinguished between the theoretical or research hypotheses and the statistical hypotheses (if used)	Identified some of the differences between the theoretical or research hypotheses and the statistical hypotheses (if used)	Did not distinguish between the theoretical or research hypotheses and the statistical hypotheses (if used)
Correctly identified the components in the sampling procedure, the implementation of the study, and the analysis of the information (data) collected	Correctly identified major components in the sampling procedure, the implementation of the study, and the analysis of the information (data) collected, but lacked detail	Correctly identified few components in the sampling procedure, the implementation of the study, and the analysis of the information (data) collected, but lacked detail
Correctly distinguished between results and conclusions and stated each accurately	Did not fully distinguish between results and conclusions and tended to misstate them	Did not distinguish between results and conclusions
Apply Design Concepts to Assess Internal Validity, External Validity & Explanatory Power of the Conclusions (Mostly Based on Discussion Questions)		
Clearly explained the degree to which **this specific design** depended on an intervention or external event (a poke), the temporal relationship of cause and effect, and/or comparison groups to warrant claims of causality and make comparisons	Explained in broad terms how *this general group or type of design* uses an intervention or external event (a poke), the temporal relationship of cause and effect, and/or comparison groups to warrant claims of causality and make comparisons	Limited the discussion of causality to broad generalities about the role of an intervention or external event (a poke), the temporal relationship of cause and effect, and/or comparison groups to warrant claims of causality and make comparisons
Showed a sophisticated understanding of the concept of controlling for non-experimental (or non-study) factors in scientific explanation and could give specific examples in the study	Showed an understanding of the concept of controlling for non-experimental (or non-study) factors in scientific explanation but did not give specific examples in the study	Could not identify the presence or absence of techniques used to control for non-experimental (or non-study) factors in scientific explanation
Correctly distinguished between causality and direct cause and effect	Correctly distinguished between causality and direct cause and effect	Confused causality and direct cause and effect
Discussed in some detail the adequacy of the author's procedures used to eliminate, account for, or test alternative explanations other than the proposed (theoretical, hypothesized) explanation in the study and used examples	Discussed the adequacy of the author's procedures used to eliminate, account for, or test alternative explanations other than the proposed (theoretical, hypothesized) explanation in the study in general terms, with few or no examples	Did not analyze the adequacy of the author's procedures used to eliminate, account for, or test alternative explanations other than the proposed (theoretical, hypothesized) explanation in the study in general terms, with few or no examples
Correctly identified & explained the key components of the sampling approach and procedures in detail	Correctly identified and explained the broad features of the sampling approach	Did not correctly identify the broad features of the sampling approach
Explained specifically why (or why not) the sampling approach was appropriate for answering the question	Stated a few specifics and some generalities about why (or why not) the sampling approach was appropriate for answering the question	Stated generalities about the relationship between sampling approach and research question

Made a reasoned assessment of the degree to which the sample is representative of the theoretical population	Identified some relevant considerations with regard to the degree to which the sample is representative of the theoretical population	Misstated factors that could affect the degree to which the sample is representative of the theoretical population
Assessed the representativeness of the sample based on specific traits or characteristics of this specific sample that could affect the results of this study	Identified some specific traits of the procedures and sample that could affect the results of this study, but over-relied on generalizations about sampling	Repeated generalizations about how sampling can affect results rather than give specifics relevant to this study
Identified specific aspects of the sampling approach and procedures that *strengthened* or *weakened internal validity*	Identified few specific aspects of the sampling approach and procedures that *strengthened* or *weakened internal validity*	Misidentified or failed to identify specific aspects of the sampling approach and procedures that *strengthened* or *weakened internal validity*
Used specifics and provided examples to show how the strengths and weaknesses of the sampling approach and procedures used affect the degree to which the conclusions can be generalized theoretically and statistically	Explained largely in general terms how sampling approaches and procedures used could affect the degree to which the conclusions can be generalized theoretically and statistically and justified and explained your conclusions	Drew broad, general conclusions not specific or relevant to this study about how the general approach to sampling can affect the degree to which conclusions can be generalized theoretically or statistically and justified and explained your conclusions
Distinguished correctly between results and conclusions	Drew on the some **relevant** key concepts about sampling that we have discussed to explain how decisions about sampling affected the adequacy of the sample in terms of the research question posed in the article, but some concepts were misstated or misapplied	Explanation of statistical data analyses were inaccurate in several ways and indicated only a broad, basic examination of the process
Stated the authors conclusions accurately in your own words		
Made a "fair and reasonable" assessment of the responsiveness of the conclusions to the research question	Some comments were specific to the sampling scheme and context in the article, but some were generalities about sampling	
Assessed both advantages and disadvantages of the data analysis techniques for the research question posed	Limited discussion largely to the general appropriateness of the data analysis techniques for the research question posed	Significant errors about the relationship of data analysis to question were stated
Explanation of statistical data analyses were accurate and showed that the team understood the results, including providing examples of the different types of results produced	Explanation of statistical data analyses were accurate but lacked detail and use of examples that would demonstrate a thorough understanding	Explanation of statistical data analyses were not accurate
The discussion of statistical analyses identified the logic of the relationship between research question, sampling, and data analysis decisions and was specific to this article (not generalities)	The discussion of statistical analyses identified only the overall general logic of the relationship between research question, sampling, and data analysis decisions	The discussion of statistical analyses identified incorrectly stated relationships between data analysis, sampling approach and nature of the research question
If qualitative data analysis was used, assessed the rigor of the approach and was able to distinguish between descriptive analysis and analytic or explanatory analysis	If qualitative data analysis was used, little assessment of the quality of and rigor of the process was provided with little distinction made between descriptive analysis and analytic or explanatory analysis	If qualitative data analysis was used, there was no distinction made between descriptive analysis and analytic or explanatory analysis

Overall Consistency, Sophistication and Completeness of Your Analysis

Correctly identified most or all of the relevant **specific** aspects of the design that enhance or weaken the internal validity of the conclusions reached	Correctly identified some of the specific aspects of the design that enhance or weaken the internal validity of the conclusions reached	Relied almost completely on generalities about design features that strengthen or weaken internal validity and design in your discussion of internal validity

In each case, explained in your own words the reasons why you believe the **specific** design features you identified strengthened or weakened internal validity Correctly identified the most important specific features of the design that contributed to the explanatory power this contribution (study) makes to the body of knowledge Considered all three components of the body of knowledge in your assessment of the way design decisions were used to enhance explanatory power Formulated a well-balanced (not super-critical, not "anything is fine") assessment of the quality of the author's research question based on your considerations in Q7-9	Misidentified some specific design features and/or over-relied or focused on generalities about internal validity rather than specific components of this study Correctly identified overall features of the design that contributed directly to the explanatory power this contribution (study) makes to the body of knowledge Considered some of the components of the body of knowledge in your assessment of the way design decisions were used to enhance explanatory power Formulated a well-balanced(not super-critical, not "anything is fine") assessment of the quality of the author's research question, but did not provide evidence that your assessment grew out of your considerations in Q7-9	Did not offer explanations that were specific to the actual features of the design in your study Formulated an unrealistic (probably either super-critical, or "anything is fine") assessment of the quality of the author's research question Did not justify that your assessment grew out of your consideration of internal validity, external validity & explanatory power
Other		
Responded to all aspects of this assignment in your own words, even the complex components Relied little on direct citations or paraphrased repetition of what the authors' say Consulted and referenced **extensive** materials about research design in your responses, especially materials about sampling, design choice, and analysis, including materials other than the required readings Cited all references in the body of the document Consistently explained how you used the information in each resource to reach conclusions When appropriate, cited materials with opposing or conflicting perspectives and explained which perspective was used and why	Responded to many aspects of this assignment in your own words, but had difficulty expressing or explaining more complex ideas in your own words Tended to rely on direct citations or paraphrased repetition of what the authors' say Consulted and referenced **some** materials about research design in your responses, especially materials about sampling, design choice, and analysis, including materials other than the required readings Cited most, but not all, of the references in the body of the document Sometimes explained how you used the information in each resource to reach conclusions Rarely cited materials with opposing or conflicting perspectives	Consistently relied upon direct quotes and paraphrases in your responses Consulted and referenced **few** materials about research design in your responses, especially materials about sampling, design choice, and analysis, and included very few materials other than the required readings Failed to cite several of the references in the body of the document Did not explain how you used the information in each resource to reach conclusions Never cited materials with opposing or conflicting perspectives Often seems to "throw in" citations or references not directly relevant to the discussion