Research Design Methodology II

Derrick Snow

Omega Graduate School

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Professor

Dr. Taladay

Assignment #1 – Core Essential Elements

Answer the following questions in short answer format and be prepared to discuss them with your classmates in the virtual residency or the discussion forum.

1. What is the difference between quasi-experimental and correlational designs? Which design has an independent variable and a dependent variable? Which design uses two continuous variables?

2. How might your selected instrument, such as a validated psychometric survey, help determine which quantitative design to use for a dissertation? Why are Likert-style surveys typically based on variables at the ordinal or interval scale?

3. What are scales and subscales used on survey instruments? Do all surveys have subscales? Why or why not?

4. Describe construct validity and internal reliability of quantitative survey instruments. Why is it best practice to use a validated survey instead of a researcher-created survey in dissertation research?

5.Why is an interview protocol or a questionnaire used in basic qualitative studies? How can a researcher ensure their qualitative instruments align with their research questions?

1. What is the difference between quasi-experimental and correlational designs? Which design has an independent variable and a dependent variable? Which design uses two continuous variables?

Experimental and quasi-experimental methods (used mainly in the social sciences) aim to measure differences between groups and perhaps control for a given variable (Sheskin, 2011) through hypothesis testing, given a possible effect between the independent variable and the dependent variable. With correlational design the researcher’s aim is to study if there is an association and the strength of the relationship between given variables (Schober, et al, 2018). Correlational design research uses continuous variables (numeric) that could be subdivided or have infinite values (Frankfort-Nachmias, et al, 2021), such as Gross Domestic Product (GDP) and carbon dioxide emissions.

2. How might your selected instrument, such as a validated psychometric survey, help determine which quantitative design to use for a dissertation? Why are Likert-style surveys typically based on variables at the ordinal or interval scale?

Selecting a validated instrument to use in one’s dissertation is important to identify the quantitative design to use the research. The survey instrumentation is one of the most important features of survey research (Singleton, et al 1999), where it is intended to adequately measure the social phenomena of interest, not just by one survey question but by several that could be used to create a scale that overall measures the given phenomena. For dissertation research, it is best to use a validated instrument with a proven track record of measuring the intended notion. Likert scales (i.e. strongly agree, agree, neither agree or disagree, disagree, strongly disagree) are based on ordinal level of measurement (as above) and or are coded to a five-point scale (strongly agree = 5, disagree =2) to be measured and reported at the interval scale. This way, we could identify where our respondents are on the spectrum of 1-5.

3. What are scales and subscales used on survey instruments? Do all surveys have subscales? Why or why not?

Scales are used to capture a construct or phenomenon that cannot be captured in a single variable item (Boateng et al., 2018). They are constructed from multiple survey questions that could indeed have different raw scores but are standardized to be computed in the given scale. (Mukherjee et al., 2018). Subscales are components of the larger scale, such as religiously, to where a subscale may measure the if organized religiosity, or intellect as a scale and mathematical intellect as subscale. Not all surveys have subscales depending upon whether the researcher is interested in analyzing the sub-components of the scale.

4. Describe construct validity and internal reliability of quantitative survey instruments. Why is it best practice to use a validated survey instead of a researcher-created survey in dissertation research?

Construct validity is the ability of the instrument chosen for the research to actually measure what is sought to be measured (Science Direct, n.d.). Researchers need to have an instrument with construct validity and internal reliability, which has to do with the variables measuring what is intended to be measured. For example, measuring reading ability, the variable used to measure reading ability needs to measure reading ability and not grade level for instance, and our instrument actually needs to measure reading ability, and not some other ability.

5.Why is an interview protocol or a questionnaire used in basic qualitative studies? How can a researcher ensure their qualitative instruments align with their research questions?

Interview and questionnaire protocols are used in qualitative studies to standardize the context of the question so that it will be asked the same way with each participant to yield a consistent response to a given question for the validity and reliability of collecting qualitative data. The researcher can test the interview protocol by reviewing the questions, testing them out on a practice sample, having a structured format, and rehearsing asking the questions in a standard way.

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