

HOW TO MODIFY QUANT SURVEYS

Presented by

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Welcome

- Welcome to How to Modify Quant Surveys Webinar
- The purpose of this webinar is to provide an overview of how to modify an existing survey instrument for quantitative research
- The objectives of this webinar are:
 - Provide conceptual overview of survey modification
 - Highlight key steps in the modification process
 - Inspire courage and confidence to modify an existing instrument

Agenda

- Basic Concepts
- Pre-planning activities
- Modify an existing survey instrument
- Group Discussion
- Summary Wrap Up
- Q & A
- References

Basic Concepts: Survey Modification

What is the purpose of Survey Modification?

To align with a specific population and topic and maintain suitable validity and reliability of measurement.

When is Survey Modification used?

Researcher needs a survey instrument having suitable validity and reliability to measure the variables and researcher has obtained permission from the copyright holder to modify.

How is a quantitative survey different from a qualitative survey?

Quantitative surveys are designed to collect numeric information.

Qualitative surveys are designed to collect words, narratives, expressions of meaning, etc.

Developing or modifying a survey instrument is rooted in the field of psychometrics and guided by theories and techniques for creating valid and reliable surveys – classical test theory, item response theory (IRT), and structural equation modeling (SEM) for achieving validity and reliability.

Validity is when the measure accurately measures as intended.

Reliability is when the measure consistently measures as intended –that is, over time and with many more respondents (samples) from the population intended.

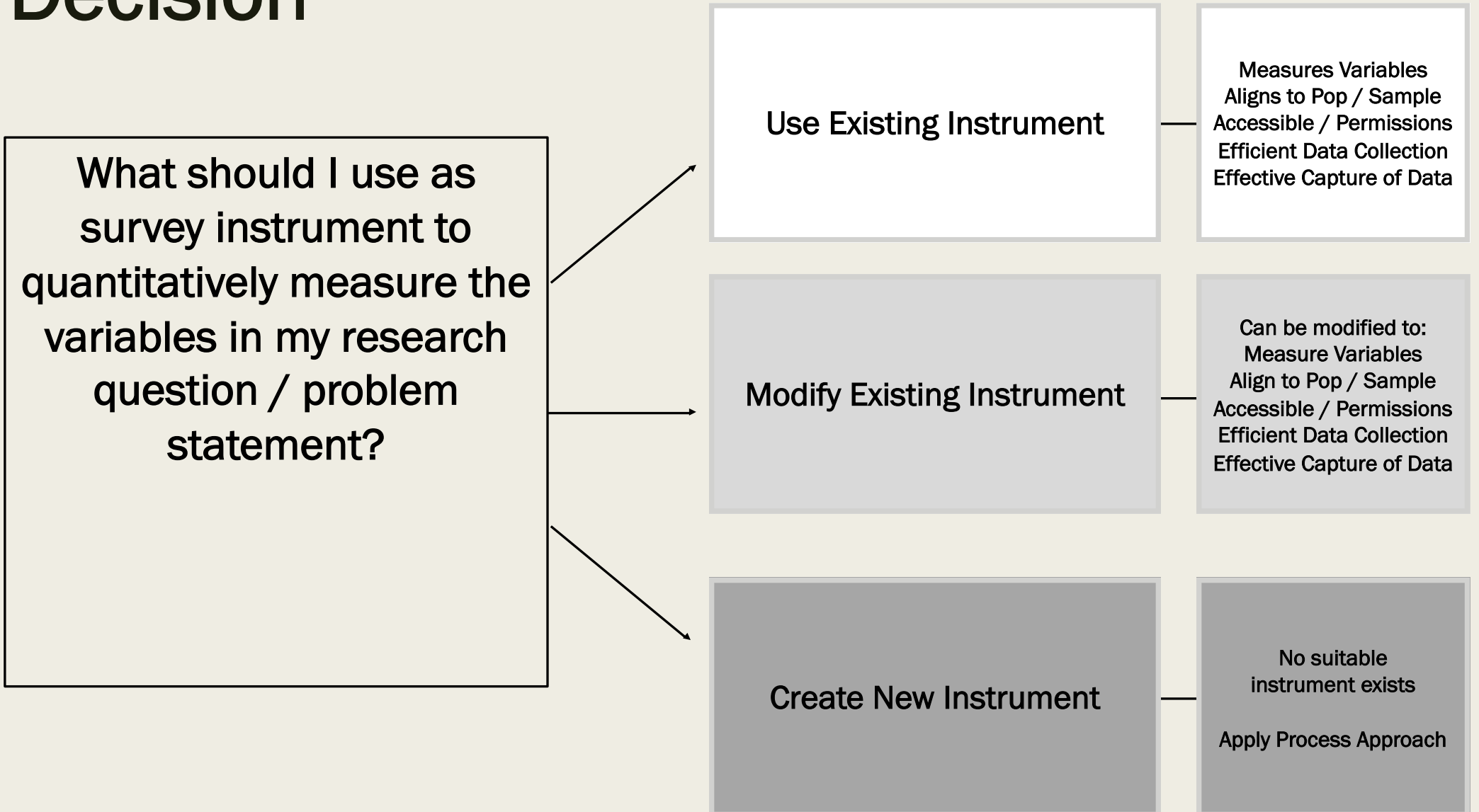
Pre-Planning Activities

Search & Find Relevant Scholarly Literature

- * Current and past research studies on the specific topic
- * What are the names of the quantitative survey instruments?
- * What is the validity and reliability of each survey instrument?
- * How well did the survey instrument fit the population / sample in context of age, culture, language, professional, experiences, etc.?
- * What scholarly peer-review evaluations can you find in the literature on the survey instrument?

Helpful Resource: Mental Measures in Yearbook database

Decision



Modify An Existing Survey Instrument

- **Make sure contents are valid:** Examine content of survey items to see if it fits with the study's focus: Industry, practice, product, or participants
- Confirm appropriateness of **participants' age, culture, language professional, experiences, etc.**
- Search and review **scholarly literature** to see if survey instrument has been modified before and how that was achieved in context of **validity and reliability**
- Search the ***Mental Measures in Yearbook*** database for a peer-review evaluation on the survey instrument to learn about history, any previous modifications, validity, reliability, etc.

Small Changes less likely to have Big Impact

- Changing a word like “management” to a specific type, like “project management” adds clarity for respondents without losing instrument’s psychometric properties. Also, changing words to help respondents understand a less familiar word is beneficial – for example, cumbersome to awkward (Sauro, 2016)
- Changing demographic questions will usually not affect validity and reliability of core content questions unless participant attributes differ from intended audience of survey instrument
- Consider how respondents will interpret each question through the lens of diverse personal / professional perspectives

For example, make sure the modality of specific questions can be applied to different categories of responders (LPN, RN, APRN, radiographers, MRI technologists, etc.)

Here is where conditional branching will allow participants to skip questions or option out of survey sections - choice of Not Applicable (N/A), etc.

Conduct a Scholar Review (aka Field Test)

Identify qualified individuals relevant to the topic of study (e.g. stakeholders and content experts; could be doctorate degreed or experienced practitioners / professionals in the field).

Purpose is to get feedback on how to improve upon modifications made to an existing survey instrument.

Invite them to participate in a scholar review to provide feedback on how well the revised survey questions read and may be interpreted by research participants.

Capture before and after modifications in a MS Word table/matrix to show changes and include reason for change.

Show how modified survey questions align with research questions via a MS Word table/matrix.

Run a Mock Study

Run a Mock Study in SPSS using the modified survey instrument:

- * Create mock data as if you collected real data using the instrument
- * Enter into SPSS
- * Check data / sampling assumptions to select appropriate statistical test
- * Perform data analysis in SPSS
- * Review the data displays, apply critical thinking, and interpret meaning
- * Make decision about your null hypothesis: (1) Fail to reject or (2) Reject
- * Can you answer the research questions?

Evaluate your Mock Study results --- does it make sense?

Examine Correlation between Changes Made & Original

- Run the correlations between changes made and other items and between the item and total scores
- Acceptable correlations ($r > .7$) indicate similar responses as in the original and suggest the changes made are measuring a similar construct. Therefore, consider leaving as is; may not be worth making changes
- Low correlations ($r < .50$) indicate something else is being measured than what is intended and making these changes creates problems with validity

Get IRB Approval and Run Pilot Study

1. Get IRB Approval.
2. Collect data via Pilot Study – prepare to run up to 3 pilot studies, if needed to refine modifications made to the survey instrument, when altering core content questions.
3. Examine correlation of changes made to original.
4. Collect more data – different samples to analyze and adjust survey instrument.
5. Assess reliability to determine if items consistently measure over time and with same population (many different samples taken).

Group Discussion Questions

- What did you hear?
- How can you apply these concepts?
- How can this webinar be improved to help scholar practitioner leaders (SPLs)?
 - * Students
 - * Faculty
 - * Alumni

Summary / Wrap Up

- Search & find relevant scholarly literature
- Small changes less likely to have big impact
- Conduct a scholar review / field test
- Conduct a pilot study
- Run a mock study using mock data to evaluate your modification decision and adjust accordingly to improve quality and overall rigor

Q & A



References & Resources

Churchill, G.A. (1979). A Paradigm for developing better measures of marketing concepts. *Journal of Market Research* Vol. 16(1), 64-73.

Leggett, T. (2017). Survey Development: Creating intended consequences. *Radiologic Technology* 88(5), 568-571.

Sauro, J. (2016, August 30). Can you change a standardized questionnaire? *MeasuringU*. Retrieved at: <https://measuringu.com/change-standardized/>

RESOURCES:

2020 Research Methodology Webinars: <https://research.phoenix.edu/content/2020-workshop-schedule>

Mental Measures in Yearbook (Tests in Print) Database – via UOPX Library
https://library.phoenix.edu/mental_measurements_yearbook

SAGE Research Methods: https://library.phoenix.edu/sage_research_methods_online

SAGE Research Cases: https://library.phoenix.edu/sage_research_methods_cases

SPSS Tutorials, Statistics Help Videos, Khan Academy: https://library.phoenix.edu/doctorsal_guide/statistics

Laerd Statistics: <https://statistics.laerd.com/>

IntellectusStatistics: <https://www.intellectusstatistics.com/>

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