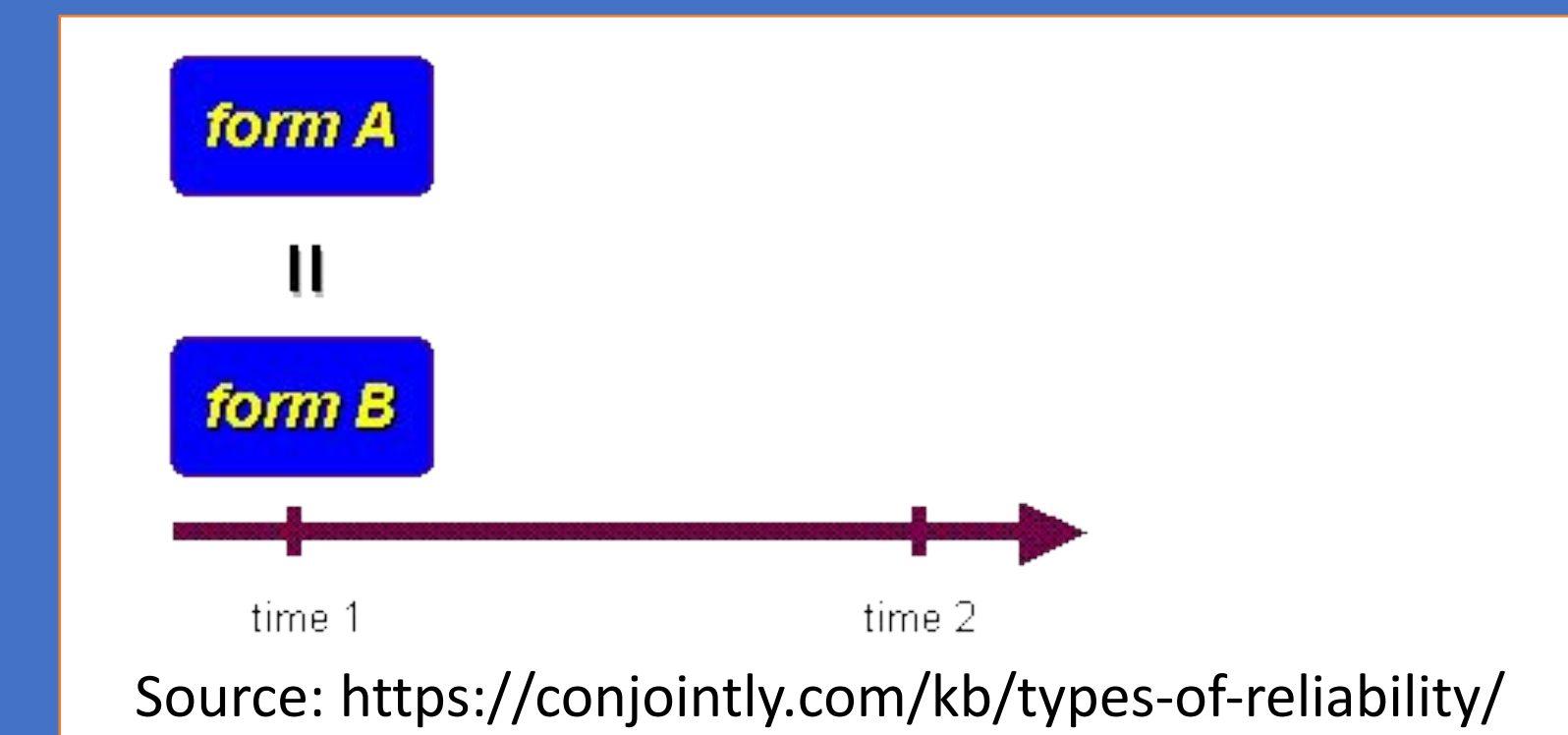


Construct Reliable and Valid Survey

Beomsoo Kim Master of Art in International Crime and Justice Program

Survey have strength in reliability and weakness in validity. But it does not mean it always have reliability and don't have validity Depending on how to choose questions for survey form.
How can we construct reliable and valid survey?

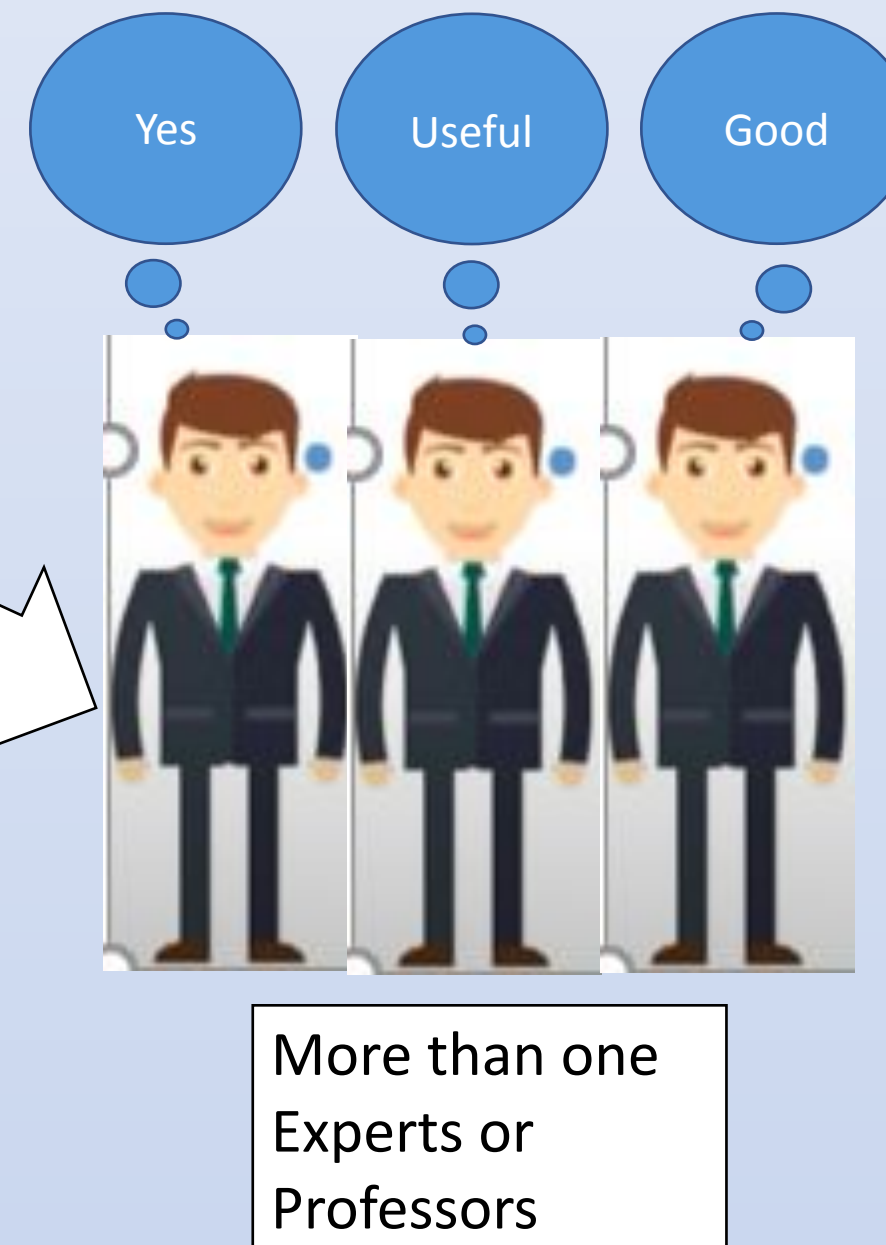


Introduction

This research is about drafting a survey instrument. From March 2021, I was accepted as a research assistant by Professor Mayra Nieves and Dean Morote. My first work as a research assistant was making a survey that asks 'what the students of John Jay want/need most in terms of career preparation. Do they feel they are ready to be employed? What skills do they need that they have not received instruction on?' to John Jay Graduate School students. For this, the professor sent me 6 surveys from 4 institutions. Those were the surveys that asking graduate school students about their profile, situation, circumstance, internship, and anything want to request to develop their career. I reviewed, compare, and checked each question to make the survey I should make. In a meantime, Dean gave me advice on each question. In the end, I made a survey. However, there is another work that I accomplished. While working on making the survey, I analyzed how can we increase the reliability and validity of the survey, and drafted a survey instrument.

Finding: Reliability x Valid

- According to Bolarinwa (2015), **alternate-form reliability** referred to the amount of agreement between two or more research instruments such as two different questionnaires on a research construct that are administered at nearly the same point in time.
- Inter-rater reliability** is agreement or degree of **two or more raters** (observers, coder, examiners)(BC Campus). We compared 6 survey instruments from 4 institutions and to find out which questions are appropriate and consistent for our research survey.
- By reviewing the past survey that has a similar area or field (but not identical) by three experts together, we were able to find the correlation between the forms and how parallel is the questions that researchers of the surveys are using in same area and field.
- It is because comparing surveys and questions helps us to check the consistency across different researchers that research about the same topic (BC Campus).



- Second, comparing and reviewing the previous two or more surveys by more than one experts, applying **method of alternate-form reliability and inter-rater reliability** (Bolarinawa, 2015) (BC Campus), also helps to build up validity through content validity, not only reliability.
- While comparing the previous surveys helps us to construct reliability by building up consistency, reviewing the questions of previous surveys helped us to distinguish and choose the useful questions related to a similar area or field that is valid to what we exactly want to ask from the population (John Jay Graduate students) who we want to ask.
- Third, we should make up validation of the survey at least twice when we are performing content validity.
 - First, we should check the questions that we distinguished and collected from previous surveys are valid to the field of the survey we want to research. If there are questions that do not validate, we should take them off.
 - Next, we have to check is there any part that we have to modify in the remaining questions. For example, we changed a Likert scale question:



Content Validity

Does the content of the measure represents the universe of content of the concept being measured?

- Example
- “During your time as a graduate student at UAlbany, have you...
- Presented at a regional or national academic conference in your field
 - Had an article accepted for publication in a peer-reviewed journal?”
 - Performed in a musical or theatrical presentation
- Into
- “During your time as a graduate student at John Jay, have you...
- Presented or attended at GS Symposium or conference in your field?
 - Write an article for publication in a peer-reviewed journal”

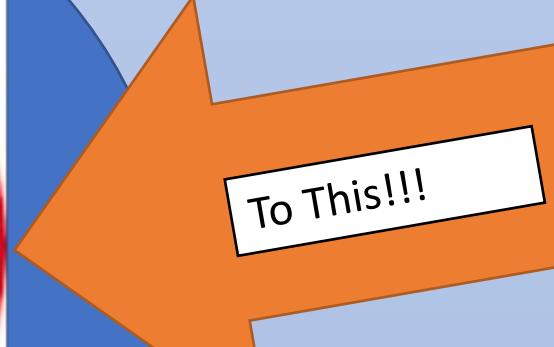
- Last, including short-answer questions, also helps to increase both validity and reliability. In the previous surveys, there were short-answer questions for writing a response with 1 or 2 sentences besides multiple choice or Likert questions. It was a kind of short interview-type question.
- If we use these short-answer questions to ask what we cannot find out exactly through multiple choice or Likert, we can increase validity and reduce bias.
- A too-long paragraph can take more time and make lesser reliable. So we have to use 1 or 2 short-sentence questions that can receive simple and uncomplicated answers.

Method

The survey instruments that I reviewed were:

- “Short Follow-up survey for Master’s Degree students” by American Sociological Association,
- “Graduate Career outcomes Survey – Class of 2018,”
- “Life Beyond the Square: Undergraduate Class of 2019,”
- “Part-time Job and Internship Survey” from Student of Academic Year between 2018-2019 by NYU: Wasserman Center for Career Development,
- And “Graduate Student Assessment Survey in Spring 2011” by the University at Albany,
- and “Survey of Graduating Master’s Students” by Council of Graduate Schools Completion and Attrition in STEM Master’s Programs.

- The first time, I tried to make my own survey questions after using these six surveys as a reference. One of the reasons is I also once asked by such surveys, and I was worried about plagiarism. However, Dean and Director advised me that those surveys were previously validated.
- Therefore, we worked on choosing and picking which questions should we use on our topic survey.
- First, picked the same questions that were used in the survey. Second, we look if there are any other survey questions that we still can use for our topic survey. Third, we reviewed the chosen question and took out the questions that do not validate our survey topic (First Validation). Last, we modified the question from other surveys to the questions that validate our topic survey (Second Validation).



Contents Validity is checking whether the instrument is fully assessed or measure the construct of interest by a person who is an expert or professional in the area or field of the survey that researchers are going to research (Bolarinwa, 2015).

- Contents Validity may not appropriate for measuring quantitative findings through a survey. It is because the researcher’s or professor’s subjective and perspective can be intervening while making a survey.
- However, it is useful to carefully check the measurement method against the conceptual definition of a construct (BC Campus). In other words, it is useful to make a survey form and to check whether the researchers are using the proper and appropriate questions that they going to ask respondents what researchers want to ask exactly through their survey.
- Furthermore, what Director and Dean wanted to find out is what college students wanted and their circumstances, rather than using the collected data to analyze a scientific phenomenon or to prove a social scientific hypothesis of other circumstances.

Conclusion

You can construct a reliable and valid survey form with making reviewing more than 1 previous surveys that ask about the same area or field to your research topic, using alternate-form reliability + Inter-rater reliability contents validity when” making a survey form to ask, make 2 times validation, and using short-sentence questions for a question that can be invalid with multiple-choice or Likert.

$$\begin{aligned}
 & (\text{Alternative-form reliability} + \text{Inter-rater reliability}) \\
 & \times \\
 & (\text{Content Validity}) \\
 & = \\
 & \text{Increase more reliability \& strengthen Validity of Survey form}
 \end{aligned}$$

