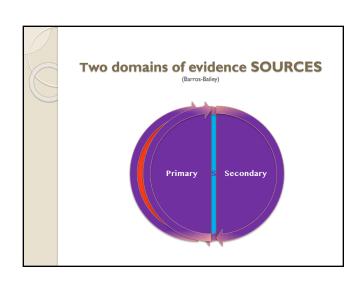
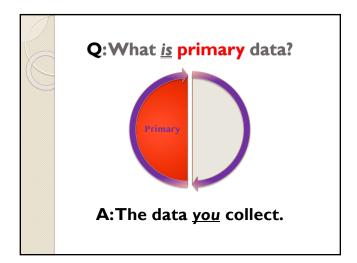


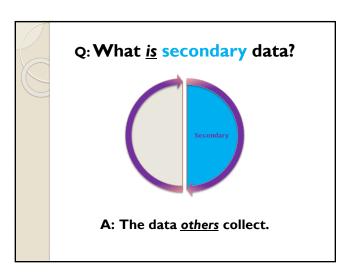
Objectives

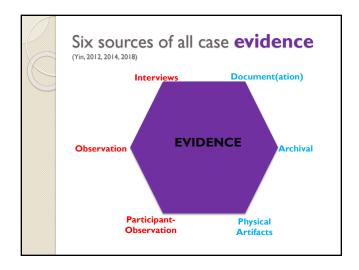
- Define labor market survey (LMS) and labor market research (LMR) within labor market search (LMSea)
- Identify the 12 steps of LMS
- Generate appropriate sampling within LMS methodology using available resources

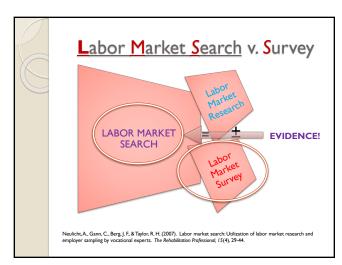












The Conceptual Model for Labor Market Information

- Conceptual Framework: Labor Market Search (LMSea)
 - Secondary Data: Labor Market Research (LMR)
 - Primary Data: Labor Market Survey (LMS)

LMSea = LMR (secondary) ±
LMS (primary)



Q&A

Q: What is a labor market survey?

Q&A

A: "... (LMS) is a method of information gathering about particular jobs that are specific to a geographical area for an individual being served."

International Encyclopedia of Rehabilitation
Gloria K. Lee, Ph.D., CRC, Associate Professor
Department of Counseling, School & Educational Psychology, University at Buffalo
Found at: http://cirrie.buffalo.edu/encyclopedia/en/article/128/#s8

Why survey methods?

"Surveys are information-collection methods ... A survey can be a self-administered questionnaire that someone fills out alone or with assistance, or a survey can be an interview in person or on the telephone."

(p. 1, Fink, 2009)

COLLECT DATA TO:

- I) DRAW CONCLUSION(S) and
- 2) MAKE DECISION(S)

Q&A

Q: Does size matter?

Q&A

A: Not necessarily!

"The quality of a survey is best judged not by its size, scope, or prominence, but by how much attention is given to [preventing, measuring, and] dealing with the many important problems that can arise."

--"What is a Survey?", American Statistical Association, 1996 as cited at: http://www.aapor.org/Best_Practices/2845.htm

But, perhaps: Beware of Antitrust

"In August 1996, the US Department of Justice ... and the Federal Trade Commission ... jointly published 'Statements of Antitrust Enforcement Policy in Health Care.' In these guidelines, it is suggested that salary surveys that meet certain criteria will, under most circumstances, be safe from government antitrust prosecution." (Davis, 2003, p. 2)

More Antitrust

"While this report focuses on salary surveys, the same principles and perspectives apply to the exchange of information in any human resource function, whether salaries (and all forms of compensation and rewards), benefits, policies[,] or practices."

Statements of Antitrust Criteria

- Information provide by survey participants is based on data more than three months old.
- There are at least five providers reporting data upon which each disseminated statistic is based.
- No individual provider's data represents more than 25 percent on a weighted basis of that statistic.

(Davis, 2003, p. 20)

Clearing up confusion

• Sampling occurs in all sorts (and almost all) research, whether quantitative (numeric), qualitative (non-numeric, themes), or both (mixed numeric/non-numeric data)

Confusion: Content Analysis Example

Content Analysis:

- Purpose: The general work activity requirements of indeed.com cashier positions within five miles of Fife over the last three months
- Sampling Frame: List of 831 position announcements
- Sampling Strategy: Text sample/census of archived secondary data

(probabilistic, non-probabilistic, mixed/multi-phasic)

Confusion: Survey Research Example

Survey Research:

- Purpose: Determine the average number of hours worked by VRCs in Washington State performing L&I work
- Sampling Frame: List of 222 VRCs in the state
- Sampling Strategy: Following same steps as content analysis, except to prepare for primary data collections (probabilistic, non-probabilistic, mixed/multi-phasic)

Clearing up confusion

Employer sampling is
 a step in survey
 research, not
 a method separate and
 apart from it.

Confusion in the profession ...

The sampling plan (census or sample) is part of doing a labor market survey (step 4), not something separate and apart from it.

Clearing up confusion

•Survey research in the mode we use, surveys is the method, and employers is the unit of analysis (the ones we call)

Example

Q: "How did you arrive at these wages for electricians?"

A: "I did research [mode] to perform a labor market survey [method] of electricians in the Seattle-Tacoma-Bellevue, WA Metropolitan Statistical Area [unit]."

Summing up the REVIEW ...



Barros-Bailey (2011) LMS 12 Steps Adapted From

Best practices: How to produce a quality survey. (2011). Deerfield, IL:American Association of Public Opinion Research. Fink, A. (2009). How to conduct surveys: A step-by-step guide (4th ed.). Thousand Oaks, CA: SAGE Publications. Fowler, F.J. (2009). Survey research methods (4th ed.). Thousand Oaks, CA: SAGE Publications.

12 steps (5 phases) of Surveys

- Phase I: Survey Design
- Phase 2: Data Collection
- Phase 3: Data Analysis and Summary
- Phase 4: Reporting the Survey Results
- Phase 5: Data Integration

12 steps (5 phases) of Surveys

- Phase I: Survey Design
 - Step 1: Identifying research questions(s)
 - Step 2: Developing survey questions (items)
 - Step 3:Training the interviewer(s)
 - Step 4: Selecting the population: The sampling frame

12 steps (5 phases) of Surveys

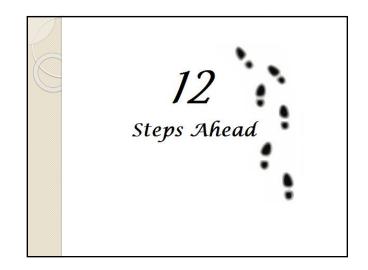
- Phase I: Survey Design
 - Step 5: Taking a census v. sample
 - Step 6: Deciding on probablisticv. nonprobablistic sampling
 - Step 7: Constructing and testing the instrument

12 steps (5 phases) of Surveys

- Phase 2: Data Collection
 - Step 8: Collecting and preparing the data
- Phase 3: Data Analysis and Summary
 - Step 9: Analyzing qualitative and quantitative data
 - Step 10: Summarizing the data

12 steps (5 phases) of Surveys

- Phase 4: Reporting the Survey Results
 - Step 11: Reporting the data
- Phase 5: Data Integration
 - Step 12: Integrating the survey's data with other data and research in the case



Phase I: Survey Design





- •This step drives everything else
 - Questions to consider:
 - •What do I want to know as a result of this survey?
 - To whom is this information going to apply?

Sample LMS Research Questions

- Trucker Drivers: "What is the labor market for truck drivers in the Seattle-Tacoma-Bellevue, Washington Metro Area?"
- 2. GIS: "What are the entry level wages and placement opportunities for geographical information system technicians in Boston?"
- 3. Cashiers: "In the 83714 zip code, what are the employment opportunities for grocery store cashiers? What are their starting wages?"

Step 2



Open-ended v. Close-ended

- •Q: How many questions should my survey have?
- A: As <u>brief</u> as you can make it to answer what you need to know.



Definition of Terms

Survey Questions = "Items"

Survey Questionnaire = "Instrument"



: Survey Questions

- Short
- Standard grammar and syntax
- Avoid jargon
- Check for hidden biases
- Caution with personal questions



: Survey Questions

- Multiple questions (e.g., "Does the work activity require lifting and sitting?")
- Poor wording (e.g., "Do you hire Spanish speakers?") (HINT: Try to keep the questions about the DEMANDS OF WORK, not the ABILITIES OF THE PERSON)

p. 89-95, Fowler



: Survey Questions: Easy

- "Do you hire for x?"
- "Have you hired for GIS technicians in the last six months?"
- "Do you anticipate hiring for grocery store cashiers in the next six months?"
- "When you hire, what top three qualifications do you seek for an entrylevel/experienced truck driver position?"



Threats to Response Validity

- Don't understand the question
- Don't have the knowledge to answer the question
- Social desirability of the question

p. 105-109, Fowler

Step 3

Step 5 Interviewers & Interviews

Interviewers are the key to valid and standard telephone surveys. Standardization from call to call is the key to reliability.

"... attitude toward the survey will influence the results. If the interviewer does not expect much and sends this message, the response rate will probably suffer." p. 40, Fink



Step 4: Selecting the Population: The Sampling Frame

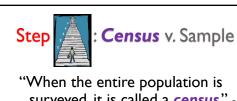
"The sampling frame is a technical term for the list of all employers or individuals that have a chance to be contacted given the identified target population."

Teaching LMS (Barros-Bailey, 2012a)

Step : Selecting the Population

- I. Who are you going to call?
- 2. Why are these the best sources to call?
- 3. Where are they located?
- 4. How are you going to find them?

Step 5



"When the entire population is surveyed, it is called a **census**." p. 332, How to Design and Evaluate Research in Education

"In the decennial *census*, statistics are produced about a population by asking people questions. No sampling, though, is involved; data are suppose to be collected about every person in the population." p. I, Fowler



A **sample** is a subset of the population

"... to **sample** [is] to select a small subset of a population representative of the whole population." p. 4, Fowler

Step 6

Step 6: Definition of Terms

Sampling Frame =
All those who have a chance to be called ...
your list!

Step 6: Definition of Terms

Random Sampling

"Probability(stic) Sampling"

Nonrandom

"Convenience/availability Sampling"

Step 6: Random Sampling **Tools**

SkillTRAN

Step 7

Step 7: Constructing and Testing the Instrument

- Constructing
 - Background
 - Survey Questions (Items)
 - Comments

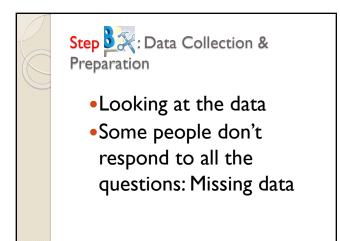
Step 7: Constructing and Testing the Instrument

- Testing
 - Review by other trained professionals
 - Refining the questionnaire
 - Testing the questionnaire (called piloting)



Phase II: Data Collection

Step 8



Step 9

Step 9: Qualitative & Quantitative Data Analysis

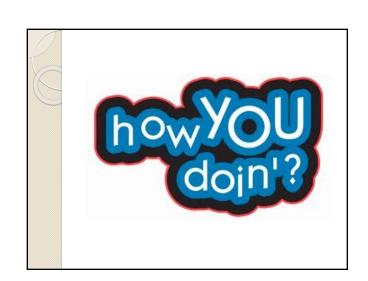
• Qualitative: Narrative answers – summarizing the data by themes

Step 9: Qualitative & Quantitative Data Analysis

- Quantitative (numerical)
 - Descriptive statistics Let's try it!!!

XUXU Free Online Descriptive Statistics Calculator

Grocery Store Cashier Wages (n=10) \$18.50, \$19, \$18, \$17.25, \$17.50, \$20, \$18, \$17.50, \$17.25, \$19



Phase III: Data Analysis and Summary

Step 10

Step 10: Summarizing the Data

Narrative Tables Graphs Charts Phase IV: Reporting the Survey Results

Step 11

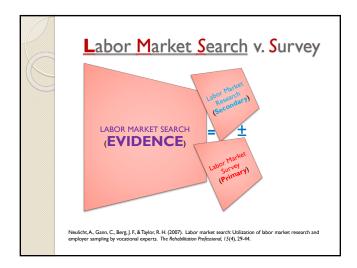
Step 11: Reporting Ethics, ...

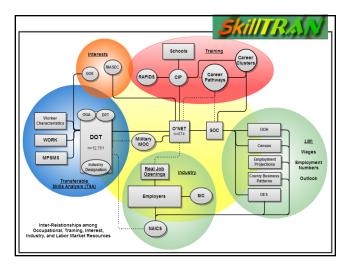
"Surveyors must be concerned with protecting respondents' privacy and assuring confidentiality of responses." p. 35, Fink

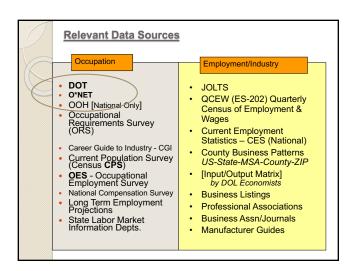
The Ethics of it All

- Title 45 Code of Federal Regulations Part 46 Subpart A:
 - Research: a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.
 - Human subjects: a living individual about whom an investigation.

Phase V: Data Integration







Population count of all U.S. Citizens Captures wide range of demographics, including occupation Two+ year reporting delay Self-reported information

Current Population Survey - CPS

- Conducted by Bureau of the Census
- Gender; Full-Time; Part-Time; Self-Employed workers
- 60,000 contacts/month among pool of 210,000 households
- Gathered monthly; aggregated and reported annually in January for the prior year

Current Population Survey - CPS

- Published data vs. "unpublished" -Table A26
- Occupation, industry, unemployed reason, hours
- Survey of Households [not employers]
- National Data only Captures gender data <u>www.bls.gov/cps</u>

OES – Occupational Employment Survey

- 840 SOC (= 841 OES) occupations (F-T & P-T) [820 civilian]
- Responses by 1.2 million non-farm employers
- Does not include self-employed or agricultural industry
- National, State, Metropolitan & Non-Metro (Rural) Regions
- Minimum reporting is 50 in an area (if not all at one firm)

OES – Occupational Employment Survey

- Data collected during a 3-year survey cycle of 450 industries
- Reported using a rolling average of employment & wage ranges
- >70% response rate required for publication
- Released once per year in Spring

www.bls.gov/oes

Industry Classifications

SIC - 1987

0x - Agriculture

10-14 - Mining

15-17 – Construction

2x-3x - Manufacturing

4x - Transportation, Utilities

50-51 - Wholesale

52-59 - Retail

6x - Finance, Insurance, Real Estate

7x-8x - Services

9x - Public Administration [Govt.]

www.bls.gov/bls/naics.htm

NAICS 2007/2012

- II Agriculture
- 21 Mining, Quarrying, Oil-Gas Extraction
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation / Warehousing
- 51 Information
- 52 Finance / Insurance
- 53 Real Estate / Rental / Leasing
- 54 Professional / Scientific / Technical 55 - Management of Companies
- 56 Administrative / Support / Waste Mgmt.
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, Recreation
- 72 Accommodation / Food Services 81 Other Services
- 92 Public Administration

[Fed/State/Local Govt.]

CBP - County Business Patterns

- Data reported by ALL employers on tax returns
- Series that compiles all annual data (therefore a census of the universe)
- · Includes employment numbers of all fulltime and part-time workers in an industry, and payroll size
- National, State, Metropolitan, County, ZIP Code by NAICS

CBP - County Business Patterns

- All tax reporting entities of all sizes (number of employees)
- Data collected annually across many NAICS industries
- Does NOT collect data at the occupational level
- Released annually in Spring usually 2 year delay

https://www.census.gov/programs-surveys/cbp.html

CES - Current Employment Statistics

- Nonfarm Employment, Hours, **Earnings**
- National, State, MSA numbers
- Monthly survey of 147,000 businesses drawn from 634,00 worksites
- Current = I-2 months ago!

CES – Current Employment Statistics

- Historical employment numbers by economic supersector and by NAICS (Some data goes back to 1939! Most is 1990 →)
- Some NAICS are combined with others (usually when NAICS employment < 30,000)

https://www.bls.gov/ces/

OES – Long Term Employment Projections

- Updated every two years
- Shows projections for occupations by industry
- Uses OES Survey data plus Current Employment Statistics (CES) and the CPS
- Cites 300⁺ NAICS industries for 700⁺ OES groups

OES - Long Term Employment Projections

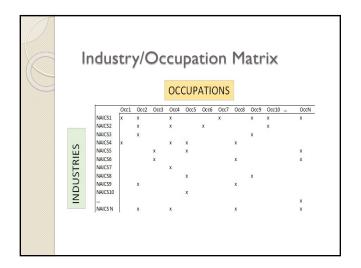
- Data suppressed if < 50 workers in an industry
- 10 year projection model uses labor force, aggregate economy, final demand (GDP), industry output, employment by industry, and employment by occupation

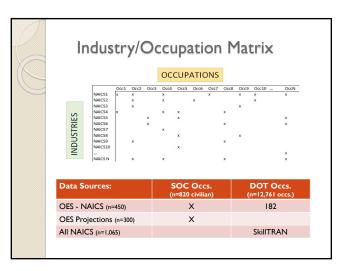
www.bls.gov/emp/home.htm

Input-Output Matrix

- Built using OES, CPS, and CES data
- Constructed for long-term occ. projections
- Covers 300⁺ NAICS industries and 700+ occupations
- Considers: Labor Force, aggregate economy, final demand (GDP), industry output, employment by industry, employment by occupation

www.bls.gov/emp/empind3.htm





Industry Analyzer – NEW!!!

- A faster/simple user interface to: NAICS, County Business Patterns, Historical Employment (CES)
- See/Sort/Compare by:
 US/State/MSA/County/Zip, Employment,
 Establishments, National / State Workforce
 Distribution by Employee Size Range, Staffing
 Pattern by OES x DOT, Sample Size Calculator
 for true survey development
- Integrated to Job Browser Pro
- Integrated to Transferable Skills Service

https://online.skilltran.com/cbp

State Labor Market Information Sources

- Should be available on web for most states
- Check here for your state:

www.bls.gov/bls/ofolist.htm



Bibliography

Arnon, S., & Reichel, N. (2009). Closed and open-ended question tools in a telephone survey about "The good teacher": An example of a mixed methods study. *Journal of Mixed Methods Research*, 3, 172-196.

Basic v. applied research. (2011). Lawrence Berkeley National Laboratory.

Retrieved from http://www.lbl.gov/Education/ELSI/research-main.html

Barros-Bailey, M. (2017, October). 12 steps to valid and reliable labor market surveys (LMSs). Vocational Placement & Assistive Technology, University of Idaho, Boise, ID.

Barros-Bailey, M. (2017, June). Understanding and applying 12 steps to any survey used in labor market or life care planning. 25th Annual Michigan International Association of Rehabilitation Professionals Conference Forensic Rehabilitation, Bingham Farms, MI.

Barros-Bailey, M. (2014). Occupational and labor market information. In D. R. Strauser (Ed.), Career development, employment, and disability: From theory to practice (pp. 225-244). New York, NY: Springer Publications.

Barros-Bailey, M., & Heitzman, A. (2014). Labor market survey. In R. Robinson (Ed.), Foundations of forensic vocational rehabilitation (pp. 167-201). New York, NY: Springer Publications.

Barros-Bailey, M., & Karman, S. (2014). Occupational and labor market information. In R. Robinson (Ed.), Foundations of forensic vocational rehabilitation (pp. 203-238). New York, NY: Springer Publications.

Barros-Bailey, M. (2014, March). Applied primary and secondary occupational and labor market sources in rehabilitation courseling. National Council on Rehabilitation Education, 14th Annual National Rehabilitation Educators Conference, Manhattan Beach, CA.

Barros-Bailey, M., & Saunders, J. L. (2013a). Benchmarking the use of labor market surveys by Certified Rehabilitation Counselors. Rehabilitation Counseling Bulletin, 56(3),160-171. doi:10.1177/0034355212460590

Barros-Bailey, M., & Saunders, J. L. (2013b). Labor market surveys: Importance to and preparedness of Certified Rehabilitation Counselors. Rehabilitation Research, Policy, and Education, 27(2), 75-88. doi: 10.1891/2168-6653.27.2.1

Barros-Bailey, M. (2012, April). Labor market survey practice. Guest presenter at Kent State University seminar on Research in Disabilities.

Barros-Bailey, M. (2012a). Commentary: Labor market survey methodology and applications. Rehabilitation Professional, 20(2), 137-146.

Barros-Bailey, M. (2012b). Teaching labor market survey methodology in rehabilitation counseling. Rehabilitation Research, Policy, and Education, 26(2&3), 199-211.

Barros-Bailey, M. (2012c). The 12-step labor market survey methodology in practice: A case example. Rehabilitation Professional, 20(1), 1-10.

Barros-Bailey, M., & Robinson, R. (2012). 30 years of rehabilitation forensics: Inclusion of occupational and labor market information competencies in earning capacity models. Rehabilitation Professional, 20(3), 157-166.

Barros-Bailey, M. (2011, February). 12 steps to valid and reliable labor market surveys. IARP 2011 CM/DM Conference, Scottsdale, AZ.

Barros-Bailey, M. (2012, April). Teaching labor market survey in forensic practice. National Council on Rehabilitation Education, Spring 2012 Conference, San Francisco, CA. Barros-Bailey, M., & Heitzman, A. (2011, November). Labor market survey case law: An international research project. Vive la France & Vive Las Vegas: Painting a Forensic Masterpiece. 2011 IARP Forensic Conference, Las Vegas, NV.

Bellini, J. L., & Rumrill, P. D. (1994). Research in rehabilitation counseling: A guide to design, methodology, and utilization. Springfield, IL:Thomas.

Best practices: How to produce a quality survey. (2011). American Association of Public Opinion Research. Retrieved January 15, 2011 from http://www.aapor.org/Best_Practices/2845.htm

Boland Patterson, J. (1996). Occupational and labor market information and analysis. In E. M. Szymanski & R. M. Parker (Eds.). Work and disability: Issues and strategies in career development and job placement. Austin, TX: Pro-Ed.

Brown, M. B., & Forsythe, A. B. (1974). The small sample behavior of some statistics which test the equality of several means. *Technometrics*, 16(1), 129-132.

Bibliography

Daniel, J. (2012). Sampling essentials: Practical guidelines for making sampling choices. Thousand Oaks, CA: SAGE Publications, Inc.

Davis, J. (2003). Salary surveys and antitrust: An overview for the HR professional. Scottsdale, AZ: WorldatWork.

Delsen, L. (1989). Improving the employability of the disabled: A practical approach. International Journal for the Advancement of Counselling, 12, 125-235

Field, C., & Ronchetti, E. (1990). Small sample asymptotics. Hayward, CA: Institute of Mathematical Statistics.

Fink, A. (2009). How to conduct surveys: A step-by-step guide (4th ed.).
Thousand Oaks, CA: SAGE Publications.

Ford, M., & Jensen, S. (2004). Labor market survey: An effective tool for vocational case management. *Lippincott's Case Management*, 9(1), 50-52.

Bibliography

Fowler, F.J. (2009). Survey research methods (4th ed.). Thousand Oaks, CA: SAGE Publications.

Kalachek, E. (1978, September), Longitudinal labor market surveys: Asking "how come," not "how many." *Monthly Labor Review*, 8-14.

Keller, D. K., & Casadevall-Keller, M. L. (2010). The Tao of research: A path to validity. Thousand Oaks, CA: SAGE Publications.

Lee, G. K. (2011). International encyclopedia on rehabilitation. Buffalo, NY: Center for International Rehabilitation Research Information and Exchange. Retrieved January 15, 2011 from http://cirrie.buffalo.edu/encyclopedia/en/article/128/#s8

Mellow, W., & Sider, H. (1983). Accuracy of response in labor market surveys: Evidence and implications. *Journal of Labor Economics*, 1(4), 331-344.

Bibliography

Neulicht, A., Gann, C., Berg, J. F., & Taylor, R. H. (2007). Labor market search: Utilization of labor market research and employer sampling by vocational experts. The Rehabilitation Professional, 15(4), 29-44.

Nevitt, J., & Hancock, G. R. (2004). Evaluating small sample approaches for model test statistics in structural equation modeling. *Multivariate Behavioral Research*, 39(3), 439-478.

Office of Management and Budget. (2006, September). Standards and guidelines for statistical surveys. Washington, DC: OMB.

Sample Size Table. Retrieved from research-advisors.com

Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On quantitizing. Journal of Mixed Methods Research, 3, 208-222.

Savalei, V. (2010). Small sample statistics for incomplete nonnormal data: Extensions of complete data formulae and a Monte Carlo comparison. Structural Equation Modeling: A Multidisciplinary Journal, 17(2), 241-264.

Bibliography

- Saxon, J. P., Alston, P. P., & Holbert, D. (1994). Principles for research in rehabilitation. Athens, GA: Elliott & Fitzpatrick, Inc.
- Stude, E.W. (1997). Vocational counseling and placement. Rehabilitation Education, 11(3), 191-198.
- Schwartz, J. L., Lontree, G. L., & Kee, M. (1993). Development of a local labor market analysis model to identify employment opportunities for person with disabilities living on reservations. Flagstaff, AZ: American Indian Rehabilitation Research and Training Center, Institute for Human Development, Arizona University Affiliated Program, Northern Arizona University.
- The American Association for Public Opinion Research. (2009). Standard definitions: Final dispositions of case codes and outcome rates for surveys (6th ed.). Deerfield, IL:AAPOR.
- Tse, Y. K., Ng, K. W., & Zhang, X. (2001). A small-sample overlapping variance-ratio test. *Journal of Times Series Analysis*, 25(1), 127-135.

Bibliography

- Wiersma, W. (2000). Research methods in education: An introduction (7th ed.). Boston, MA: Allyn and Bacon.
- Wittenborn, J. R. (1952). Critique of small sample statistical methods in clinical psychology. *Journal of Clinical Psychology*, 8(1), 34-37.
- Yin, R. K. (2018). Case study research: Design and methods (6th ed.). Thousand Oaks, CA: SAGE.