

MAN 7432
Measurement Design and Evaluation
Fall, 2008

Professor:	Dr. Stephanie L. Castro Department of Management College of Business
Office:	452 LA Building, Davie
Office hours:	Monday 9 – 12, Wednesday 9 – 12 and by appointment
Telephone:	(954) 236-1350 (O) (954) 236-1298 (fax) (954) 252-8077 (H)
e-mail:	scaastro@fau.edu

Course Description:

The objective of this course is to familiarize students with psychometric theory and its application. The emphasis will be on classical test theory and the construction, validation, and revision of survey measures.

Software:

There are several statistical software packages available which can be used to complete your assignments, including SPSS and SAS. The analyses presented in this class will be done using SPSS, although students are free to use other programs for their individual assignments.

Warning:

This syllabus reflects a “work in progress.” All statements may be subject to change. It is important for students to come to class and attend to any changes. Be sure I have your current e-mail address, and that you check it regularly.

Objectives:

At the completion of this course students will

1. understand the basics of psychometric theory,
2. be able to develop sound survey measures using a programmatic approach, and
3. be able to validate survey measures.

Textbooks*:

Crocker & Algina (1986) Introduction to classical and modern test theory. Wadsworth. ISBN # 0030616344

Nunnally & Bernstein (1994) Psychometric theory (3rd Edition). McGraw-Hill. ISBN # 007047849X

*Additional readings will also be required – see schedule below.

Evaluation:

Exercises	24 points	24%
Critique	16 points	16%
Exam I	30 points	30%
Exam II	<u>30 points</u>	<u>30%</u>
Total points:	100 points	100%

Grades will be assigned on the following scale:

93 – 100	A	73 – 77	C
90 – 92	A-	70 – 72	C-
88 – 89	B+	68 – 69	D+
83 – 87	B	63 – 67	D
80 – 82	B-	60 – 62	D-
78 – 79	C+	<60	F

Exercises

The majority of homework exercises will be taken from the exercises at the end of the chapters in the Crocker & Algina book. Toward the end of the semester, there will also be assignments related to factor analysis; these will be given out in class. See the schedule for specific assignments. Each day's assignments will be worth 4 points, for a total of 24 points for the semester.

For the factor analysis assignments, the student is to write up a brief report of the results of the analyses, describing what was done and why, as well as interpreting the output (what does it mean?). Include your output with the report.

Critique

Select a paper in a major journal in your area that presents information on the development and validation of a measure. Write a critique of the development and evaluation of the measure, as well as the evidence provided supporting validity. Your critique should comment both on what was done as well as what could have been done better. You should also look for additional studies that have used this measure, as these may provide evidence of (or lack of) validity. Ultimately, you will need to make a judgment about the validity of the measure. Please consult with me as to the appropriateness of the paper and measure before you begin your critique.

Your critique is due the last regular class meeting (see schedule below). Prepare a short presentation to present your findings to the class on that day as well.

Exams

The exams will consist of several comprehensive exam-style questions. The exams will be closed books and closed notes. Students are expected to have theoretical knowledge of measurement issues, and to have memorized sources to be cited in their answers. Sample questions will be discussed prior to the first exam.

Make-up Tests and Extra Credit

If you cannot attend an exam or hand in a homework project in time due to a relevant reason like significant health problems or being involved in a major traffic accident, you can make up the respective assignment. Documentation may be requested.

Extra credit work is not possible.

Incomplete Grades

A grade of I (incomplete) will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's Graduate Policies and Procedures Manual (see <http://graduate.fau.edu/Pubs/pol.pdf>) and the Barry Kaye College of Business. The student has to show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

Students with Disabilities

In compliance with the Americans with Disabilities Act (A.D.A.) – Students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca – SU 133 (561-297-3880), or in Davie – MOD I (964-236-1222) and follow all OSD procedures.

Attendance

Naturally, students are expected to attend all classes and be fully prepared. All reading assignments should be completed prior to the start of class.

Academic Integrity

Be sure to do your own work in all aspects of this course. A fundamental principle of academic and community life is honesty. I have and will continue to monitor any and all forms of cheating, including (but not limited to) plagiarism, unauthorized materials and/or communication with other students during an examination, and any attempt to benefit from the work of other students or similar behavior that defeats the purpose of examinations and assignments. I will use available internet resources, such as Turnitin®, to monitor plagiarism. (Turnitin is a service that detects plagiarism by comparing papers to billions of pages on the Internet and to Turnitin's own database of submitted papers.) Please be aware that using information taken from a website without giving credit to the website/author(s) is a form of plagiarism. Any violation (i.e., any form of cheating) shall result in disciplinary action as specified by The College and The University (see University Catalog). Penalties may range from a grade of "F" in this course to dismissal from the University. In all penalties, a letter of fact will be included in the student's file.

Date	Topic	Readings	Exercises
08/26	Introduction to Measurement	NB: Ch 1 Reading 1	
09/02	Introduction to Measurement	CA: Ch 1, 2, & 3 Reading 2	Ch 1: 2, 5 Ch 2: 1, 2, 3, 6, 13, 17 Ch 3: 1, 5
09/09	Scale Development	CA: Ch 4 & 5 NB: Ch 8 Reading 3	Ch 4: 5, 7 Ch 5: 1, 2, 3, 4
09/16	Scale Development	Readings 4 -- 11	
09/23	Introduction to Classical Test Theory and Reliability	CA: Ch 6 & 7 NB: Ch 7 (pp248-278)	Ch 6: 1, 2, 4, 8 Ch 7: 1, 2, 3
09/30	Reliability continued	Readings 12, 13, 14, 15	
10/07	Exam I		
10/14	Alternate Approaches to Estimating Reliability and Interrater Agreement	NB: Ch 7 (pp279-292) Readings 16, 17, 18, 19, 20	
10/21	Validity	CA: Ch 10 NB: Ch 3 Readings 21, 22	Ch 10: 2, 5, 6, 7
10/28	Validity	Readings 23, 24, 25, 26	
11/04	Exploratory Factor Analysis	CA: Ch 13 NB: Ch 11 & 12 Reading 27, 28	Ch 13: 1, 2 Analyses on data set as described in class
11/11	Veteran's Day Holiday		
11/18	Confirmatory Factor Analysis; Content Adequacy	NB: Ch 13 Readings 29, 30, 31, 32	Analyses on data set as described in class
11/25	Project Work Day		
12/02	Project Presentation & Discussion		Critiques due
12/09	Exam II		

Readings:

1. Pedhazur & Schmelkin Ch 2
2. Pedhazur & Schmelkin Ch 6 (pp. 118 – 131)
3. Hinkin, T.R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. Organizational Research Methods, 1, 104-121.
4. Spector, P.E., VanKatwyk, P.T., Brannick, M.T., & Chen, P.Y. (1997) When two factors don't reflect two constructs: How item characteristics can produce artifactual factors. Journal of Management, 23, 659-678.
5. Horan, P.M., DiStefano, C., & Motl, R.W. (2003). Wording effects in self-esteem scales: Methodological artifact or response style? Structural Equation Modeling, 10, 435-455.
6. Bartlett, C.J., Heermann, E., & Rettig, S. (1960). A comparison of six different scaling techniques. Journal of Social Psychology, 51, 343-348.
7. Bartlett, C.J., Quay, L.C., & Wrightsman, L.S. (1960). A comparison of two methods of attitude measurement: Likert-type and forced choice. Educational and Psychological Measurement, 20, 699-704.
8. Barclay, J.E., & Weaver, H.B. (1962). Comparative reliabilities and ease of construction of Thurstone and Likert attitude scales. Journal of Social Psychology, 58, 109-120.
9. Schriesheim, C.A., Kopelman, R.E., & Solomon, E. (1989). The effect of grouped versus randomized questionnaire format on scale reliability and validity: A three-study investigation. Educational and Psychological Measurement, 49, 487-508.
10. Bass B.M., Cascio, W.F., OConnor, E.J. (1974). Referent effects in the magnitude estimation scaling of frequency expressions for response anchor sets: An empirical investigation. Journal of Applied Psychology, 59, 313-320.
11. Schriesheim, C.A., & Castro, S.L. (1996). Referent effects in the magnitude estimation scaling of frequency expressions for response anchor sets: An empirical investigation. Educational and Psychological Measurement, 56, 557-569.
12. Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and application. Journal of Applied Psychology, 78, 98-104.
13. Schmitt, N. (1996). Uses and abuses of coefficient alpha. Psychological Assessment, 8, 350-353.
14. Muchinsky, P. M. (1996). The correction for attenuation. Educational and Psychological Measurement, 53, 63-75.

15. Ree, M. J., & Carretta, T. R. (2006). The role of measurement error in familiar statistics. Organizational Research Methods, *9*, 99-112
16. Murphy & DeShon (2000). Inter-rater correlations do not estimate the reliability of job performance ratings. Personnel Psychology, *53*, 873-900.
17. Shrout P.E., & Fleiss, J.L. (1979). Intraclass Correlations: Uses in assessing rater reliability. Psychological Bulletin, *86*, 420-428.
18. Bliese, PD, & Halverson, RR. (1998) Group size and measures of group-level properties: An examination of eta-squared and ICC Values. Journal of Management, *24*, 157-172.
19. James, L.R., Demaree, R.G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. Journal of Applied Psychology, *69*, 85-98.
20. Lindell, M.K., & Brandt, C.J. (1999). Assessing interrater agreement on the job relevance of a test: a comparison of the CVI, T, rwg(j), and r*wg(j) indexes. Journal of Applied Psychology, *84*, 640-647.
21. Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validation by the multitrait multimethod matrix. Psychological Bulletin, *56*, 81-105.
22. Bagozzi, R.P., & Yi, Y. (1991). Multitrait multimethod matrices in consumer research. Journal of Consumer Research, *17*, 426-439.
23. Pedhazur & Schmelkin, Ch 3
24. Pedhazur & Schmelkin, Ch 4
25. Schriesheim, C.A., Powers, K.J., Scandura, T.A., Gardiner, C.C., & Lankau, M.J. (1993). Improving construct measurement in management research: Comments and a quantitative approach for assessing the theoretical content adequacy of paper and pencil survey-type instruments. Journal of Management, *19*, 385-417
26. Schriesheim et al (1999). An empirical comparison of approaches for quantitatively assessing the content adequacy of paper and pencil measurement instruments. Organizational Research Methods, *2*, 140-156.
27. Ford, MacCallum, & Tait (1986). The application of exploratory factor analysis in applied psychology: A critical review and analysis. Personnel Psychology, *39*, 291-314.
28. Hurley et al. (1997). Exploratory and confirmatory factor analysis: Guidelines, issues, and alternatives. Journal of Organizational Behavior, *18*, 667-683.

29. Podsakoff, P.M., & Organ, D.W. (1986). Self-reports in organizational research: Problems and prospects. Journal of Management, 12, 531-542.
30. Podsakoff et al. (2003). Common method bias in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88, 879-903.
31. Richardson, H., Simmering, M.J., & Sturman, M. (2006) Common method variance simulation. Working paper.
32. Spector, P. (1987) Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? Journal of Applied Psychology, 72, 438-443.