

DISCIPLINA / COURSE: Psicometria
 DEPARTAMENTO / DEPARTMENT: MKT
 CURSO / PROGRAM: CMCD AE
 SEMESTRE E ANO / SEMESTER AND YEAR: 02/2020
 CARGA HORÁRIA / CLASS-HOURS: 30 horas ou 15 horas (selecionar)
 PROFESSOR: Felipe Zambaldi
 LÍNGUA / LANGUAGE: PORTUGUÊS

DESCRIÇÃO DA DISCIPLINA / COURSE DESCRIPTION

The objective is to prepare students to measure latent variables. The course addresses measurement theory and its applications in marketing. Students will learn how to build and test scales to be used in surveys and experiments, among other possibilities. Testing scales and evaluating reliability and validity of measures require theoretical knowledge. Additionally, students will learn how to perform predictive validity by means of structural equation modelling (SEM - covariance-based and PLS). Other quantitative methods are used and exercised, such as factor analysis and item response theory (IRT).

OBJETIVOS DA DISCIPLINA / LEARNING GOALS

Os objetivos de aprendizagem da disciplina estão apresentados na tabela abaixo, demonstrando como os mesmos contribuem para os objetivos do CMCDAE.

The course learning goals are presented in the table below, showing how they contribute to the learning goals related to the objectives of CMCDAE.

GRAU DE CONTRIBUIÇÃO / LEVEL OF CONTRIBUTION *			
Forte / High	Intermediário / Medium	Reduzido / Low	Nenhum / None
●●●	●●○	●○○	○○○

Objetivos do CMCDAE CMCDAE Objectives	Objetivos da disciplina Course learning goals	Grau de contribuição / Level of Contribution *
Métodos qualitativos de pesquisa Qualitative research methods	Students will go through the process of defining and analyzing scale items by means of construct domain theory and qualitative technique such as interviews, observation, sorting items and or focus/groups.	●○○
Métodos quantitativos de pesquisa Quantitative research methods	Students will be able to perform analysis with techniques such as factor analysis (exploratory and confirmatory), structural equations modeling, and item response theory (uni and multidimensional)	●●●
Conhecimento do tema de pesquisa / teoria Knowledge of research themes and theory		○○○
Procedimentos de pesquisa Research procedures	The students will go through the whole process of scale validation, including content and face validity, construct validity (convergent and discriminant), criterion validity (concurrent and predictive) and nomological validity. The use of scales in surveys and experiments will be addressed.	●●●
Relevância e inovação em pesquisa Relevance and innovation in research		○○○
Elaboração de artigos	The students will exercise their ability to report methods and construct domain sections of researchs in the form of article excerpts.	●○○

Development of academic papers		
Outros objetivos da disciplina / Other course learning goals:.....		

A descrição completa dos objetivos de aprendizagem do CMCDAE e outras informações podem ser encontradas em <https://rebrand.ly/cmae-eaesp> (mestrado) e <https://rebrand.ly/cdae-eaesp> (doutorado).

The full description of the CMCDAE objectives, and other related information, may be found at <https://rebrand.ly/cmae-eaesp> (masters) e <https://rebrand.ly/cdae-eaesp> (doctorate).

CONHECIMENTO PRÉVIO, SE HOVER / PREVIOUS KNOWLEDGE REQUIRED, IF APPLICABLE

Previous knowledge in descriptive statistics and hypotheses testing is required. Knowledge in linear and multiple regression is desirable.

CONTEÚDO/METODOLOGIA / CONTENT/METHODOLOGY

1. Measurement Theory
2. Latent Variables
3. Scale Development and Adaptation
4. Reflective and Formative Items
5. Construct Dimensionality
6. Construct Validity
7. Model identification
8. Reliability
9. Second Order Variables
10. Criterion Validity
11. Nomological Validity
12. Common Method Bias
13. Item Response Theory and Extreme Response Style

The course involves different activities, each one contemplating an aspect to the achievement of the desired knowledge. Activities include:

- a) Lectures
- b) Discussions on textbooks, scientific papers and research reports
- c) Data collection and analysis
- d) Exercises; and
- e) Seminars

The learning process is student-centered, which calls for preparation and the prior undertaking of the recommended activities and readings. In each class, a different group of students will be responsible for presenting the recommended readings and for guiding the discussion on the theme. The students should seek to enlarge their knowledge about the specific topic they will discuss.

In such a context, the role of the professor is to induct and to moderate the learning process and his job is to: discuss the content; evaluate students; and provide feedback. A masters or doctoral candidate is expected to be motivated and to work hard, and to precisely study course materials. He/she needs to be prepared and to participate actively during classes, by discussing subjects and contributing with reflections and interpretations.

CRITÉRIO DE AVALIAÇÃO / ASSESSMENT

Activities	Weight
Exercises	40%

Activities	30%
Project	30%

BIBLIOGRAFIA (BÁSICA E COMPLEMENTAR) / BIBLIOGRAPHICAL REFERENCES

- Aranha, Francisco & Felipe Zambaldi. (2008). *Análise fatorial em Administração*. São Paulo: Cengage Learning.
- Babin, B J; Hair, J F; Boles, J S (2008) Publishing research in marketing journals using structural equation modeling, *Journal of Marketing Theory and Practice*, 16(4), 279-285.
- Bagozzi, R. P, Y Yi, & L. W. Phillips. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*. 36 (3), p. 421-458.
- Bagozzi, R. P.; Y. Youjae & K. D. Nassen. (1998). Representation of measurement error in marketing variables: Review of approaches and extension to three-facet designs. *Journal of Econometrics*. 89 (1-2), p. 393-421.
- Bolt, D. M. and Lall, V. F. (2003), “Estimation of compensatory and noncompensatory multidimensional item response models using Markov chain Monte Carlo”. *Applied Psychological Measurement*, Vol. 27 No. 6, pp. 395-414.
- Boomsma, A. (2000) Reporting analyses of covariance structures, *Structural Equation Modeling*, 7(3), 461-483.
- Brown, Timothy A. (2006). *Confirmatory factor analysis for applied research*. New York: The Guilford Press. (<http://people.bu.edu/tabrown/cfabook.html>)
- Churchill, Gilbert A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*. 16 (February), p. 64-78.
- DeVellis, R. F. (2003). *Scale development: Theory and applications*, Second Edition. Thousand Oaks, CA: Sage Publications.
- Diamantopoulos, A. (2011). Incorporating formative measures into covariance-based structural equation models, *MIS Quarterly*, 35(2), p. 335-358.
- Fornell, C. & D. F. Larcker. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*. 18 (1), p. 39-50.
- Hayton, J. C., D. G. Allen & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organization Research Methods*, 7, p.191-205.
- Kenny, D.A., D.A. Kashy & N. Bolger. (1998). Data Analysis in Social Psychology. In Gilbert, Fiske & Lindzey. (eds). *Handbook of Social Psychology*. v. 1. Boston: McGraw-Hill, p. 233-265.
- Kline, Rex. (2011). *Principles and practice of structural equation modeling*, 3d ed., New York: Guilford Press. (http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/kline.htm&dir=research/MSS_series&cart_id=)
- Netemeyer, R. G., Bearden, W. O., & Subhash Sharma. (2003). *Scaling procedures: Issues and applications*. Thousand Oaks, CA: Sage Publications.
- O’Leary-Kelly, S. W, R.J. Vokurka. (1998). The empirical assessment of construct validity. *Journal of Operations Management*. 16 (4), p. 387-405.

- Pedhazur, Elazar J. & Liora Pedhazur Schmelkin. (1991). *Measurement, Design, and Analysis: An Integrated Approach*, Hillsdale, NJ: Lawrence Erlbaum Associates.
- Podsakoff, Philip M., Scott B. MacKenzie & Nathan P. Podsakoff. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*. 88 (5), p.879–903.
- Raycov, T & G. A. Marcoulides. (2006). *A first course in structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum.
- Raykov, T. and Calantone, R. J. (2014), “The utility of item response modeling in marketing research”. *Journal of the Academy of Marketing Science*, Vol. 42 No. 4, pp. 337-360.
- Reckase, M. D. (2009), *Multidimensional item response theory*, Springer, New York, NY.
- Rindskopf, D. & T. Rose. (1988). Some theory and applications of confirmatory second-order factor analysis. *Multivariate Behavioral Research*. 23(1), p.51-67.
- Samejima, F. (1969), “Estimation of latent ability using a response pattern of graded scores”. *Psychometrika Monograph Supplement*, Vol. 1 No. 17, pp. 1-100.
- Shah, R; Goldstein, S M (2006), Use of structural equation modeling in operations management research: Looking back and forward, *Journal of Operationa Management*, 24, 148-169
- Shook, C L, Ketchen, D J, Hult, J T M, Kacmar, KM (2004) An assessment of the use of structural equation modeling in strategic management Research, *Strategic Management Journal*, 25(4), 397-404.
- Singh, J. (2004), “Tackling measurement problems with Item Response Theory: Principles, characteristics, and assessment, with an illustrative example”. *Journal of Business Research*, Vol. 57 No. 2, pp. 184-208.
- Spector, Paul E. (2006). Method Variance in Organizational Research: Truth or Urban Legend? *Organizational Research Methods*. 9(2), p. 221-232.
- Vieira, Valter A. (2011). *Escalas em Marketing: Métricas de respostas do consumidor e de desempenho empresarial*, São Paulo: Atlas.
- Zambaldi, F., da Costa, F. J., & Canniatti Ponchio, M. (2014). MEASUREMENT IN MARKETING: CURRENT SCENARIO, RECOMMENDATIONS AND CHALLENGES. *REMark: Revista Brasileira de Marketing*, 13(2).

Additional Readings

- Bradburn, Norman M. & Seymour Sudman. (1991). The Current Status of Questionnaire Research. In Biemer, Groves, Lyberg, Mathiowetz & Sudman (eds.). *Measurement errors in surveys*. New York: Wiley, p.29-40.
- Cortina, Jose M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*. 78 (February), p. 98-104.
- Graham, J. M. (2006). Congeneric and (essentially) tau-equivalent estimates of score reliability: What they are and how to use them. *Educational and Psychological Measurement*. 66, p. 930-944.

- Jarvis, Cheryl Burke, Scott B. MacKenzie & Philip M. Podsakoff. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research, *Journal of Consumer Research*, 30 (September), p. 199-218.
- Joreskog, Karl G. & Dag Sorbom. (1996). *LISREL 8: User's Reference Guide*, Lincolnwood, IL: Scientific Software International.
- Kock, N. (2011a). Using WarpPLS in e-collaboration studies: Mediating effects, control and second order variables, and algorithm choices. *International Journal of e-Collaboration*. 7(3), p.1-13. (http://www.scriptwarp.com/warppls/pubs/Kock_2011_IJeC_WarpPLSEcollab3.pdf)
- Kock, N. (2011b). Using WarpPLS in e-collaboration studies: Descriptive statistics, settings, and key analysis results. *International Journal of e-Collaboration*. 7(2), p.1-18. (http://www.scriptwarp.com/warppls/pubs/Kock_2011_IJeC_WarpPLSEcollab2.pdf)
- Kock, N. (2010). Using WarpPLS in e-collaboration studies: An overview of five main analysis steps, *International Journal of e-Collaboration*. 6(4), p.1-11. (http://www.scriptwarp.com/warppls/pubs/Kock_2010_IJeC_WarpPLSEcollab.pdf)
- Krosnick, Jon A. & Leandre R. Fabrigar. (1997). Designing Rating Scales for Effective Measurement in Surveys. In Lyberg, Biemer, Collins, de Leeuw, Dippo, Schwarz and Trewin (eds). *Survey Measurement and Process Quality*, New York: Wiley.
- Lucas, R. E., & Baird, B. M. (2006). Global self-assessment. In M. Eid and E. Diener (eds.) *Handbook of multimethod measurement in psychology*. Washington, D.C.: American Psychological Association.
- Mackenzie S.B., Podsakoff, P.M. & Podsakoff, N.P. (2011). Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly*, 35 (2), p. 293-334.
- Maruyama, Geoffrey M. (1998). *Basics of Structural Equation Modeling*. Thousand Oaks, CA: SAGE.
- McDonald, R P; HO, M R (2002) Principles and Practice in Reporting Structural Equation Analyses, *Psychological Methods*, 7(1), 64-82.
- Franke, George R., Kristopher J. Preacher and Edward E. Rigdon. (2008). Proportional Structural Effects of Formative Indicators. *Journal of Business Research*. p.1229-1237.
- Peter, J. Paul. (1979). Reliability: A Review of Psychometric Basics and Recent Marketing Practices. *Journal of Marketing Research*. 16 (February), p. 6-17.
- Peter, J. Paul. (1981). Construct Validity: A Review of Basic Issues and Marketing Practices. *Journal of Marketing Research*. 18 (May), p.133-145.
- Preacher, Kristopher J. & Robert C. MacCallum. (2003). Repairing Tom Swift's Electric Factor Analysis Machine, *Understanding Statistics*. 2 (1), p.13-43.
- Rigdon, Edward E. (1995). A Necessary and Sufficient Identification Rule for Structural Models Estimated in Practice. *Multivariate Behavioral Research*, 30 (3), p. 359-383.
- Shook, C. L. et al. (2004). An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal*. 25 (4), p. 397-404.

Webster, G. D. and Jonason, P. K. (2013), “Putting the “IRT” in “Dirty”: Item Response Theory analyses of the Dark Triad Dirty Dozen—An efficient measure of narcissism, psychopathy, and Machiavellianism”. *Personality and Individual Differences*, Vol. 54 No. 2, pp. 302-306.