

Víctor H. Cervantes

ASSISTANT PROFESSOR - UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

PHD MATHEMATICAL AND COMPUTATIONAL COGNITIVE SCIENCE · MS (MATHEMATICS, STATISTICS, PSYCHOLOGY)

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Education

Ph.D. in Mathematical and Computational Cognitive Science

West Lafayette, USA

PURDUE UNIVERSITY

08/2014–08/2020

- Dissertation: Contextuality and Noncontextuality in Human Choice Behavior
- Advisor: Ehtibar N. Dzhafarov

M.S. in Mathematics

West Lafayette, USA

PURDUE UNIVERSITY

08/2017–05/2019

M.S. in Psychological Sciences

West Lafayette, USA

PURDUE UNIVERSITY

08/2014–12/2016

- Thesis: An Application of Contextuality-by-Default in a Psychophysical Double Detection Experiment
- Advisor: Ehtibar N. Dzhafarov

M.S. in Statistics

Bogotá, Colombia

UNIVERSIDAD NACIONAL DE COLOMBIA

03/2006–10/2010

- Thesis: Modelamiento de la habilidad en modelos de Teoría de Respuesta al Ítem (TRI) logísticos para variables ordinales [Modelling Ability in Logistic Item Response Theory Models for Ordinal Items]
- Advisor: Edilberto Cepeda Cuervo

B.S. in Psychology

Bogotá, Colombia

UNIVERSIDAD NACIONAL DE COLOMBIA

02/1999–09/2005

- Thesis: Un estudio de Monte Carlo sobre la precisión del Alfa de Cronbach [A Monte Carlo Study on Cronbach's Alpha Precision]
- Advisor: Aura Nidia Herrera

Research areas and interests

- Mathematical psychology
- Foundations of probability and probabilistic contextuality across sciences
- Knowledge and learning spaces
- Theory of measurement
- Philosophy of science
- Behavioral decision theory
- Reproducible Science
- Psychometrics
- Free/Libre Software

Research Experience

Contextuality Across Sciences (GSR)

PI: Ehtibar N. Dzhafarov

PURDUE UNIVERSITY, USA

08/2014–ongoing

Identifying Cultural Bias in the Items of Colombian “Examen de Estado” Tests (RA)

PI: Aura Nidia Herrera

UNIVERSIDAD NACIONAL DE COLOMBIA, COLOMBIA

2006–2013

Evaluating DIF Detection Procedures in Large-Scale Assessments

PI: Víctor H. Cervantes

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN (ICFES), COLOMBIA

2011–2014

Assessing Sample Design Effects on Item Parameter Estimations for Large-Scale Assessments

PI: Víctor H. Cervantes

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN (ICFES), COLOMBIA

2010–2011

Bibliometric Indicators on Measurement Invariance Research (GSR)

UNIVERSITAT DE BARCELONA, ESPAÑA

Visitor scholar

PI: Juana Gómez Benito

01/2008–03/2008

RESEARCH GROUPS

Contextuality Across Sciences

PURDUE UNIVERSITY, USA

Co-investigator

08/2014–ongoing

Investigaciones y Análisis de Evaluaciones Educativas de Gran Escala

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN (ICFES), COLOMBIA

Group leader

2010–2014

Métodos e Instrumentos para la Investigación en Ciencias del Comportamiento

UNIVERSIDAD NACIONAL DE COLOMBIA, COLOMBIA

Research assistant and

co-investigator

2003–ongoing

Teaching

Instructor

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN. DEPARTMENT OF PSYCHOLOGY

- Courses:

Graduate Seminar: Probabilistic Contextuality.

USA

01/2021–05/2021

Spring 2021

Graduate instructor

PURDUE UNIVERSITY. PSYCHOLOGICAL SCIENCES DEPARTMENT

- Courses:

Introduction to Statistics in Psychology.

USA

06/2019–07/2019

Summer 2019

Graduate instructor

UNIVERSIDAD NACIONAL DE COLOMBIA. STATISTICS DEPARTMENT

- Courses:

Statistics II for Psychology.

Quantitative methods I for Geography.

Colombia

02/2007–06/2007

2007-I

2007-I

Professional Experience

Assistant Professor

UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN. DEPARTMENT OF PSYCHOLOGY

USA

08/2022–current

Postdoctoral Research Associate

UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN. DEPARTMENT OF PSYCHOLOGY

USA

08/2020–08/2022

Psychometrics consultant

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES

Colombia

09/2021–to date

Teaching assistant

PURDUE UNIVERSITY. DEPARTMENT OF PSYCHOLOGICAL SCIENCES

- Courses:

PSY607 - Scaling and Measurement

PSY605 - Applied Multivariate Analysis

PSY201 - Introduction to Statistics in Psychology

USA

08/2016–05/2020

Spring 2020

Spring 2019, Spring 2018

Fall 2019, 2018, 2017, 2016; Spring 2017

Psychometrics consultant

Colombia

UNIVERSIDAD DE LOS ANDES. CENTRO DE INVESTIGACIÓN Y FORMACIÓN EN EDUCACIÓN (CIFE)

07/2016, 10/2016–11/2016,

05/2017–09/2017

Subdirector de Estadística (Head of the Statistics Subdirectorate)

Colombia

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES

02/2012–06/2014

- Design, coordinate and control the development of methodologies and procedures for sample designs, data processing, item parameter calibration, test scoring and statistical and psychometric analyses of assessments.

Gestor de pruebas 04 (Test analyst 04)

Colombia

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES

01/2010–02/2012

- Management tasks and participation on developing activities and projects related to improving the methodologies and processes regarding the statistical and psychometric analyses of educational tests.

Psychometrics contractor

Colombia

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES

02/2009–12/2009

- Professional services to support statistical and psychometric analyses of educational tests for ICFES.

Psychometrics contractor

Colombia

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES. RED DE UNIVERSIDADES DEL EJE

05/2008–12/2008

CAFETERO (ALMA MATER)

- Professional services to support statistical and psychometric analyses of educational tests for ICFES.

Psychometrics contractor

Colombia

INSTITUTO COLOMBIANO PARA LA EVALUACIÓN DE LA EDUCACIÓN - ICFES. CONVENIO ANDRÉS BELLO

07/2007–12/2007, 12/2007–03/2008

- Professional services to support statistical and psychometric analyses of educational tests for ICFES.

Psychometrics contractor

Colombia

ESCUELA SUPERIOR DE ADMINISTRACIÓN PÚBLICA - ESAP. OFICINA DE ASESORÍAS Y CONSULTORÍAS

01/2006–10/2006

- Write and review 200 aptitude items.

Service

REVIEWER

Journals	Educational and Psychological Measurement (ISSN 1552-3888), BioSystems (ISSN 0303-2647), Journal of Mathematical Psychology (ISSN 0022-2496), Philosophical Transactions of the Royal Society A (ISSN 1471-2962), Avances en Psicología Latinoamericana (ISSN 1794-4724), Perspectivas en Psicología (ISSN 1853-8800), Avances en Medición (ISSN 1692-0023).
Grants and Fellowships	Fellowships granted by Fulbright Colombia 2019, 2020. Colombian National Institute for Educational Assessment Research Grants 2012, 2013.
Seminars and Conferences	Quantum Interactions 2016 Conference, ICFES International Seminar on Education Quality Research (Seminario Internacional de Investigación sobre la calidad de la Educación) 2012, 2013.

OTHER SERVICE ACTIVITIES

2021	Organization, along Ehtibar Dzhafarov, of the 4th workshop Quantum Contextuality in Quantum Mechanics and Beyond (QCQMB), May 17-20.
2020, 2019	Mentor to new Colombian Fulbright scholars.
2019, 2017, 2015	Mentor to incoming exchange undergraduate students Purdue University-Universidad Nacional de Colombia Program UREP-C.
2018	Organization, along Ehtibar Dzhafarov and Maria Kon, of the 2018 Purdue Winer Memorial Lectures - Probability and Contextuality held November 9-12.

2017–2020	Graduate Student Faculty Liaison for the Mathematical and Computational Cognitive Science program (Purdue University).
2013–2014	Interinstitutional task force for developing an instrument and protocol for assessing the quality of tests in current use in Colombia.
2013	Interinstitutional task force (Ministry of Education, National Administrative Department of Statistics –DANE– and National Institute for Education Assessment –ICFES–) for the national schools directory in Colombia.
2003	Organization, along Nidia Herrera and Sandra Camargo, of III Encuentro de Psicometría, October 20 and 21.

Affiliations

2016–present	Society for Mathematical Psychology
2020–present	Psychonomic Society
2009–present	Colegio Colombiano de Psicólogos
2008–2016	European Association of Methodology

Skills

LANGUAGES

Spanish	Native	English	Excellent (C2)
French	Fair	German	Beginner (A2)

PROGRAMMING LANGUAGES AND SPECIALIZED SOFTWARE

R	Excellent	LaTeX	Very good
SPSS	Good	perl	Good
Linux	Very good	python	Fair

MOOCs

∞ 2015	Programming for Everybody (Python). University of Michigan.
∞ 2015	An Introduction to Interactive Programming in Python (Part 1). Rice University.
∞ 2015	Reproducible Research. Johns Hopkins University.
∞ 2013	Game theory. Stanford University.

Honors & Awards

2020, 2021	Illinois Distinguished Postdoctoral and Visiting Scholars Program , University of Illinois at Urbana-Champaign, USA	
2017, 2018, 2020	Graduate School Summer Research Grant Award , Purdue University, USA	
2016, 2018	Graduate Student Conference Participation Award , Society for Mathematical Psychology	
2016	Travel Award for young scientists , University of Indiana, USA	US\$1000
2014–2016	Fulbright scholarship , Fulbright Commission, Colombia-USA	Two year fellowship
2007	Programa de Movilidad Internacional de Investigadores e Innovadores a Eventos y Estancias de Corta Duración Tercer Corte. Call 395/2007 , Colciencias, Colombia	International travel tickets

2007	Programa de Movilidad Académica entre las Instituciones Asociadas a la AUIP, Asociación Universitaria Iberoamericana de Postgrado, España	€500
2005	Honor degree, Facultad de Ciencias Humanas, Universidad Nacional de Colombia, Colombia	
2004	Outstanding results on “Examen de la calidad de la educación superior” (ECAES), terciary education exam, in 2003, Ministry of Education, Colombia	

Talks and Conference Presentations

PAPERS PRESENTED AT CONFERENCES

25. Wang, D., Sadrzadeh, M., Abramsky, S., & **Cervantes, V. H.** (2021, July). On the Quantum-like Contextuality of Ambiguous Phrases. *Semantic Spaces at the Intersection of NLP, Physics, and Cognitive Science, Groningen, The Netherlands*
24. **Cervantes, V. H.** & Dzhamfarov, E. N. (2021, July). A hierarchical approach to measuring contextuality. *Society for Mathematical Psychology Meeting, Online conference (virtual.mathpsych.org)*
23. Dzhamfarov, E. N., Kujala, J. V., & **Cervantes, V. H.** (2021, July). Measures of the degree of contextuality and noncontextuality. *Society for Mathematical Psychology Meeting, Online conference (virtual.mathpsych.org)*
22. **Cervantes, V. H.** (2020, July). Detecting contextuality in systems with categorical variables. *Society for Mathematical Psychology Meeting, Online conference (virtual.mathpsych.org)*
21. **Cervantes, V. H.** & Dzhamfarov, E. N. (2019, July). Contextuality in human decision making. *Frontiers of Quantum and Mesoscopic Thermodynamics, Prague, Czech Republic*
20. Dzhamfarov, E. N. & **Cervantes, V. H.** (2019, June). Quantum Contextuality in human behavior. *Quantum Information Revolution: Impact to Foundations, Växjö, Sweden*
19. **Cervantes, V. H.** & Dzhamfarov, E. N. (2018, July). Contextuality in behavioral systems. *Society for Mathematical Psychology Meeting, Madison, WI, USA*
18. Dzhamfarov, E. N. & **Cervantes, V. H.** (2018, June). Contextuality in human behavior. *Towards Ultimate Quantum Theory, Växjö, Sweden*
17. Dzhamfarov, E. N., **Cervantes, V. H.** & Kujala, J. V. (2017, July). Canonical systems of random variables in contextuality analysis. *Society for Mathematical Psychology Meeting, Warwick, UK*
16. Dzhamfarov, E. N., **Cervantes, V. H.** & Kujala, J. V. (2017, June). Canonical representations of quantum measurements for contextuality analysis. *Foundations of Quantum Mechanics and Technology, Växjö, Sweden*
15. **Cervantes, V. H.** & Dzhamfarov, E. N. (2016, August). Exploration of contextuality in a psychophysical double-detection experiment. *Society for Mathematical Psychology Meeting, New Brunswick, NJ, USA*
14. **Cervantes, V. H.** & Dzhamfarov, E. N. (2016, July). Exploration of contextuality in a psychophysical double-detection experiment. *Quantum Interactions, San Francisco, CA, USA*
13. Dzhamfarov, E. N., Kujala, J. V., Larsson, J.-Å., & **Cervantes, V. H.** (2015, July). Contextuality-by-Default: A brief overview of ideas, concepts and terminology. *Quantum Interactions, Filzbach, Switzerland*
12. Dzhamfarov, E. N., Kujala, J. V., Larsson, J.-Å., & **Cervantes, V. H.** (2015, June). Contextuality: An almost general theory. *Quantum Foundations and Quantum Information, Växjö, Sweden*
11. **Cervantes, V. H.** (2012, July). On using the Item Parameter Replication (IPR) approach for power calculation of the noncompensatory differential item functioning (NCDIF) index. *V European Congress of Methodology, Santiago de Compostela, España*

10. Camargo, S. & **Cervantes, V. H.** (2012, July). Validity of the Colombian adaptation of PIML attachment questionnaire. *V European Congress of Methodology, Santiago de Compostela, España*
9. **Cervantes, V. H.** & Uzaheta, A. (2011, November). Uso de pesos muestrales en la calibración de los parámetros de los ítems en evaluaciones a gran escala [How to use the sampling weights in estimating Item Parameters in Educational Surveys]. *II Seminario Internacional de Investigación sobre la Calidad de la Educación, Bogotá, Colombia*
8. **Cervantes, V. H.** & Cuevas, M. L. (2011, November). NCDIF y Regresión logística como procedimientos para detectar funcionamiento diferencial del ítem en SABER 5 y 9 [Differential Item Functioning Detection on National Tests "SABER 5 y 9" using NCDIF and logistic regression]. *II Seminario Internacional de Investigación sobre la Calidad de la Educación, Bogotá, Colombia*
7. **Cervantes, V. H.** (2011, August). Assessing the effects of the sample size, sample size ratio, magnitude of DIF and test length on the noncompensatory differential item functioning index (NCDIF). *European Mathematical Psychology Group Meeting, Paris, France*
6. Uzaheta, A. & **Cervantes, V. H.** (2011, July). How to use the sampling weights in estimating Item Parameters in Educational Surveys. *4th Conference of the European Survey Research Association (ESRA), Lausanne, Switzerland*
5. **Cervantes, V. H.** & Uzaheta, A. (2011, March). Estimating item parameters for the dichotomous Rasch model with a complex sampling design. *8th International Amsterdam Multilevel Conference, Amsterdam, The Netherlands*
4. Fernandes, I., Lopera, C., & **Cervantes, V. H.** (2010, July). Resultados de Colombia en TIMSS 2007 [Colombian National Results on TIMSS 2007]. *I Seminario Internacional de Investigación sobre la Calidad de la Educación, Bogotá, Colombia*
3. **Cervantes, V. H.** & Cepeda, E. (2008, October). Regresión latente en modelos de respuesta al ítem logísticos de tres parámetros [Latent regression in three parameter logistic item response models]. *XV Jornadas en Estadística e Informática, Guayaquil, Ecuador*
2. **Cervantes, V. H.** & Cepeda, E. (2008, October). Intervalos de confianza y de credibilidad para una proporción [Confidence and credibility intervals for one proportion]. *XV Jornadas en Estadística e Informática, Guayaquil, Ecuador*
1. **Cervantes, V. H.** (2005, September). Robustez del índice alfa de Cronbach [Cronbach's alpha coefficient robustness]. *IV Encuentro de Investigadores en Ciencias del Comportamiento y IV de Medición y Evaluación, Bogotá, Colombia*

INVITED TALKS

14. Wang, D., Sadrzadeh, M., Abramsky, S., & **Cervantes, V. H.** (2021, May). In search of true contextuality in natural language. *Quantum Contextuality in Quantum Mechanics and Beyond, Online conference*
13. **Cervantes, V. H.** & Dzhafarov, E. N. (2021, May). A hierarchical measure of contextuality. *Quantum Contextuality in Quantum Mechanics and Beyond, Online conference*
12. Dzhafarov, E. N. & **Cervantes, V. H.** (2021, May). All about cyclic systems. *Quantum Contextuality in Quantum Mechanics and Beyond, Online conference*
11. **Cervantes, V. H.** (2021, March). Rethinking models of lineup memory: Toward a general multidimensional SDT framework for n-AFC and Presence/Absence tasks. *Attention & Perception Area Brownbag, University of Illinois at Urbana-Champaign, IL, USA*
10. **Cervantes, V. H.** (2021, February). Rethinking models of lineup memory: Toward a general multidimensional SDT framework for n-AFC and Presence/Absence tasks. *Cognitive Psychology Area Brownbag, University of Illinois at Urbana-Champaign, IL, USA*
9. **Cervantes, V. H.** (2020, October). A brief intro to Contextuality. *Quantitative Psychology Area Brownbag, University of Illinois at Urbana-Champaign, IL, USA*

8. **Cervantes, V. H.** (2020, September). Contextuality analysis of some impossible figures. *Mathematical and Computational Psychology Colloquium, Purdue University, IN, USA*
7. **Cervantes, V. H.** & Dzhafarov, E. N. (2019, May). Using probabilistic couplings in data analysis. *Quantum Contextuality in Quantum Mechanics and Beyond, Prague, Czech Republic*
6. **Cervantes, V. H.** & Dzhafarov, E. N. (2018, November). Direct influences vs contextuality in human choices. *Purdue Winer Memorial Lectures, West Lafayette, IN, USA*
5. **Cervantes, V. H.** (2018, October). Contextuality in human choices. *Mathematical and Computational Cognitive Science Colloquium, Purdue University, IN, USA*
4. **Cervantes, V. H.** & Dzhafarov, E. N. (2018, May). Two behavioral experiments revealing contextuality. *Workshop Quantum Contextuality in Quantum Mechanics and Beyond, Prague, Czech Republic*
3. **Cervantes, V. H.** (2018, April). Contextuality in two behavioral experiments. *Mathematical and Computational Cognitive Science Colloquium, Purdue University, IN, USA*
2. **Cervantes, V. H.** (2017, April). Contextuality in systems of categorical random variables. *Mathematical and Computational Cognitive Science Colloquium, Purdue University, IN, USA*
1. **Cervantes, V. H.** (2016, April). An exploration of Contextuality-by-Default in psychophysics. *Mathematical and Computational Cognitive Science Colloquium, Purdue University, IN, USA*

Publications

EDITED VOLUMES

2. Dzhafarov, E. N., Jordan, S., Zhang, R., & **Cervantes, V. H.** (Eds.). (2016). *Contextuality from Physics to Psychology*. New Jersey, NJ, USA: World Scientific.
1. Lopera, C. & **Cervantes, V. H.** (Eds.). (2011). *Informe técnico SABER 5o. y 9o. 2009. [SABER 5 y 9 Technical Report]*. Bogotá, Colombia: ICFES.

PEER-REVIEWED JOURNAL ARTICLES AND BOOK CHAPTERS

22. Dzhafarov, E. N., Kujala, J. V., & **Cervantes, V. H.** (2021). Epistemic odds of contextuality in cyclic systems. *The European Physical Journal - Special Topics*, 230(4), 937-940. doi:10.1140/epjs/s11734-021-00063-7
21. Wang, D., Sadrzadeh, M., Abramsky, S., & **Cervantes, V. H.** (2021). Analysing ambiguous nouns and verbs with quantum contextuality tools. *Journal of Cognitive Science*, 22(3), 391-420
20. Wang, D., Sadrzadeh, M., Abramsky, S., & **Cervantes, V. H.** (2021). On the quantum-like contextuality of ambiguous phrases (pp. 42--52). In: Lewis, M., Sadrzadeh, M. (Eds.) *Proceedings of the 2021 Workshop on Semantic Spaces at the Intersection of NLP, Physics, and Cognitive Science (SemSpace)*. <https://aclanthology.org/2021.sem-space-1.5>
19. **Cervantes, V. H.** & Dzhafarov, E. N. (2020). Contextuality analysis of impossible figures. *Entropy*, 22(9), 981. doi:10.3390/e22090981
18. Dzhafarov, E. N., Kujala, J. V., & **Cervantes, V. H.** (2020). Erratum: Contextuality and noncontextuality measures and generalized Bell inequalities for cyclic systems [Phys. Rev. A 101, 042119 (2020)]. *Physical Review A*, 101(6), 069902. doi:10.1103/PhysRevA.101.069902
17. Dzhafarov, E. N., Kujala, J. V., & **Cervantes, V. H.** (2020). Contextuality and noncontextuality measures and generalized Bell inequalities for cyclic systems. *Physical Review A*, 101(4), 042119. doi:10.1103/PhysRevA.101.042119
16. Basieva, I., **Cervantes, V. H.**, Dzhafarov, E. N. & Khrennikov, A. Y. (2019). True contextuality beats direct influences in human decision making. *Journal of Experimental Psychology: General*, 148(11), 1925-1937. doi:10.1037/xge0000585

15. **Cervantes, V. H.** & Dzhafarov, E. N. (2019). True contextuality in a psychophysical experiment. *Journal of Mathematical Psychology*, 91, 119-127. doi:10.1016/j.jmp.2019.04.006
14. **Cervantes, V. H.** & Dzhafarov, E. N. (2018). Snow Queen is evil and beautiful: Experimental evidence for probabilistic contextuality in human choices. *Decision*, 5(3), 193-204. doi:10.1037/dec0000095
13. Dzhafarov, E. N., **Cervantes, V. H.** & Kujala, J. V. (2017). Contextuality in canonical systems of random variables. *Philosophical Transactions of the Royal Society A*, 375, 20160389. doi:10.1098/rsta.2016.0389
12. **Cervantes, V. H.** & Dzhafarov, E. N. (2017). Advanced analysis of quantum contextuality in a psychophysical double-detection experiment. *Journal of Mathematical Psychology*, 79, 77-84. doi:10.1016/j.jmp.2017.03.003
11. **Cervantes, V. H.** & Dzhafarov, E. N. (2017). Exploration of contextuality in a psychophysical double-detection experiment (pp. 182-193). In: de Barros J., Coecke B., Pothos E. (Eds.) *Quantum Interaction. LNCS*, (Vol. 10106) Available as arXiv:1604.04800
10. **Cervantes, V. H.** (2017). DFIT: An R package for Raju's Differential Functioning of Items and Tests Framework. *Journal of Statistical Software*, 76(5), 1-24. doi:10.18637/jss.v076.i05
9. Dzhafarov, E. N., Kujala, J. V., & **Cervantes, V. H.** (2016). Contextuality-by-default: a brief overview of ideas, concepts, and terminology (pp. 12-23). In: Atmanspacher, H., Filk, T., Pothos, E. (Eds.) *Quantum Interaction. LNCS*, (Vol. 9535) Available as arXiv:1504.00530
8. Dzhafarov, E. N., Kujala, J. V., **Cervantes, V. H.**, Zhang, R., & Jones, M. (2016). On contextuality in behavioural data. *Philosophical Transactions of the Royal Society A*, 374, 20150234. doi:10.1098/rsta.2015.0234
7. **Cervantes, V. H.**, Cepeda, E. & Corrales, M. (2014). Acoso en el ambiente escolar: Análisis de un cuestionario mediante Teoría de Respuesta al Ítem y Análisis de Correspondencias Múltiples [Analysis of a school bullying questionnaire using Item Response Theory and Multiple Correspondence Analysis]. *Universitas Psychologica*, 13(2), 443-456. doi:10.11144/Javeriana.UPSY13-2.aaed
6. Cuevas, M. & **Cervantes, V. H.** (2012). Differential item functioning detection with logistic regression. *Mathématiques et Sciences Humaines / Mathematics and Social Sciences*, 50(199), 45-59. <http://msh.revues.org/12274>
5. **Cervantes, V. H.**, Santana, A. C., Gómez Benito, J. & Guilera, G. (2009). Hierarchical linear models in psychiatry: A bibliometric study. *Scientometrics*, 80(3), 797-808. doi:10.1007/s11192-009-2121-4
4. Cepeda, E. & **Cervantes, V. H.** (2009). Regresión latente en modelos de respuesta al ítem logísticos de tres parámetros [Latent regression in three parameter logistic item response models]. *Matemática*, 7, 13-20
3. Cepeda, E., Aguilar, W., **Cervantes, V. H.**, Corrales, M., Díaz, I. & Rodríguez, D. (2008). Intervalos de confianza e intervalos de credibilidad para una proporción [Confidence and credibility intervals for one proportion]. *Revista Colombiana de Estadística*, 31(2), 211-228. <http://www.emis.de/journals/RCE/V31/bodyv31n2/v31n2a06CepedaEtAl.pdf>
2. **Cervantes, V. H.**, Cepeda, E. & Camargo, S. (2008). Una propuesta para la obtención de niveles de desempeño en los modelos de Teoría de Respuesta al Ítem [A proposal for setting achievement levels with item response models]. *Avances en Medición*, 6(1), 49-58. http://www.humanas.unal.edu.co/psicometria/files/5313/8574/6081/Articulo5_Estimacion_IRT_49-58.pdf
1. **Cervantes, V. H.** (2005). Interpretaciones del coeficiente alpha de Cronbach [Interpretations of Cronbach's alpha coefficient]. *Avances en Medición*, 3(1), 9-28. http://www.humanas.unal.edu.co/psicometria/files/1113/8574/8604/Articulo_1_Alfa_de_Cronbach_9-28_2.pdf

SUBMITTED AND UNPUBLISHED PAPERS IN REPOSITORIES

2. Bogdan, P., **Cervantes, V. H.**, & Regenwetter, M. (Submitted). Bridging the model-theory gap in mediation analysis: What does a population-level mediation reveal about individual people?.

1. **Cervantes, V. H.** (Submitted). A note on the relation between the Contextual Fraction and CNT_2 . Available as arXiv:2110.07113

IN PREPARATION

3. **Cervantes, V. H.** & Benjamin, A. (In preparation). Models of unforced choice.
2. **Cervantes, V. H.**, Rodríguez, N., & Calderón, J. A. (In preparation). Using DIF analysis in the equating of large-scale assessments.
1. **Cervantes, V. H.** & Rodríguez, A. R. (In preparation). Exploring the MG-NCDIF index for multigroup DIF detection.

PROCEEDINGS

4. **Cervantes, V. H.** (2012). On using the Item Parameter Replication (IPR) approach for power calculation of the non-compensatory differential item functioning (NCDIF) index (pp. 206-207). In: *Proceedings of the V European Congress of Methodology*.
3. Camargo, S. & **Cervantes, V. H.** (2012). Validity of the Colombian adaptation of PIML attachment questionnaire (p. 205). In: *Proceedings of the V European Congress of Methodology*.
2. Uzaheta, A. & **Cervantes, V. H.** (2011). How to use the sampling weights in estimating of Item Parameters in Educational Surveys (p. 150). In: *Proceedings of the 4th Conference of the European Survey Research Association (ESRA)*.
1. **Cervantes, V. H.** & Uzaheta, A. (2011). Estimating item parameters for the dichotomous Rasch model with a complex sampling design (p. 17). In: *Proceedings of the 8th International Amsterdam Multilevel Conference*.

NON PEER REVIEWED PUBLICATIONS

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