

Mustafa Yildiz

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Longitudinal research | Measurement | Research methodology

EDUCATION

Western Michigan University - Kalamazoo, MI

Doctor of Philosophy – Evaluation, Measurement & Research, July, 2017

Western Michigan University - Kalamazoo, MI

Master of Arts – Evaluation, Measurement & Research, December, 2011

Kocaeli University - Kocaeli, Turkey

Bachelor of Science – Mathematics and Science Education, July, 2006

WORK EXPERIENCE

The University of Texas Health and Science Center – (2023-current)

Role: Assistant Professor at Cizik School of Nursing – Research Department

- Teaching (TBD)
- Research

I spend all my time at the Pickering Caregiver Lab where a lot of caregiver sample datasets are collected. I contribute with my analytical social science methodology expertise when answering research problems. Primarily, I manage datasets, and run suggested models by other scholars.

Primary duties

University of Alabama at Birmingham – (2022-2023)

Role: Statistician I at the School of Nursing

Primary duties:

- Managing large datasets

I was responsible for downloading, merging, filtering large datasets

- Running analyses on longitudinal datasets with caregiver samples using the following analytical frameworks: structural equation modeling, multilevel modeling, mixture modeling, machine learning, data simulation, data imputation

I was responsible for analyzing the datasets with appropriate analytical frameworks that are discussed with collaborators. I also contributed manuscript preparation for publication in scientific journals.

- Software: R, Mplus

Amasya University – (September, 2018 to 2022)

Role: Assistant Professor at Education Faculty

Courses taught:

- Educational research methods (undergraduate level)

This course is an introduction to quantitative and qualitative educational research methods that were designed to help undergraduate students to reach scientific literacy in their area.

- Introduction to educational measurement (undergraduate level)

This course covers the following topics: classical true score theory, reliability, validity, and item writing guidelines.

- Factor analysis (graduate level)

This is a graduate level course that focuses on analytical frameworks on psychometric foundations such as reliability , common factor models (e.g. exploratory factor analysis, confirmatory factor analysis), other factor analytic frameworks such as bi-factor models, models with higher order structure, and measurement invariance.

Western Michigan University (September, 2013 to May, 2017)

Role: Graduate Assistant at the School of Education

Courses assisted:

- Introductory statistics (graduate level)

This course is an introductory statistics course that introduces statistical decision theory and topics such as t-test, ANOVA.

- Intermediate statistics (graduate level)

This course is an advanced statistics course covering topics from simple linear regression to logistic regression.

- Introduction to measurement (graduate level)

This course is an introductory measurement course that covers issues related to educational measurement such as reliability, generalizability theory and validity.

- Advanced measurement applications (graduate level)

This course was an advanced measurement course that introduces item response theory applications such as Rasch Model, 1PL model, 2PL model, rating scale model, nominal response model.

- Structural equation modelling (graduate level)

This course was an advanced educational and psychological measurement course that covers topics such as exploratory factor analysis, confirmatory factor analysis, measurement invariance, path analysis, and structural analysis.

SOFTWARE

- test.adaptation (R package)

I developed this R package called test.adaptation which is a piece of software that calculates the test adaptation indices that are specific to computerized adaptive testing.

<https://github.com/mustfa5/test.adaptation>

SOFTWARE SKILLS

- R programming language (advanced)

- SAS (advanced)
- SPSS (advanced)
- Mplus (intermediate)
- IRTPRO (advanced)
- WINSTEPS (intermediate)
- HLM7 (intermediate)
- WINBUGS/JAGS (advanced)
- Power and Precision
- Comprehensive Meta Analysis
- Microsoft Office (advanced)

Quantitative Methods Expertise

- Structural equation modeling
- Item response theory
- Multilevel models
- Machine learning
- Meta-analysis
- Simulation
- Imputation

Awards and Honors

- Turkish Ministry of National Education Study Abroad Scholarship by Turkish Government.
- Travel grant to American Educational Research Association April 2014 by WMU.
- Travel grant to American Educational Research Association, April 2015 by WMU.
- Travel grant to American Evaluation Association Chicago, 2016 by WMU.
- Travel grant to American Evaluation Association, Minneapolis, 2019, by Scientific and Technological Council of Turkey (TUBITAK).

Professional Memberships

- American Evaluation Association (2015, 2019)
- American Educational Research Association (2014, 2015, 2016)
- National Council on Measurement in Education (2015)

Workshops delivered

- An introduction to R programming language, Social Science Methodology Series, 2-day workshop, Amasya University, September 2018.

Doctoral Dissertation

Yildiz, M. (2017). Modelling Student Misconceptions Using Nested Logit Item Response Models.

Publications

- Brown C., Applegate E. B., Yildiz M. (2015). Structural Validation of the Holistic Wellness Assessment. *Measurement and evaluation in counselling psychology*.
- Mallak L. & Yildiz M. (2016). Developing a Workplace Resilience Inventory. *Work*
- YILDIZ, M., ERDAS KARTAL, E., & MESCİ, G. (2020). Investigation of Turkey's PISA 2015 Science Performance and Associated Variables Using Hierarchical Linear Modeling. *Necatibey Faculty of Education Electronic Journal of Science & Mathematics Education*, 14(1).
- Yildiz, M., She, R., Kara, M. (2022). How to Improve the Design of Experimental Studies in Computing Education: Evidence from the International Assessments. *Education and Information Technologies*.
- Yildiz, M. (in review, 2023). Validities of extreme response style models, Methodology. *European Journal of Research Methods for the Behavioral and Social Sciences*.
- Petrovsky D., Yildiz M., Yefimova M., Sefcik J., Baker Z., Ma K., Rahemi Z., Bacsu J., Smith M., Pickering C. (in review, 2023). Shared Activities as a Protective Factor Against Behavioral and Psychological Symptoms of Dementia and Caregiver Stress. *Innovation in Aging*
- Hernández Chilatra, J. A., Browning, W., Yildiz, M., Sullivan, T., & Pickering, C. (Accepted for publication). Emotion Regulation, Coping Strategies, and Hazardous Drinking Among Family Caregivers of People Living with Alzheimer's Disease and Related Dementias. *Research in Gerontological Nursing*

Presentations

- Yildiz M. (2013). The development of Holistic Wellness Assessment, Western Michigan University, Educational Leadership Research and Technology, Student Research Symposium, Kalamazoo, MI.
- Brown C., Applegate E. B., Yildiz M. (2014). Convergent and Concurrent Validity of Holistic Wellness Assessment. Presentation at American Educational Research Association, Philadelphia, PA.
- Mallak, L.A. & Yildiz, M. (2014). Developing a Workplace Resilience Instrument. Presented to American Society for Engineering Management Conference, (ASEM IAC 2014), Virginia Beach, VA.
- Brown, C.R., Applegate, E.B., Yildiz, M., (2014). Holistic Wellness: An Integrated Assessment. Presentation at the Fourth International Conference on Health, Wellness & Society, Vancouver, BC.
- Brown C., Applegate E. B., Yildiz M. (2015). Instructional sensitivity of Holistic Wellness Assessment. Presentation at American Educational Research Association, Chicago, IL.
- Brown C., Applegate E. B., Yildiz M. (2016). Developing a holistic wellness assessment. Presented at American Evaluation Association, Chicago, IL.
- Mesci, G., Yildiz M., & Kartal E.E. (2018). Investigating the impact of formative assessment on student science achievement: a meta-analysis. Presented at International Learning Teaching an Educational Research Congress, Amasya, Turkey.
- Kartal E.E., Mesci, G., & Yildiz M. (ILTER, 2018). The variables of students' beliefs and attitudes towards science, and their impact on science achievement: A hierarchical linear model. Presented at International Learning Teaching an Educational Research Congress, Amasya, Turkey.
- Yildiz M. (2019). Investigating missing data patterns in PISA 2015. Presented at American Evaluation Association, Minneapolis, MN, USA.
- Uygun N., Yildiz M., Mesci G. (2021). A Comparative Review of the STEM Curriculum Inclusion. Presented at Universality of Global Education Conference, Virtual Conference, Sam Houston State University.
- Armah, Henrietta, Vicki Winstead, Mustafa Yildiz, Jasmine Vickers, and Carolyn Pickering. "SUCCESSFUL COMPLIANCE OF FAMILY CAREGIVERS IN DEMENTIA RESEARCH." *Innovation in Aging* 7, no. Suppl 1 (2023): 604.

- Browning, Wesley, Jessica Hernandez Chilatra, Mustafa Yildiz, Vicki Winstead, and Carolyn Pickering. "DYNAMIC IMPACTS OF FAMILY CONFLICT ON ELDER ABUSE AND NEGLECT AMONG ADRD CAREGIVERS." *Innovation in Aging* 7, no. Suppl 1 (2023): 619.
- Chilatra, Jessica Hernandez, Wesley Browning, Mustafa Yildiz, Vicki Winstead, and Carolyn Pickering. "ALCOHOL CONSUMPTION AND ABUSIVE/NEGLECTFUL BEHAVIORS AMONG FAMILY CAREGIVERS OF PEOPLE LIVING WITH DEMENTIA." *Innovation in Aging* 7, no. Supplement_1 (2023): 619–619.
- Mustafa Yildiz, Carolyn E. Pickering, Maria Yefimova, Christopher D. Maxwell, Tami Sullivan. "Impact of Missing Days in Daily Diary Studies: A Simulation Study." *Modern Modeling Methods*, 2023.
- Petrovsky, Darina, Carolyn E Pickering, and Mustafa Yildiz. "Examining Environmental Predictors of Behavioral Symptoms of Dementia Using Dynamic Structural Equation Modelling." *Alzheimer's & Dementia* 19 (2023): e078451.
- Pickering, Carolyn E, Vicki Winstead, Mustafa Yildiz, Danny Wang, Maria Yefimova, and Andrew Pickering. "Multi-Level Factor Analysis of Daily Data to Identify Subsyndromes of Behavioral and Psychological Symptoms." *Alzheimer's & Dementia* 19 (2023): e078413.
- Pickering, Carolyn, Mustafa Yildiz, and Maria Yefimova. "SELF-COMPASSION, DAILY STRESS APPRAISALS, AND ODDS OF ELDER ABUSE AND NEGLECT IN DEMENTIA FAMILY CAREGIVING." *Innovation in Aging* 7, no. Suppl 1 (2023): 619.
- Winstead, Vicki, Carolyn E Pickering, Mustafa Yildiz, and Danny Wang. "Caregiver Attributions of Cause to Behavioral Symptoms of Dementia." *Alzheimer's & Dementia* 19 (2023): e079955.
- Yildiz, Mustafa, Vicki Winstead, and Carolyn Pickering. "THE ROLE OF MISSINGNESS IN DAILY DIARY DATA." *Innovation in Aging* 7, no. Suppl 1 (2023): 604.