

CURRICULUM VITAE

Education

- 2001-2008 Ph.D. in Psychology (majored in psychometrics), January, 2008
National Chung Cheng University, Taiwan
Advisor: Dr. Wen-Chung Wang
Dissertation Topic:
A Comparison of Item Selection Strategies in Computerized Adaptive Testing for Testlet-based Items and Multidimensional Items.
- 1997-1999 M.S. in Education, June, 1999.
National Taichung Teachers' College, Taiwan
Advisor: Dr. Hsiang-Chuan Liu & Dr. Tian-Wei Sheu
Thesis Topic:
Cognitive Network Assessment Model for polytomous items.
- 1991-1996 B.Sc. in Education, June, 1996
National Taichung Teachers' College, Taiwan

Professional career

- 2013/8 - present Associate Professor
National Sun Yat-sen University, Taiwan
- 2010/8 - 2013/7 Assistant Professor
National Sun Yat-sen University, Taiwan
- 2008/8 - 2010/8 Assistant Professor
National Taichung University, Taiwan
- 2008/3 - 2008/7 Postdoctoral
National Chung Cheng University, Taiwan

Journal Papers

SSCI/SCI

- 1 Chen, K. L., Chou, Y. T., Yu, W. H., Chen, C. T., Shih, C. L., & Hsieh, C. L. (2015). A prospective study of the responsiveness of the original and the short form Berg Balance Scale in people with stroke. *Clinical Rehabilitation*, 29, 468-476. (SCI)
- 2 Hsiao, Y. Y., Shih, C. L., Yu, W. H., Hsieh, C. H., & Hsieh, C. L. (2015). Examining unidimensionality and improving reliability for the eight subscales of the SF-36 in opioid-dependent patients using Rasch analysis. *Quality of Life Research*, 24, 279-85. (SSCI)
- 3 Shih, C. L.*, Liu, T.S., & Wang, W.C. (2014). Controlling Type I error rates in assessing DIF for logistic regression method combined with SIBTEST regression correction procedure and DIF-free-then-DIF strategy. *Educational and Psychological Measurement*, 74, 1018-1048. (SSCI)
- 4 Chen, K. L., Chen, C. T., Chou, Y. T., Shih, C. L., Koh, C. L., & Hsieh, C. L. (2014). Is the long form of the Fugl-Meyer motor scale more responsive than the short form in patients with stroke? *Archives of Physical Medicine and Rehabilitation*, 95, 941-949. (SCI)
- 5 Chen J. H., Chen C. T., & Shih, C. L.* (2014). Improving the control of Type I error rate in assessing differential item functioning for hierarchical generalized linear model when impact is presented. *Applied Psychological Measurement*, 38, 18-36. (SSCI).
- 6 Shih C. L., Chen C. H., Sheu C. F., Lang H. C., Hsieh C. L. (2013, Jul). Validating and improving the reliability of the EORTC QLQ-C30 using a multidimensional Rasch model. *Value in Health*, 16, 848-854. (SCI, IF=2.891, 9/70 in Health policy & services; 20/333 in economics).
- 7 Shih, C. L. & Chuang H. H. (2013). The development and validation of an instrument for assessing college students' perceptions of faculty knowledge in technology-supported class environments. *Computers & Education*, 63, 109-118. (SSCI).
- 8 Hou, W. H., Shih, C. L., Chou, Y. T., Sheu, C. F., Lin, J. H., Wu, H. C., Hsueh, I. P., & Hsieh, C. L*. (2012) Development of a computerized adaptive testing system of the Fugl-Meyer motor scale in stroke patients. *Archives of Physical Medicine and Rehabilitation*, 93, 1014-1020. (SCI)
- 9 Wang, W. C.*, Shih, C. L., & Sun, G. W. (2012). The DIF-Free-Then-DIF

strategy for the assessment of differential item functioning. *Educational and Psychological Measurement*, 72, 687-708. (NSC 97-2410-H-142 -017 -)(SSCI)

- 10 Sun, S. H., Zhu, Y. C., Shih, C. L., Lin, C. H., & Wu, S. K*. (2010). Development and initial validation of the preschooler gross motor quality scale. *Research in Developmental Disabilities*, 31, 1187-1196. (SSCI/SCI)
- 11 Wang, W. C.* & Shih, C. L. (2010). MIMIC methods for assessing differential item functioning in polytomous items. *Applied Psychological Measurement*, 34, 166-180. (SSCI)
- 12 Wang, W. C.*, Shih, C. L., & Yang, C. C. (2009). The MIMIC method with scale purification for detecting differential item functioning. *Educational and Psychological Measurement*, 69, 713-731. (SSCI)
- 13 Shih, C. L. & Wang W. C.* (2009). Differential item functioning detection using the multiple indicators, multiple causes method with a pure short anchor. *Applied Psychological Measurement*, 33, 184-199. (SSCI)
- 14 Wang, W. C.*, Wilson, M. R., & Shih, C. L. (2006). Modeling randomness in judging rating scales with a random-effects rating scale model. *Journal of Educational Measurement*, 43, 335-353. (SSCI)

TSSCI

- 1 Chen, C. C., Chou, Y. T., & Shih, C. L.* (2018). Exploring the Variables that Influence the Performance of the DIF-free-then-DIF Strategy in Assessing Differential Item Functioning. *Chinese Journal of Psychology*, 60, 251-265.
- 2 Chen, J. H., Chao, H. Y., & Shih, C. L.* (2018). Applying the Mantel-Haenszel Method to Exploratory Differential Item Functioning Assessment in Continuous Response Items. *Chinese Journal of Psychology*, 60, 217-231.
- 3 Sun, G. W., Chen, C. T.,* & Shih, C. L. (2018). Investigating sources of differential item functioning: the relationship between item property and differential item functioning (in Chinese). *Bulletin of Educational Psychology*, 50, 167-188.
- 4 Lin, Y. H. * & Shih C. L. (2013). Can we rely too much on testlets? The influence of the number of testlet items on parameter estimation. *Psychological Testing*, 60, 649-680.
- 5 Wu, P. H., Lai, E. J., & Shih, C. L.* (2013) . Evaluation of the Rosenberg self-esteem scale using the rating scale model (in Chinese). *Psychological Testing*,

60. 263-289.

- 6 Chen, Y. F., Kuo, B. C.*, Shih, C. L., & Shih, Y. S. (2008). The equating procedures under graded response model (in Chinese). *Psychological Testing*, 55, 695-723.
- 7 Tsai, L. T., Yang, C. C.*, Wang, W. C., & Shih, C. L. (2008). A simulation study on using MIMIC model to assess the accuracy of differential item functioning (in Chinese). *Psychological Testing*, 55, 287-312.
- 8 Shih, C. L. & Wang W. C.* (2006). Rasch analysis of rating scale data (in Chinese). *Journal of Education & Psychology*, 29, 399-421.

Peer-reviewed Journal paper (in Chinese)

Lin, C. H., Chen, J. H., & Shih, C. L. (2017). Institutional research: use planning and assessment to measure student learning outcomes. *Journal of Education Research*, 280, 17-29.

Translated Book Chapter (in Chinese)

- 1 Shih, C. L. & Chen, C. C. (2018). Detecting and Evaluating the Impact of Multidimensionality using Item Fit Statistics and Principal Component Analysis of Residuals. (pps. 447-466). *Introduction to Rasch Measurement*. JAM press °
- 2 Shih, C. L., Chen, J. H., & Chao, H. Y. (2018). Computerized Adaptive Testing. (pps. 467-485). *Introduction to Rasch Measurement*. JAM press °

Awards and Honors

- 2015 Distinguished University Young Scholar, National Sun Yat-sen University.
Distinguished College Young Scholar, College of Social Sciences, National Sun Yat-sen University.
- 2008 Dissertation award of Chinese Association of Psychological Testing.
- 2007 Travel Support of Young Scientists Scholarship
International Meeting of the Psychometric Society (IMPS 2007; Tokyo, Japan)

Conference Presentations

- 1 Chen, J. H., Chao, H. Y., & Shih, C. L. (2018). A New Concept of Computerized Adaptive Testing: Global Adaptiveness in Administration Procedures. The 2018 Annual Meeting of the National Council on Measurement in Education, April 12-16, 2018, New York, NY, USA.
- 2 Chao, H. Y., Chen, J. H., & Shih, C. L. (2018). Assessing Differential Item Functioning in Continuous Items: A Comparison Study. The 2018 Annual Meeting of the National Council on Measurement in Education, April 12-16, 2018, New York, NY, USA.
- 3 Chen, J. H., Chao, H. Y., Chen, C. C., & Shih, C. L. (2017). A Forced-Choice Model for Enhancing Interpersonal Comparisons. The 82nd Annual Meeting of the Psychometric Society, July 17-21, 2017, Zurich, Switzerland.
- 4 Chen, C. C., Cheng, C. P., & Shih, C. L. (2017). An Exploratory Strategy to Identify and Define Sources of Differential Item Functioning for Dichotomous Items. The 82nd Annual Meeting of the Psychometric Society, July 17-21, 2017, Zurich, Switzerland.
- 5 Huang, H., Hung, S., Chao, H. Y., & Shih, C. L. (2017). Developing and Validating a Computerized Adaptive Testing System for Measuring the English Proficiency of EFL College Students. The 2017 International Computer Assisted Language Learning (CALL) Research Conferences, July 7-9, 2017, Berkeley, CA, USA.
- 6 Chen, J. H., Lin, C-H., & Shih, C. L. (2017). Effects on Employability of Students' Characteristics, Majors, and Learning. The 2017 Association for Institutional Research Forum, May 30- June 2, 2017, Washington, DC, USA.
- 7 Lin, C-H., Chen, J. H., & Shih, C. L. (2017). Assessing Students' Learning Experiences and First-Year Outcomes. The 2017 Association for Institutional Research Forum, May 30- June 2, 2017, Washington, DC, USA.
- 8 Chen, J. H., Shih, C. L., & Chen, S. Y. (2017). Minimum Sample Size Requirements for Nonparametric Item Response Theory with Continuous Items. The 2017 Annual Meeting of the American Educational Research Association, April 27-May 1, 2017, San Antonio, TX, USA.
- 9 Chen, J. H., Lio, M. C., Chou, Y. H., & Shih, C. L. (2016). An Exploratory Study on the Relationship between Students' Learning Outcomes and Career Performances of National Sun Yat-sen University. The 2016 International Conference on Institutional Research in Taiwan, May 20-21, 2016, Taichung, Taiwan.

- 10 Chen, J. H., Shih, C. L., & Chen, S. Y. (2016). Nonparametric Item Response Theory for Continuous Items and Its Applications. The 2016 Annual Meeting of the American Educational Research Association, April 8-12, 2016, Washington, DC, USA.
- 11 Chao, H. Y., Chen, J. H., & Shih, C. L. (2016). Applying the Mantel-Haenszel Method to Exploratory Differential Item Functioning Assessment in Continuous Items. The 2016 International Objective Measurement Workshop, April 4-6, 2016, Washington, DC, USA.
- 12 Chen, J. H., Chen, C. T., & Shih, C. L. (2015). Investigating the Efficiency of Polytomous Hierarchical Generalized Linear Models in Exploratory Differential Item Functioning Assessment. The 2015 Annual Meeting of the American Educational Research Association, April 16-20, 2015, Chicago, IL, USA.
- 13 Chao, H. Y., Chen, J. H. & Shih, C. L. (2015). Using the Mantel-Haenszel Method for Differential Item Functioning Assessment in Continuous Items. The 2015 Annual Meeting of the American Educational Research Association, April 16-20, 2015, Chicago, IL, USA.
- 14 Chou, Y. H., Shih, C. L., & Cheng, C. P. (2015). DIF Detection Through Simultaneous Logistic Regression. The Asian Conference on Psychology & the Behavioral Sciences. March 26-29, 2015, Osaka, Japan.
- 15 Sun, G. W., Chen, C. T., Huang, T. C., & Shih, C. L. (2015). Assessing Differential Facet Functioning in the Measurement of Adults' Scientific Literacy. The Asian Conference on Psychology & the Behavioral Sciences. March 26-29, 2015, Osaka, Japan.
- 16 Chen, C. C., Cheng, C. P., & Shih, C. L. (2015). A Latent Trait Adjustment Procedure for a Test that Contains Multiple DIF Items. The Asian Conference on Psychology & the Behavioral Sciences. March 26-29, 2015, Osaka, Japan.
- 17 Chou, Y. H., Shih, C. L., & Cheng, C. P. (2014). Controlling Type I Error Rates in Detecting DIF by Applying LASSO to Logistic Regression Method. The Asia Pacific Educational Research Association International Conference. November 19-21, 2014, Hong Kong.
- 18 Lin, T. P., & Wu, P. H., & Shih, C. L. (2014). The effects of students' perceived teacher autonomy support, self-efficacy, task value, and achievement emotions on the students' engagement of college students in Taiwan: using structural equation modeling. Higher Education Research and Development Society of Australasia (HERDSA) 2014 Conference, July 7-10, 2014, Hong Kong.

- 19 Chen, J. H., Shih, C. L., & Chen, S. Y. (2014). The Continuous Response Model with Random-Effect for Modeling Subjective Judgment in Rating Scale Items. The 2014 Annual Meeting of the American Educational Research Association, April 3-7, 2014, Philadelphia, PA, USA.
- 20 Sun, G. W., Chen, C. C., Chen, C. T., Shih, C. L. (2013). Validating and Improving Reliability of the Student Evaluation of Teaching Scale Using multidimensional Rasch Model. The third Asian Conference on Psychology & the Behavioral Sciences, March 28-31, 2013, Osaka, Japan.
- 21 Chen, C. T., Wang, W. C., & Shih, C. L. (2012). Effect of Scale Purification on the Assessment of Differential Rater Functioning. Paper presented at the 77th Annual Meeting of the Psychometric Society. Lincoln, NE.
- 22 Sun, G. W., Shih, C. L., Wang, W. C. (2012). Assessing Differential Item Functioning Using Mantel-Haenszel Method with The Dynamic Matching Variable Strategy. International Objective Measurement Workshop, April 11-12, 2012, Vancouver, Canada.
- 23 Chen, C. C., Shih, C. L., & Wang, W. C. (2012). The Effect of Model Misfit in Parameter Estimation for Linking Scales of Testlet-Based Items. International Objective Measurement Workshop, April 11-12, 2012, Vancouver, Canada.
- 24 Chen, C. C., Shih, C. L., & Wang, W. C. (2011). Testlet Effect on Scale Linking under Rasch Testlet model. 2011 TERA International Conference on Education, Dec 15-18, 2011, Kaohsiung, Taiwan.
- 25 Liu, T. H., Chou, Y. T., & Shih, C. L. (2011). Differential Item Functioning Detection Using Logistic Regression with SIBTEST Correction and DIF-free-then-DIF strategy. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 26 Sun, G. W., Chen, H. C., & Shih, C. L. (2011). The DFTD Strategy with Likelihood Ratio Test method in Assessing DIF for polytomous items. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 27 Chen, L. M., Shih, C. L., Shein, P. C., Liu, K. S., Cheng, Y. Y. (2011). A Rasch Approach to Measure Undergraduates' Key Competence. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 28 Chen, C. C., Chen, C. T., & Shih, C. L. (2011). Rater Subjectivity in the Development of Imagination Test for University Student. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.

- 29 Sun, G. W., Chen, H. C., & Shih, C. L. (2011). The DFTD Strategy with Likelihood Ratio Test method in Assessing DIF for polytomous items. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 30 Tsai, C. C., Wang, W. C., & Shih, C. L. (2011). The Performance of DIF-Free-Then-DIF Strategy in MIMIC method. The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 31 Chang, H. C., Wang, W. C., & Shih, C. L. (2011). How Many Anchor Items Should be Selected in DIF-Free-Then-DIF Strategy? The 76th Annual Meeting of the Psychometric Society, July 18-22, 2011, Hong Kong.
- 32 Chen, J. H., Chen, C. T., & Shih, C. L. (2011). Applying DIF-free-then-DIF Strategy on Hierarchical Generalized Linear Models for Differential Item Functioning Assessment. Annual Meeting of the National Council on Measurement in Education, April 9-11, 2011, New Orleans, USA.
- 33 Sun, G. W., Shih, C. L., & Wang, W. C. (2011). The Effect of DIF-free-then-DIF Strategy on Likelihood Ratio Test method in Assessing Differential Item Functioning. Annual Meeting of the National Council on Measurement in Education, April 9-11, 2011, New Orleans, USA.
- 34 Chen, J. H., Chen, C. T., & Shih, C. L. (2010). Applying Constant Item Method on Hierarchical Generalized Linear Models to Assess Differential Item Functioning. The 16th International Meeting of Psychometric Society, July 7-9, 2010, Georgia, USA.
- 35 Chen, J. H., Chen, C. T., & Shih, C. L. (2010). Applying DIF-free-then-DIF strategy on Hierarchical Generalized Linear Models to Assess Differential Item Functioning. The 75th Annual Meeting of the Psychometric Society, July 6-9, 2010, Georgia, USA. (2010 International Meeting of the Psychometric Society Travel Award for Excellence in Research)
- 36 Huang, P. R., Sun, G. W., & Shih, C. L. (2010). Assessing differential item functioning using Mantel-Haenszel method with the freeware EZDIF. The 75th Annual Meeting of the Psychometric Society, July 6-9, 2010, Georgia, USA.
- 37 Shih, C. L. & Wang W. C. (2009). A comparison of three MIMIC methods on locating DIF-free anchor items. The 74th Annual Meeting of the Psychometric Society, July 20-24, 2009, Cambridge, England.
- 38 Chen, Y. F., Shih, C. L., & Wang W. C. (2009). A Scale Purification Procedure to MACS Models for Assessment of Nonuniform DIF. The 74th Annual Meeting of the Psychometric Society, July 20-24, 2009, Cambridge, England.

- 39 Shih, Y. S., Kuo, B. C., Sheu, T. W., & Shih, C. L. (2009). Scale linking procedure with concurrent calibration under the three-parameter logistic testlet model. The 74th Annual Meeting of the Psychometric Society, July 20-24, 2009, Cambridge, England.
- 40 Shih, C. L., Wang W. C., & Chen, Y. F. (2009). A Scale Purification Procedure to SIBTEST for Assessment of DIF. Pacific Rim Objective Measurement Symposium Hong Kong (PROMS HK 2009). July 28-30, 2009, Hong Kong.
- 41 Sun, G. W., Shih, C. L., & Wang W. C. (2009). A Scale Purification Procedure to Likelihood Ratio Test Method for Assessment of DIF. Pacific Rim Objective Measurement Symposium Hong Kong (PROMS HK 2009). July 28-30, 2009, Hong Kong.
- 42 Huang, P. R., Sun, G. W., & Shih, C. L. (2009). Assessing differential item functioning using Mantel-Haenszel method with DIF-free-then-DIF strategy. Pacific Rim Objective Measurement Symposium Hong Kong (PROMS HK 2009). July 28-30, 2009, Hong Kong.
- 43 Wang, H. P., Kuo, B. C., & Shih, C. L. (2009). Compare the Equate Effect of Testlet Tests between Different Equating Designs. Pacific Rim Objective Measurement Symposium Hong Kong (PROMS HK 2009). July 28-30, 2009, Hong Kong.
- 44 Hsieh, C. L., Shih, C. L., & Chen, C. T. (2008). Efficiency and responsiveness to change of multidimensional computerized adaptive testing of movement in stroke patients. Pacific Rim Objective Measurement Symposium (PROMS 2008 - Tokyo), August 1-3, 2008, Tokyo, Japan.
- 45 Shih, C. L. & Wang W. C. (2008). Item Selection Strategies in Computerized Adaptive Testing under the Rasch Testlet Model. Annual Meeting of the American Educational Research Association, March 24-28, 2008, New York, USA. [*Travel Support of International Conference for Scholars by the National Science Council in Taiwan*]
- 46 Shih, C. L. & Wang W. C. (2008). A Comparison of Item Selection Strategies in Computerized Adaptive Testing for Testlet-based items. Annual Meeting of the National Council on Measurement in Education, March 25-27, 2008, New York, USA.
- 47 Shih, C. L. & Wang W. C. (2007). Comparison of Item Selection Strategies in Multidimensional Computerized Adaptive Testing. Pacific Rim Objective Measurement Symposium Taiwan (PROMS TW 2007), July 16-19, 2007, Taoyuan, Taiwan.

- 48 Shih, C. L. & Wang W. C. (2007). DIF Detection using the MIMIC Method with a Pure Short Anchor. The 16th International Meeting and the 72th Annual Meeting of the Psychometric Society, July 9-13, 2007, Tokyo, Japan. [*Travel Support of Young Scientists Scholarship by International Meeting of the Psychometric Society.*]
- 49 Wang W. C. & Shih, C. L. (2007). The MIMIC Method with Scale Purification Procedure for Detecting Differential Item Functioning. The 16th International Meeting and the 72th Annual Meeting of the Psychometric Society, July 9-13, 2007, Tokyo, Japan. [*Travel Support of Young Scientists Scholarship by International Meeting of the Psychometric Society.*]
- 50 Wang W. C. & Shih, C. L. (2006). A new item response modeling for Likert-type and rating scale items. Asia Pacific Educational Research Association International Conference 2006 (APER 2006), November 28-30, 2006, Hong Kong.
- 51 Shih, C. L. & Wang W. C. (2006) . Comparison of Item Selection Strategies in Computerized Adaptive Testing for Testlet-based Items . Pacific Rim Objective Measurement Symposium Hong Kong (PROMS HK 2006), June 27-29, 2006, Hong Kong. [*Travel Support of International Conference for Scholars by the National Science Council in Taiwan*]
- 52 Shih, C. L. & Wang W. C. (2005). Locating DIF-Free Items as Anchors Using the Iterative Constant-Item Method . The 14th International Meeting and the 70th Annual Meeting of the Psychometric Society, July 5-9, 2005, Tilburg, The Netherlands. [*Travel Support of International Conference for Scholars by the National Science Council in Taiwan*]
- 53 Shih, C. L. & Wang W. C. (2004). A Comparison of the Characteristic Curve Method and the Constant Anchor Item Method on Detection of Differential Item Functioning. Annual Meeting of the American Educational Research Association, April 12-16, 2004, San Diego, USA. [*Travel Support of International Conference for Scholars by the National Science Council in Taiwan*]