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Validation of the Malay version of Food Insecurity Experience Scale (M-FIES) using Rasch analysis
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Abstract

Introduction: Food security can be defined as the availability of and accessibility to food, acquired in an acceptable means at any given time and place in a way that could maintain health and wellbeing. One critical dimension of food security is continued access to adequate food. To measure this dimension, the Food and Agriculture Organization (FAO) developed the latest measurement tool, namely the Food Insecurity Experience Scale (FIES), the first instrument to measure people who experience food insecurity globally. This study aimed to validate the construct validity and reliability of the Malay version of FIES (M-FIES) for Malaysians. **Methods:** This cross-sectional study was conducted among 145 households in Kuantan, Pahang. Rasch analysis was used to analyse the construct validity of FIES. **Results:** FIES met the Rasch model assumptions with all items having an infit value of between 0.7- 1.3 and an outfit value of <2.0. The item and person reliability were 0.97 and 0.71, respectively; while the item and person separation were 5.59 and 1.58, respectively. The FIES item severity indicated that the items "few food", "healthy", "skipped", "ate less", and "runout" were disordered. **Conclusion:** The M-FIES is a valid and reliable measurement tool for the food insecurity situation among households based on its construct validity assessed using the Rasch model. Furthermore, the severity of item in M-FIES was different in terms of order from the original FIES, suggesting that the same items may be interpreted differently due to cultural or societal differences. © (2023), (Malaysian Journal of Nutrition). All Rights Reserved.

Author Keywords

FIES; food insecurity; Rasch measurement; reliability; validity

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References

- Akinboade, OA, Adeyefa, SA
An analysis of variance of food security by its main determinants among the urban poor in the city of Tshwane, South Africa
(2018) *Soc Indic Res*, 137 (1), pp. 61-82.
- Atuoye, KN, Antabe, R, Sano, Y, Luginaah, I, Bayne, J
Household income diversification and food insecurity in the upper west region of Ghana
(2019) *Soc Indic Res*, 144, pp. 899-920.
- Agarwal, S, Sethi, V, Gupta, P, Jha, M, Agnihotri, A, Nord, M
Experiential household food insecurity in an urban underserved slum of north India
(2009) *Food Sec*, 1, pp. 239-250.
- Azrilah, AA, Mohd Saidfudin, A, Azami, Z
(2013) *Asas model pengukuran Rasch: Pembentukan skala & struktur pengukuran*, Penerbit Universiti Kebangsaan Malaysia, Bangi
- Ballard, TJ, Kepple, AW, Cafiero, C
(2013) *The food insecurity experience scale: developing a global standard for monitoring*

hunger worldwide,
From [Retrieved June 27 2021]

- Bond, TG, Fox, CM
(2007) *Applying the Rasch model: Fundamental measurement in the human sciences*, (2nd ed). Lawrence Erlbaum Associates, New Jersey
- Cafiero, C, Viviani, S, Nord, M
Food security measurement in a global context: The Food Insecurity Experience Scale
(2018) *Measurement*, 116, pp. 146-152.
- Coates, J, Frongillo, EA, Rogers, BL, Webb, P, Wilde, PE, Houser, R
Commonalities in the experience of household food insecurity across cultures: what are measures missing?
(2006) *J Nutr*, 136 (5), pp. 1438S-1448S.
(2019) *Household Income & Poverty*,
Economic Planning Unit. From [Retrieved June 27 2021]
- (2016) *Methods for estimating comparable prevalence rates of food insecurity experienced by adults throughout the world*,
From [Retrieved June 27 2021]
- (2008) *The state of food insecurity in the world*,
Food and Agriculture Organization of the United Nations, Rome: Italy
- Fisher, WP
(2007) *Rating scale instrument quality criteria: Rasch measurement transactions*,
From [Retrieved June 22 2021]
- Jones, AD
Food insecurity and mental health status: A global analysis of 149 countries
(2017) *Am J Prev Med*, 53 (2), pp. 264-273.
- Kardooni, R, Fatimah, K, Siti Rohani, Y, Siti Hajar, Y
Traditional knowledge of orang asli on forests in Peninsular Malaysia
(2014) *Indian J Tradit Knowl*, 13 (2), pp. 283-291.
- Mohammadi, F, Omidvar, N, Houshiar-Rad, A, Khoshfetrat, MR, Abdollahi, M, Mehrabi, Y
Validity of an adapted Household Food Insecurity Access Scale in urban households in Iran
(2011) *Public Health Nutr*, 15 (1), pp. 149-157.
- Na, M, Miller, M, Ballard, T, Mitchell, DC, Hung, YW, Melgar-Quiñonez, H
Does social support modify the relationship between food insecurity and poor mental health? Evidence from thirtynine sub-Saharan African countries
(2019) *Public Health Nutr*, 22 (5), pp. 874-881.
- Nord, M, Cafiero, C, Viviani, S
Methods for estimating comparable prevalence rates of food insecurity experienced by adults in 147 countries and areas
(2016) *J Phys:Conference Series*, 772 (1), p. 012060.
- Norhasmah, S, Yeatman, H, Russell, J, Law, LS
A food insecurity systematic review: Experience from Malaysia
(2021) *Nutrients*, 13 (3), p. 945.
- Owino, A, Wesonga, R, Nabugoomu, F
Determining food insecurity: An application of the Rasch model with household survey data in Uganda
(2014) *Int J Food Sci*, 2014, pp. 1-8.

- Pérez-Escamilla, R
Can experience-based household food security scales help improve food security governance?
(2012) *Glob Food Sec*, 1 (2), pp. 120-125.
- Radimer, KL, Olson, CM, Greene, JC, Campbell, CC, Habicht, JP
Understanding hunger and developing indicators to assess it in women and children
(1992) *J Nutr Educ*, 24 (1), pp. 36S-44S.
- Roselawati, MY, Suriati, S, Jamalludin, AR, Sulaiman, N, Yahya, NA, Saadiah, H, Wan Azdie, MAB
Translation and validation of Food Insecurity Experience Scale (FIES)
(2021) *Mal J Nutr*, 27 (3), pp. 449-459.
- Smith, MD, Kassa, W, Winters, P
Assessing food insecurity in Latin America and the Caribbean using FAO's Food Insecurity Experience Scale
(2017) *Food Policy*, 71, pp. 48-61.
- Sadiddin, A, Cattaneo, A, Cirillo, M, Miller, M
Food insecurity as a determinant of international migration: evidence from Sub-Saharan Africa
(2019) *Food Secur*, 11, pp. 515-530.
- Schutte, L, Wissing, MP, Ellis, SM, Jose, PE, Vella-Brodrick, DA
Rasch analysis of the Meaning in Life Questionnaire among adults from South Africa, Australia, and New Zealand
(2016) *Health Qual Life Outcomes*, 14 (1), p. 2.
- Wambogo, EA, Ghattas, H, Leonard, KL, Sahyoun, NR
Validity of the food insecurity experience scale for use in sub-Saharan Africa and characteristics of food-insecure individuals
(2018) *Curr Dev Nutr*, 2 (9), pp. 1-10.
- (2019) *Prevalence of moderate and severe food insecurity in the population*,
From [Retrieved September 5, 2022]

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