BADAN PUSAT STATISTIK

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Data Statistik
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Untuk Semua

MEASURING FOOD INSECURITY EXPERIENCE SCALE (FIES) IN INDONESIA

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SUSTAINABLE DEVELOPMENT GOALS

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Food Insecurity

FAO's Voices of the Hungry (VoH) is developing a new global standard for estimating food insecurity prevalence through the use of a tool called the Food Insecurity Experience Scale (FIES).

FIES is a food insecurity severity experience matrix that relies on immediate responses of respondents to questions about their access to adequate food → to see the ability to access / obtain food.

Sample units collected in FIES: household or individual.

Advantage of FIES

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51 Hdv|#wr#dsso|#dw#orz#frvw#lq#dq|#lqglylgxdo#ru#krxvhkrog#vxuyh|1

61 IIHV#lv#d#gluhfw#phdvxuh#ri#irrg#lqvhfxulw|#h{shulhqfhg#e|#shrsoh#dqg#krxvhkrogv1

71 Suhydohqfh#udwhv#fdq#eh#frpsduhg#ehwzhhq#frxqwulhv#dqg#fxowxuhv1

81 Doorzv#iru#dqdo|vlv#ri#jhqghu#gliihuhqfhv#lq#irrg#lqvhfxulw|#zkhq#dssolhg#dw#wkh#lqglylgxdo#ohyho1

91 Zkhq#lqfoxghg#lq#d#odujh#vxuyh|/#lw#fdq#surylgh#lqirupdwlrq#iru#iroorz0xs#e|#srolf|#pdnhuv#dqg#fdq#eh#xvhg#wr#lghqwli|#yxoqhudeoh#srsxodwlrq#jurxsv#dqg#jxlgh#lq#srolf|#lqwhuyhqwlrqv1

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in 2017, FIES Questions have been included into the SUSENAS KOR Questionnaire, at the household level

BLOK XV. AKSES TERHADAP MAKANAN	
SEKARANG SAYA AKAN MENGAJUKAN BEBERAPA PERTANYAAN MENGENAI AKSES TERHADAP MAKANAN. **DALAM SETAHUN TERAKHIR**, APAKAH ADA SAAT DIMANA:	
1501. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA KHAWATIR TIDAK AKAN MEMILIKI CUKUP MAKANAN UNTUK DISANTAP KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1502. **SELAMA SETAHUN TERAKHIR**, APAKAH ADA SAAT DI MANA ANDA/ART LAINNYA TIDAK DAPAT MENYANTAP MAKANAN SEHAT DAN BERGIZI KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1503. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA HANYA MENYANTAP SEDIKIT JENIS MAKANAN KARENA TIDAK MEMILIKI UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1504. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA PERNAH MELEWATKAN MAKAN PADA SUATU HARI TERTENTU KARENA TIDAK MEMILIKI UANG ATAU SUMBER DAYA LAIN YANG CUKUP UNTUK MENDAPATKAN MAKANAN?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1505. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA MAKAN LEBIH SEDIKIT DARIPADA SEHARUSNYA KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1506. **SELAMA SETAHUN TERAKHIR**, APAKAH RUMAH TANGGA KEHABISAN MAKANAN KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1507. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA MERASA LAPAR TAPI TIDAK MAKAN KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA UNTUK MENDAPATKAN MAKANAN?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9
1508. **SELAMA SETAHUN TERAKHIR**, APAKAH ANDA/ART LAINNYA TIDAK MAKAN SEHARIAN KARENA KURANGNYA UANG ATAU SUMBER DAYA LAINNYA?	YA ..... 1 TIDAK ..... 5 TIDAK TAHU ..... 8 MENOLAK MENJAWAB 9

BLOCK XV. ACCESS TO FOOD	
NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT FOOD. DURING **THE LAST ONE YEAR**, WAS THERE A TIME WHEN:	
1501. **DURING THE LAST ONE YEAR** , YOU WERE WORRIED YOU WOULD NOT HAVE ENOUGH FOOD TO EAT BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9
1502. **DURING THE LAST ONE YEAR**, YOU WERE UNABLE TO EAT HEALTHY AND NUTRITIOUS FOOD BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9
1503. **DURING THE LAST ONE YEAR**, YOU ATE ONLY A FEW KINDS OF FOODS BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9
1504. **DURING THE LAST ONE YEAR**, YOU HAD TO SKIP A MEAL BECAUSE THERE WAS NOT ENOUGH MONEY OR OTHER RESOURCES TO GET FOOD?	Yes 1 No 5 Do not know 8 Refused 9
1505. **DURING THE LAST ONE YEAR**, YOU ATE LESS THAN YOU THOUGHT YOU SHOULD BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9
1506. **DURING THE LAST ONE YEAR**, YOUR HOUSEHOLD RAN OUT OF FOOD BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9
1507. **DURING THE LAST ONE YEAR**, YOU WERE HUNGRY BUT DID NOT EAT BECAUSE THERE WAS NOT ENOUGH MONEY OR OTHER RESOURCES FOR FOOD?	Yes 1 No 5 Do not know 8 Refused 9
1508. **DURING THE LAST ONE YEAR**, YOU WENT WITHOUT EATING FOR A WHOLE DAY BECAUSE OF A LACK OF MONEY OR OTHER RESOURCES?	Yes 1 No 5 Do not know 8 Refused 9

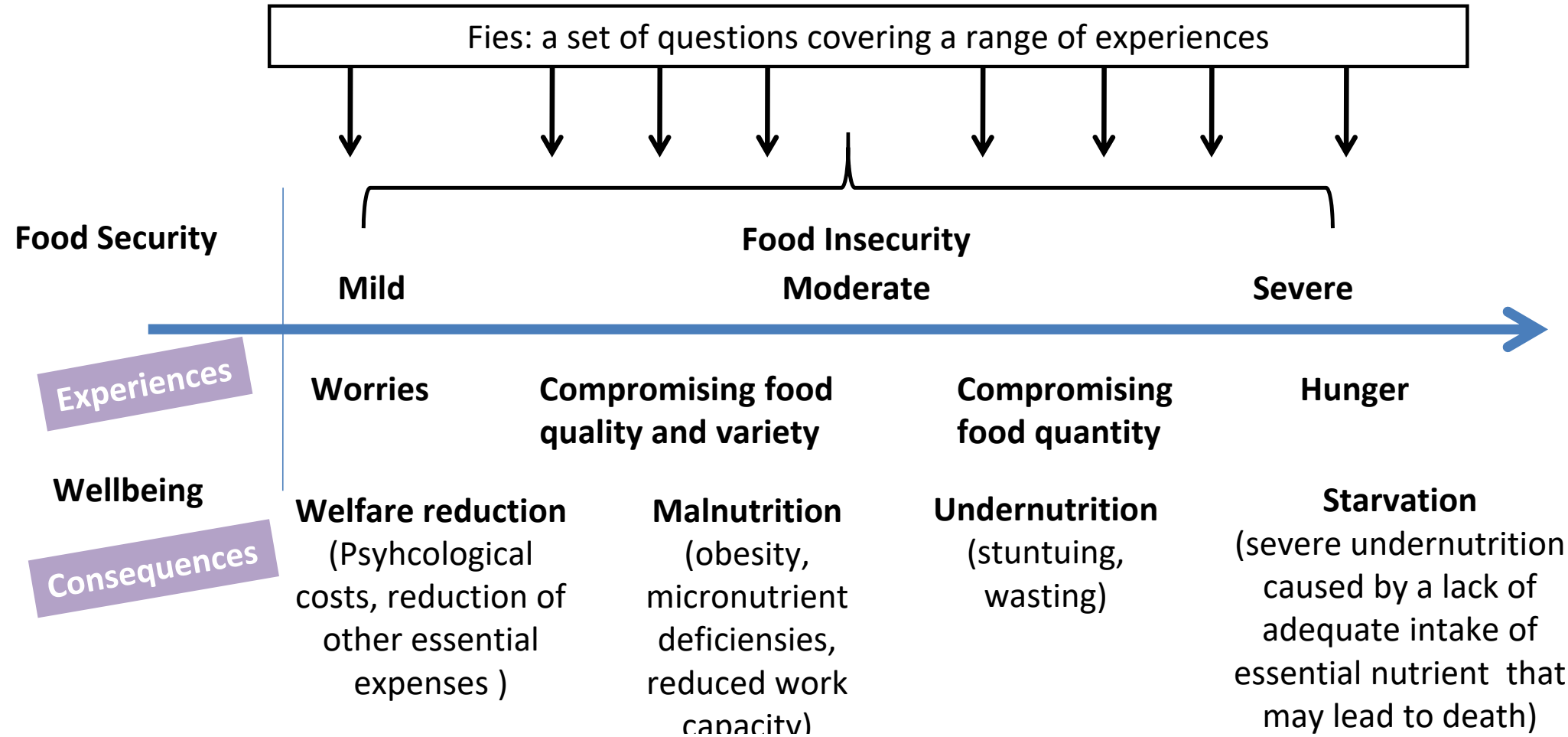
FIES data is validated using Item Response Theory (Rasch model) to confirm that they provide a reliable measure of food insecurity

INFIT STATISTICS	•If INFIT between 0.7 and 1.3, the question is maintained
Residual correlation	•No significant correlation must remain in the residuals
Rasch reliability	•Rasch reliability flat > 0.7

Each respondent's answer will be scored according to the question items, then classified according to the RAW SCORE:

Food secure or mild food insecure	•If RAW SCORE < 4
Moderate	•if RAW SCORE = 4, 5 or 6
Severe	•if RAW SCORE = 7 or 8

FIES Measurement Scale



The Analytics: the Rasch model

$$Prob(X_{i,j} = 1) = \frac{\exp(\theta_i - \beta_j)}{1 + \exp(\theta_i - \beta_j)}$$

- Wkh#rgg#uryghv#wkh#edvlv#ru#Hvwlpdwlqj#wkh#vnloo|#sdup hwhuv#dvvrfldwhg#erwk# zlwk#wkh#v#ll1/#wkh#ydulxv#h{shulqfhv#hqwrqhg#q#wkh#xhvwlrqv,#dqg#zlwk# uhvsrqghqw
- Frqgxfwlqj#wdlwlfdo#whvw#i#wkh#whqjwk#i#dvvrfldwrq#i#wkh#hvsrqvhv#w#wkh# odwhqw#wdlw/#dqg#i#jrrgqhvv#i#lw

Result (1)

fies1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	848023	74,9	74,9	74,9
	Ya	284726	25,1	25,1	100,0
	Total	1132749	100,0	100,0	

fies2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	936425	82,7	82,7	82,7
	Ya	196324	17,3	17,3	100,0
	Total	1132749	100,0	100,0	

fies3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	970517	85,7	85,7	85,7
	Ya	162232	14,3	14,3	100,0
	Total	1132749	100,0	100,0	

fies4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	1083528	95,7	95,7	95,7
	Ya	49221	4,3	4,3	100,0
	Total	1132749	100,0	100,0	

fies5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	1021572	90,2	90,2	90,2
	Ya	111177	9,8	9,8	100,0
	Total	1132749	100,0	100,0	

fies6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	1069965	94,5	94,5	94,5
	Ya	62784	5,5	5,5	100,0
	Total	1132749	100,0	100,0	

fies7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	1090273	96,3	96,3	96,3
	Ya	42476	3,7	3,7	100,0
	Total	1132749	100,0	100,0	

fies8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak	1107547	97,8	97,8	97,8
	Ya	25202	2,2	2,2	100,0
	Total	1132749	100,0	100,0	

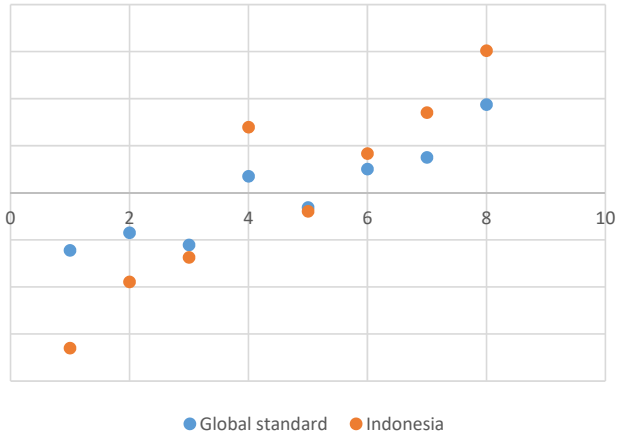
Result (1)

One of the recommendations suggested by FAO related to the anomaly in the fourth question is to provide longer time in the training of officers/surveyor when discussing the FIES and emphasis on the fourth and eighth question explanations so that surveyor and respondents can distinguish the fourth and eighth questions

Result (2)

Pertanyaan	Sev Global Standard	Sev Indonesia	Jarak
1	-1.22305641042655	-3.3003455	2.077289
2	-0.847120973979218	-1.8907132	1.043592
3	-1.1056616195967	-1.3718246	0.266163
4	0.350984786690848	1.3961944	1.04521
5	-0.311799948213288	-0.3927713	0.080971
6	0.506505085808895	0.8331009	0.326596
7	0.754613821163174	1.7048690	0.950255
8	1.87553525855283	3.0214971	1.145962

comparison of Global Standard and Indonesia



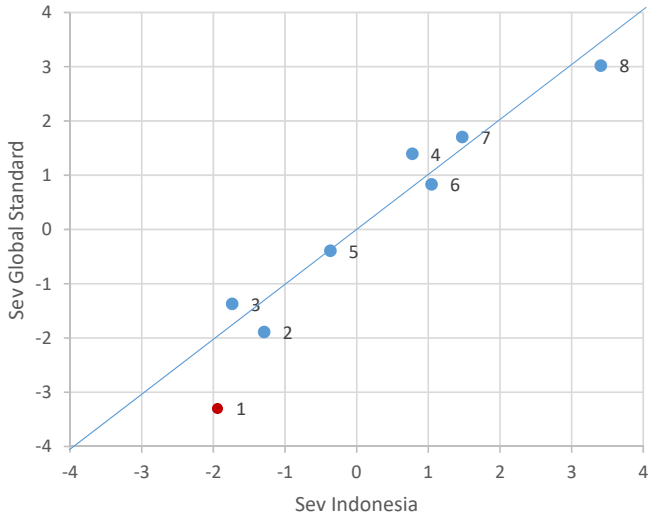
- When compared to the global standard, the value in column sev is different from the global standard. Values on the first question in the global standard are around -1,2231 (Indonesia -3,300) and at the eighth question 1.876 (Indonesia 3,0215), so the distance on Global Standard is about 3.1 and Indonesia about 6.3. The intervals are very different (2 times) between global standards and Indonesia, so calibration is required so that Indonesia's output can be compared.

- Comparison of global and Indonesian standard values identifies the need for national calibration of global standards. Calibration is done by standardization

Result (2)

Pertanyaan	Sev Global Standard	Sev Indonesia	Glob St adj	Jarak
1	-1.2231	-3.3003	-1.9407	0.69
2	-0.8471	-1.8907	-1.2920	0.30
3	-1.1057	-1.3718	-1.7381	0.19
4	0.3510	1.3962	0.7757	0.31
5	-0.3118	-0.3928	-0.3681	0.01
6	0.5065	0.8331	1.0441	0.11
7	0.7546	1.7049	1.4722	0.12
8	1.8755	3.0215	3.4067	0.20
Mean (items 2-8)		0.4715	0.4715	
Standard Deviation		1.6360	1.6360	

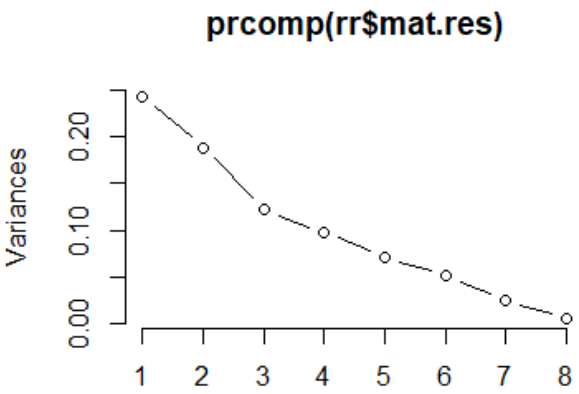
comparison of Global Standard and Indonesia



- Comparison of severity levels under the global standard and the Indonesian FIES values identifies the need for national calibration against the global standards.
- Calibration is done by identifying items that are common, and standardizing so that the mean and the standard deviation of the common items is the same.
- When compared to the global standard, the value of severity associated with item no. 1 is different, so item 1 is treated as unique.

Result (3)

Residual pattern



- The residual pattern of the eight questions forms a particular pattern, decreasing regularly and indicating that the residual is not correlated. If the residual plot to eight irregular FIES questions indicates residual correlation between questions.

- The residual plot of the FIES question shows a regular pattern, the first question has the largest residual, then shrinks on the second question and continues to narrow down to the eighth question

Result (4)

Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale in Indonesia 2017

Year	Prevalence
2017	8,66

Challenges

- P xw#frqgxfw#krxvhkrog#vxuyh|#
- Fxowxuh#p d|#hiihfw#wkh#dqvzhu#ri#wkh#uhvsrqghqw#h1j1#ehwzhhq#surylqfhv/#qhhg# ixuwkhu#vwxg|
- Uhvsrqghqw#gliilfxow#wr#glvwlqjxlvk#ehwzhhq#txhvwlrq#h1j1#ehwzhhq#txhvwlrq#7#) # ;,
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- Dv#d#qhz#lqglfdwru/#qhhg#d#p dvvlyh#vrfldol}dwlrq#wr#doo#wdnhkroghu

Iru#Ghwdlohg#lqirupdwlrq#rq#LHV#dqg#SRX#ri#Lqgrqhvld

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