# PERCEIVED STRESS SCALE DENGAN MODEL RASCH

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### ABSTRAK

*The present study aimed to examine the validity and reliability of perceived stress scale using Rasch model. This quantitative study involved 195 students of guidance and counseling department in a university in Yogyakarta, Indonesia. The data were collected using Perceived stress scale and analyzed using Rasch model. The result of the study showed that perceived stress scale's person reliability score was acceptable (0.79) and item reliability score of 0.98. The person separation score was 1.93 (poor) while the item separation score was 7.17 (very good). Based on misfit test, each item of the scale was fit to Rasch model. TO conclude, the perceived stress scale was valid and reliable, thus can be used by university counselors to measure students' perceived stress level.*

*Keywords:* perceived stress scale, rasch model, university student.

## INTRODUCTION

Every individual ideally should go through their developmental task according to their age. University students' developmental task, according to Danim (2013), is to achieve emotional autonomy and develop responsible behaviors. However, students often face hindrances in accomplishing their developmental tasks. Stress is one of the students' hindrances in fulfilling their developmental tasks (Kholidah & Alsa, 2012).

According to Shahsavarani, Abadi, & Kalkhoran (2015), stress refers to a depressed mental condition. Child Mind Institute (2015) reports that more than 17 million youths suffer from mental illness. One of the illnesses is stress. Habeeb (2010) reports that the prevalence of university students' stress around the world reaches 71%. This is supported by Fitasari (2011) who reports that 71.6% of Indonesian university students suffer from stress.

University students' stress, according to Maslakhatun (2014), is affected by a range of factors, including the demand to graduate on time, GPA, and organization. Coping strategies are needed to cope with stress. Dexter (2018), Kwaah (2017), Bamuhair (2015) state that to cope with stress, an individual may meditate, listen to music, take exercise, and seek advice from others. These could be done in a special treatment, where the treatment is initiated by collecting

supporting data. Perceived stress scale could be used to collect students' data related to stress (Andreou et al., 2011; Lee 2012; Lesage et al., 2012; Leung et al., 2010; Siqueira et al., 2010). This is an instrument developed by Cohen (1994) to measure one's perceived stress. This scale could be used to collect initial data to design a treatment for solving university students' stress.

Studies on perceived stress scale (PSS) are carried out massively around the world, such as Sun (2019) in China, Manzar (2019) in Ethiopia, Khalili (2017) in Iran, Andreou (2011) in Greece. The result of these studies showed that PSS was valid and reliable to be used in these countries.

The present study aimed to examine the validity and reliability of the perceived stress scale. The analysis result showed that the perceived stress scale was valid and reliable, thus can be used by university counselors to measure students' perceived stress level.

## METHODOLOGY

This quantitative study Involved 195 students of the Guidance and Counseling Department of a university in Yogyakarta, Indonesia. They were recruited using simple random sampling technique. The data were collected using the Perceived stress scale and analyzed using Rasch model.

## RESULT AND DISCUSSION

Based on the description mentioned earlier, we conclude that stress is a general problem occurs among university students, which is affected by various factors. Stress could be handled using treatment. Before conducting any treatment, it is necessary to have an adequate data as the basis so that the treatment given fits the condition. To obtain such data, a valid instrument is required.

Cohen (1994) validate the scale by involving subjects from various racial background, age, and gender. As Cohen (1994) did, the data collected in the present study involved respondents as presented in Table 1.

Table 1
*Category and Number of Respondents*

| Category | Total |
|---|---|
| Gender | |
| Male | 51 |
| Female | 144 |
| Age | |
| 18-22 | 162 |
| 23-27 | 30 |
| >28 | 1 |
| Unknown | 2 |
| | |
| Javanese | 163 |
| Sundanese | 10 |
| Kepo | 1 |
| Jawir | 1 |
| Komering | 1 |
| Malay | 2 |
| Palembang | 1 |
| Sasak | 3 |
| Toraja | 2 |
| Javanese-Malay | 1 |
| Gayo | 1 |
| Dayak Taboyan | 1 |
| Batak-Malay | 1 |
| Bali | 2 |
| Hawa | 1 |
| Unknown | 4 |

After that, misfit test was conducted to see whether or not the PSS fits to the rasch model This scale consisted of 10 items in Table 2.

Table 2
*Item Score*

| No. Item | Value | Description |
|---|---|---|
| 1 | 0.95 | Fit |
| 2 | 0.89 | Fit |
| 3 | 1.12 | Fit |
| 4 | 1.07 | Fit |
| 5 | 1.04 | Fit |
| 6 | 0.92 | Fit |
| 7 | 0.90 | Fit |
| 8 | 1.09 | Fit |
| 9 | 1.03 | Fit |
| 10 | 0.92 | Fit |

As shown in the table above, each item of the PSS fits the Rasch model since The score of each item is higher than 0.5 and less than 1.5.

The score of person reliability was 0.79, which was categorized as good, while the score of item reliability was 0.98, which was

categorized as very good. It was found that the person separation score was 1.93 (poor) and the item separation score was 7.17 (very good). The data on person and item criteria are presented in Table 3.

Table 3
*Person and Item Criteria*

| Criteria | Value | Description |
|---|---|---|
| Person reliability | 0.79 | Fair |
| Item reliability | 0.98 | Very good |
| Person Separation | 1.93 | low |
| Item Separation | 7.17 | Very good |

Based on the scores of person and item reliability, it could be concluded that the respondents' answer was consistent and the quality of the PSS item was very good. Based on the result of person and item separation, the PSS items lack of variation between the easy and difficult items. However, regarding the item reliability criteria, the respondents recruited had been varied, from low to high perceived stress level. The variance in data explained by measure was 47.5%, while the Unexplained variance data in contrast 1-5 of PCA of residuals was 14.7%. The explained and unexplained variance criteria are described in Table 4.

Table 4
*Explained and Unexplained Variance Criteria*

| Criteria | Value |
|---|---|
| Variance in data explained by Measures | 47.5% |
| Unexplained variance data in contrast 1-5 PCA of residuals | 14.7% |

As shown by the analysis result, the PSS contains factors beyond the perceived stress.

Regarding the function of the rating scale (using Winsteps), the result indicated a consistent increase in each item (from -4.09 to 4.03). In other words, the PSS's rating scale functions well. This is supported by equal distribution of the choice in the instrument. Each item serves its functions well.

Based on the description above, it could be said that the weakness of Cohen's perceived stress scale lies in its item separation and the presence of factors beyond perceived stress. However, based on the items of the scale, Cohen's PSS fits the Rasch Model.

## CONCLUSION

Based on the result of analysis using Winsteps, Perceived Stress Scale was found to fit rasch model. The PSS could be used as a reference for other researchers who develop an instrument related to university students' stress in order to develop a scale with higher person separation value.

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