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# RASCH ANALYSIS: DIFFERENCES IN STUDENT ACHIEVEMENT MOTIVATION IN TERMS OF GENDER

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## ABSTRACT

*Achievement motivation is a sufficient factor important in determining ability within academic field. This research was conducted to see differences in achievement motivation in male students and female student. The data in this study are in the form of data politomi collected using instruments DAMS (Dds Achievement Motivation Scale). Research this involved 287 students consisting of 83 men and 204 women. Data analysis technique used is Mann Whitney combined with the RASCH model. Analysis results showed that there is a difference in achievement motivation. The results of this study shows that female students have high achievement motivation compared to students male. The results of this study contribute to guidance and counseling teachers in providing more intensive and effective services for students, especially male students who have lower achievement motivation than female students.*

*Keywords: achievement motivation, rasch analysis, gender.*

## INTRODUCTION

The purpose of national education is to develop the potential and character of students. Therefore, it is necessary to have a learning environment that supports the formation of character and the development of the potential of students. The learning environment has a role in internalizing values to shape the character of students. The existence of behavior change is the core of the learning process according to behavior theory. (Hidayati, et al., 2018, Mason, et al.,

2014). Education is a way of developing the potential possessed by humans. Education becomes a medium for elevating human beings through capability development, the more reflected the human glory and the essence of humanity (Hidayati, et al., 2017). Achievement motivation requires students to improve their abilities to achieve optimal results (Sagita, et al., 2013; Yazdani & Sane, 2014). Having higher achievement motivation, individuals are likely to exhibit consistent effort in pursuing academic objectives (Chaerani,

2011; Kaura & Sharma, 2015). The motivation for outstanding achievement resulted in a consistent effort in pursuing academic objectives (Hasan & Khalid, 2012). In the same vein, Shekhar & Devi (2012) suggest that achievement motivation is a prerequisite to academic success. It drives students to keep making effort to achieve academic goals through mastering, manipulating, managing the social and physical environment, overcoming problems and maintaining high-quality work, and outperforming other works. Previous studies report that male and female students exhibit difference in achievement motivation levels. According to Else-Quest, et al. (2013), female students achievement motivation is lower than male students.

The data obtained from observation and interviews at a Muhammadiyah high school in the city of Jakarta found different level of achievement motivation between male and female students. While female student exhibited higher enthusiasm in classroom learning process and more actively participated to obtain academic and non-academic achievements, male students tended to be more passive and less enthusiastic in learning process.

Grounded on the preliminary findings, the study aims to test the hypothesis and determine the differences in achievement motivation between male and female students. The results of the study can be used as a basis for school counselors to design guidance and counseling services for improving male and female students' achievement motivation.

### RESEARCH METHOD

This research applied a comparative descriptive method. The sample of this study was 287 students (83 male and 204 female students) recruited using the convenience sampling method. The data were collected using DAMS (Dds Achievement Motivation scale) and were analyzed using a combination of Mann-Whitney the tested Rasch model stack. The RASCH model analysis results showed that the reliability score of the person was 0.85 while the reliability score based on

Cronbach's alpha (KR-20) was 0.86, it show that the interaction between person and item is good. In addition, the sensitivity value of person answers +1.02 logit (INFIT MNSQ), and the sensitivity value for overall person answers is +1.00 logit (OUTFIT MNSQ), meaning that it was still in the ideal range ( $+0.5 > \text{MNSQ} < +1.5$ ). Furthermore, the RASCH modeling analysis also exhibited a reliability score of 0.98, indicating a good measurement item. Furthermore, the sensitivity value on item answer +1.00 logit (INFIT MNSQ) and the overall sensitivity value of item answer was +1.02 logit (OUTFIT MNSQ), meaning that it is still in the ideal range. This result indicated that the items have good quality for measurements.

### RESULTS AND DISCUSSIONS

This section presents the result of the study and discussion on different achievement motivation levels between male and female students. The analysis result is presented in following table 1.

Table 1.  
*Results of Mann Whitney student  
achievement motivation based on gender*

Score	Mann-Whitney U	Wilcoxon W	Z	Asymp . Sig. (2-tailed)
achievement motivation	7012.5	27922.50	-2.281	.023

As shown in table 1 above, the U value is 7012,500 and the W value is 27922,500. if converted to a Z value of maja, the score is -2.281, for a Sig or P Value of 0.023 < 0.050, indicating a difference between male and female students' achievement motivation. This finding supports previous studies that report similar result (Rego, et al., 2012; Awan, et al, 2011; Chetri, 2014; Wang, et al, 2020). It turns out women are better in the test of the speed of understanding, speaking abnormality, determining the determination of the subject, and accuracy in doing the tasks (Mahmood, et al., 2013). Based on the above

results about differences in achievement motivation, researchers clarify by using pictures about differences in achievement motivation based on gender using RASCH model.

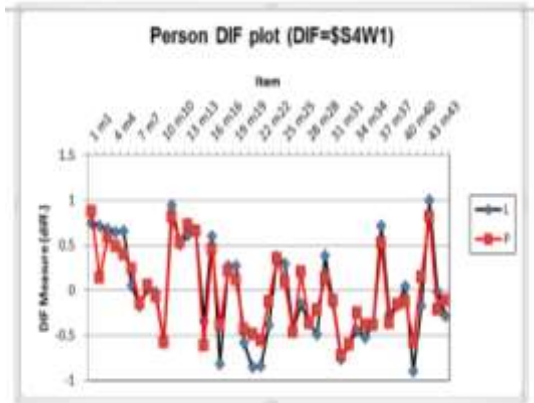


Figure 1  
Differences in Achievement Motivation Viewed from Gender (The Ability to Answer Instruments)

Figure 1 shows that female students' achievement motivation is higher than male students, as illustrated by the red line that tends to be higher than the blue line in. This proves that female students have a higher achievement motivation. This finding is also in line with another research reporting that female students have higher achievement motivation than male students (Kinanti, 2014; Pany, 2014; Anwar & Wardhono, 2019). Based on the explanation above, the researcher makes it clear by looking at how the sample provides answers to the instruments that have been given in accordance with the conditions of the student and how the sample provides answers for instruments that have been given in accordance with the conditions conveyed in Figure 2.

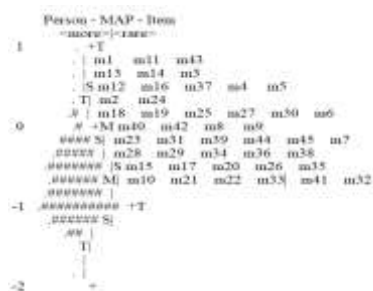


Figure 2.  
Difficulty Level Items

Figure 2 displays an item map. The right side of the map shows the difficulty level of each item, starting from the easiest item to agree (logit score -0.73 item m32) to the most difficult to agree (logit score +0.87 item m43).

Achievement motivation can be seen from the energy released by students during learning process (Desi Putrianasari & Wasitohadi, 2015). Students with higher achievement motivation are expected to exhibit better performance during the learning process. In contrast, students with lower achievement motivation may exhibit poor performance during the learning process (Achmad et al., 2017)

Achievement behavior is defined as behavior that is directed at developing or demonstrating high abilities rather than low abilities (Kim, et al, 2018). An ability can be seen in two ways.. First is by seeing one's past performance or knowledge and the second is by comparing it to others. Regarding the second way, an achievement does not necessarily means To obtain higher achievements, one must try harder than others. The ability of each individual is different according to the goals and experiences of each individual in each case.

Efforts to increase achievement motivation need to be tested in various educational settings to find the right strategy. Further research can be conducted to determine the factors that can affect the level of achievement such as skills, approaches, and individual goals. Women and men have their own peculiarities in motivating themselves to achieve. By understanding the differences in characteristics, strategies to improve achievement can be more specific and on target.

## CONCLUSION

This study finds that female and male students have different achievement motivations. It was found that female students exhibit a higher achievement motivation than male students, proven by the result of their responses to the instrument. Their higher achievement motivation was accounted for by their concern in having higher academic

achievement at school. They also exhibit better agility in completing the given task and are more competitive compared to male students.

#### REFERENCE

- Achmad, R.I. et al. (2017). "Hubungan antara Motivasi Berprestasi dan Kebiasaan Belajar terhadap Prestasi Belajar Fisika". *Prosiding Seminar Nasional*, 3(1), 177-187.
- Anwar, K., & Wardhono, A. (2019). Students' Perception of Learning Experience and Achievement Motivation: Prototyping English for Academic Purposes (EAP). *International Journal of Instruction*, 12(3), 271-288.
- Awan, R. U. N., Noureen, G., & Naz, A. (2011). A Study of Relationship between Achievement Motivation, Self Concept and Achievement in English and Mathematics at Secondary Level. *International Education Studies*, 4(3), 72-79.
- Chaerani, N. (2011). *Hubungan Motivasi Berprestasi dengan Hasil Belajar Matematika Siswa SMP Global Islamic School Jakarta*. Jakarta: Pendidikan Matematika Fakultas Ilmu Tarbiyah dan Keguruan UIN Syarif Hidayatullah.
- Chetri, S. (2014). Achievement Motivation of Adolescents and its Relationship With Academic Achievement. *International Journal of Humanities And Social Science Invention*, 3(6), 8-15.
- Desi Putrianasari, D., & Wasitohadi, W. (2015). Pengaruh Penerapan Pendekatan Contextual Teaching And Learning (CTL) Terhadap Hasil Belajar Matematika Ditinjau dari Motivasi Belajar Siswa Kelas 5 SD Negeri Cukil 01 Kecamatan Tenganan-Kabupaten Semarang. *Scholaria : Jurnal Pendidikan Dan Kebudayaan*, 5(1), 57.
- Else-Quest, N. M., Mineo, C. C., & Higgins, A. (2013). Math and Science Attitudes and Achievement at the Intersection of Gender and Ethnicity. *Psychology of Women Quarterly*, 37(3), 293-309.
- Hasan, S. S., & Khalid, R. (2012). Differences in Achievement Motivation and Salient Components Among High and Low Achieving Student. *Pakistan Journal of Psychology*, 43(1), 27-40.
- Hidayati, A., Amilia, W., & Amsal, M. F. (2017). Need Analysis of Media Video Development for Character Education at Early Childhood Education in Padang. *In International Conference of Early Childhood Education*, 169.
- Hidayati, A., Felicita Amsal, M., & Amilia, W. (2018). Development Of Classroom Design Model Into Character Education In Elementary. (2010), 945-948.
- Kaura, N., & Sharma, R. (2015). The Effect of Gender on Achievement Motivation. *Indian Journal of Health & Wellbeing*, 6(5).
- Kim, D., Yoon, M., Jo, I. H., & Branch, R. M. (2018). Learning Analytics To Support Self-Regulated Learning In Asynchronous Online Courses: A Case Study at A Women's University In South Korea. *Computers & Education*, 127, 233-251.
- Kinanti, P. D. (2014). Perbandingan Motivasi Berprestasi Pada Anak Sulung Laki-Laki Dan Perempuan Di Universitas Indonesia: A Comparative Study of Achievement Motivation Among Firstborn Male And Firstborn Female In Universitas Indonesia.
- Mahmood, R., Parveen, S., Shah, S. K., & Batool, A. (2013). A Corpus Driven Comparative Study of Representation Of 'Man' and 'Woman' in Pakistani And British English Fictions. *Research on Humanities and Social Sciences*, 3(11), 95-105.
- Mason, C., Griffin, M., & Parker, S. (2014). Transformational Leadership Development: Connecting Psychological and Behavioral Change. *Leadership & Organization Development Journal*.
- Pany, S. (2014). Achievement Motivation of College Students in Relation to Their Gender, Stream and Locale. *Online International Interdisciplinary Research Journal*, 4(1), 360-367.
- Rego, A., Sousa, F., Marques, C., & Cunha, M. P. e. (2012). Authentic Leadership Promoting Employees' Psychological Capital and Creativity. *Journal of Business Research*, 65(3), 429-437.

- Sagita, D. D., Erlamsyah, E., & Syahniar, S. (2013). Hubungan Antara Perlakuan Orang Tua Dengan Penyesuaian Diri Siswa Di Sekolah. *Konselor*, 2(1).
- Shekhar, C., & Devi, R. (2012). Achievement Motivation Across Gender and Different Academic Majors. *Journal of Education and Development Psychology*, 2(2).
- Yazdani, K., & Sane Godbole, V. (2014). Studying The Role of Habits And Achievement Motivation In Improving Students' Academic Performance. *European Online Journal of Natural and Social Sciences*, 3(4), 827.