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Psychometric Analysis Instruments of Self-efficacy in Work

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The authors declare that they have no significant competing financial, professional or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

Abstract: The purpose of this study was to determine the self-efficacy of students in their ability to achieve a certain level in the context of work. Respondents in this study were 234 students of class XII Vocational High School in Tangerang City. The sampling technique used in this research is non-probability sampling with the snowball sampling method. Researchers distributed online questionnaires through Google Forms to student representatives from several class XII Vocational High School in various schools. The instrument used in this study was the Work Self-Efficacy Scale (WSES). This scale consists of a total of 10 items with 2 dimensions, namely Relational Willingness and Commitment. The results of the study, this Work Self Efficacy instrument can be declared reliable and valid. It is said to be reliable or consistent because in the third test, the calculation results obtained a Cronbach alpha reliability coefficient value of 0.874. The coefficient value is greater than the standard parameter, namely 0.7. This means that this instrument can be used repeatedly and can produce a consistent picture of Work Self Efficacy.

Keywords: work self-efficacy scale, career, vocational high school.

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Introduction

Silvia, et al (2010) Self-efficacy at work is defined as the level of confidence that individuals have in their ability to achieve a certain level of achievement in the work context (Abbas, 2019). This efficacy can be influenced by individual thoughts and behavior, besides that self-efficacy can also be influenced by other factors such as goals and aspirations that the individual chooses to achieve, resilience in adversity, commitment to achieving goals, efforts, results and persistence (Ganaprakasam, 2018). As for Astuti and Gunawan (2016) defines self-efficacy as a person's belief in his ability to complete a task. They also say that career self-efficacy is a person's belief in his ability to make career decisions (Salim, 2020). Career self-efficacy is formed through career self-efficacy sources consisting of mastery experience, vicarious learning, verbal persuasion, and psychological states (Sheu, 2018). Efficacy beliefs influence people's thoughts and behavior, and influence other determinants such as the goals and aspirations individuals choose to pursue,

their resilience to adversity, commitment to goals, effort, results, and persistence (Akosah-Twumasi, 2018). People spend a lot of time at work, expending a lot of energy, emotions and hopes (Pettit, 2019). Self-efficacy is closely related to work, because people derive most of their self-efficacy (Fathi, 2020). Thus, job loss can determine a decrease in the sense of efficacy, "the longer the unemployment, the greater the erosion for self-efficacy (Silvia et al., 2010) .

The literature on job search (activities other than increasing job likelihood) reveals that general (eg locus of control, general self-efficacy) and specific (domain self-efficacy) variables can be considered as antecedents of search behavior (Kanfer, Kantrowitz, & Wanberg, 2001).) . These efficacy beliefs play an important role in decisions regarding future employment, due to the uncertainty of the world of work and accessibility in the job market, which varies from one cultural context to the next (Brown, 2019). In addition, young adults' expectations of finding work depend on how they perceive abilities that they would not normally experience in real life (De Haas, 2020).

Self-efficacy in general, refers to a person's confidence in carrying out actions in managing various situations, work self-efficacy assesses the confidence of workers in managing the workplace experience (Lin, 2022). The theoretical basis is that individuals with higher work self-efficacy are more likely to expect and succeed in performance at work (Qureshi, Arshad, & Whitty, 2016) . Self-efficacy affects learning and performance in three ways (Bandura, 1982) :

1. Self-efficacy influences the goals that employees choose for themselves.
2. Self-efficacy affects learning and the efforts made by employees at work.
3. Self-efficacy affects employee persistence in trying new and different tasks.

In an extensive literature review on self-efficacy Bandura and Locke (2003) concluded that self-efficacy is a strong determinant of job performance. Based on the explanation of the definition of self-efficacy above, this study uses the theory of self-efficacy at work which was developed by Silvia et al (2010) who define self-efficacy at work as the level of confidence that individuals have in their ability to achieve a certain level of achievement in the work context.

According to Silvia et al (2010) self-efficacy in work (work self-efficacy) is divided into two dimensions, including:

1. Relational willingness , namely the ability to manage interpersonal relationships (colleagues and direct superiors), work with colleagues with different characteristics and experiences, behave effectively in the work environment. Individuals who have relational willingness tend to have an open attitude in relationships interpersonal. Indicators in relational willingness are having good relationships with coworkers, superiors, and clients.
2. Commitment , namely the ability in a work context, to learn new work methods, to respect work schedules and deadlines, and to achieve set goals. Indicators in commitment are committed to work and learn new things.

Several studies have been conducted to examine the impact of career adaptation on career outcomes, both subjectively and objectively measured. Career adaptability has been found to be positively related to job search self-efficacy (Atitsogbe, 2019). As in the research conducted by Hartono and Gunawan (2017) which examines the relationship between student job search self-efficacy and career adaptability (Hamzah, 2021). The results showed that there was a relationship between career adaptability and self-efficacy in finding work (Kim, 2018). Another study conducted by Bocciardi, et al (2017) The results highlight that work self-efficacy, job-seeking self-efficacy, and educational games have important role in predicting career adaptability (Kanar, 2021). Surprisingly, features related to professional development and professional status do not appear to have any relevant influence (Toropova, 2021).

The literature on the topic has underlined that there have been many important factors in adapting to life transitions, especially vocational secondary students who are preparing to enter the world of work (Dayagdag, 2019). So in this study, the researcher intends to show whether the adaptation of the Search For Work Self Efficacy Scale (SWSES) measurement tool can be used to measure self-efficacy in finding work in the context of the Indonesian country and culture (Imdiati, 2019).

Method

Research Design

Respondents in this study amounted to 234 class XII Vocational High School students throughout Tangerang Regency who were willing to fill out online measuring instrument questionnaires via Google Form. The technique used in this research is non-probability sampling with snowball sampling method. Researchers distributed online questionnaires via Google Form to student representatives from several class XII Vocational High School in various schools. This student representative then distributes the questionnaire link in the group chat to be filled out by other students. To measure self-efficacy in working in this study using a measuring instrument developed by Silvia et al (2010) namely the Work Self-Efficacy Scale (WSES). This scale consists of a total of 10 items with 2 dimensions, namely Relational Willingness and Commitment. The statements presented have five response ranges from 1 (Not good at all) to 5 (Very good). The alpha coefficient for the first factor is .85, and for the second factor .82. The following are the stages of adaptation carried out by researchers:

First, Based on the research topic, the researcher selects a list of questions that will be used in filling out the questionnaire. The list of questions in question is the Work Self-Efficacy Scale (WSES) which uses a measurement scale with 5 Likert scales, namely (1) strongly disagree, (2) disagree, (3) agree, (4) somewhat agree and (5) totally agree .

Second, choose an adaptation design. In this case the researcher chose the Forward Translation adaptation design. In this case, translating the instrument requires two translations (English-Indonesian, Indonesian-English) and two expert translators who have the appropriate qualifications in their field. The first translator translates from the instrument language to the target language, then continues by the second translator who checks the accuracy and suitability between the first translator's translation and the meaning of the original instrument, and if there is a discrepancy, input can be given regarding this matter. This is of course done separately between the first translator and the second translator.

Third, the next step is to combine the results of the two translations into the target language, in this case Indonesian. After being put together and adjusted to the input, the next step is the judgment of experts who have qualifications according to the field of research that the researcher will do. In this case, the expert chosen by the researcher is a Master's graduate in the field of Counseling Guidance. When conducting a Judgment, the expert will provide an assessment regarding the previously put together instrument, and provide input regarding the instrument.

Fourth, this stage is the final stage before testing the instrument. In this stage, the researcher made improvements to the inputs and corrections from the results of previous expert judgments. In this case, the researchers made improvements related to grammar and better sentence structure. After everything was repaired and re-examined, this was deemed sufficient and could be used to test the research instrument.

The next stage, the researcher tested the suitability of the measurement model for each dimension of the Indonesian version of the job search scale through a confirmatory factor analysis (CFA) process and reliability and validity analysis using SPSS. This study involved 234 participants.

Results and Discussion

Researchers conducted initial data collection on 234 students of SMK Se-Tangerang Regency. The initial data is in the form of a WSES questionnaire which has been translated from English to Indonesian. The purpose of taking this initial data is to obtain an overview of the reliability, validity and quality of the statement items from the measuring instrument. The following are the results of the initial data obtained from testing the translated WSES measuring instrument.

Table 1. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
VAR1	40.08	20,466	.490	.871
VAR2	39.87	20,533	.632	.860
VAR3	40.03	20.072	.620	.860
VAR4	40.47	20,053	.397	.886
VAR5	39.78	21,064	.622	.862
VAR6	40.04	19,011	.718	.852
VAR7	39.88	20.145	.627	.859
VAR8	39.89	19,727	.686	.855
VAR9	39.75	20,325	.675	.857
VAR10	39.77	20,522	.668	.858

From the table above, most of the quality items are good, this is because the results of observations in the r_{table} show that the value of the sample (n) = 234 is 0.1402. So that referring to the results of the validity test, it is found that all instruments start from the WSES variable (VAR) which consists of VAR1. VAR2. VAR3. VAR4. VAR5. VAR6. VAR7. VAR8. VAR9. VAR10. All of them resulted in a value (r_{Count}) > than r_{Table}. To collect evidence of the validity of the internal structure of the measuring instrument, CFA was carried out with the help of LISREL software. CFA is used to compare the suitability of the theoretical model with the data obtained. In addition, the reliability test can be presented in the following table:

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
.874	10

From the results of the questionnaire obtained, the researcher estimated reliability through internal consistency by evaluating the Cronbach Alpha coefficient value and through item discrimination analysis by evaluating the corrected-item total correlation value for each item. The measuring instrument is said to be reliable if it has a reliability coefficient of ≥.70. In addition, the greater the corrected item total correlation value for each item, the higher the item discriminating power (Kaplan & Saccuzzo, 2009) . That is, each item measures a different thing. If the corrected item-total correlation value is < .30, then the item measures the same thing as other items so it needs to be corrected or deleted. Reliability measurement is done with the help of SPSS software. From table 1, information is obtained that the value of the reliability coefficient of the SWSES measuring instrument from the reliability results obtained by the value of the X1 variable resulting in Cronbach's alpha value> 70. So it can be concluded that all instruments in this study are reliable. As for the criteria for each measurement to evaluate the validity of the confirmatory factor analysis process:

Table 3. Criteria for Goodness of Fit Indices

Estimate	Criteria
Minimum Fit Function Chi-Square	p > .05
Root Mean Square Error of Approximation (RMSEA)	< .08
Goodness of Fit Index (GFI)	.90
Normal Fit Index (NFI)	.90
Comparative Fit Index (CFI)	.90
Relative Fit Index (RFI)	.90
T-Values	> 1.96

After the reliability estimation is done, then confirmatory factor analysis is carried out on the data with the help of the LISREL program. The following are the results of the analysis based on the goodness of fit criteria:

Table 4. Results of The Analysis based on the Goodness of Fit Criteria

Estimate	Criteria	Results
Minimum Fit Function Chi-Square	$p > .05$	193.25
Root Mean Square Error of Approximation (RMSEA)	$< .08$	.14
Goodness of Fit Index (GFI)	.90	.86
Normal Fit Index (NFI)	.90	.94
Comparative Fit Index (CFI)	.90	.95
Relative Fit Index (RFI)	.90	.92

The proof of construct validity was tested through CFA. As can be seen in Table 5, there are goodness of fit criteria that are fulfilled or not. In this case, the RMSEA (.10) and GFI (.86) values do not meet the criteria values. This is influenced by the number of samples in the study (Black & Anderson, 2014) . This is in line with the population of this study which is limited to a certain group (one of the schools in Tangerang Regency) with a relatively small number to represent a wider group. Therefore, other parameters are needed to see the suitability of the research model with the original theoretical model. In Table 5, the Chi-Square, NFI, CFI, and RFI parameters have met the criteria, namely > .90. Although the GFI value (.84) does not meet the criteria, it is still included in the reasonable fit and can be accepted (Baumgartner & Homburg, 1996) . Thus, it can be concluded that the existing data model is in accordance with the work self-efficacy theory model.

Then, to see the evaluation value of the loading factor value to see the extent of the relationship between each item with the dimensions of self-efficacy at work. The loading factor value is expected to be > .50 to indicate a fairly good relationship with the latent variable (Black & Anderson, 2014) . The loading factor value < .50 indicates a weak relationship and needs to be improved on the items. For the loading factor value of each item on the job search dimensions are as follows:
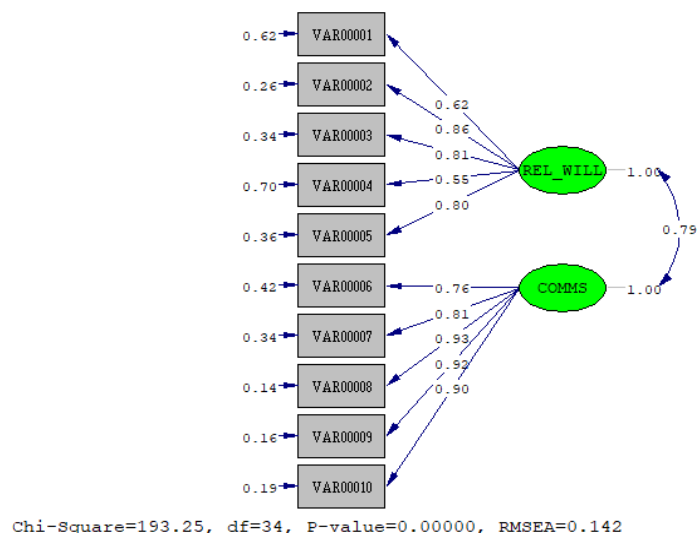

Chi-Square=193.25, df=34, P-value=0.00000, RMSEA=0.142

Figure 1. The loading factor value of each item on the job search dimensions

Conclusion

Based on the results of the study, this WSES instrument can be declared reliable and valid. It is said to be reliable or consistent because in the third test, the calculation results obtained the Cronbach alpha reliability coefficient value of 0.874. The coefficient value is greater than the standard parameter, namely 0.7. This means that this instrument can be used repeatedly and can produce a consistent picture of WSES.

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References

Abbas, G., & Nawaz, A. (2019). Linking employee motivation with teamwork-spirit: The influence of social skills and self-confidence. Gomal University Journal of Research, 35(2), 87-97.

Akosah-Twumasi, P., Emeto, T. I., Lindsay, D., Tsey, K., & Malau-Aduli, B. S. (2018, July). A systematic review of factors that influence youths career choices—the role of culture. In Frontiers in Education (Vol. 3, p. 58). Frontiers Media SA.

Astuti, R., & Gunawan, W. (2016). Sources Of Career Self-Efficacy On Adolescents. Journal of Psychogenesis , 4 (2), 141–151.

Atitsogbe, K. A., Mama, N. P., Sovet, L., Pari, P., & Rossier, J. (2019). Perceived employability and entrepreneurial intentions across university students and job seekers in Togo: The effect of career adaptability and self-efficacy. Frontiers in psychology, 10, 180.

Bandura, A. (1982). Self-Efficacy Mechanism In Human Agency. AMERICAN PSYCHOLOGIST , 37 (2), 122–147.

Bandura, A., & Locke, EA (2003). Negative Self-Efficacy And Goal Effects Revisited. Journal Of Applied Psychology , 88 (1), 87–99. Https://Doi.Org/10.1037/0021-9010.88.1.87

Baumgartner, H., & Homburg, C. (1996). Marketing Applications Of Structural Equation Modeling In Marketing And Consumer Research : A Review . 13 , 139–161.

Black, JFHJWC, & Anderson, BJBRE (2014). Multivariate Data Analysis (7th Ed.) (Seventh Ed). Pearson Education Limited.

Bocciardi, F., Caputo, A., Fregonese, C., Langher, V., & Sartori, R. (2017). European Journal Of Training And Development Volume 41 Issue 1 2017 [Doi 10.1108_EJTD-07-2016-0049] Bocciardi, Federica; Caputo, Andrea; Fregonese, Chiara; Langher, -- Career Adaptability As A Strat (1).Pdf. European Journal Of Training And Development , 41 (1), 67–82.

Brown, S. D., & Lent, R. W. (2019). Social cognitive career theory at 25: Progress in studying the domain satisfaction and career self-management models. Journal of Career Assessment, 27(4), 563-578.

Dayagdag, C. V., Catanghal Jr, R. A., & Palaoag, T. D. (2019, March). Improving vocational training in the Philippines using AR. In Proceedings of the 8th international conference on informatics, environment, energy and applications (pp. 253-257).

De Haas, M., Faber, R., & Hamersma, M. (2020). How COVID-19 and the Dutch 'intelligent lockdown'change activities, work and travel behaviour: Evidence from longitudinal data in the Netherlands. Transportation Research Interdisciplinary Perspectives, 6, 100150.

Fathi, J., Derakhshan, A., & Saharkhiz Arabani, A. (2020). Investigating a structural model of self-efficacy, collective efficacy, and psychological well-being among Iranian EFL teachers. Iranian Journal of Applied Language Studies, 12(1), 123-150.

Ganaprakasam, C., & Hutagalung, F. D. (2018). Religion on psychological well-being and self-efficacy among secondary school students. International Journal of Scientific and Research Publications, 8(5), 38-45.

Hamzah, S. R. A., Kai Le, K., & Musa, S. N. S. (2021). The mediating role of career decision self-efficacy on the relationship of career emotional intelligence and self-esteem with career adaptability among university students. International Journal of Adolescence and Youth, 26(1), 83-93.

Hartono, RM, & Gunawan, W. (2017). (Relationship Of Job Search Self-Efficacy With Career Adaptability). JU , 8 (2), 78–90.

Imdiati, V. N. (2019). Pengaruh dukungan sosial dan efikasi diri dalam pencarian kerja terhadap adaptabilitas karier pada mahasiswa tingkat akhir (Bachelor's thesis, Fakultas Psikologi UIN Syarif Hidayatullah Jakarta).

Kanar, A., & Bouckenooghe, D. (2021). The role of extracurricular activities in shaping university students' employment self-efficacy perceptions. Career Development International.

Kanfer, R., Kantrowitz, TM, & Wanberg, CR (2001). Job Search And Employment: A Personality-Motivational Analysis And Meta-Analytic Review. Journal Of Applied Psychology , 86 (5), 837–855. Https://Doi.Org/10.1037/0021-9010.86.5.837

Kaplan, Rm, & Saccuzzo, Dp (2009). Psychological Testing: Principles, Applications, And Issues (Ninth Edit). Wadsworth Cengage Learning.

Kim, N. R., & Lee, K. H. (2018). The effect of internal locus of control on career adaptability: The mediating role of career decision-making self-efficacy and occupational engagement. Journal of employment counseling, 55(1), 2-15.

Lin, S., Döngül, E. S., Uygun, S. V., Öztürk, M. B., Huy, D. T. N., & Tuan, P. V. (2022). Exploring the Relationship between Abusive Management, Self-Efficacy and Organizational Performance in the Context of Human–Machine Interaction Technology and Artificial Intelligence with the Effect of Ergonomics. Sustainability, 14(4), 1949.

Pettit, H. (2019). The cruelty of hope: Emotional cultures of precarity in neoliberal Cairo. Environment and Planning D: Society and Space, 37(4), 722-739.

Qureshi, IA, Arshad, KS, & Whitty, M. (2016). Relationship Of Computer Usage And Work Self-Efficacy Of Employees In The Organizations. European Journal Of Business And Management , 8 (4), 2222–2839. Retrieved From Http://Www.Iiste.Org/Journals/Index.Php/EJBM/Article/Viewfile/28633/29395

Salim, R. M. A., & Safitri, S. (2020). Career decision-making attribution and self efficacy: the moderating role of emotional intelligence. Jurnal Psikologi, 19(1), 1-14.

Sheu, H. B., Lent, R. W., Miller, M. J., Penn, L. T., Cusick, M. E., & Truong, N. N. (2018). Sources of self-efficacy and outcome expectations in science, technology, engineering, and mathematics domains: A meta-analysis. Journal of Vocational Behavior, 109, 118-136.

Silvia, P., Maria Luisa, F., Francesco, A., & Michele, V. (2010). Work Self-Efficacy Scale And Search Forwork Self-Efficacy Scale: A Validation Study In Spanish And Italian Cultural Contexts. Revista De Psicología Del Trabajo Y De Las Organizaciones , 26 (3), 201–210. Https://Doi.Org/10.5093/Tr2010v26n3a4

Toropova, A., Myrberg, E., & Johansson, S. (2021). Teacher job satisfaction: the importance of school working conditions and teacher characteristics. Educational review, 73(1), 71-97.

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