Self-regulation, self-evaluation, and self-efficacy: How does its impact on employability?

Muhamad Hasan Abdillah[1], Fatwa Tentama[2], Herlina Siwi Widiana[2], Zurqoni[3]
[1]Department of Community Empowerment, Faculty of Ushuluddin Adab and Da'wah, Sultan Aji Muhammad Idris State Islamic University Samarinda, Samarinda, Indonesia
[2]Department of Psychology, Faculty of Psychology, Universitas Ahmad Dahlan, Yogyakarta, Indonesia
[3]Department of Islamic Education, Faculty of Tarbiyah and Teacher Training, Sultan Aji Muhammad Idris State Islamic University Samarinda, Samarinda, Indonesia

ABSTRACT

This study investigated whether self-regulation, self-evaluation, and self-efficacy can predict students' employability levels, either simultaneously or partially. Researchers used class XII students of Muhammadiyah 1 Bambanglipuro Vocational High School, Indonesia with the criteria of having implemented industrial work practices (N=433) as research subjects. The sample consisted of 168 students obtained randomly by cluster sampling technique. Likert model scale as the main instrument in obtaining empiric data to answer the research hypothesis using multiple regression techniques with the help of the SPSS V.23 program. Based on the results of the analysis, it is known that self-regulation, self-evaluation, and self-efficacy have a very significant effect on the level of employability (F=134.28 and sig.=.000). Partially, each independent variable (self-regulation, self-evaluation, and self-efficacy) also has a very significant effect on employability with statistical values (t) obtained at 11.54, 3.24, 7.99 and sig. level of .000, .001, .000. These findings provide evidence that self-originating factors (self-regulation, self-evaluation, and self-efficacy) are sufficiently capable of increasing employability. Thus, it can be concluded that internal factors are one of the critical factors in predicting the employability of vocational students.

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Corresponding Author:

Muhamad Hasan Abdillah
Department of Community Empowerment, Faculty of Ushuluddin Adab and Da'wah,
Sultan Aji Muhammad Idris State Islamic University
Samarinda, East Kalimantan 75251, Indonesia
Email: m.hasan.abdillah@uinsi.ac.id

1. INTRODUCTION

Educational institutions are expected to contribute to national economic growth, such as vocational high schools (*sekolah menengah kejuruan*/SMK), which prepare graduates to have special knowledge, skills, and competencies for the needs of the world of work [1], [2]. A series of practical vocational activities, theoretical discussions, and industrial practical work experiences outside of school (internships) are believed to make it easier for graduates to find and secure a particular job, as the successful completion of this program leads to a labor market relevant to their profession. This assumption is in line with Bambang Brodjonegoro's Minister of National Development Planning [3] plan to make SMK graduates who can be directly absorbed by the world of work.

Based on the plan, SMK graduates should be able to become the government's mainstay in overcoming the open unemployment rate in Indonesia, but the reality on the ground shows that most SMK graduates are still not absorbed by the world of work. Starting from 2017 to 2019, SMK graduates are still the highest contributor to open unemployment when viewed from the level of education. Data obtained from the Central Statistics Agency (BPS) in August 2019, the open unemployment rate (TPT) for SMK graduates was 7.05 million people or 10.42%, from this data there was an increase from 2018 which only amounted to 7 million people, 7.05 million in 2019 [4]. This is not in line with the initial plan of the SMK goals where SMK graduates were designed to be the government's mainstay in overcoming the open unemployment rate in Indonesia.

According to the head of the cooperative manpower office [5], [6], low employability is one of the main reasons SMK graduates are unable to compete for positions in the labor market. He discovered this condition after meeting with several company managers in Central Java Region, East Java, and Special Region of Yogyakarta. In this literature, we aimed to broaden the understanding of the employability phenomenon in Indonesian cultural settings. We offered internal predictors of employability levels. The first hypothesis of the study is "there is an effect of self-regulation, self-evaluation, and self-efficacy on employability." Through the results of this study, it is hoped that it can become a foothold or basis for further research, the school, and the government to improve the quality of employability of vocational students.

Employability is a set of skills that individuals need to seek sustainable employment [7]. This ability helps individuals identify a variety of alternative career opportunities and a suitable work environment [8]. Individuals tend to be aware of what careers they can get according to their field of expertise, have clear goals to achieve, a willingness to continue to learn, and the ability to make decisions effectively that allow them to minimize job uncertainty or career failure [9]. At a more comprehensive level, individuals can move independently to create jobs and implement their potential to the fullest [10], [11].

Employability is an important part that every individual must have in entering the world of work because employability affects the behavior or efforts of individuals in finding a job, the quality of the job chosen, and the results of the job search. Individuals may be able to get a job, but it may be beyond their skill level, unwanted, and unsustainable or have no career path [9]. Individuals who obtain jobs but with these criteria do not reflect employability. Individuals with employability are individuals who can utilize their knowledge, skills, and understanding in finding work. Individuals can maximize their information and social networks to adapt to various changing situations in the world of work; therefore, individuals who have employability tend to get more satisfying jobs [12], [13].

Meanwhile, the impact of low employability can affect individual confidence and self-esteem on the range of abilities they have [14], [15]. Individuals feel that their abilities are limited and that they lack control over their work-life so that it is very difficult or even impossible for them to compete for specific jobs. Therefore, it is not surprising that low employability is considered a severe problem in the context of the national economy because the resulting impact can lead to unemployment [16]–[18].

Self-regulation is the first internal factor that we propose to influence employability; this refers to the important role of self-regulation in the learning process and individual career development [19]. According to Panari, Tonelli, and Mazzetti [20], self-regulation is an individual's conscious effort to suppress a load that is too strong in order to achieve higher goals. Regulation functions as a control over individual behavior, emotions, and motivation [21], [22]. Individuals with self-regulation tend to be more responsible for their career development. Individuals do not have careers only because of the demands of their parents or the invitation of friends, but rather determine their career concepts based on their skills, abilities, and experiences which allow them to continue their careers later so that individuals can focus on achieving certain goals [23]–[25]. Based on some of the literature, the second hypothesis of the study is "there is an effect of self-regulation on employability."

Furthermore, the second internal factor that we propose influencing employability is self-evaluation. Self-evaluation is an essential skill that individuals need for their future professional career development [26]. According to Bourke and Mentis [27], self-evaluation is a process in which individuals assess their performance against predetermined standard criteria in setting more independent goals and for self-reflection. The self-evaluation process involves two main types of activities (seeking feedback and self-reflection). Feedback is specific information that individuals get to facilitate their learning outcomes and is usually used to inform about their strengths, weaknesses, and learning progress [28]. Self-reflection refers to the process by which individuals are responsible for seeking specific information to describe and evaluate learning outcomes [29], [30]. Individuals need to gather feedback about their quality from various sources which allows them to reflect on the reasons behind their performance [31], [32]. Positive self-evaluation can help develop a sense of internal responsibility for self-learning. This sense of responsibility will provide confidence and motivation to control and direct the efforts needed for higher achievement [33]. These

literatures become our theoretical foundation in constructing the third hypothesis: "there is an effect of self-evaluation on employability."

Finally, we propose self-efficacy as another internal factor that contributes to increasing employability. Self-efficacy will increase individual confidence about the level of self-success when facing certain situations [34], [35]. Self-efficacy is a cognitive mechanism that encourages and influences behavior to achieve the goals it has set [36]. Self-efficacy determines the amount of effort and the level of individual persistence in pursuing goals. The level of self-efficacy will affect how individuals' complete tasks, face challenges and achieve goals [37]. Individuals tend to be more daring to act in the face of difficulties and problems when they believe in their capacity to achieve the desired results [38]; therefore, individuals with high self-efficacy are more ready to face uncertain challenges in the world of work [39]. These literatures form the basis of our theory in compiling the fourth hypothesis, namely "there is an effect of self-efficacy on employability."

2. RESEARCH METHOD
2.1. Participants and procedures
The population in this study were all students of class XII SMK Muhammadiyah 1 Bambanglipuro, Indonesia. There were 433 students with the criteria of having participated in the industrial work practice program (PRAKERIN). The assumption is that students with experience in industrial work have the understanding and skills according to their field of interest that enables them to have better employability. While the sample in this study amounted to 168 students who were determined based on an error rate of 10% referring to the table of Isaac and Michael [40]. The sample selection is made by random cluster sampling.

The steps are: i) The researcher determine the number of clusters of the entire population; and ii) The researcher choose the cluster that will be used as the trial sample and the research sample by draw (to determine the number of clusters selected can use the Isaac and Michael table with an error rate of 1%, 5%, or 10%). There are five clusters in this study, namely: i) Motorcycle engineering class (TSM); ii) Multimedia class (MM); iii) Light vehicle engineering class (TKR); iv) Agricultural products processing engineering (TPHP); and v) Software engineering class (RPL). After the draw for the classes TSM (1, 2, 3, 4, 5), MM (1, 2), TKR (1, 2, 3, 4, 5, 6), TPHP and RPL were selected in two classes as trial samples (TSM 2 and TSM 5) and six classes as research samples (TSM 4, TPHP, MM 1, TKR C, TKR 4, TPHP, and RPL).

2.2. Validity and reliability of research instruments
The main instrument used by researchers in obtaining empirical data on employability, self-regulation, self-evaluation, and self-efficacy is the Likert model scale with four alternative answers: strongly disagree, disagree, agree, and strongly agree. The scale is prepared in the form of Indonesian by the general guidelines for enhanced Indonesian spelling (EYD). The employability scale is the result of a modification from previous research while the scale of self-regulation, self-evaluation, and self-efficacy is compiled by the researcher. The scale was then tested on 59 students to obtain the validity and reliability of the measurement.

The researchers modified the employability scale [41], whose preparation refers to the employability dimensions from Fugate *et al.* [42] (career identity, personal adaptability, social and human capital). The career identity dimension is reflected by the items "I have the skills needed in the world of work" and "I am actively involved in practice at school." The personal adaptability dimension is reflected in the items "I am able to solve every problem in practical work with my ability" and "I am able to think positively even in difficult situations." The dimensions of social and human capital are reflected in the items "I feel that practical experience in school can help get a job" and "I have friends who can help in getting job references." Based on the test results obtained 13 valid items that are ready to be used for research with a Cronbach's alpha coefficient of .83 and a moving difference index from .32 to .77.

Researchers compile the self-regulation scale by referring to the dimensions of self-regulation from Polnariev [43]. This dimension consists of three phases, namely: attention regulation, emotion regulation, and behavior regulation. The dimension of attention regulation is reflected by the items "I pay attention to the teacher's explanation during the lesson" and "I refuse the invitation to play while studying." The dimension of emotion regulation is reflected by the items "I dare to take every risk" and "I never give up in facing every challenge." The dimension of behavior regulation is reflected by the items "I re-corrected the assignment before it was submitted" and "I have a discussion in making a decision." Based on the test results obtained 14 valid items that are ready to be used for research with a Cronbach's alpha coefficient of .88 and a moving difference index from .38 to .66. The basis for compiling the researcher's self-evaluation scale refers to the dimensions of self-evaluation from Gecas [44], [45], which consists of self-power and self-worth. The self-power dimension is reflected in the items "I contribute to group assignments" and "I help friends learn to understand the subject matter." The self-worth dimension is reflected in the items "I respect other people's opinions" and "I obey school rules." Based on the test results obtained 10 valid items that are ready to be used for research with a Cronbach's alpha coefficient of .80 and a moving difference index from .32 to .69.

The self-efficacy scale was compiled by the researcher himself concerning the aspects of self-efficacy from Bandura [46]. These aspects consist of magnitude, strength, and generality. The aspect of magnitude is reflected in the items "I am able to do the assignment given by the teacher" and "I am able to follow vocational practice." The strength aspect is reflected in the items "I like the assignment the teacher gives me" and "I am passionate about taking daily tests." The generality aspect is reflected in the items "The experience of failure increases my enthusiasm for learning" and "I believe I can get better results the next time." Based on the test results obtained 15 valid items that are ready to be used for research with a Cronbach's alpha coefficient of .86 and a moving difference index from .35 to .71.

2.3. Data analysis

The data analysis used in this study is multiple linear regression with the SPSS 26 program. This technique is one of the analyzes in parametric statistics which require the fulfilment of assumptions (normality, linearity, and multicollinearity) before testing the hypothesis. The purpose of the researchers choosing this technique was to test whether self-regulation, self-evaluation, and self-efficacy affect the level of student employability.

3. RESULTS AND DISCUSSION
3.1. Classic assumption test
3.1.1. Normality test

The normality test aims to determine whether the sample used in the study is normally distributed (representative). We used the Kolmogorov-Smirnov Test (KS-Z) technique in testing for normality with the data criteria being said to be expected if $p > .05$. From the results of the residual normality test, the Kolmogorov-Smirnov Z score was 1.15 with a significance level of .144 $p > .05$, which means that the research sample was able to represent the population. The results of the normality test can be seen in Table 1.

Table 1. Residual normality test

	Kolmogorov-Smirnov Z	Sig.	Interpretation
Unstandardized residual	1.15	.144	Normal

3.1.2. Linearity test

Linearity test aims to see whether there is a linear line connecting the values of the independent variable with the values of the dependent variable. We use the F Linearity rule in linearity testing; in this rule, the data is said to be linear when $p < .05$. From the results of the linearity test between self-regulation with employability (F Linearity 235.49), self-evaluation with employability (F Linearity 112.64), and self-efficacy with employability (F Linearity 34.48), the significance level of all variables is .000 $p < .05$. This means that each independent variable is connected linearly with the dependent variable. The linearity test results can be seen in Table 2.

Table 2. Linearity test

Variable	F Linearity	Sig.	Interpretation
Self-regulation with employability	235.49	.000	Linear
Self-evaluation with employability	112.64	.000	Linear
Self-efficacy with employability	34.48	.000	Linear

3.1.3. Multicollinearity test

The purpose of multicollinearity testing is to ensure that the independent variables do not have the same function. According to statistical rules, the research data is un-multicollinear if the tolerance value > .1 and VIF < 10. From the multicollinearity test results on self-regulation, self-evaluation and self-efficacy, the Tolerance value of each variable is .556, .557, and .999, while VIF values obtained were 1.79, 1.80, and 1.00. Thus, it can be said that in each independent variable, multicollinearity does not occur. The results of the multicollinearity test analysis can be seen in Table 3.

Table 3. Multicollinearity test

Variable	Tolerance	VIF	Interpretation
Self-regulation	.556	1.79	There is no multicollinearity
Self-evaluation	.557	1.80	There is no multicollinearity
Self-efficacy	.999	1.00	There is no multicollinearity

3.2. Hypothesis testing
3.2.1. Major hypothesis

Based on the results of multiple regression analysis, it was obtained that the F value of self-regulation, self-evaluation, and self-efficacy toward employability was 134.28 with a significance level of .000 p<.01. This means that there is a very significant influence on self-regulation, self-evaluation, and self-efficacy toward employability with a contribution (R Square) generated by 71.1%. The results of multiple regression analysis can be seen in Table 4.

Table 4. Multiple regression analysis

Variable	F	R Square	Sig.	Interpretation
Self-regulation, self-evaluation, and self-efficacy toward employability	134.28	.711	.000	There is a very significant effect

3.2.2. Minor hypothesis

Based on the results of partial correlation analysis, it was obtained that the t value on self-regulation on employability, self-evaluation on employability, and self-efficacy on employability were 11.54, 3.24, and 7.99 with a significance level of .000, .001, and .000. This shows that partially each independent variable has a very significant effect on employability. The results of the partial correlation analysis can be seen in Table 5.

Table 5. Partial correlation analysis

Variable	Partial	Sig.	Interpretation
Self-regulation with employability	1.54	.000	There is a very significant positive effect
Self-evaluation with employability	.24	.000	There is a very significant positive effect
Self-efficacy with employability	.99	.000	There is a very significant positive effect

3.2.3. Coefficient of determination

The formula used to determine the contribution of each independent variable to employability is SE=Standardized Coefficients Beta*Zero Order*100%. Based on this formula, the contribution of self-regulation to employability is 49.5%, the contribution of self-evaluation to employability is 11%, and the contribution of self-efficacy to employability is 10.6%. From this acquisition, it is known that self-regulation is an independent variable that has a more dominant contribution to employability. Meanwhile, self-efficacy has the lowest contribution to employability. The results of calculating the contribution of each independent variable are can be seen in Table 6.

Table 6. Coefficient of determination

Variable	Beta	Zero order	%	Interpretation
Self-regulation	.649	.763	100 %	49.5%
Self-evaluation	.182	.603	100 %	11%
Self-efficacy	.336	.314	100 %	10.6%

Based on the results of multiple regression analysis, it is known that all the hypotheses proposed by the researcher are proven. First, there is a very significant effect of self-regulation, self-evaluation, and self-efficacy on employability. Simultaneously, these three independent variables can predict employability, meaning that the higher the self-regulation, self-evaluation, and self-efficacy, the higher the student's employability level. Regarding novelty, researchers have not found research similar to this study, starting from the research subject and location to the proposed independent variables. Thus, this study is the only literature that discusses how self-regulation, self-assessment, and self-efficacy can affect the employability of vocational students.

Second, there is a very significant effect of self-regulation on employability. Self-regulation acts as a regulator of individual cognition and behavior during the job search process. Individuals will devote their time and effort in generating job opportunities. The process begins with the individual setting job goals that he wants to achieve in the future; then the individual takes actions that lead to getting the job, such as seeking information to get a job, attending training to improve job skills, discussions with professionals who understand the characteristics of the desired job. This finding is supported by several researchers who also believe in the importance of self-regulation in increasing employability [35], [47].

According to Qenani, MacDougall, and Sexton [48], self-regulation encourages individuals to participate in many activities that they have independently determined to achieve better employability levels. In this phase, individuals will use various ways to design or prepare for their careers, such as: i) Identifying important information; ii) Summarizing important information; iii) Organizing information; and iv) Applying their knowledge to achieve target targets, and developing social skills that will influence the individual's adaptation process in looking for work [49], [50]. Thus, it can be said that when students try to meet the skill requirements related to the learning process to improve the workability of graduates, it is likely that students will have high work readiness [51]. These findings and previous literature provide evidence that self-regulation is an essential factor of employability.

Third, there is a very significant effect of self-evaluation on employability. Self-evaluation functions as a process of positive self-evaluation of a series of strengths, self-potential, and work readiness (employability). This ability allows individuals to assess themselves as being able to overcome various obstacles during their job search with better problem-solving strategies. Individuals assess themselves as being able to adapt to the various demands of the work world, never give up in the face of difficulties in finding work, and believe that their efforts will pay off (get a job) in the future. This finding aligns with the researchers' third hypothesis and previous literature findings.

Such as the findings of Onyishi *et al.* [52], who reported that individuals with lively self-evaluation show high levels of employability and job-seeking behavior intensity after graduation. Individuals consider themselves to have skills that are needed by the labor market, making it easier for them to be hired and find jobs [53]. According to Lo Presti, Magrin, and Ingusci [54], individuals who know their strengths and potential tend to more easily apply their knowledge to design careers, job search strategies, and adapt to the demands of the world of work [55]. This ability is a unique advantage in finding and getting a job. Thus, it can be said that self-evaluation is an essential factor of employability, where the level of self-evaluation predicts the level of employability.

Lastly, there is an effect of self-efficacy on employability. Self-efficacy is an essential factor in increasing individual beliefs about the possibility of getting linear jobs (employability). This ability facilitates individuals to apply their knowledge and skills related to the process of setting career goals, job search behavior, career decision making, and career development. Therefore, individuals with high self-efficacy tend to show mastery in workability, thereby strengthening their belief that they can get a job in certain situations. This finding is in line with the results of a study reported by Puertos [56], that individuals with high self-efficacy are more likely to achieve job goals than individuals who have low self-efficacy.

Apart from predicting job search results, self-efficacy also affects individual readiness to enter or look for work. Readiness refers to the readiness of individuals to be able to adapt to various demands and changes in the world of work [57]–[59]. Zhao, Peng, and Liu [60] in their study proved that "self-efficacy is a significant predictor of employability." Based on the support of some of the previous literature, it can be said that self-efficacy is one of the internal factors that affect the employability level; this is in line with the fourth hypothesis that the researchers propose.

The implications of this literature provide an understanding of how the effect of self-regulation, self-evaluation, and self-efficacy in increasing employability in vocational high school students, besides that it can also be a reference for further research relevant to research variables, especially employability research in the realm of vocational high schools. Furthermore, for educational institutions, the practical information produced by this literature can be used as material for school considerations in compiling local content curricula to develop student's employability, such as providing training or seminars that can improve students' self-regulation, self-evaluation, and self-efficacy abilities.

The limitation of this research is that research data collection cannot carry out face-to-face or offline because, in the conditions of the COVID-19 pandemic, all teaching and learning activities in Indonesia require it to carry out in one network. This condition makes researchers unable to ascertain whether students understand the items the researcher means. The impact is believed to influence some of the results obtained, such as the difference in the contribution of each independent variable which is too big for employability.

4.   CONCLUSION

The results of this study prove that the independent variables proposed by the researcher (self-regulation, self-evaluation, and self-efficacy) are sufficient to predict students' employability levels, particularly self-regulation which has the most significant useful contribution. Thus, practitioners can consider the variables of this research in preparing training modules to develop the employability of vocational students. Also, our literature focuses only on internal factors; thus, further research may focus on investigating external factors as predictors of employability. Future researchers can also consider the results of this study as a reference in conducting replication research, whether at the same or different locations.

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BIOGRAPHIES OF AUTHORS

Muhamad Hasan Abdillah ⓘ 🄶 SC ⮡ is a young lecturer born in 1995 whom the Ministry of Religion newly appointed in 2022 at the Sultan Aji Muhammad Idris State Islamic University Samarinda. He is a graduate of the Master of Psychological Science from Ahmad Dahlan University, Yogyakarta in 2021. His research focus lies on the themes of education and social psychology. He can be contacted at email: m.hasan.abdillah@uinsi.ac.id.

Fatwa Tentama ⓘ 🄶 SC ⮡ was born on October 1, 1984, in Yogyakarta. Working as a lecturer at the Faculty of Psychology, Ahmad Dahlan University, Yogyakarta. Scientific focus and research on industrial psychology and educational psychology. He can be contacted at email: fatwa.tentama@psy.uad.ac.id.

Herlina Siwi Widiana ⓘ 🄶 SC ⮡ is a senior lecturer in the Faculty of Psychology, Universitas Ahmad Dahlan. Herlina graduated from PhD program in the School of Psychology at Monash University, Australia. Herlina is the editor-in-chief of Humanitas Indonesian Psychological Journal and she published articles in national and international journals. He can be contacted at email: herlina.widiana@psy.uad.ac.id.

Zurqoni ⓘ 🄶 SC ⮡ is a Professor of Research and Education Evaluation at Sultan Aji Muhammad Idris State Islamic University Samarinda. He completed his Doctoral Program at Yogyakarta State University in 2009 and was awarded a professor in 2019. His research interests are character education and educational evaluation. He can be contacted at email: zurqoni@uinsi.ac.id.