The Influence of Self-efficacy and Self-regulation on Motivation and Learning Achievement

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Abstract. This ex post facto study aims at examining the partial and simultaneous influence of self-efficacy and self-regulation on both learning achievement and learning motivation. This research was conducted at Universitas Muhammadiyah Makassar with total population were 960 persons and the sample were 280 persons that obtained through a probability sampling technique with equalize cluster random sampling type. Collecting data was through a self-efficacy questionnaire, self-regulation, and motivation, as well as learning outcomes tests. Data analysis was carried out by descriptive analysis and inferential analysis through Structural Equation Modeling (SEM). The results of the study found a direct influence of self-efficacy and self-regulation on learning motivation and learning achievement as the intervening variables that mediated both the self-efficacy and self-regulation on learning achievement. Thus, in order to maximize further the role of self-efficacy and self-regulation in improving learning achievement on both these variables should be accompanied by an improvement in the student's learning motivation and achievement.

Keywords: Learning achievement; Learning motivation Self-efficacy; Self-Regulation; and SEM

1 Introduction

One of the benchmarks of student mastery in learning can be seen from their learning achievement as stated in [1] explained that achievement is a real ability as a result of the interaction between various factors in learning, then the same opinion is expressed by Gagne that achievement describes the mastery of learners of certain learning materials can be measured by learning outcomes and made in the form of scores [2]. Thus, to determine the level of students' mastery toward the learning materials can be measured from their learning achievement through their test outcomes.

One of factors that influence the students' learning achievement is self-efficacy. It is a correlation to a person's belief in their ability to produce a target to be achieved [3]. Self-efficacy is a self-assessment that can support a person to successfully complete certain tasks at a certain academic level in school or college which in turn can be the reason for their success or failure in future mathematical activities [4]. Self-efficacy is able to influence one's efforts to complete tasks and increase self-confidence in learning [5]. In the context of learning, self-efficacy can affect learning outcomes [6][7]. Furthermore, in terms of measurement, self-efficacy lies in three indicators, namely: magnitude, strength, and generality [8].

Students with high self-efficacy have a strong tendency and drive to study mathematics [9]. A person who has high self-efficacy believes that they can overcome obstacles or challenges based on increased self-knowledge and skills [10]. Self-efficacy facilitates the improvement of student performance in mathematics and increases persistence when working on difficult tasks [11]. And self-efficacy as affective factors and cognitive factors can play an important role in solving mathematical problems [12].

The results of previous studies have found that self-efficacy can influence mathematics learning outcomes [13][14] [15] [16] [17] [18] [19]. Other relevant research was conducted by [20] that self-efficacy has a significant prediction of mathematics learning achievement; [21] with the research findings that the better the students' self-efficacy, the higher their learning outcomes; [22] that self-efficacy has a positive direct effect on learning achievement; and self-efficacy can be promoted to reduce anxiety, and also enable students to practice skills in peer groups, as well as positively correlated with academic performance [23].

Another factor that contributes to the achievement of learning outcomes is self-regulation as developed in social and cognitive learning theory that in order to achieve effective independent learning, a student must be able to manage himself in learning activities through self-regulated learning [24]. Learning with self-regulation is the ability to learn to acquire academic skills which is carried out in steps such as setting goals, developing strategies and learning schedules, as well as monitoring on an ongoing basis the learning outcomes [25]. Learning with self-regulation is a learning strategy that is carried out by setting goals, planning a study schedule, evaluating cognitive, self-motivating, and taking actions that lead to the achievement of goals [26] [27].

P. R. Pintrich and E. V. De Groot [28] explained that learning with self-regulation is measured by three indicators, namely: a) the ability of students to apply metacognitive strategies to plan, monitor, and modify their cognition; b) the ability of students to control themselves in completing various tasks, including anticipating external environmental disturbances in order to stay focused on the task; and c) the ability to set cognitive strategies in learning, remembering, and understanding the subject matter. Self-regulation refers to learning that results from students' thoughts and behavior which are systematically oriented towards achieving learning goals [29].

Furthermore, self-regulation consists of a series of actions that assist students in directing their learning process such as selecting and using various cognitive strategies for memorizing, learning, thinking and problem solving, managing anxiety arising from the need for achievement and success, planning learning times to complete tasks efficiently with the right time, and strive to build an environment that facilitates the completion of learning assignments [30]. Individuals who have self-regulation can be involved in various optimal processes of emotional arousal, behavior, cognitive, and motivation [31] [32].

Several research results have examined self-regulation and its relationship and its impact on motivation and learning outcomes, among others [33][34][35][36]. The same findings explain that students who have attended self-regulated learning training have higher academic performance than groups who have not attended the training [37]; self-regulation is significantly related to academic achievement [38]; self-regulation is beneficial for student learning and has a positive effect on learning outcomes [39]; self-regulation is positively related to social competence, school involvement, and academic performance [40]; and self-regulation is a dominant predictor of reading comprehension and problem solving [41].

Likewise, the results of research by [42] concluded that self-regulation is a determining factor in influencing student academic achievement and students' mathematical reasoning abilities [33]; academic achievement related to self-regulation [43]; confirm that self-regulation

plays a stronger role in mathematic [44]; self-regulation can show an increase in the level of student independent learning and affect learning outcomes [45]; and self-regulation is positively related to affective attitudes, belief expectations, and learning outcomes [46]. Those previous research results are the clear supportive data. Self-regulation is having a big role to enable the students to achieve their goals and help the teachers to reach the teaching outcome.

Another factor that influences student achievement comes from internal factors, one of which is learning motivation [47]. Motivation to learn as a power motivation, driving force, or a means of building a strong desire in students to learn actively, creatively, effectively, innovatively, and fun so that there is a change in cognitive, affective, and psychomotor behavior towards a more positive one [48]. Motivation as an internal drive-in behavior change [49], motivation as a driving force, encourage learning behavior, build learning systems, and improve learning outcomes [50].

Students who have high motivation will be seen through their actions or activities in achieving learning goals or objectives. Student motivation has a great opportunity to encourage them to increase their competence and compete to achieve maximum results in learning [51]. High learning motivation encourages students to carry out learning activities optimally [52]. Motivation is a driving force in learning activities, because learning is impossible without motivation, students who are motivated to learn realize and understand their goals and are stimulated to learn [53] [54] [55] [56] [53] [53]. Motivation to learn can be measured by the duration of learning time, positive attitudes towards learning, and loyalty to learning [48]; the desire to succeed, the need for learning, the existence of future aspirations [57]; persevering, tenacious, high interest, desire to solve problems, and future orientation [58].

Several previous research results provide empirical evidence about the relationship and influence of learning motivation on mathematics learning achievement [59] [60] with the finding that there is a positive relationship between learning motivation and learning outcomes. Motivation to learn mathematics and student mathematics achievement are two interdependent things [61]. Previous existing studies have also shown that motivation is significantly and positively correlated with academic achievement [62] [63] [56]. The results of other studies which explain that learning motivation has a sensitive to learning outcomes expressed by [64] [65] [66] [67] [68] [69] [70].

Based on the problems previously described, self-efficacy, self-regulation, and learning motivation are very important variables for achieving student academic goals. Until now, there have been studies examining this on students in primary and secondary education, but there is still limited research that has considered the dynamic relationship of these variables to students, besides that, several previous studies only tested the direct effect of each variable on learning outcomes. Therefore, to address this gap, this study was conducted on students using a mixed study method to examine the effect of self-efficacy and self-regulation on learning achievement either directly or through motivation variables.

2 Method

This research was an ex-post-facto correlational research conducted at Universitas Muhammadiyah Makassar. The population in this study were students of Management Study Program and Accounting Study Program, Faculty of Economics and Business with a total of 960 students that divided into 20 classes. Sampling was done by using probability sampling technique with group sampling of equal size cluster random sampling, namely the determination of the sample was done by not selecting individuals but groups so that the sample 280 people

were obtained which were divided into 8 classes. The reasons for determining a sample of 8 classes with the consideration that they were considered representative of the population.

Data collection through a 1-5 scale questionnaire with the following details: self-efficacy variable consisted of 6 question items developed from 3 indicators, namely metacognitive strategies, self-control abilities, and cognitive strategies. The self-regulation variable consisted of 7 question items developed from 4 indicators, namely magnitude, strength, generality, and emotional state. The motivation variable consisted of 7 question items from 7 indicators, namely the desire to succeed, self-motivation, expectation, self-desire, commitment, initiative, and optimism. The questionnaire instrument was developed by the researcher in stages, namely the preparation of the instrument which was then validated by two experts and then tested on 70 students. While the learning achievement variable was measured by the test instrument for learning outcomes.

The collected data was then analyzed using descriptive analysis to describe the level of self-efficacy, self-regulation, and motivation variables using the categories [71] as stated in Table 1.

Table 1. Scoring variable category

Score	Category
1,00 – 1,80	Low
1,81 – 2,60	Less
2,61 – 3,40	Fair
3,41 – 4,20	High
4,21 – 5,00	Very High

As for the level of learning outcomes using [72] category, as the following Table 2.

Table 2. Learning outcome category

Score	Achievement
> 87	Very high
75 – 86	High
63 – 74	Fair
50 – 62	Low
< 50	Very low

Furthermore, to test the impact of self-efficacy and self-regulation on learning achievement, either directly or through motivational variables, it was carried out by inferential analysis through Structural Equation Modeling (SEM) with the condition that fit with the goodness-of-fit (GOF) criteria with the AMOS program to test the submitted hypothesis.

3 Research Findings

3.1 Respondent characteristic

This study involved 280 students with the following characteristics.

Table 3. Respondent characteristic

Characteristic	Category	Frequency	Percentage
Study Program	Accounting	173	48,93
	Management	143	51,07
Gender	Male	94	33,57
	Femalee	186	66,43

Age	19 years	19	6,79
	20 years	243	86,79
	21 years	18	6,43

Based on these data, it can be illustrated that the respondents in this study were dominated by women with the most dominant age around 20 years

3.2 Descriptive analysis results

Descriptive analysis of the research results is described in Table 4.

Table 4. Results of descriptive analysis of each variable

Variable	Mean	Category
Self Efficacy (X1)	3.95	High
Self Regulation (X2)	3.89	High
Motivation (Y1)	4.25	Very high
Learning Achievement (Y2)	85	High

The results of the descriptive analysis explained that the three variables, namely self-efficacy, self-regulation, and learning achievement is in the high category, while the motivation variable is in the very high category. Furthermore, inferential analysis using SEM with confirmatory factor analysis (CFA) through the AMOS 21.0 program [73]. The criteria used are model fit criteria consisting of: 1) positive degree of freedom 2) Chi-square ($p \geq 0.05$) and ($p = 0.10$) (Hair et al., 2006), 3) incremental fit at > 0.90, namely low GFI, AGFI, TLI, CMIN, DF, and CFI, and 4). The test steps include confirmatory factor analysis (CFA), early-stage SEM test, and final stage SEM test.

3.3 Initial structural equation models

The initial structural equation model is shown in Figure 1.
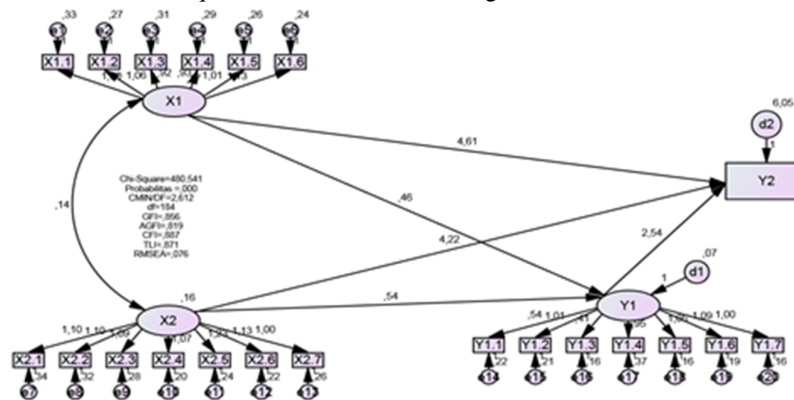
Fig 1. Initial structural equation models

3.4 Initial structural equation models
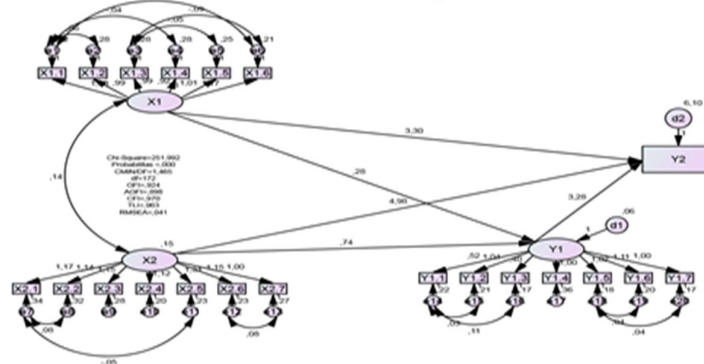
The final structural equation model is shown in Figure 2

Fig 2. The final structural equation model

3.5 Result of fit test of structural equation model

The results of the structural equation model fit test (goodness of fit test) are as shown in Table 5.

Table 5. The results of the evaluation of the fit model test

Variable	Value Limit	Result	Conclusion
X2 Chi-square	≤ 236.025	251.992	-
Significance probability	≥ 0.005	0.005	Fit
GFI	≥ 0.90	0.924	Fit
AGFI	≥ 0.90	0.898	Marginal Fit
CFI	≥ 0.90	0.970	Fit
TLI	≥ 0.90	0.963	Fit
NFI	≥ 0.90	0.911	Fit
RMSEA	≤ 0.08	0.041	Fit

Based on the research model testing, it is found that all cut-off values meet the criteria for the fit model well so that the model can be accepted and can be continued for hypothesis testing.

3.6 Hypothesis test

Hypothesis test is described in table 6.

Table 6. Hypothesis testing

Variable Correlation	Estimate	Standardized	SE	CR	P	Information
Y1 <- X2	0.741	0.614	0.173	4.296	***	Be significant
Y1 <- X1	0.280	0.258	0.141	1.984	0.047	Be significant
Y2 <- X2	4.981	0.369	1.572	3.168	0.002	Be significant

| Y2 <- X1 | 3.295 | 0.272 | 1.138 | 2.896 | 0.004 | Be significant |
| Y2 <- Y1 | 3.277 | 0.293 | 0.986 | 3.325 | *** | Be significant |

From the results of hypothesis test, the following structural equation is obtained:

$$Y1 = 0.258X1 + 0.614X2 + 0.287$$
$$Y2 = 0.272X1 + 0.369X2 + 0.293Y1 + 0.230$$

The results of hypothesis test are described below.

a. The estimation result = 0.258 (positive) and the p value = 0.047 $< \gamma_{11}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant influence of self-efficacy (X1) on learning motivation (Y1), thus the first hypothesis, namely "Self-efficacy affects learning motivation" is accepted. The big influence of self-efficacy on learning motivation is = 66% (obtained from the value (0.258^2))

b. The estimation result = 0.272 (positive) and the p value = 0.004 $< \gamma_{21}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant influence of self-efficacy (X1) on learning achievement (Y2), thus the second hypothesis, namely "Self-efficacy affects learning achievement" is accepted. The big influence of self-efficacy on learning achievement = 7.40% (obtained from the value = (0.272^2)).

c. The estimation result = 0.076 (positive) and the p value (single test) = 0.044 $< \beta_{21}\gamma_{11}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant effect of self-efficacy (X1) through learning motivation (Y1) on learning achievement (Y2), thus the third hypothesis, namely "Self-efficacy affects learning achievement through learning motivation" is accepted. The magnitude of self-efficacy influence on learning achievement through learning motivation = 34.8% (obtained from the value = 0.272 + (0.258 x 0.293) = 0.348 x 100).

d. The estimation result = 0.614 (positive) and the p value = 0.0000 $< \gamma_{12}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant influence of self-regulation (X2) on learning motivation (Y1), thus the fourth hypothesis, namely "Self-regulation affects learning motivation" is accepted. The large effect of self-regulation on learning motivation = 37.70% (obtained from the value = (0.614^2))

e. The estimation result = 0.369 (positive) and the p value = 0.000 $< \gamma_{22}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant effect of self-regulation (X2) on learning achievement (Y2), thus the fifth hypothesis, namely "Self-regulation affects learning achievement" is accepted. The big influence of self-regulation on learning achievement = 13.62% (obtained from the value = (0.369^2)).

f. The estimation result = 0.180 (positive) and the p value (single test) = 0.004 $< \beta_{21}\gamma_{12}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant effect of self-regulation (X2) through learning motivation (Y1) on learning achievement (Y2), thus the sixth hypothesis, namely "Self-regulation affects learning achievement through learning motivation" is accepted. The large effect of self-regulation (X2) on learning achievement through learning motivation = 54.9% (obtained from the value = 0.369 + (0.614 x 0.293) = 0.549 x 100).

g. The estimation result = 0.293 (positive) and the p value = 0.049 $< \beta_{21}\alpha = 0.05$ (significant) indicates that H0 is rejected. So, there is a positive and significant influence of learning

motivation (Y1) on learning achievement (Y2), thus the seventh hypothesis, namely "learning motivation affects learning achievement" is accepted. The big influence of learning motivation on learning achievement = 8.58% (obtained from the value = (0.293^2)).

h. The estimation results show that $\gamma_{11}\gamma_{22}$ = 0.258 x 0.614 = 0.158 (positive) and the p-value = 0.047 x 0.000 = 0, 000 < α= 0.05 (significant), this means that Self Efficacy (X1) and self-regulation (X2) together have a positive and significant effect on learning motivation (Y1), thus the eighth hypothesis is "Self-efficacy and self-regulation. Both of affect the motivation to learn is "accepted". The big influence of self-efficacy and self-regulation together on learning motivation = 71.3% (obtained from the value = (0.713 x 100).

i. The estimation results show that $\beta_{21}\gamma_{21}\gamma_{22}$ = 0.293 x 0.272 x 0.369 = 0.029 (positive) and the p value = 0.004 x 0.002 x 0.000 = 0.000 < α= 0.05 (significant), this means self-efficacy (X1), self-regulation (X2), and learning motivation (Y1) together have a positive and significant effect on learning outcomes (Y2), thus the ninth hypothesis is "Self-efficacy (X1), self-regulation (X2), and motivation to learn (Y1) together have an effect on learning outcomes." The big influence of self-efficacy, self-regulation, and learning motivation together on learning achievement = 77% (obtained from the value = (0.770 x 100).

Furthermore, the direct and indirect effects of each variable are described in Table 7 below.

Table 7. Direct influence and indirect influence

Hypothesis	Dependent Variable	Variable Independent	Influence			P / Sobel's test	Decision
			Live	Indirect	Total		
H1	Learning motivation (Y1)	Self efficacy (X1)	0.258	-	0.258	0.047	Be accepted
H2	Learning achievement (Y2)	Self efficacy (X1)	0.272	-	0.272	0.004	Be accepted
H3	Learning achievement (Y2)	Self efficacy (X1)	0.272	0.076	0.348	0.044	Be accepted
H4	Learning motivation (Y1)	Self Regulation (X2)	0.614	-	0.614	0.000	Be accepted
H5	Learning achievement (Y2)	Self regulation (X2)	0.369	-	0.369	0.000	Be accepted
H6	Learning achievement (Y2)	Self regulation (X2)	0.369	0.180	0.549	0.004	Be accepted
H7	Learning achievement (Y2)	Learning motivation (Y1)	0.293	-	0.293	0.049	Be accepted
H8	Learning motivation (Y1)	Self-efficacy (X1) and Self-regulation (X2)	0.713	-	0.713	0,000	Be accepted
H9	Learning achievement (Y2)	Self-efficacy (X1), Self-regulation (X2), and Learning motivation (Y1)	0.770	-	0.770	0.000	Be accepted

4 Discussion

At this discussion point, several research findings will be described as follows:

4.1 Self-efficacy has a significant influence on learning motivation and student learning outcomes

In research, self-efficacy is measured by three indicators, namely magnitude, strength, and generality, which are very important for students to form self-confidence in achieving goals.

Based on the results of the study, it is found that self-efficacy had a significant influence on learning motivation, this means that the higher the student's self-efficacy, the student's learning motivation increase. This means that there is an agreement between the hypothesis and the data obtained as well as strengthening the view [62] that self-efficacy is a motivational construct that is clearly related to other motivational constructs, including personal interests and values, self-confidence and interests. Self-efficacy is positively related to adaptive motivational beliefs, such as interests, values, and utility, and affective reactions are positive and negatively related to negative emotions. Another supporting theory put forward by Bandura is that self-efficacy is a belief in the ability and ability of a student to achieve and complete learning tasks within the specified time [74].

The results of this study are in line with the results of the study [75] that self-efficacy has emerged as a very effective predictor of student motivation and learning; [76] that self-efficacy has a positive effect and shows a strong role in the components of learning motivation; and [77] that there is a significant relationship between learning motivation and self-efficacy. The results of other studies that are in line with the findings of this study are [78] that low self-efficacy causes motivation problems. If students believe they cannot succeed at a particular task (low self-efficacy), they will try it superficially, give up quickly, or avoid and reject it. Likewise the findings [79] [80] [81] [82] that there is a correlation between self-efficacy on learning motivation.

Furthermore, self-efficacy is also found to be able to influence learning achievement, this means that the higher the student's self-efficacy, the student's learning achievement will increase. This finding means that self-efficacy can influence a person's efforts to complete his tasks and increase self-confidence in learning as stated, [5]. In the context of learning, self-efficacy can affect learning outcomes [6] [7].

The results of this study are also in line with several previous studies, namely [83] that high efficacy is closely related to better performance in tasks. The same thing was found by [84] that students with high self-efficacy have high critical thinking skills; Students with moderate self-efficacy have moderate critical thinking skills and students with low self-efficacy have low critical thinking skills.

Likewise, the results of research which explain that self-efficacy can have a significant effect on student learning outcomes [85]. A person with strong self-efficacy will increase his personal achievement and well-being in various situations, so that students who have high self-efficacy tend to have high achievement, the higher the level of self-efficacy of students will further encourage these students to get optimal learning outcomes [86].

Self-efficacy can play a supportive and protective role, by increasing the positive effects and reducing the negative effects of learning goals [87]. The results of other studies that support the research findings, namely [88] [89] [90] [91] [92] [93] [94] [95] that when self-efficacy is achieved it will have an impact on improving learning outcomes, one's self-efficacy for success is the strongest predictor of academic success, and to increase student success, focus on increasing student self-efficacy which will lead to higher achievement.

4.2 Self-regulation has a significant influence on learning motivation and learning achievement
Self-regulation in this study is measured by three indicators, namely the ability to apply metacognitive strategies; ability to control efforts to complete various tasks, and cognitive strategies. The results of this study have found that regulation has a significant positive effect on learning motivation, this means that the better the self-regulation of students, the higher the student's motivation will be. This finding supports this view [26] [27] that learning with self-regulation is a student learning strategy in planning, then controlling, and evaluating cognitive,

motivation, and student behavior in learning. Likewise, it is explained in educational psychology that self-regulation has an important effect on students' cognition, metacognition, motivation, and behavior [96].

The results of this study are in line with the results of the study [97] that self-regulation learning has a significant effect on students' academic motivation. Furthermore, student motivation after being provided with guidance services with self-regulation techniques can increase student learning motivation, this model is effective in increasing student motivation, [98]. Other supporting findings were found by [99][100][101] [59] that there is a strong relationship and influence between self-regulation and learning motivation.

Furthermore, the results of this study also found that self-regulation has a direct effect on learning outcomes, which means that students who have good self-regulation will have an impact on the good learning achievement of these students, and the higher self-regulation students have, the student learning outcomes will be. the higher it is. The results of this study are in line with the results of the study [102] with the conclusion that students who have high self-regulated learning tend to have high motivation and achievement, and vice versa, students who have low self-regulated learning tend to have low learning achievement. The results of other studies that have examined self-regulation and its impact on learning outcomes are relevant to the findings of this study, among others [37][33] [34] [35] [36][38] [39] [40] [41].

4.3 Motivation has a significant effect on learning achievement and is able to mediate self-efficacy and self-regulation in increasing learning achievement

Motivation to learn in this study is measured by seven indicators, namely desire and desire to succeed, self-drive and needs, future aspirations, independent learning because of one's own desires, commitment, initiative, and optimistic attitude in learning. The results of this study found that motivation has a significant influence on learning achievement, which means that the higher the motivation of the students, the higher the student's learning outcomes.

The findings of this study explain the correlation between the hypothesis and existing data and at the same time strengthen the view [50] [48] that motivation is the driving force, encourages learning behavior, builds learning systems, and improves learning outcomes. Students who have high motivation will be seen through their actions or activities in achieving learning goals or objectives. Student motivation has a great opportunity to encourage them to increase their competence and compete to achieve maximum results in learning [51]. High learning motivation encourages students to carry out learning activities optimally [52].

Several previous research results are relevant to the findings of this study and have become empirical evidence about the relationship and influence of learning motivation on the students' learning achievement, among others [64][62][66][67] [68][59][60][56][70][103]. Furthermore, the results of this study found that learning motivation is appropriate as an intervening variable that mediated the relationship between self-efficacy and learning achievement. This means that self-efficacy will have a much greater impact on student achievement if self-efficacy is accompanied by learning motivation. These findings support this opinion [104] argues that learning motivation is necessary because it directly influences learners' perceptions of learning effectiveness and even strengthens learning behavior, thus playing a role in strengthening themselves in the independent learning process.

Although the results of the study which explain that learning motivation is capable as an intervening variable between self-efficacy and learning achievement are still relatively few, there have been those who have found it such as [105]. Likewise, in relation to the self-regulation variable, where the results of the study are able to explain that learning motivation is appropriate as an intervening variable that is able to mediate the relationship between self-

regulation on learning achievement. These findings can be explained that self-regulation will have a much greater effect on student achievement if self-regulation is accompanied by learning motivation. So that in this study, the variable of motivation as variable has the greatest impact on student achievement, because learning motivation can directly influence learning achievement and is able to mediate the variables of self-efficacy and self-regulation in increasing student learning achievement.

In the end, the results of this study as a whole can be illustrated that the variables of self-efficacy and self-regulation can simultaneously increase learning motivation with an effect of (71.3%), the same thing can also be explained that self-efficacy, self-regulation, and learning motivation simultaneously able to increase learning achievement with an influence of 77%.

4 Conclusion

The results of this study explain well the direct influence of the variable self-efficacy on learning motivation and learning achievement as well as explain that the learning motivation variable is appropriate as an intervening variable that mediates the correlation between self-efficacy on learning achievement, the great impact of self-efficacy on learning achievement through learning motivation is (34 , 8%) is much higher than the direct effect of self-efficacy on learning achievement only (7.40%), so to further maximize the role of self-efficacy in increasing learning achievement, it needs to be accompanied by an improvement in student learning motivation.

Likewise, the self-regulation variable is found to have a direct influence on learning motivation and learning achievement as well as learning motivation as an intervening variable that mediates the correlation between self-regulation on learning achievement, the influence of self-regulation on learning achievement through learning motivation is (54.9%).) is much greater than the direct effect of self-regulation on learning achievement only (13.62%), so that in order to maximize self-regulation in increasing learning achievement, it needs to be accompanied by improvements in student learning motivation.

This study also concludes that the motivation variable has a direct effect on learning achievement, besides that the variables of self-efficacy and self-regulation can simultaneously increase learning motivation with an effect of (71.3%), the same thing can also be explained that self-efficacy, self-regulation, and learning motivation can simultaneously increase learning achievement with an effect of 77%. Thus, the research findings explain the important role of self-efficacy and self-regulation as very fundamental things that every student must have to create and increase learning motivation and learning achievement, but to further maximize the role of self-efficacy and self-regulation in increasing learning achievement,

Therefore, a student must have self-efficacy, self-regulation, and motivation in learning and an educator must be able to help students improve self-efficacy, self-regulation, and learning motivation because these variables are proven to be effective in increasing student learning achievement.

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