

**MANAGING STUDENT MOTIVATION AND LEARNING ACHIEVEMENTS:  
A CASE STUDY IN FINANCIAL MATHEMATICS CLASS  
SRIWIJAYA STATE POLYTECHNIC**

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**Abstract:** Motivation as a part of the learning process is a crucial aspect and some previous research has been showing evidence. Motivation also becomes a part of Emotional Intelligence (EQ) and that is also proven to be involved to improve learning processes and help students understand advance and improve learning achievements. So, students have more enhanced knowledge and skills in competing and facing real work environments. This paper aims to collect data and discover how motivation affects student learning achievement. The hypothesis of this research is that students who have a good learning achievement are students who have a good motivation and also have a positive effect on student learning achievement. The research sample includes 71 students of Sriwijaya State Polytechnic. Motivation and learning achievements were measured by a questionnaire with a lickert scale. Then the data were analyzed through SPSS software. The results show that Motivation has an effect on student learning outcomes.

**Keywords:** Motivation, student achievement, Sriwijaya State Polytechnic.

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## INTRODUCTION

As time goes by, some natural resources (SDA) that we use as a part of daily needs will begin to decrease and some natural resources will even run out without being able to be renewed. This will be very difficult to avoid or improve. However, apart from natural resources, we also have human resources (HR). Human resources (HR) are those involved in the process of cultivating or processing natural resources. In processing natural resources there will of course be leftovers in the production process. From here we can set out to study so that we can be more efficient in production or even find something that can replace limited natural resources to be used in the production process. Singapore for an example that has very limited natural resources but can be one of the well-developed countries and that is possible because of the quality of their human resources. To form a society with good quality human resources will not just happen. need to start from the very beginning or even the basic level. In Indonesia, school starts from elementary school or even kindergarten level. Thus, this means that education is an important part in forming good human resources.

Motivation is a condition of being driven by motives (Peltonen and Ruohotie, 1992). And on the other hand, motivation is a key point to achieve successful learning, Ryan (2017). Albrecht (2018) also found that Motivation is a decisive factor when trying to determine academic success. In the beginning of the 1940s, Wechsler, D (1940) discussed the concept of intelligence which includes both elements of intelligence which are cognitive intelligence (intellectual) and non-cognitive intelligence (emotional). Nowadays we know that cognitive intelligence (intellectual) or we call it (IQ) and non-cognitive intelligence (emotional) and we call it (EQ). Goleman, (1995) state emotional intelligence as self-awareness, self-regulation, motivation. This means that motivation is identified also as a crucial aspect of emotional intelligence, and it is even stronger than IQ in success in life. Whereas Goleman, (1996); Elias, Ubriaco, Reese et al., (1992) also found that high emotional intelligence can contribute to the learning process of a student. This implies that emotional intelligence can improve student learning achievements.

Teachers benefitted from a better understanding of student engagement and motivation as well as gaining further understanding of possible factors influencing why student engagement and motivation increase or decrease (Olivier et al., 2022). In fact, Hariri et al. (2021), concluded that three factors in student motivation, value, expectancy, and motivation, could predict student learning strategies.

Becoming a student in universities is one of the final stages and the next step will be becoming an HR. Students can also continue their studies to the next stage. But of course, after finishing school, they will become HR anyway, whether working as an employee or setting up their own business and becoming an entrepreneur. Students are still working on their abilities and knowledge and further improve Indonesian Human Resource quality. Through this article, it will be shown that motivation can help improve good learning achievement. Of course, everyone's motivation is different. This is where one of the lecturers' roles is to help trigger students to find and maximize their motivation in the learning process. Lecturers have to find and manage each student's motivation. Because not all students in class are in a condition of 100% intention to study. Some of the students only come to class for several reasons, including just because their parents told them to give them pocket money, a vehicle or just to meet friends and play. Here the lecturer needs to find, manage and redirect the student's motivation to become interest in learning.

This paper hypothesizes students that study very seriously because they have strong desire and strong drive also have strong motivation and achieve a good learning. And motivation as a part of emotional intelligence as Higgs and Dulewicz, (1999) give a broad definition of emotional intelligence which is understanding self-feelings and being able to deal with those feelings without being influenced by them, being able to motivate oneself to complete work, be creative and strive to reach the maximum level, notice the feelings of others and deal with social relationships effectively.

Sabariah (2013) found that students with high emotional intelligence have the potential to obtain better academic understanding. This paper hopes to achieve some findings to improve learning achievements through student motivation. Data analysis showed that there were significant differences for factors (self-awareness, self-motivation and empathy) on students' academic understanding. In short, superior academic understanding is the main target and goal of every student regardless of ethnic grouping, Yahaya, et al (2014). Rahmawati, et al (2022) found that motivation contributed to learning outcomes about 14.3%.

On the other hand, Ryan and Deci (2000) developed The Intrinsic Motivation Inventory (IMI) as a way of measuring factors related to the theory of self-determination, also pioneered by Deci and Ryan (2000). They developed the IMI as a multidimensional measurement tool intended to collect data about an individual's subjective experience of an activity. It has been used in several studies related to intrinsic motivation (Ryan et al., 1983; Plant & Ryan, 1985; Ryan et al., 1991).

Meanwhile, a student can be assessed as understanding learning if he understands the concept being taught and is able to explain it again with his own version. Nickerson (1985) explains that students understand something if:

1. He can see the characteristics of the concept in depth.
2. He looks for specific information about a situation quickly.
3. Able to represent situations and see situations with schematic models.
4. He also underlined the importance of knowledge and the ability to relate knowledge.

These two dimensions were then developed into 27 positive statements with a score of 1-4 each on the Likert scale.

Likert-styling scores from:

- 1 (SD = Strongly Disagree)
- 2 (D = Disagree)
- 3 (A = Agree)
- 4 (SA = Strongly Agree).

In terms of statements of motivation and learning achievement results, a score of 4 (SA = Strongly Agree) will represent a high level of motivation and learning achievement results.

## METHODS

This research is cross-sectional in nature. A cross-sectional research design is a type of observational study that analyzes data collected from a population, or a representative subset, at a specific point in time (Saunders et al., 2007; Sekaran, 2003). The sample of this study consisted of 71 students from the Department of Business Administration at Sriwijaya State Polytechnic who attended the Financial Mathematics class, consisting of 71 students from the Bukit class located in Palembang City, Indonesia. The population is all who take the Financial Mathematics class. The research was conducted from August 2023 at the Sriwijaya State Polytechnic, Department of Business Administration, in the Financial Mathematics class.

Research data were analyzed through regression analysis. Student motivation is defined as the independent variable (X), while student learning achievement is defined as the dependent variable (Y). The analysis will be carried out at a significant level of 0.05 with the help of SPSS software. The hypothesis to be tested is: "Does student motivation contribute to student learning achievements?". Estimate of the regression equation for the data obtained is:

$$Y = b_0 + b_1X$$

Note:

Y = Student Learning Achievements

b<sub>0</sub> = Intercept

b<sub>1</sub> = Regression Coefficient

X = Student Motivation

Where *b*'s denotes the population regression coefficients. Before a regression analysis is performed, the data normality test and the variance homogeneity test will be conducted first as a prerequisite for using regression analysis. From the results of the analysis, we can elaborate on the relationship between student motivation and student learning achievements, also the degree of student motivation contribution towards student learning achievements.

## RESULTS AND DISCUSSION

### Content Validity and Reliability.

The test to determine Validity and Reliability of question items was carried out using SPSS. Based on the results carried out using SPSS, the question items are Valid and Reliable.

**Table 1. Validity of Motivation questionnaire items**

Items	Statement	r count	Information
X1.1	As I work on assignments, I think about how much I enjoyed it.	,692**	valid
X1.2	I didn't feel nervous at all when doing the assignment.	,576**	valid
X1.3	I felt that it was my choice to undertake the task.	,545**	valid
X1.4	I think I'm pretty good at this task.	,634**	valid
X1.5	I find this assignment very interesting.	,699**	valid
X1.6	I don't feel tense when doing assignments.	,583**	valid

X1.7	In my opinion, I did this activity quite well compared to other students.	,535**	valid
X1.8	Doing assignments is fun.	,590**	valid
X1.9	I feel relaxed when doing assignments.	,483**	valid
X1.10	I really enjoyed doing this assignment.	,748**	valid
X1.11	I am satisfied with my performance in this assignment.	,475**	valid
X1.12	I don't feel anxious when doing assignments	,558**	valid
X1.13	I don't think this task is boring.	,398**	valid
X1.14	I felt like I was doing what I wanted to do when I did the assignment.	.708**	valid
X1.15	I feel quite skilled at this task.	,681**	valid
X1.16	I think this assignment is very interesting.	,636**	valid
X1.17	I don't feel pressured when doing assignments.	,632**	valid
X1.18	I think this task is very enjoyable	,775**	valid
X1.19	After working on this task for some time, I feel quite competent.	,580**	valid

Source: primary data

**Table 2. Validity of LA questionnaire items**

Items	Statement	r count	information
Y1	I can see the characteristics of the concept in depth.	.711**	valid
Y2	I can look up specific information about a situation quickly.	,771**	valid
Y3	I can see the characteristics of the concept as a whole.	,814**	valid
Y4	I can find specific information about an event quickly.	,789**	valid
Y5	I am able to represent a situation and see a situation with a schematic model.	,767**	valid
Y6	I can underline the importance of knowledge and the ability to connect knowledge.	,677**	valid
Y7	I am able to represent events and see events with a certain scheme.	,730**	valid
Y8	I can underline the importance of knowledge and the ability to connect knowledge.	.504**	valid

Source: data processed 2023

**Table 3. Reliability of Motivation questionnaire items.**

Variable	Cronbach's Alpha	N of Items	Criteria	Information
Motivation	0.903	19	0.7	reliable
LA	0.869	8	0.7	reliable

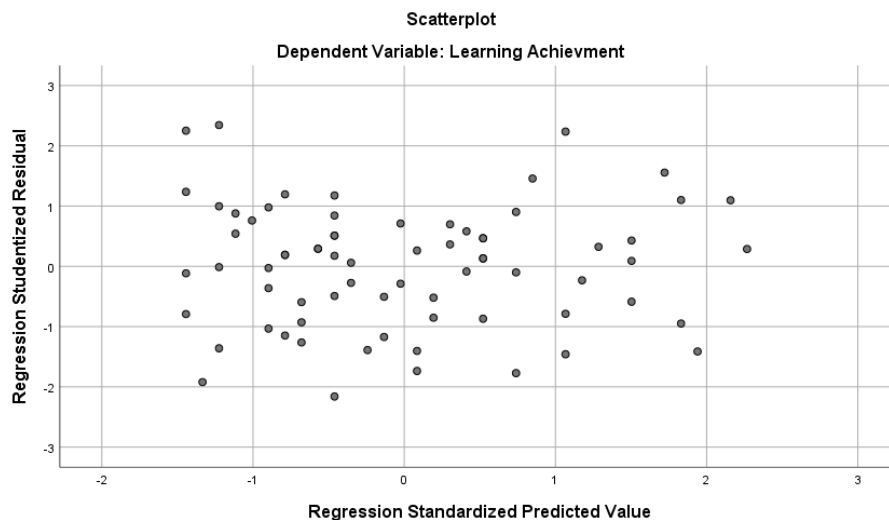
Source: data processed 2023

Based on the table above, Cronbach's Alpha is  $0.899 > 0.7$ . Ghazali (2018) said that if Cronbach's Alpha  $> 0.7$ , it shows that the question item is Reliable.

## Classical Assumptions

**Table 4 Kolmogorof Smirnov Normality Test**

		Unstandardized Residuals
N		71
Normal Parameters, b	Mean	0.0000000
	Std. Deviation	3.00208007
Most Extreme Differences	Absolute	0.060
	Positive	0.050
	Negative	-0.060
Statistical Tests		0.060
Asymp. Sig. (2-tailed)		,200c,d
Heterodescency Test		



**Figure 1. Heterodescency Test**

## Regression Analyses

Based on the results of the regression test, the t value of 8.818 is greater than the t table of 1.9939 or  $8.818 > 1.9939$  and the significance is  $0.000 < 0.005$ , meaning that the calculation results show that there is a significant influence of motivation on learning achievement.

**Table 5. Regression test**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3,779	2,091		1,807	0,075
Motivation	0.348	0.039	0.728	8,818	0,000

Source: data processed in 2023

**Table 6. Determination**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.728a	0.530	0.523	3,024

Source: data processed in 2023

The present study results indicate that motivation is predictors on student learning achievements in the Department of Business Administration Sriwijaya State Polytechnic who took the Financial Mathematics class as shown in the regression analyzes model. It is also indicated that there is a positive relationship between motivation and student learning achievements which implies that a change in motivation would cause a change in student learning achievements. This result is also relevant with Ryan (2017) who found Motivation is a key point to achieve successful learning. Albrecht (2018) also found that Motivation is a decisive factor when trying to determine academic success. Jennifer Rowley (1996) describes that motivation is key in the establishment and further development of quality in higher education", which discusses the importance of motivating teaching staff in higher education.

With this, motivation should also be managed by lectures in order to increase each student's motivation, to make sure they have enough to know their motivation. This will create a healthy and competitive atmosphere that reflects on the student learning achievements.

Motivation is a process that gives enthusiasm, direction and persistence of behavior. This means that motivated behavior is behavior that is full of energy, directed and long-lasting. Motives will change into motivation if they receive stimulation. If the source of stimulation comes from within the individual, the motivation is called intrinsic motivation. Meanwhile, extrinsic motivation occurs if individuals do something for external reasons such as wanting to please other people (teachers, parents) or to avoid punishment. A student's learning success is not only determined by school factors, so it is the student's successful achievement in studying science. Factors that influence learning include internal factors and external factors. Motivation is one of the factors that influences learning achievement. In other words, motivation is an important factor that can influence learning achievement. Motivating children in learning activities will have a big influence on children being able to study more actively so that they can achieve good learning achievements. Likewise, vice versa, if there is a lack of or low motivation in children's learning activities, it will also affect their learning achievement.

## **CONCLUSION**

This paper aims to find out the contribution of motivation on student learning achievements using evidence from the Department of Business Administration Sriwijaya State Polytechnic who took the Financial Mathematics class. This was achieved through a questionnaire survey of 71 students in the Department of Business Administration Sriwijaya State Polytechnic who took the Financial Mathematics class. Regression results indicate that motivation contributes up to 51.0% of the variance in student learning achievements. This means that of 71 respondents, 23.9% were male whereas 76.1% were female. Regression Analyzes Results reveal that motivation has contributed to student learning achievements ( $\beta = .343$ ,  $p = 0.059 > 0.05$ ). This implies that motivation is predictors of student learning achievements. From the results above, a unit change in motivation will bring about 0.343 change in student learning achievements.

Since the research findings show that there is a positive relationship between Self-awareness and student learning understanding, teachers can develop and improve student learning understanding by managing student self-awareness with the following recommendations:

1. Help Students to manage so that while they are doing the task, they will enjoy it.
2. Manage to create an environment that students do not feel at all nervous while doing the task.
3. Develop student mindset to feel that it is their own choice to do the task.
4. Make students feel confident in doing their tasks.
5. Assure them to think that they were pretty good at doing the task.
6. Create the outcome that they satisfied with their performance in their task.



Because this research uses a sample of only 71 students from only one university, of course this research has limitations. Besides that, the majority of the sample from this study were also only female students. Further research could use samples taken from several universities and maybe have samples that tend to have an equal ratio of female students and male students.

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