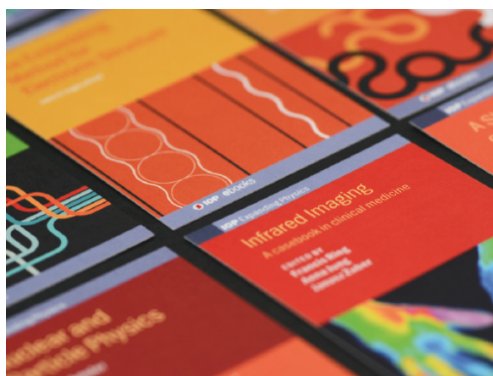


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# Constraints of Biology students' thesis completion

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**Abstract.** Most students have some problems completing their studies on time. Based on the data of Biology Department of FMIPA UNNES, the average of students from 2012 to 2014 who graduated on time only 20.55%. This study would analyze the factors that become constraints in thesis completion. The research design is quantitative methods with ex-post facto strategies. The research sample is students of the Biology Department of the academic year 2012-2015 taken by simple random sampling technique. The data was collected by a questionnaire and processed using the path analysis by SMART PLS software version 2.0. It is found that motivation, administrative factors, and the guidance process contributed to the process of students' thesis completion.

## 1. Introduction

Biology Department, Universitas Negeri Semarang, involves Educational Biology Study Program and Biology Program. In this department, the duration of the study is still in problems. Many students have difficulty in completing the thesis on time. Bachelor's degree in Education (S1) should be accomplished within four years or eight semesters. Based on the academic data of the Biology Department, there are still many students who study for more than four years. The latest data on the even mid-semester 2018/2019, the Biology Education Study Program has 90 students in their 5th, 6th, and 7th years of study. In comparison, the Biology Study Program has 37 students with the same criterion. Meanwhile, the average of students from 2012 to 2014 who graduated on time was only 20.55%. According to the interviews and surveys on Biology Department students, several reasons affect the completion of the final thesis involve; some students are still repeating courses, lack of motivation, laziness, unsupportive environment, difficulty to meet with supervisors, challenging to find learning resources needed, administrative factors, student activities such as work and organization.

Generally, factors affecting the delay in completion of the student thesis are internal factors and external factors. Lack of motivation is an obstacle for students to complete the thesis. The weak motivation of students doing thesis can lead to lazy students in working thesis and finally pass beyond the standard period in education S1 [1]. One of the factors that can influence student motivation is an interest in working on the thesis. Difficult to process-related data associated can delay the thesis completion [2]. Factor that encourage and hinder thesis completion, one of them is experienced in writing [3]. The ability to write scientific papers is essential in the process of writing a thesis [4]. Difficulties in finding literature will affect students in the thesis completion [5-6]. However, for students who have experience in writing scientific papers, these difficulties would be quickly resolved. Limitations knowledge of scientific papers, especially in research as in the study of theory, data collection techniques, research instruments, and analysis, also affect the completion of the thesis.



External factors that cause delays in the completion of the first thesis is the lack of family support. Family is one of the factors that influence students' academic achievement [7]. Family plays a role in increasing students to complete their studies, especially in financial support [8]. Another reason that becomes an obstacle to complete the thesis is peer environmental factors. School environment and peer influence make a significant contribution to academic achievement [9]. Moreover, communication and intensity guidance with the supervisor affect the settlement process of the thesis [1].

To improve the curriculum Biology Department, it is vital to analyze the factors that become obstacles in the completion of the thesis. The results of this study are expected to strengthen the theory and previous research related to factors affecting the completion of the thesis. Through the path analysis method assisted by SMART PLS software version 2.0, then-unknown factors are affecting the completion of the thesis. By knowing the factors that constraint the thesis completion expected to provide feedback and can be pursued education system in particular subjects, thesis completion better.

## 2. Method

This study was conducted at Biology Department, Faculty of Mathematics and Natural Science, Universitas Negeri Semarang (FMIPA UNNES) in May – August 2019. This study used a quantitative descriptive approach. The population in this study included all students of Biology Education Study Program and Biology Program FMIPA UNNES class of 2012, 2013, 2014, and 2015. Determination of the number of samples used simple random sampling techniques. Decision of the number of samples based on the table determining the number of samples by Isac and Michael that is a minimum sample of 205 people with an error rate of 5%. Collecting data in the study used the constraints of the biology student thesis completion questionnaire with 95 items of statements. The questionnaire includes four factors of constrain student thesis completion. There were the motivational factors (X1), research skill (X2), writing of scientific work (X3), peer environment (X4), family environment (X5), learning resources (X6), administrative factors (X7), and the guidance process (X8). Data thesis completion process (Y) obtained from the questionnaire and then processed using a predetermined formula. The analysis technique used in this research was path analysis with the approach of partial least square (PLS) with the help of Smart PLS version 2.0 software. Path analysis consists of several stages, that was the goodness of fit outer model test, the goodness of fit inner model test, and model stability test. The stability of these estimates was evaluated using the t-test obtained through the procedure bootstrapping with t-statistic 1.64 and alpha 0.05.

## 3. Results and Discussion

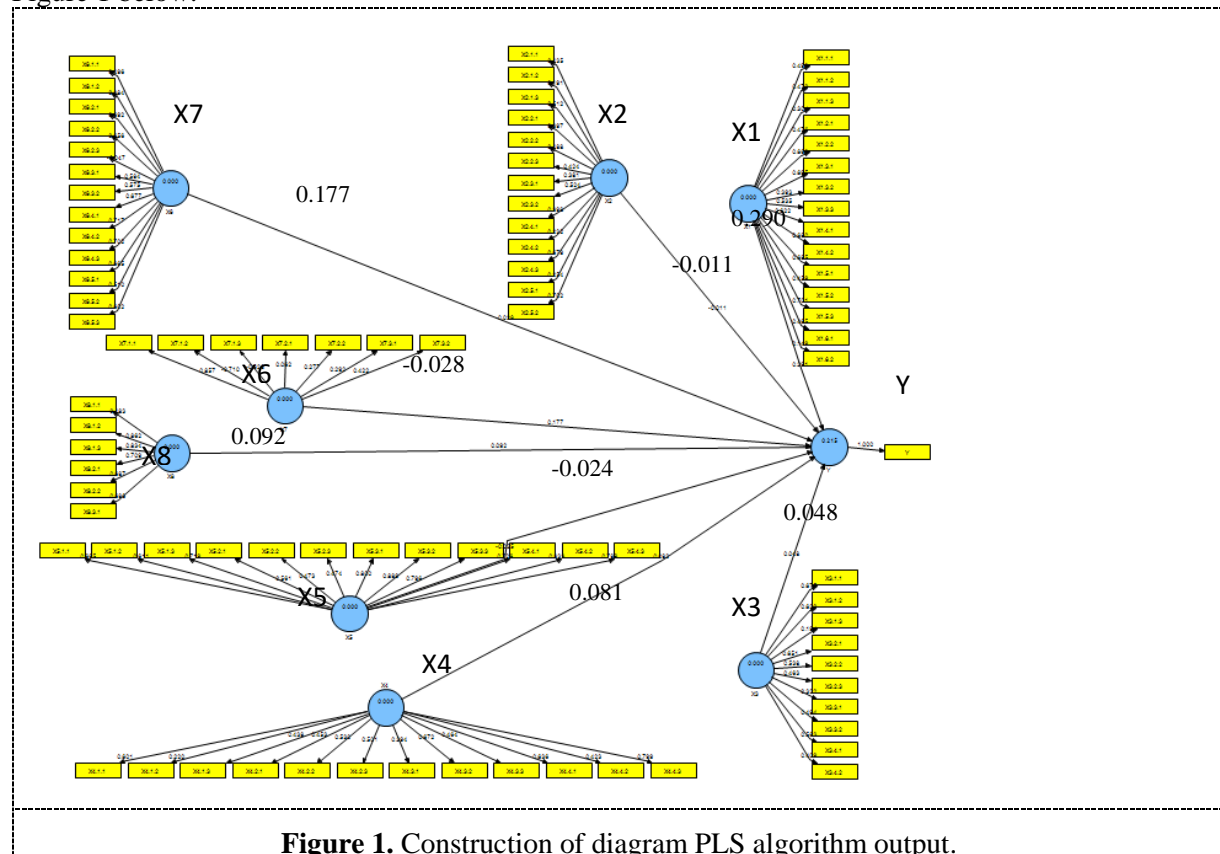
Based on the evaluation of the inner goodness of fit, the model showed good results. The R-square value was 0.215 indicates that the goodness of the formation of the model from the thesis completion can be explained quite well by the indicators of constraints the thesis completion of 21.5 %. This value showed that factor constraints of the thesis completion 21.5% in determining student thesis completion, while other variables outside of research determined 78.5% of student thesis completion. We need to be further assessed by other variables that have not been examined in this study. Some of the variables that have not been studied in this research are social support from supervisors, poor time management, and active student organizations due to work, health, fatigue, and psychology. Social support of lecturers consists of emotional support, information support, and support ratings. Social support from supervisors can improve the process of completion of the thesis. The higher the social support of lecturers, the motivation of students in completing the thesis also increases [3,10]. Low student time management was also influential in the process of thesis completion. College, while working, will hinder the process of completion of the thesis. Students who work tend to put the interests of their work rather than lectures. Internal factors that could make the reason for the delay completion of the thesis is a working, active organization, and low ability students in time management, supported by four bits of intelligence that exists within the student [1]. Intelligence in question is IQ, EQ, AQ, and SQ. These bits of intelligence must be satisfied and go hand in hand. In addition to work, other activities outside the course as an organization can interfere with the completion of a student thesis. Physical health factors also have an

essential role to final year students in the completion of the thesis. Health factors, fatigue, and psychology are the dominant factor affecting the completion of the thesis.

**Table 1.** Result of the test with the PLS algorithm.

Dimension	Values of Correlation Coefficient
X1	0.29081
X2	-0.01105
X3	0.048037
X4	0.081708
X5	-0.02463
X6	-0.02809
X7	0.177317
X8	0.092131

The results indicate an association between the variable’s thesis completion factor to the process of resolving the thesis. Significance testing variables thesis-completion factor influence the settlement thesis is done by comparing the t-value to the t-statistic to determine whether or not the influence between variables. T-value obtained from bootstrapping with SmartPLS software version 2. The amount of alpha in this study was 5%, or 0.05, then the value of t-statistic for this study was 1.64. Only two variables that had a significant influence on the process of resolving the thesis, variable motivation to graduate on time, and administrative factors. While the other variables are researching skills, the ability to write scientific papers, family environment, peer environment, learning resources, and the guidance process no significant effect, for more details PLS path diagram constructed algorithm can be seen in Figure 1 below.

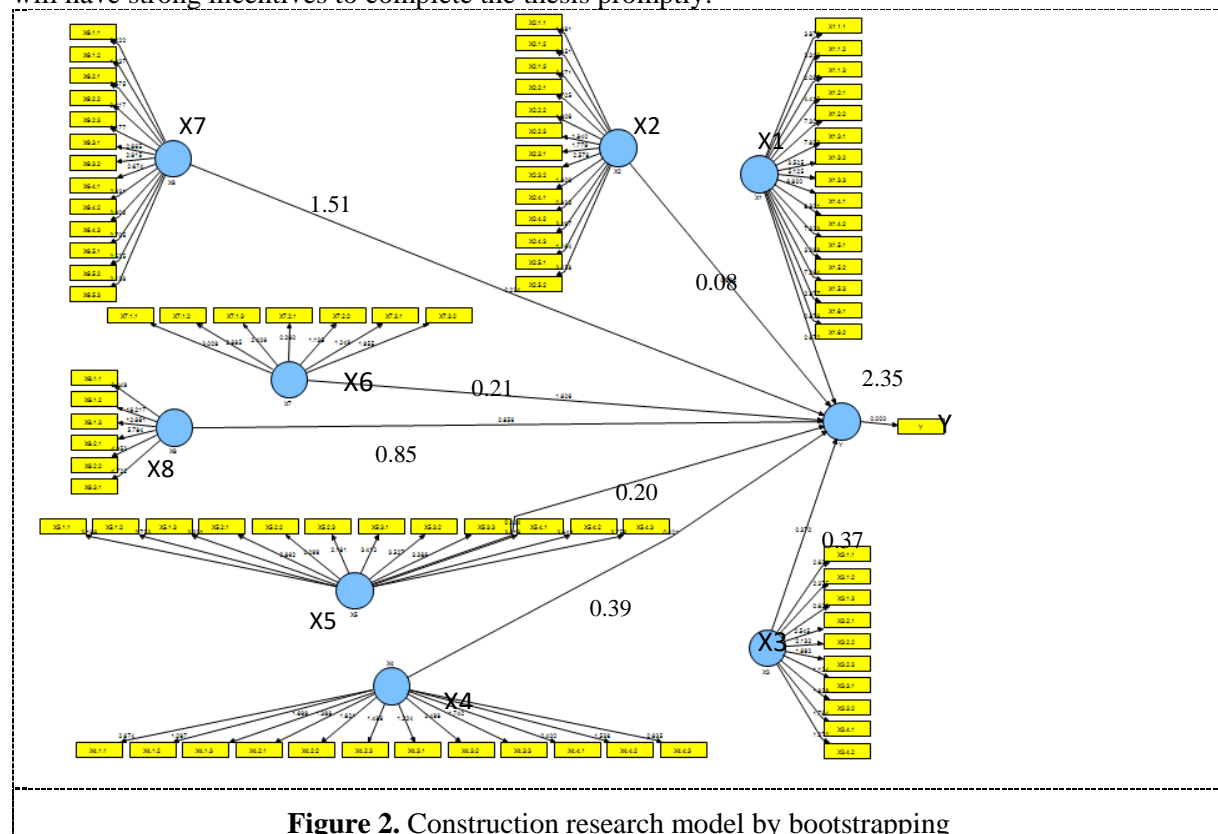


**Figure 1.** Construction of diagram PLS algorithm output.

**Table 2.** Result of the test with the PLS algorithm.

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics ( O/STERR )
X1 -> Y	0.29081	0.278826	0.123745	0.123745	2.350081
X2 -> Y	-0.01105	0.027737	0.126728	0.126728	0.087166
X3 -> Y	0.048037	0.099941	0.127063	0.127063	0.378055
X4 -> Y	0.081708	0.04226	0.206731	0.206731	0.395238
X5 -> Y	-0.02463	0.009408	0.117343	0.117343	0.2099
X6 -> Y	-0.02809	0.037403	0.131291	0.131291	0.213979
X7 -> Y	0.177317	0.166138	0.117225	0.117225	1.512618
X8 -> Y	0.092131	0.073142	0.108053	0.108053	0.852643

Based on the results, it can be seen that there are significant differences between the factor completion of the thesis with the thesis settlement process. The level of completion of the thesis that good factors will lead to the completion of the thesis is optimal. Motivation to graduate on time (X1) has the highest coefficient value compared to the other factor is 0.29 (Figure 2). The level of student motivation in completing the final task is very influential for students preparing and completing the task eventually. In the thesis completion process, students must have high motivation to be completed on time. There are several factors, both internal and external factors affecting the completion of a student's study; one of them is motivation. The internal factors affecting the completion of the thesis are motivation [11]. Students who have a reason to complete the study promptly will have strong incentives to complete the thesis promptly. Obstacles or problems they encountered, should be relatively minor compared with the motivation to graduate on time at their disposal so that spirit which makes them more diligent and tenacious in completing the thesis. Students who have high motivation to complete the study will have strong incentives to complete the thesis promptly.



**Figure 2.** Construction research model by bootstrapping

The most dominant factor that led to the settlement process is hampered thesis is the factor guardianship with time management during the process of guidance as an indicator that has the greatest tendency [12]. The most significant value to the process of settlement of the thesis is the variable guidance schedule. However, other studies show different results, the ability in research also has a dominant influence on the thesis completion based on the other study [13]. The main obstacle to the thesis completion is confusion, difficulty in processing the data obtained, a lack of understanding about the process of writing the thesis, and supervision quality [14]. While this study showed different results, the variable of motivation to graduate on time contributed to the strong influence compared to the other variables in this study. It's means that if the variable is more emphasized in the thesis completion, the thesis proses settlement will increase. Supervision of the campus so that students will be motivated to complete his research soon [15]. Motivation and the study period was not dominant in influencing the quality of graduates.

Components motivation to graduate on time in the form of the ideals of the student to complete the thesis well and on time, trying to complete the thesis, resilient in the face of adversity final-thesis, diligent in completing the final project thesis, their high desire to graduate on time and an appreciation of the achievement. These components are required students to encourage himself to complete the thesis on time. Based on the description above, the variable motivation to graduate on time can be a reference or a policy to maintain and improve the settlement process of completing the thesis of Biological Science Education UNNES student.

#### 4. Conclusion

Motivation to graduate on time and administrative factors have a significant value to the process of settlement of the thesis. If the student does not have the high motivation and without the excellent support of administrative factors, the completion of the process of the thesis will be constrained. Variable motivation to graduate on time has the highest coefficient, among other variables 0.29. Students must have a high motivation to be an optimal completion process thesis.

#### 5. Acknowledgments

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#### References

- [1] Aslinawati E N and Mintarti SU 2017 *J. Pendidik. Ekon.* **10** 23
- [2] Barnes J 2014 *AU-GSB e-Journal* **6** 21
- [3] Lindsay S 2015 *Teach. High. Educ.* **20** 183
- [4] Ekoç A 2019 *J. Fac. Educ.* **20** 152
- [5] Wang X and Luxin Y 2012 *Chin. J. Appl. Linguist.* **35** 324
- [6] Bian X, and Wang X 2016 *Indones. J. Appl. Liguistic* **6** 20
- [7] Musthaq I, and Khan S N 2012 *Glob. J. Manag. Business Res.* **12** 17
- [8] Theisen M R, Christy R, and Ashley A W *J. Fem. Fam. Ther.* **30** 46
- [9] Korir D K, and Felix K 2014 *Int. J. Humanit. Soc. Sci.* **4** 240
- [10] Widiantoro D, Nugroho S, and Arief Y 2019 *Journal An-Nafs: Kajian Penelitian Psikologi* **4** 2
- [11] Pasaribu M X and Harlin 2016 *J. Pendidik. Tek. Mesin* **3** 24
- [12] Adelina S 2018 *Ecogen* **1** 184
- [13] Pitchforth, J, Beames S Y, Thomas A, Falk M G, Farr A C, Masson S, Thamrin S A, and Mengersen K 2012 *J. Scholarsh. Teach. Learn.* **12** 124
- [14] Jane C W H O, Lilian C, and Paul T P 2010 *Int. J. Existential Psychol. & Psychother.* **3** 117
- [15] Adeniyi E O, and Maruff A O 2012 *Proceedings of the European Conference on Research Methods for Business & Management Studies*