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The Effect of Academic Supervision of School Principals and Teachers' Performance Satisfaction in Increasing Teachers' Pedagogical Competence

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Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh supervisi akademik kepala sekolah dan kepuasan kinerja guru terhadap peningkatan kompetensi pedagogik guru di sekolah PAB Kabupaten Deli Serdang. Jenis penelitian ini ialah kuantitatif dengan metode survey yang melibatkan para guru. Pengumpulan data dilakukan dengan teknik observasi, angket, dan dokumentasi. Analisis data menggunakan validitas instrumen dan reliabilitas instrumen. Hasil pengujian hipotesis ialah terdapat hubungan positif dan tinggi antara supervisi akademik kepala sekolah dan kepuasan kerja guru secara bersama-sama terhadap kompetensi pedagogik guru. Adapun besarnya pengaruh ditunjukkan oleh koefisien determinasi R^2 (R square) = 0,431, artinya supervisi akademik kepala sekolah dan kepuasan kerja guru secara bersama-sama memberikan pengaruh terhadap kompetensi pedagogik guru sebesar 43,1% dan sisanya yaitu 56,9% ditentukan oleh faktor lainnya. Hasil analisis regresi sederhana menunjukkan persamaan $\hat{Y} = 32,725 + 0,190X_1 + 0,567X_2$.

Kata Kunci: Guru, Kepala Sekolah, Kepuasan Kinerja, Kompetensi Pedagogik, Supervisi akademik.

Abstract

This study aims to determine the effect of the principal's academic supervision and teacher performance satisfaction on improving the pedagogic competence of teachers in PAB schools, Deli Serdang Regency. This type of research is quantitative with a survey method involving teachers. The data was collected through observation, questionnaires, and documentation. Data analysis used instrument validity and instrument reliability. The results of hypothesis testing have a positive and high relationship between the principal's academic supervision and teacher job satisfaction together with the teacher's pedagogic competence. The magnitude of the effect is indicated by the coefficient of determination R^2 (R square) = 0.431, meaning that the principal's academic supervision and teacher job satisfaction together have an influence on the teacher's pedagogic competence of 43.1%, and the remaining 56.9% is determined by other factors. The results of simple regression analysis show the equation = $32.725 + 0.190X_1 + 0.567X_2$.

Keywords: Teachers, Principals, Performance Satisfaction, Pedagogic Competence, Academic Supervision.

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INTRODUCTION

Education is one of the efforts that can be made to improve the quality of human resources, and it becomes a necessity to provide education with good quality so that it can produce better human beings and be able to compete locally, nationally, and globally (Arfani, 2018). Education is something that is very significant for the formation of the character of civilization and progress (Hura & Mawikere, 2020). Without education, a nation or society will not get progress, so it becomes a nation or society that is less or even uncivilized (Fathurrohman, 2012; Masang, 2021). Therefore, civilization will be born from a pattern of education that is appropriate and effective and able to answer all the challenges of the times (Munir, 2008:1).

Education is a long-term investment in building human resources that have strategic value for the survival of human civilization (Djamarah, 2010). Therefore, almost all countries place the education variable as important and main in the context of the nation and state development. There are even some countries that put education first in nation-building (Shaifudin, 2014). Education will always change along with changing times, some changes that often occur in the wider community that must be considered are regarding the implementation of education in the country, especially with regard to the implementation of Law Number 22 of 1999 concerning Central and Regional Autonomy which has brought changes to the education management system from centralized to decentralized. Stipulation of Law Number 20 of 2003 concerning the National Education System and the management of national education as a system. The existence of the Law on Teachers and Lecturers (Law No. 14 of 2005) emphasizes teachers and lecturers become professional educators.

Considering the function of the teacher as the creator of a quality learning process, a teacher who will carry out the learning process must have the requirements as stated in Law Number 14 of 2005 concerning Teachers and Lecturers Chapter IV Article 8 which states "teachers are required to have academic qualifications, competence, and competence, educator certificate, physically and mentally healthy, and has the ability to realize national education goals. Teachers as implementers of the educational process must have adequate competence to develop the potential possessed by students, so as to produce quality human resources through their performance (Sopian, 2016; Hasyim, 2014). Daryanto & Rachmawati (2015:162) state that teacher competence is the knowledge, skills, and abilities that are mastered by someone who has become part and psychomotor as well as possible.

Based on the Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers Chapter IV Article 10 Paragraph 1, there are four competencies that must be possessed by a teacher, namely pedagogic, personality, social, and professional competencies, all of which are obtained through professional education. These four competencies have a very important role in improving the professionalism of a teacher. Of the four competencies, pedagogic competence is a competence that plays a very important role for teachers in carrying out the learning process.

In general, technical errors in educating with adverse consequences are not difficult to correct or correct. This form of educational error usually stems from the educator's own personality, this error is not easy to correct, because correcting a person's personality structure is not easy and to improve his personality and behavior requires the willingness and willingness of the person concerned and takes a long time (Nasution, 2006). A common educational error is then a conceptual error, namely in carrying out the educational process, educators are less aware that their mistakes can have profound consequences on students. Therefore, this pedagogic competence is very important in shaping the child's personality to be independent in solving problems faced with the guidance and direction given by the teacher (Fattah, 2000; Rusman, 2013). So those teachers are required to understand this pedagogic competence so that mistakes in the learning process can be overcome.

There are several things that can improve teacher competence, namely job satisfaction and academic supervision of the principal. Supervision related to the learning process is academic supervision (Basri, *et.al.*,

2021; Priatna, *et.al.*, 2021). Mulyasa (2008) stated that the core competence of academic supervision is to foster teachers in improving the quality of the learning process. Therefore, the target of academic supervision is the teacher in the learning process, which consists of the main material in the learning process, the use of media and information technology in learning, assessing the learning process and results, and classroom action research. The purpose of academic supervision is basically to improve the quality of education. This statement is in accordance with what was conveyed by Mulyasa (2009) regarding several objectives of academic supervision which include: (1) helping teachers develop their competencies; (2) developing curriculum; (3) developing teacher working groups, and (4) guiding classroom action research. Thus, academic supervision is expected to increase the understanding of teachers' pedagogic competencies which will synergize with increasing teacher performance, in order to create education that is in accordance with national education goals.

Principals as Leaders in Islamic educational institutions are expected to be able to carry out their duties well and be able to develop themselves with their partners to achieve the progress of educational institutions and also achieve the goals of Islamic education. school for a vision and mission of the school. The role of the principal as a supervisor is very helpful in the progress and success of the school, both in increasing teacher job satisfaction, teacher pedagogic competence, and in improving school quality (Syufrianti & Gustina, 2020; Prastania & Sanoto, 2021).

One of the main keys to the success of education lies in the quality of teachers. Given the large role of teachers in the educational process, principals as direct supervisors are required to have the main capacity as educators, managers, administrators, supervisors, leaders, innovators, and motivators. Meanwhile, the teacher has the main task, namely: making learning programs, implementing learning programs, carrying out evaluations, carrying out analysis of student learning outcomes, implementing improvements, remedial, and enrichment (Aqib, 2010:82; Rifa'i & Assingkily, 2021).

In its function as a motivator for teachers, principals must also be able to move teachers so that their performance increases because teachers are the spearhead in realizing quality human beings. Teachers will work optimally if they are supported by several factors, including the ability of the principal as a supervisor. This shows how important the role of the principal as a supervisor is to carry out academic supervision of teachers as a form of effort to improve the quality of education in schools and improve teacher pedagogic competence (Sadulloh, 2010).

Based on the various descriptions above, it is known that if the academic supervision ability of the principal is not good, then the supervision activities have nothing to do with the level of teacher job satisfaction whereas good supervision activities are expected to increase teacher job satisfaction. Supervision activities are carried out not only to find faults but are also improvement efforts, so the hope to increase teacher job satisfaction is not just a hope but becomes a stage that must continue to be implemented (Sanoto, 2021).

As a supervisor, the principal is expected to be able to act as a consultant, as a facilitator who understands the needs of the teacher and is also able to provide alternative solutions. In addition, the principal is also expected to motivate teachers to be more creative and innovative. Within the framework of developing teacher competence through supervision, it should be noted that these activities are not only focused on increasing knowledge and skills in managing learning but also encouraging the development of motivation to improve the quality of their performance. The principal in addition to being tasked with fostering teacher competence also functions as a motivator. Each element of the leadership should be able to move other people, both subordinates or colleagues, so that they are consciously and collectively willing to behave to achieve the goals that have been set (Mulyasa, 2007).

In other words, supervision activities are able to realize their function as a process of improving the quality of teachers through activities that emphasize self-realization, self-growth, and self-development. The development includes activities to help increase and grow the abilities, attitudes, skills, and knowledge of members (Mulyasa, 2012:22). Based on this background, the researchers are interested in conducting research

with the title "*The Effect of Principal Academic Supervision and Teacher Job Satisfaction on Improving Teacher Pedagogic Competence at PAB Deliserdang School*".

METHOD

This research was conducted at the Deli Serdang PAB School, which is located in Helvetia Deli Serdang district. The researcher chose the PAB school in Deli Serdang is the place to be researched because based on previous observations, when the researchers carried out PPL at the school, the researchers felt interested in conducting more in-depth research related to the supervision of the principal, teacher job satisfaction and teacher pedagogic competence. While the time of this research starts from November 2021.

This type of research is a quantitative research using survey methods. According to Sugiyono (2012:11), the notion of the survey method is research carried out using questionnaires as a research tool carried out on large and small populations, but the data studied are data from samples taken from the population, so that relative incidence, distribution, and the relationship between variables, sociological and psychological. The purpose of survey research is to provide a detailed description of the background, characteristics, and characteristics of a case or event of a general nature.

To obtain objective data, in this field research the researcher uses a systematic procedure, as follows: (Iskandar, 2009; Assingkily, 2021)

1. The questionnaire or questionnaire used in this study is that when viewed from the way of answering, it is a closed questionnaire because the subject only needs to choose the answers that have been provided by the researcher. When viewed from the respondents' answers, it is categorized as an indirect and direct questionnaire, because the subject gives answers about other people and also about themselves. When viewed from the form, the questionnaire in this study was in the form of a check-list and rating scale, namely a statement followed by columns indicating levels, for example from strongly agree to strongly disagree.
2. Documentation. Documentation is used to obtain data about the history of the establishment of the Deli Serdang PAB school, in the form of photos and data in the form of files. While the data analysis technique is the validity test (Arikunto, 2009:196). Criteria for item validity:

$$r_{xy} = \frac{n \sum x_i y_i - \sum x_i \sum y_i}{\sqrt{\left(n \sum x_i^2 - \left(\sum x_i \right)^2 \right) \left(n \sum y_i^2 - \left(\sum y_i \right)^2 \right)}}$$

Keterangan

r_{xy}	: koefisien korelasi antara variable X dan variable Y
x_i	: nilai data ke-i untuk kelompok variable X
y_i	: nilai data ke-i untuk kelompok variable Y
n	: banyak data

Between 0.81 – 1.00 very high validity

Between 0.61 – 0.80 high validity

Between 0.41 – 0.60 validity is sufficient

Between 0.21 – 0.40 low validity

Between 0.00 – 0.20 very low validity

The validity testing criteria is that each item is valid if:

(r_{table} is obtained from the critical value of $r_{product\ moment}$)

The results of the calculation of each item will be consulted with the "r" table, provided that if the "r" count is greater than the "r" table, the item is declared valid and can be used to collect the required data. If the "r" table is greater than the "r" count, then the variable cannot be used to collect data because it is invalid (Trihendradi, 2010).

Instrument Reliability

Instrument reliability is used to determine the level of confidence of an instrument. The instrument can be trusted enough to be used as a data collection tool because it is considered good. To test the reliability of the instrument, it can be used the Alpha formula (Arikunto, 2009:196):

$$r_{11} = \left(\frac{n}{n-1} \right) \left(1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right)$$

Keterangan :

r_{11} = reliabilitas yang dicari

n = Jumlah item pertanyaan yang di uji

$\sum \sigma_i^2$ = Jumlah varians skor tiap-tiap item

σ_t^2 = varians total

To find the total variance, the following formula is used:

$$\sigma^2 = \frac{\sum (x_i - \mu)^2}{n}$$

$$= \frac{(x_1 - \mu)^2 + (x_2 - \mu)^2 + \dots + (x_n - \mu)^2}{n}$$

Description:

σ_t^2 = The total variance is the total score variance

$\sum Y$ = Total score (all items)

The test reliability criteria are as follows: (Trihendradi, 2010)

$r_{11} \leq 0,20$ very low reliability

$0,20 < r_{11} \leq 0,40$ low reliability

$0,40 < r_{11} \leq 0,60$ medium reliability

$0,60 < r_{11} \leq 0,80$ high reliability

$0,80 < r_{11} \leq 1,00$ very high reliability

Simultaneous Hypothesis Test (F Test) Multiple Regression

The F test is used to test the significant level of the effect of the independent variables simultaneously on the dependent variable. The F test is carried out by comparing the steps of F_{count} and F_{table} . The value of F_{count}

can be seen from the results of data processing in the ANOVA section. The statistical hypothesis proposed is as follows:

1. Formulate the hypothesis, test the null hypothesis (H_0) and the alternative hypothesis (H_1): H_0 : b_1 & $b_2 = 0$, there is no effect between the school principal's academic supervision variable (X_1) on the teacher's pedagogic competence (Y). H_1 : b_1 & $b_2 \neq 0$, There is an influence between the school principal's academic supervision variable (X_1) on the teacher's pedagogic competence (Y).
2. H_0 : b_1 & $b_2 = 0$, There is no influence between the variables of School Teacher Job Satisfaction (X_2) on the pedagogic competence of teachers (Y). H_1 : b_1 & $b_2 \neq 0$, There is an influence between the variables of Teacher Job Satisfaction (X_2) on the pedagogic competence of teachers (Y).
3. H_0 : b_1 & $b_2 = 0$, There is no influence between the variables of the principal's academic supervision (X_1) and Teacher Job Satisfaction (X_2) on the teacher's pedagogic competence (Y). H_1 : b_1 & $b_2 \neq 0$, There is an influence between the principal's academic supervision variable (X_1) and Teacher Job Satisfaction (X_2) on the teacher's pedagogic competence (Y).

Table 1
Guidelines for the Interpretation of the Coefficient of Determination

No	Coefficient Interval	Influence Level
1	0% - 19.9%	Very weak
2	20% - 39.9%	Weak
3	40% - 59.9%	Medium
4	60% - 79.9%	Strong
5	80% - 100%	Very Strong

Source: Sugiyono (2012:184)

Based on the table, it can be determined how much influence the independent variable has on the dependent variable, which in this study is the effect of the principal's academic supervision and teacher job satisfaction on increasing the pedagogic competence of teachers at the Deli Serdang PAB School.

RESULTS AND DISCUSSION

Research Object Overview

The research carried out pays attention to the place of research starting from the geographical location, history, profile and activities contained in the research place attached in the appendix.

1. Description of Research Result Data

The description of the research data presented is to provide a general description of the distribution of data in the field. The data that is used as the basis for the description of the results of this study are data generated from three variables, namely Teacher Pedagogic Competence scores (Y), Principal Academic Supervision (X_1), and Teacher Job Satisfaction (X_2). The data is processed using SPSS software to present descriptive statistics, so that some descriptive data can be seen, including: the number of respondents (N), the average price (mean), the average standard error (Standard Error of Mean), the median or the middle value, mode (mode) or value that occurs frequently, standard deviation (Standard Deviation), variance (Variance), range (range), lowest score (minimum score), highest score (maximum score), which are as follows:

Table 2
Recapitulation of Descriptive Data Variables Y, X_1 and X_2

No	Data Aspect	Teacher's Pedagogic Competence	Principal Academic Supervision	Teacher Job Satisfaction
1	Total of Respondents (N)	67	67	67
2	Average (mean)	125.37	116.41	124.36
3	Average standard error (Std.	.771	848	802

<i>Error of Mean)</i>			
4	Median	126.00	117.00
5	Modus (<i>mode</i>)	123	118
6	<i>Std. Deviation</i>	7.026	7.727
7	Variance	49.359	59.708
8	Range	34	37
9	Minimum Score	107	95
10	Maximum Score	141	132

Teacher's Pedagogic Competence (Y)

Based on table 2 above, the descriptive data of the teacher pedagogic competence variable (Y) obtained from the research results, shows that the number of respondents is 67 respondents, the average score is 125.37, the average standard error is 0.771, the median is 126, the mode is 123, standard deviation 7,026, variance 49,359, score range 34, lowest score 107, highest score 141. The frequency distribution table of the Teacher Performance variable (Y) is as follows:

Table 3
Frequency Distribution of Teacher Pedagogic Competency Scores (Y)

Interval Class	Frequency (Fi)	Frequency	
		Percentage (%)	Percentage (%)
107 - 112	7	10.4	10.4
113 - 118	8	11.9	22.3
119 - 124	14	20.9	43.2
125 - 129	15	22.4	65.6
130 - 135	17	25.4	91
136 - 141	6	9	100
Total	67	100	

Principal Academic Supervision (X₁)

Based on table 2, the descriptive data of the Principal Academic Supervision variable (X₁) obtained from the research results, shows that the number of respondents is 67 respondents, the average score is 116.41, the median is 117, the mode is 1118, the standard deviation is 7.727, the variance is 59.708, the range score 37, lowest score 95, highest score 132. The frequency distribution table of the Principal Academic Supervision variable (X₁) is as follows:

Table 4
Frequency Distribution of Principal Academic Supervision Scores (X₁)

Interval Class	Frequency (Fi)	Frequency	
		Percentage (%)	Percentage (%)
95 - 101	4	4	4
102 - 108	12	12.1	16.1
109 - 115	29	29.3	45.4
116 - 122	10	30.3	75.7
123 - 129	17	17.2	92.9
130 - 136	7	7.1	100
Total	99	100	

Teacher Job Satisfaction (X₂)

Based on table 3, the descriptive data on the Teacher Job Satisfaction variable (X₂) obtained from the research results, shows that the number of respondents is 83 respondents, the average score is 124.36 median 125, mode 124, standard deviation is 7.303, variance is 53.331, score range is 32, the lowest score is 105, the highest score is 137. The frequency distribution table for the variable Teacher Job Satisfaction (X₂) is as follows:

Table 5
Frequency Distribution of Teacher Job Satisfaction Variables (X_2)

Interval Class	Frequency (F_i)	Frequency	
		Percentage (%)	Percentage (%)
105 - 110	6	9	9
111 - 116	13	19.4	28.4
117 - 122	9	13.4	41.8
123 - 128	15	22.4	64.2
129 - 134	17	25.4	89.6
135 - 140	6	10.4	100
Total	67	100	

2. Testing Requirements Research Hypothesis Analysis

The analytical technique used to test the hypotheses about the effect of Principal Academic Supervision (X_1), and Teacher Job Satisfaction (X_2), on Teacher Pedagogic Competence (Y), both individually and collectively is a simple correlation analysis technique. and multiple regression as well as simple and multiple regression techniques. To be able to use the correlation and regression analysis techniques mentioned above, it is necessary to fulfill the analytical requirements, namely the requirements for simple correlation analysis (Y over X_1 , X_2), then the regression equation must be linear. While the requirements for simple and multiple regression analysis are the estimated errors (errors) of the five variables must be normally distributed and the group variance of the five variables must be homogeneous. The independence test of the three independent variables was not carried out, because the three independent variables were assumed to be independent.

Based on the description above, before testing the hypothesis, it is necessary to test the analysis requirements as referred to above, which are as follows:

Estimated Error Normality Test

The normality test for the estimated error distribution of the three research variables is as follows:

a. The Effect of Principal's Academic Supervision (X_1) on Teacher's Pedagogic Competence (Y)

H_0 : The error in the estimation of Teacher Pedagogic Competence on Principal Supervision is *normal*.

H_1 : The error in the estimation of Teacher Pedagogic Competence on Principal Supervision is *not normal*.

Table 6
Normality Test of Estimated Y Error on X_1 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		67
Normal Parameters ^a	Mean	.0000000
	Std.	6.69003409
Most Extreme Differences	Deviation	.106
	Absolute	.069
	Positive	-.106
	Negative	.963
Asymp. Sig. (2-tailed)		.311

So, the estimation error for the regression equation \hat{Y}_1 at X_1 shows *Asymp. Sig (2-tailed)* or score $P = 0,311 > 0,05$ (5%) or Z_{hitung} 0,963 and Z_{tabel} at the level of confidence/significance $\alpha = 0,05$ is 1,960 (Z_{hitung} 0,963 < Z_{tabel} 1,960), which means H_0 received and H_1 rejected. Thus, it can be interpreted that the requirements for normality of the distribution of the estimated error are met, in other words, the estimated error of the regression equation \hat{Y} over X_1 is normally distributed.

b. The Effect of Teacher Job Satisfaction (X_2) on Teacher Pedagogic Competence (Y)

H_0 : The error in the estimation of Teacher Pedagogic Competence on Teacher Job Satisfaction is *normal*

H_1 : The error in the estimation of Teacher Pedagogic Competence on Teacher Job Satisfaction is *not normal*.

Table 7
Normality Test for Y Estimated Error on X_1 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		67
Normal Parameters ^a	Mean	.0000000
	Std.	5.49323706
Most Extreme Differences	Deviation	.114
	Absolute	.114
	Positive	-.065
	Negative	1.035
Asymp. Sig. (2-tailed)		.234

Test distribution is Normal

From table 7 above, the estimation error for the regression equation \hat{Y} on X_2 shows Asymp. Sig (2-tailed) or P value = 0.234 > 0.05 (5%) or Z_{count} 1.035 and Z_{table} at the level of confidence/significance $\alpha = 0.05$ is 1.960 (Z_{count} 1.035 < Z_{table} 1.960), which means H_0 is accepted and H_1 rejected. Thus, it can be interpreted/interpreted that the requirements for normality of the estimated error distribution are met, in other words, *the estimated error of the regression equation over X_1 is normally distributed*.

c. The Effect of Principal Academic Supervision (X_1) and Teacher Job Satisfaction (X_2) together on Teacher Pedagogic Competence (Y)

H_0 : The error in the estimation of Teacher Pedagogic Competence on Principal Academic Supervision and Teacher Job Satisfaction together is *normal*

H_1 : The error in the estimation of Teacher Pedagogic Competence on Principal Academic Supervision and Teacher Job Satisfaction together is *not normal*.

Table 8
Normality Test for Y Estimated Error on X_1 , and X_2 One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		67
Normal Parameters ^a	Mean	.0000000
	Std.	5.29831676
Most Extreme Differences	Deviation	.122
	Absolute	.122
	Positive	-.062
	Negative	1.114
Asymp. Sig. (2-tailed)		.167

From table 8 above, the estimation error for the \hat{Y} regression equation on X_1 , and X_2 shows Asymp. Sig (2-tailed) or P value = 0,167 > 0,05 (5%) or Z_{hitung} 1,114 and Z_{tabel} at the level of confidence/significance $\alpha = 0,05$ is 1,960 (Z_{hitung} 1,114 < Z_{tabel} 1,960), which mean H_0 received and H_1 rejected. Thus, it can be interpreted that the requirements for normality of the distribution of the estimated error are met, in other words, the estimated error for *the \hat{Y} regression equation on X_1 , and X_2 , is normally distributed*. Based on the table above, it can be seen the value of Z_{hitung} estimation error $\hat{Y} - X_1$, is 0,963, $\hat{Y} - X_2$ is 1,035 and $\hat{Y} - X_1, X_2$ is 1,144 all three are less than the value $Z_{\text{tabel}} = 1,960$, so it can be concluded that the three variables above are normally distributed.

Homogeneity Test or Group Variation or Regression Heteroscedasticity Assumption Test

In a simple and multiple regression model, it is necessary to test the homogeneity of group variance or test the assumption of heteroscedasticity. A good regression model is if there is no heteroscedasticity (similarity of variance from the residuals in one observation to another) or in other words a good regression model if the variance from observations to other observations is homogeneous.

1. Test the assumption of heteroscedasticity regression of Teacher Pedagogic Competence (Y) on Principal Academic Supervision (X_1).

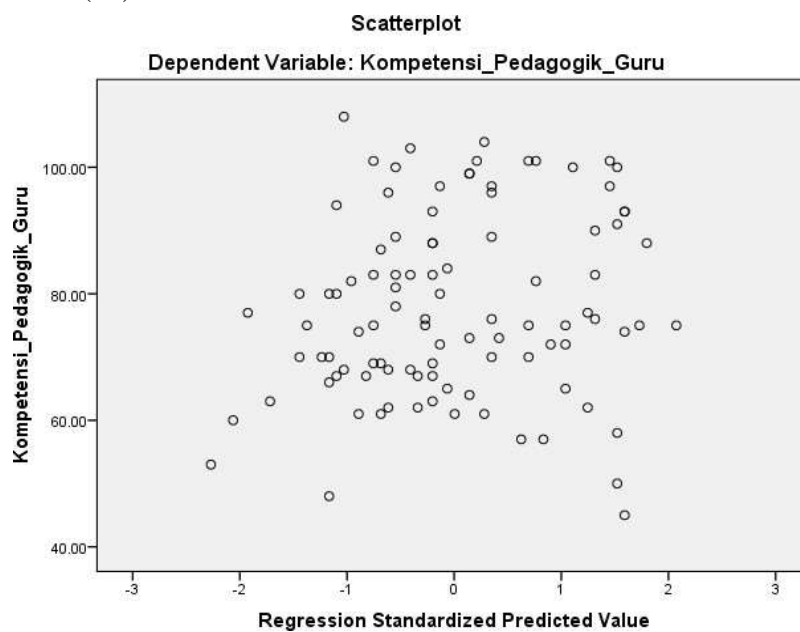


Figure 1. Teacher's Pedagogic Competence (Y) on the academic supervision of the principal (X_1)

Based on the picture above, it turns out that the dots spread above and below the zero point on the Y axis, and do not make a certain pattern. Thus, it can be interpreted/interpreted that there is no heteroscedasticity or in other words the group variance is homogeneous.

2. Test the assumption of heteroscedasticity regression of Teacher Pedagogic Competence (Y) on Teacher Job Satisfaction (X_2)

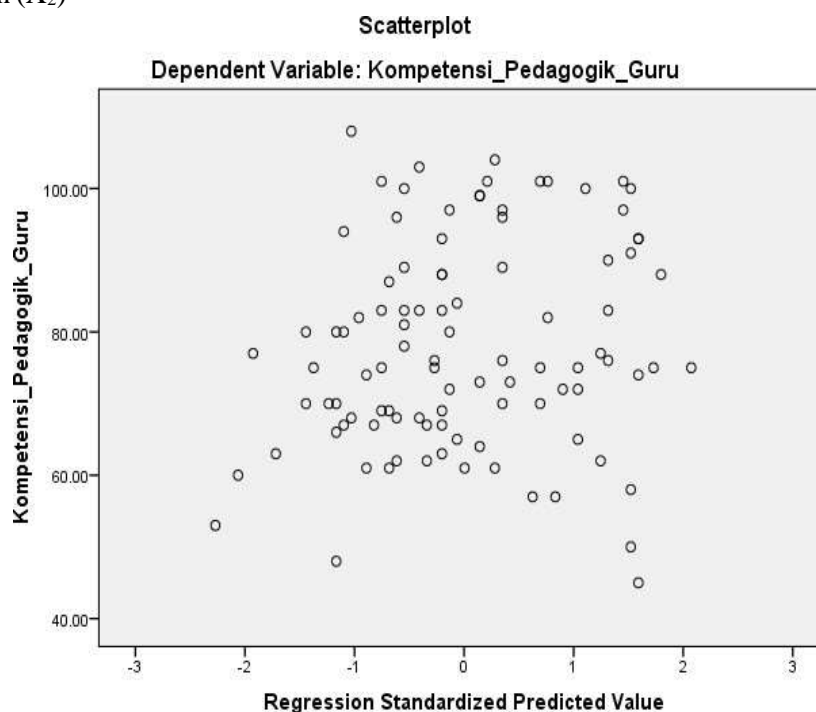


Figure 2. Teacher's Pedagogic Competence (Y) on Teacher Job Satisfaction (X₂)

Based on the picture above, it turns out that the dots spread above and below the zero point on the Y axis, and do not make a certain pattern. Thus, it can be interpreted/interpreted that there is no *heteroscedasticity* or in other words the group variance is *homogeneous*.

3. Test the heteroscedasticity regression assumption of Teacher Pedagogic Competence (Y) Principal Academic Supervision (X₁) and Teacher Job Satisfaction (X₂).

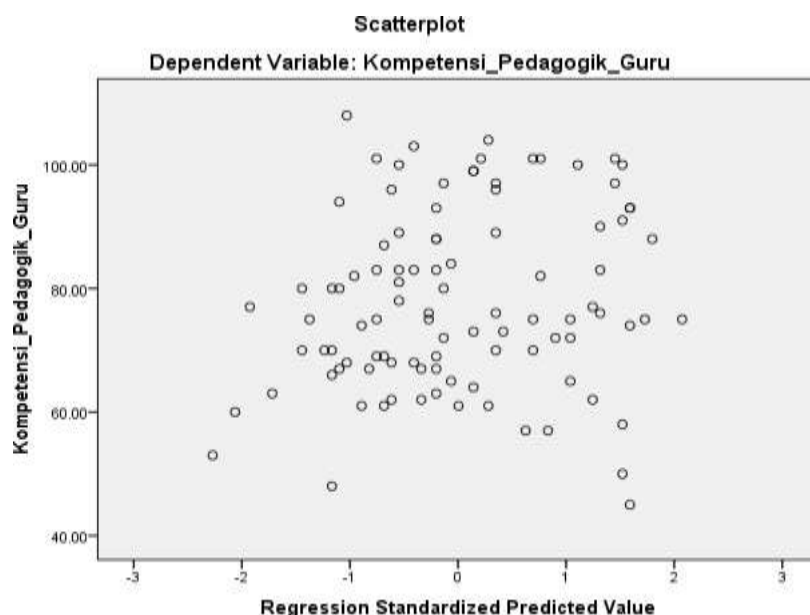


Figure 3. Teacher's Pedagogic Competence (Y), Principal Academic Supervision (X₁) and Teacher Job Satisfaction (X₂)

Based on the picture above, it turns out that the dots spread above and below the zero point on the Y axis, and do not make a certain pattern. Thus, it can be interpreted/interpreted that there is no *heteroscedasticity* or in other words the group variance is *homogeneous*.

Table 9

Recapitulation of Group Variance Homogeneity Test Results or Heteroscedasticity Assumption Test

Regression Model	Test result	Conclusion
$\hat{Y}_1 - X_1$	There is no heteroscedasticity	Homogeneous variance
$\hat{Y}_1 - X_2$	There is no heteroscedasticity	Homogeneous variance
$\hat{Y}_1 - X_1, X_2$	There is no heteroscedasticity	Homogeneous variance

Based on the test results of the three research hypothesis analysis requirements as described above, it turns out that all the requirements are fulfilled. Thus, simple and multiple correlation analysis techniques as well as simple and multiple regression analysis can be used to test research hypotheses.

CONCLUSION

Based on the results of the research data and the results of the research data analysis that have been discussed above, with the data analysis requirements which include validity test, reliability test, linearity test, normality test, homogeneity test, and regression significance test have been met, the following conclusions can be drawn.

First, there is a positive and low relationship between principals' supervision on teacher performance by 30.5%. The magnitude of the effect is indicated by the coefficient of determination R^2 (*R square*) = 0,093,

which means that the principal's academic supervision has an influence on the teacher's pedagogic competence by 9.3% and the remaining 90.7% is determined by other factors. The results of simple regression analysis show the regression equation $\hat{Y} = 93,055 + 0,278X_1$, which means that every one unit increase in the principal's academic supervision score will be followed by an increase in the pedagogic competency score of 0.278.

Second, there is a positive and high relationship between teacher job satisfaction and 62.3% teacher pedagogic competence. The magnitude of the effect is indicated by the coefficient of determination R^2 (*R square*) = 0,389, which means that teacher job satisfaction has an influence on teacher pedagogic competence by 38.9% and the remaining 61.1% is determined by other factors. The results of simple regression analysis show the regression equation $\hat{Y} = 50.788 + 0,600X_2$, which means that every one unit increase in the teacher's job satisfaction score will be followed by an increase in the teacher's pedagogic competency score of 0.600.

Third, there is a positive and high correlation between the principal's academic supervision and the teacher's job satisfaction together with the teacher's pedagogic competence. The magnitude of the effect is indicated by the coefficient of determination R^2 (*R square*) = 0.431, which means that the principal's academic supervision and teacher job satisfaction together have an influence on the teacher's pedagogic competence of 43.1% and the remaining 56.9% is determined by other factors. The results of simple regression analysis show the equation $\hat{Y} = 32,725 + 0,190X_1 + 0,567X_2$.

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- 2150 *The Effect of Academic Supervision of School Principles and Teachers' Performance Satisfaction in Increasing Teachers' Pedagogical Competence – Nurhayati, Mesiono, Nurika Khalila Daulay*
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