

# Exploring the Impact of Educational Administration Knowledge and Work Motivation on the Leadership Effectiveness of Madrasah Heads

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## ABSTRACT

This study investigates the positive relationship between educational administrative knowledge, work motivation, and leadership effectiveness among heads of madrasahs. Employing a quantitative correlational survey method, the research targeted 195 heads of MTs. Private in Serang Regency, with a sample size of 30 heads (16% of the population). Instrument reliability was confirmed with Cronbach's alpha values of 0.938 for leadership effectiveness, 0.89 for educational administrative knowledge, and 0.94 for work motivation. Data analysis utilized correlation and regression formulas. The findings revealed a significant positive relationship between educational administrative knowledge (X1) and leadership effectiveness (Y), represented by the regression equation  $\hat{Y} = 35.22 + 3X1$ , with a correlation coefficient of 0.998 at  $\alpha = 0.05$ . Additionally, a significant positive relationship was found between work motivation (X2) and leadership effectiveness (Y), described by the regression equation  $\hat{Y} = -33.011 + 1.30X2$ , with a correlation coefficient of 0.999 at  $\alpha = 0.05$ . Furthermore, the combined analysis showed a significant positive relationship between educational administrative knowledge (X1) and work motivation (X2) with leadership effectiveness (Y), represented by the equation  $\hat{Y} = 3.62 + 1.74X1 + 0.58X2$ , with a correlation coefficient value of  $R_{y12} = 0.984$ . These results underscore the importance of educational administrative knowledge and work motivation in enhancing leadership effectiveness among madrasah heads, suggesting that targeted professional development in these areas could significantly improve leadership performance in educational institutions.

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## 1. INTRODUCTION

Madrasah educational institutions, under the guidance of the Ministry of Religious Affairs, provide a blend of general education with Islamic characteristics. Historically, faith-inspired education has aimed to build on the legacy of religious contributions to education, addressing tensions and enhancing the ways in which it supports broader national educational goals (Roy et al., 2020). Over the past decade, research into teachers' implicit attitudes toward ethnic minority student groups has seen consistent growth.

However, there has been a notable gap in studies focusing on the academic performance of these students (Costa et al., 2022). This study demonstrates that the effectiveness of educational policies is contingent on the efforts of teachers. Specifically, we highlight the significant impact of teacher effort on student performance, emphasizing the need for targeted strategies to optimize educational outcomes (Kamali Shadadi, 2021).

Islamic education aims to form Indonesian people who have faith, piety, noble character, and are able to maintain religious peace and harmony. Another objective is to develop the ability of students to understand, internalize, and practice religious values based on mastery of science, technology and art. The findings show that newly appointed principals experience challenges that impact their ability to manage school culture (Medford & Brown, 2022). Collective competence is essential in shared leadership but has not been widely explored in the study of educational leadership. There are nine themes of collective competence: shared meaning, account sharing, collective mindset, knowledge sharing and creation, developing context, broad participation, relationship views, group collaboration, and shared goal-oriented beliefs (Yada & Jäppinen, 2022).

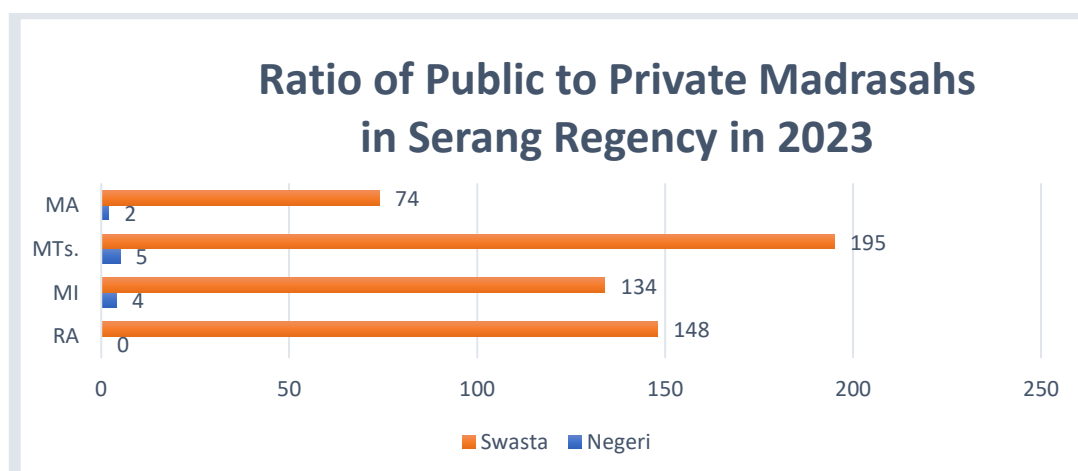
Based on national statistics, until 2022/2023, the number of madrasahs has reached 86,608 institutions. It consists of Raudlatul Athfal 31,055 institutions, Madrasah Ibtidaiyah (26,528), Madrasah Tsanawiyah (19,177) and Madrasah Aliyah (9,848) units. Of all these madrasahs, 95 percent or 34,300 are private madrasahs. Until 2023, of the 55,535 madrasahs (excluding RA), 92.7% (51,507 madrasahs) are private madrasahs. The findings showed how students with irregular attendance, from poor families, who were overaged, or who worked in households at home, were more likely to repeat classes. Some approaches suggested by teachers to make class repetition more effective include: changes in teaching methods, class structure, and opportunities for student participation (Kyereko et al., 2022).

Meanwhile, the number of state madrasahs is only 4,046 units, equivalent to 7.3% of the total. The distribution of madrasah institutions by status and level is as follows: State Ibtidaiyah Madrasahs number 1,711, while Private Ibtidaiyah Madrasahs are significantly higher at 24,817. State Tsanawiyah Madrasahs total 1,525, in contrast to 17,652 Private Tsanawiyah Madrasahs. At the Aliyah level, there are 810 State Madrasahs compared to 9,038 Private Aliyah Madrasahs. This disparity highlights the dominance of private madrasahs in the educational landscape. Consequently, the quality and effectiveness of educational administration and leadership in private madrasahs become crucial, as they cater to the majority of students in the madrasah system. Ensuring high standards in these institutions is essential for achieving national educational goals and addressing the unique challenges faced by private madrasahs. Furthermore, this underscores the importance of continuous professional development for madrasah heads, focusing on enhancing their administrative knowledge and leadership skills to drive educational excellence.

Similarly, in Serang Regency, the number of madrasahs is relatively large. Some private madrasahs are located in rural areas. The majority of students come from underprivileged families. Research findings suggest that a range of 'pushing' and 'attractor' factors, operating at individual, family, and structural levels affect children's willingness and ability to attend school (Mughal et al., 2019). It focuses on the most significant models, frameworks and pathways, and international research projects identified by researchers as advancing understanding of leadership, distinguishing between those who are "effective" and "successful". This article highlights the importance of acknowledging the influence of broader national cultures and schools as complex adaptive systems (Day et al., 2023).

Madrasah Education Institutions found some severe obstacles, such as minimal facilities and infrastructure, lack of books and learning support facilities, lack of teachers both in quality and quantity, and ineffective leadership of the head of the madrasah. In Serang Regency there are 148 Raudatul Athfal (RA). All of them have private status. Madrasah Ibtidaiyah (MI) has 138 institutions (four public and 134 private). Madrasah Tsanawiyah Negeri (MTs.N) has 5 (five) institutions and 195 MTs. Private. As for Madrasah Aliyah, there are 76 institutions (two public and 74 private) (EMIS Data, 2023). Such challenges include the unavailability of personal space to do school work, difficulty adjusting to online school due to computer literacy levels, and family responsibilities that often conflict with their schooling, as well as

feelings of boredom and sadness that impact their health and mental health (Mahamud Magan et al., 2022).



**Graph 1.** Ratio of Number of Public and Private Madrasahs in Serang Regency

The leadership factor of the head of the madrasah is an important element that is very decisive and as one of the requirements to create a quality madrasah (Tamin, 2020). Effective leadership, one of the characteristics is taking the initiative and appropriate actions to overcome various challenges faced (Azhar, 2017). Good leadership can create a vision and mission to build a madrasah in the present or the future. This achievement can only be done, one of which is by the level of educational administration knowledge possessed by the head of the madrasah. Knowledge of educational administration will be able to improve the performance of madrasah heads and the progress of madrasahs (Sutikno, 2022).

There are many root problems in education in Indonesia, one of which is the low quality of human resources. Low quality occurs in teachers, administrative staff and madrasah heads. This is because their level of education taken is not in accordance with the relevant There are many root problems in education in Indonesia, one of which is the low quality of human resources. Low quality occurs in teachers, administrative staff and madrasah heads. This is because their level of education taken is not in accordance with the relevant There are many root problems in education in Indonesia, one of which is the low quality of human resources. Low quality occurs in teachers, administrative staff and madrasah heads. This is because their level of education taken is not in accordance with the relevant There are many root problems in education in Indonesia, one of which is the low quality of human resources. Low quality occurs in teachers, administrative staff and madrasah heads. This is because their level of education taken is not in accordance with the relevant

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madrasah. Effective leadership of the head of a madrasah will be realized when the head of the madrasah has adequate knowledge of educational administration (Mulyasa, 2019).

Knowledge of educational administration is an important element that must be possessed by the head of a madrasah. This knowledge is a type of technical skill that is normative in nature and must be carried out in practice (Abu Duhou, 2013). The dimensions of educational administration that must be mastered by the head of the madrasah are student administration, learning, energy, finance, facilities and infrastructure, and others (Mahidin, 2017). In terms of management, finances, and facilities, the management of private madrasahs can implement strategic policies to maintain quality and not always depend on the government.

Despite the vital role of private madrasahs in the educational landscape, these institutions face numerous challenges. Concerns include insufficient teacher availability, inadequate teacher status, substandard learning conditions, low student financing levels, and unmet madrasah quality standards. Additional issues involve minimal honorary salaries, low quality of human resources among madrasah heads, poor discipline, and low welfare levels for both heads and teachers. Furthermore, administrative personnel often lack professionalism, and learning facilities and infrastructure are subpar. Public attention and economic support are limited, leading to minimal student outcomes and low work motivation among madrasah heads (Dirhamsyah, 2021). High work motivation is crucial for madrasah heads, as it enhances their performance, making their efforts more effective and productive. Conversely, lack of motivation can lead to suboptimal performance and a stagnating, non-progressive environment (Torang, 2013). This research identifies a significant gap in understanding how educational administrative knowledge and work motivation impact leadership effectiveness in private madrasahs. Addressing this gap, the study aims to explore the relationships between these variables to offer insights into improving leadership and educational outcomes. The research question guiding this study is: How do educational administrative knowledge and work motivation correlate with the leadership effectiveness of madrasah heads? The objective is to determine the positive relationships between these factors to inform targeted strategies for professional development and policy enhancements, ultimately fostering a more conducive and progressive educational environment in private madrasahs.

## 2. METHODS

This study employed a quantitative correlational survey method, also referred to as the confirmative method, to verify research data through numerical analysis and statistical techniques (Sugiyono, 2018). The research population consisted of 195 heads of private Tsanawiyah Madrasahs (MTs.) in Serang Regency. A sample of 30 heads, representing 16% of the population, was selected. According to Arikunto (2017), when the subject pool exceeds 100, a sample size of 15-25% is appropriate. Data were collected using structured questionnaires with closed-ended questions (Creswell, 2012). The questionnaire employed a five-point Likert scale for responses.

Before deployment, the instrument underwent rigorous validity and reliability testing to ensure accuracy and consistency (Hardani, 2020). The survey included items across three variables: the independent variables of Educational Administration Knowledge (X1) and Work Motivation (X2), and the dependent variable of Leadership Effectiveness of the Head of Tsanawiyah Madrasah (Y), referred to as Leadership Effectiveness of the Head of MTs. Private in subsequent sections.

The data analysis involved correlation and regression techniques to determine the relationships between the variables. The use of these statistical methods enabled the researchers to quantitatively assess the impact of educational administrative knowledge and work motivation on leadership effectiveness, providing empirical evidence to support the study's hypotheses. This methodological approach ensures that the findings are robust and can be generalized to similar educational contexts, offering valuable insights for policy and practice in improving the leadership effectiveness of madrasah heads.

### 3. FINDINGS AND DISCUSSION

#### 3.1 Data Description of Variable Leadership Effectiveness

Of the 30 leadership effectiveness questions (instruments) distributed to trial respondents, 25 were deemed valid. Each question item had a minimum score of 1 and a maximum score of 5, resulting in a possible score range of 25 to 125 for each respondent. Based on respondents' perceptions, the highest score recorded was 109, and the lowest was 71. The detailed results are as follows: number of data points: 30, score range: 38, number of classes: 6, class interval width: 7, bottom interval class width: 71-77, top interval class width: 106-112, mean: 89.90, mode: 89.90, median: 91.50, standard deviation: 9.43, and variance: 88.92. The mean, mode, and median scores are very close, indicating that the Leadership Effectiveness scores of the Heads of MTs. Private tend to form a normal distribution. The distribution of the Leadership Effectiveness scores revealed that 10% (three people) fell into the "less" category, 83.33% (25 people) were in the "medium" category, and 6.66% (two people) were in the "good" category. This analysis suggests that the majority of respondents perceive the leadership effectiveness of madrasah heads as moderate, with a small percentage indicating lower or higher effectiveness.

**Table 1.** Variable Data Frequency Distribution Leadership Effectiveness

No	Class Interval	Absolute Frequency	Relative Frequency (fr%)	Cumulative Frequency (fk)	Cumulative Frequency (fk%)	Class Mark
1	71-77	3	10,00	3	10,00	74
2	78-84	5	16,66	8	26,67	81
3	85-91	7	23,33	15	50,00	88
4	92-98	10	33,33	25	83,33	95
5	99-105	3	10,00	28	93,33	102
6	106-112	2	06,67	30	100,00	109
Total		30	100,00	-	-	-

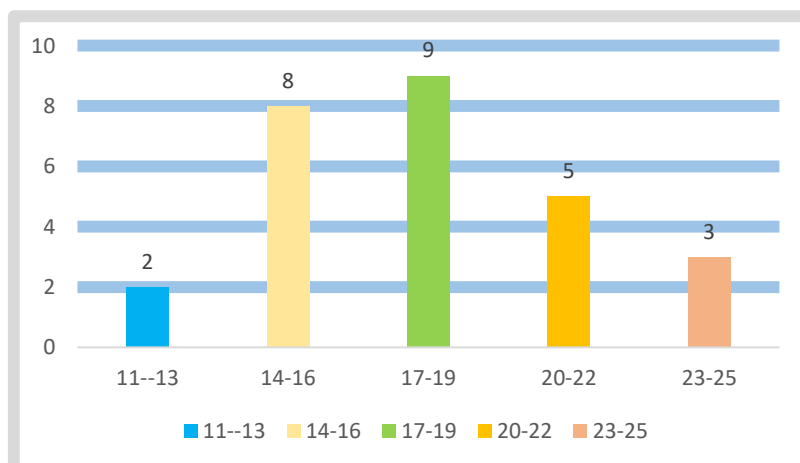
#### 3.1.1 Description of Education Administration Knowledge Variable Data

To measure the ability of Education Administration Knowledge Head MTs. Private used research instruments in the form of tests. Of the 30 validated questions, there are 23 valid questions. Thus, from the valid questions, the highest score is obtained 23 and the lowest is 0, because the score range of each item; 1-0. Based on the calculation results of the normality test, the highest score reached 23 and the lowest 12. Calculation of other data average or mean; 18,20, mode; 18.00, median; 18.00, standard deviation (standard deviation); 3.07. When looking at the mean, median and mode scores, the numbers are not much different. This suggests that the variable score of the Head of MTs. Private Education Administration Knowledge tends to form a normal distribution.

**Table 2.** Variable Data Frequency Distribution Educational Administration Knowledge

No	Class Interval	Absolute Frequency	Relative Frequency (fr%)	Cumulative Frequency (fk)	Cumulative Frequency (fk%)	Class Mark
1	11-13	2	06,67	2	06,37	12
2	14-16	8	26,67	10	30,00	15
3	17-19	9	30,00	19	63,33	16
4	20-22	8	26,67	27	90,00	21
5	23-25	3	10,00	30	100,00	24
Sum		30	100,00	100	-	-

Other data descriptions are as follows; Range 11, Class Interval 3, Number of Classes 5, Bottom Class Interval 11-13 and Top Class Interval 23-25. From these data, respondents can be grouped into good categories as many as 3 people (10%), medium categories as 25 people (83.33%), and low categories or less as many as 2 people (6.67). Based on these categories, the level of Educational Administration Knowledge of the Head of MTs. Private, the majority is at a moderate level. Based on these categories, it can be understood that the level of educational administration knowledge is that of the head of MTs. Serang Regency is generally at a moderate level. With a score range of 1-0 each, the variable score achievement rate is 0.79 or 79%. This number includes sufficient categories, as per the histogram below.



**Graph 2.** Histogram Variable Data Frequency Knowledge Education Administration Head MTs. Private

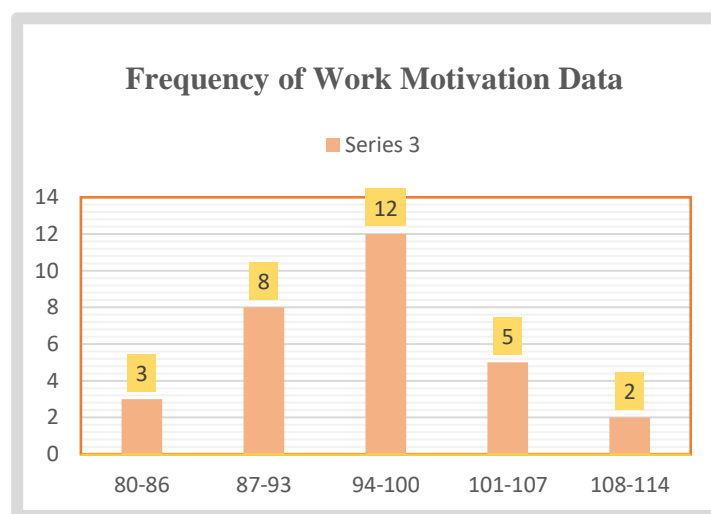
### 3.1.2 Description of Variable Data on Work Motivation

Based on respondents' perceptions of 24 work motivation instrument statements items, the minimum score obtained is 24 and the minimum score is 24. The maximum score is 120 because the score range of each item is 1-5. From the results of the study obtained the lowest score of 80 and the highest of 110. The score when calculated the high level of work motivation of the Head of Private MTs. in Serang Regency reached 0.72 (72%). This figure is included in the sufficient category because it ranges from 65%-79% as set criteria. Full data description, average; 94.70, median; 95.8, mode; 95, range; 34, grade width; 7, many classes; 5, standard deviation (standard deviation); 7.06 and variance; 49,84. By looking at the mean, mode, and median values that are almost the same, it can be concluded that the data for the work motivation variables are normally distributed. The complete distribution of work motivation of the head of the madrasah can be seen in the following table.

**Table 3.** Frequency Distribution of Variable Data Work Motivation Head MTs. Private

No	Class Interval	Absolute Frequency	Relative Frequency (fr%)	Cumulative Frequency (fk)	Cumulative Frequency (fk%)	Class Mark
1	80-86	3	10,00	3	10,00	83
2	87-93	8	26,67	11	36,67	90
3	94-100	12	40,00	23	76,67	97
4	101-107	5	16,67	28	93,33	104
5	108-114	2	06,67	30	100,00	111
Total		30	100,00	-	-	-

The distribution of data on work motivation variables can also be described in the following histogram.



**Graph 3.** Histogram Frequency Data Variable Work Motivation of Head Private Madrasah

Furthermore, as the distribution of data frequency listed in table 3, it can be seen that respondents who get the lowest score are three people (10%), while 25 people (83.33%) and the highest score is two people (6.67%). This composition shows that the level of motivation of the work of the Head of MTs. Private sector in Serang Regency is generally in the middle category.

### 3.1.3 Analysis Requirements Testing

The research hypothesis was tested using correlation and regression analysis. Before applying this technique, it is necessary to conduct a normality test and a homogeneity test first.

#### a. The Normality Test

The normality test is performed with Chi Squared. The results of normality on each research variable, namely leadership effectiveness, educational administrative knowledge, and work motivation can be seen in the table below.

**Table 4.** Variable Normality Test Results Y, X1, and X2

Variable	X <sup>2</sup> count	X <sup>2</sup> table	Conclusion
Y	3,49	7,82	Usual
X <sub>1</sub>	7,40	7,82	Usual
X <sub>2</sub>	1,27	7,82	Usual

From the test results as described above, it appears that X2 counts the three variables smaller than X2 of the table. This means that all three variables of the population are normally distributed. Thus the requirements for regression analysis can already be met.

#### b. Homogeneity Test

To find out, the population comes from a homogeneous population or not, then a calculation or homogeneity test is carried out using the Bartlett test. Based on the calculation results,  $\chi^2$  is calculated

at 31.828, smaller than  $\chi^2$  table at 42.6. It can be concluded that the data group comes from a homogeneous population.

### c. Y-regression significance test over X1

The significance test uses the regression equation  $\hat{Y} = 35.22 + 3X_1$ . Based on data processing carried out with an excell program computer, it is obtained that F count (540.21) is greater than Ftable (4.20). This means that the regression of Y over X, proved to be significant as shown in the table below. The correlation significance test obtained t count  $76.67 > t_{table} = 1.70$ . Thus, the correlation between significance and H0 is rejected.

**Table 5.** Variance Analysis for Y Regression of X1

SU. Va	Db	JK	RJK	Fh	Ft
Total	30	245145			
Reg. a	1	242460,30	242460,30	540,21	4,20
Reg. b	1	2552,41	2552,41		
Sisa	28	132,29	4,72		

### d. Y-regression significance test over X2

The significance test uses the regression equation  $\hat{Y} = -33.01 + 1.30X_2$ . From the results of data processing, F count is 430.42 and F table is 4.20. Given that F count is greater than F of the table, regression of Y over X2 proves significant. In the significance test, the correlation proved to be significant because t count =  $140.99 > t_{table} = 1.70$ . Thus H<sub>0</sub>, rejected. The calculation can be seen in the following table.

**Table 6.** Variance Analysis for Y Regression over X2

SU. Va	Db	JK	RJK	Fh	Ft
Total	30	245145			
Reg. a	1	242460,30	242460,30	430,42	4,20
Reg. b	1	2544,76	2544,76		
Sisa	28	139,94	5,00		

### e. Y-regression significance test over X1, and X2

The significance test uses the regression equation  $\hat{Y} = 3.62 + 1.74 X_1 + 0.58X_2$ . The result is obtained F count of 399.223 and F table of 3.35. Given that F count is greater than F of the table then regression of Y over X, and X2 proves significant. Based on the calculation of the significance test the double correlation coefficient obtained t<sub>1</sub>, and t<sub>2</sub> respectively 2.93 and 2.24 > t table (2.05). Below is a summary of the results of the analysis of regression variance Y over X1, and X2.

**Table 7.** Variance Analysis for Y Regression over X1, and X2

Su. Va	Db	JK	RJK	Fh	Ft	Ket
Regresi	2	2597,5	1298,45	399,223	3,35	
Residu	27	87,82	3,25			

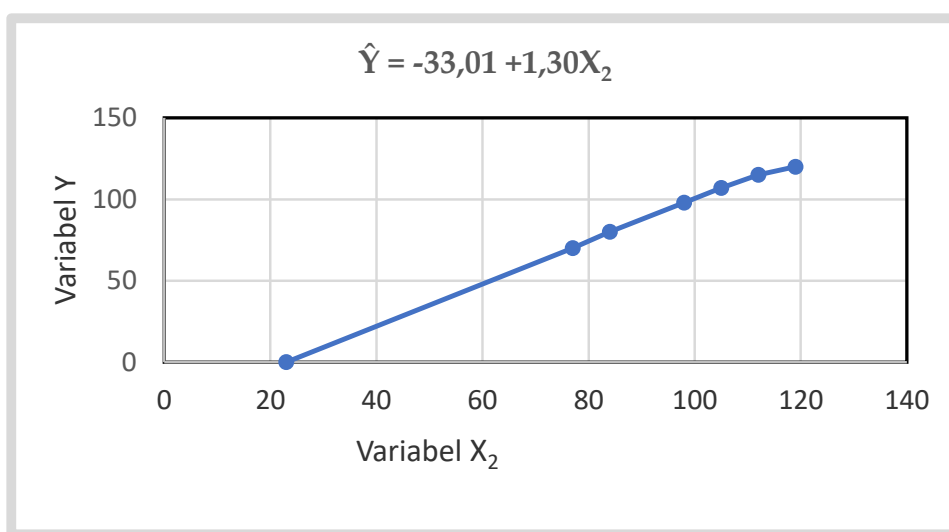
### f. Y Regression Linearity Test over X1

Based on the calculation of the regression linearity test, F is calculated at 1.78 and F table is 4.41. Given that F is smaller than F in the table, the variables Y and X1 relate linearly, as illustrated in the Scatter diagram below. From the picture, it can be predicted that the higher the value of educational

administration knowledge, the higher the level of leadership effectiveness of the head of the madrasah, and vice versa.

**g. Y Regression Linearity Test over X2**

Based on calculations, it is known that f count is 3.41 when compared to F Table which is 4.67, it can be concluded that F count < F table. This shows that between the variables of leadership effectiveness and work motivation are linearly related. As shown in the Scatter diagram below. From this picture, it can also be predicted that the higher the level of motivation for the work of the head of the madrasah, the higher the level of leadership effectiveness. Conversely, the lower the motivation of the madrasah head, the lower the level of leadership effectiveness.



**Graph 4.** Scatter Linearity Diagram Y and X2

**3.1.4 Hypothesis Testing**

**a. The first hypothesis**

The first hypothesis is that there is a positive relationship between educational administration knowledge (Variable X1) and the leadership effectiveness of the head of the madrasah (Variable Y). To test this hypothesis, the hypothesis test of correlation coefficient and regression is carried out. The results of computer calculations with excel programs can be seen in the following table.

**Table 8. Correlation analysis results X1 with Y**

Correlation	Correlation Coefficient	Correlation Coefficient	Conclusion
r <sub>y.1</sub>	0,998	0,996	Significant

In the table above, the price r<sub>y.1</sub> = 0.998 where α = 0.05. This shows that the relationship between the variables of educational administration knowledge and the leadership effectiveness of the head of the madrasah is significantly related. The correlation coefficient of educational administration knowledge to the leadership effectiveness of the head of the madrasah is 0.998. The strength of the

relationship is expressed by the coefficient of determination = 0.996. This means that the variation in leadership effectiveness of madrasah heads is strengthened by the contribution of educational administration knowledge by 99.6%. This means that the hypothesis that there is a positive relationship between Education Administration Knowledge and the Leadership Effectiveness of the Head of Private MTs in Serang District is acceptable.

### b. The second hypothesis

The second hypothesis is that there is a positive relationship between the work motivation of the head of the madrasah and the effectiveness of the leadership of the head of the madrasah. To test this hypothesis, correlation and regression analysis was performed. Based on the calculation results, the price correlation coefficient is 0.999. The strength of the relationship is expressed by the coefficient of determination, which is 0.998. This means that variations in work motivation contribute to the leadership effectiveness of the head of the madrasah by 99.80%. This shows that the hypothesis that there is a positive relationship between work motivation and the leadership effectiveness of the head of the madrasah is acceptable.

### c. Third hypothesis

The third hypothesis states that there is a positive relationship between educational administration knowledge (X1) and work motivation (X2) with the leadership effectiveness of the head of the madrasah (Y). To determine the form of the relationship of variables X1 and X2 together with Y is predictive or not, it is necessary to test the significance of the double correlation coefficient. Here is the summary result of the calculation.

**Table 9.** Summary of the Double Correlation Coefficient Significance Test

Coefficient	Price	T count/ F count	T table / F table	Information
ry.12	0,984	399,223	3,35	Significant

Based on the above calculations it appears that the calculated t of 399.223 is greater than the table t of 3.35. This means that the variables of educational administration knowledge and work motivation together have a fairly positive relationship. Furthermore, from the price of the correlation coefficient which is 0.984, the coefficient of determination is obtained 0.968. This is an indication that the variation in leadership effectiveness of the head of the madrasah is determined or influenced jointly by the knowledge of education administration and the work motivation of the head of the madrasah by 96.80%. The remaining 3.20% is estimated to come from other variables not addressed in the study.

To determine the relationship between education administration and work motivation together with the leadership effectiveness of the head of the madrasah, a double regression was carried out. From the calculation results obtained the equation  $Y = 3.62 + 1.74 X1 + 0.58X2$ . Based on the calculation of the double correlation coefficient significant test, it is known that the calculated F price is obtained 399.223 then consulted with the F table which is 3.35. Given that F counts > F tables, the double correlation coefficient is accepted and can be used to forecast variations that occur in the variable of leadership effectiveness of the head of the madrasah through predictors of variables of educational administrative knowledge and work motivation.

Based on this analysis, it is known that the variables of educational administration knowledge and work motivation together contribute significantly to the effectiveness of the leadership of the head of the madrasah. Thus, this third hypothesis has been empirically tested and is acceptable.

### 3.2 Discussion

All correlation coefficients or degrees of relationship resulting from the analysis described above, show a positive relationship between the variable of educational administration knowledge and the leadership effectiveness of the head of the madrasah of 0.998 with the meaning of the correlacyte coefficient  $t$  calculated at  $76.67 > t$  table of 1.70.

While table 9 also shows a positive relationship between educational administration knowledge variables and leadership effectiveness. Known  $F$  count ( $540.21$ )  $>$   $F$  table ( $4.20$ ). In addition, the two variables are also tested for linearity and it turns out that based on calculations and shown by the Scatter diagram (Graph 5) forming a straight line.

Based on the calculation results that have been disclosed in advance, variables  $X_2$  and  $Y$  have a significant positive relationship. This is evidenced by a significance test where  $F$  counts ( $430.42$ )  $>$   $F$  table ( $4.20$ ). In addition to being tested for regression significance, linearity is also tested. Based on the calculation, it turns out that the variables  $X_2$  and  $Y$  are linearly related, as shown in the Scatter diagram in graph 6 using the equation  $\hat{Y} = -33.01 + 1.30X_2$ .

Both variables also have a pretty good correlation coefficient of 0.999. This means that the coefficient of determination is 0.9980 or 99.80%. Thus, the variation in work motivation of the head of the madrasah contributes 99.80% to the effectiveness of the leadership of the head of the madrasah. The results of testing the correlation coefficient of the two showed a fairly significant relationship.

Similarly, the relationship between variables  $X_1$  and  $X_2$  together has a positive correlation with variable  $Y$ . The three variables are tested for correlation significance where  $F$  counts ( $399.223$ )  $>$  ( $3.35$ ). Furthermore, from the price of the correlation coefficient, the coefficient of determination is obtained at 0.984 or 98.40%.

Furthermore, between the ability of educational administration knowledge and work motivation has a reciprocal relationship, where both influence each other and are very strongly related, namely 0.984 with a coefficient of determination of 0.968 or 96.82% A positive correlation is also shown by variable  $X_1$  and variable  $X_2$  to variable  $Y$  of 0.968. This relationship can be qualitatively expressed as very strong and more than the individual correlation between  $X_1$ , with  $Y$  or  $X_2$  with  $Y$ . The correlation of 0.968 applies to the sample studied and can be generalized after going through a significance test.

Based on the test results,  $F$  count is  $399.22 >$   $F$  table is 3.35. This shows that the multiple correlation coefficients tested proved to be significant and quite strong as in the following table of correlation coefficient interpretation criteria.

**Table 10.** Interpretation Criteria of the Correlation Coefficient

No	Coefficient Interval	Relationship Level	Information
1	0,00 – 0,19	Very low	
2	0,20 – 0,39	low	
3	0,40 – 0,59	Keep	
4	0,60 – 0,79	Strong	
5	0,80 – 1,00	Very powerful	

These three research hypotheses are stated to be accepted both individually and together. The assumptions underlying the study of theory are supported by empirical data obtained from respondents. The first finding is that there is a significant contribution between Education Administration Knowledge and the Leadership Effectiveness of the Head of Private MTs. in Serang Regency. This fact shows that knowledge of education administration is one of the important aspects for madrasah heads to improve the effectiveness of their leadership. If the head of the madrasah has good knowledge of educational administration, then his leadership effectiveness is likely to improve. Conversely, if the administrative knowledge of leadership education is reduced, the level of effectiveness will be less as well. These results support the theory put forward by (Rivai, 2014), That

the effectiveness of a leader is influenced by dimensions related to his duties, functions and technical skills

The closeness of the relationship between variables X1 and X2 also shows positive properties. The value of the partial correlation coefficient of both is quite high as can be seen in table 12. Qualitatively, the picture of the relationship shows that the two variables cannot be separated in terms of influencing leadership effectiveness, in other words, variable X1 must be supported by variable X2 in achieving leadership effectiveness, and vice versa.

Knowledge of educational administration is conceptually an insight or mastery possessed by the head of a madrasah about administration that is closely related to the management of education in madrasah (Mulyasa, 2019). Similarly, work motivation is conceptually a force both from within and outside that drives a madrasah head to achieve the goals outlined (Marno, 2014). These two variables support the increase in leadership effectiveness.

#### 4. CONCLUSION

The effectiveness of leadership among madrasah heads is closely tied to their level of educational administrative knowledge. This study concludes that higher work motivation among madrasah heads leads to greater leadership effectiveness, while lower motivation results in reduced effectiveness. Moreover, educational administration knowledge and work motivation are strongly correlated with leadership effectiveness, with a combined contribution of 98.4%. These findings underscore the importance of educational administration knowledge and work motivation for madrasah leaders to foster advanced and competitive institutions. However, this research is limited by its focus on a specific geographical area and does not account for other potential factors influencing leadership effectiveness. Future research should explore these relationships in diverse settings and consider additional variables that may impact leadership outcomes.

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