

Original Article

# Smart Strategy to Enhance Learning Effectiveness Through Transformational Leadership, Implementation of Cooperative Learning Models, And Learning Motivation

<sup>1</sup>Andi Hermawan, <sup>2</sup>Latif Sufi Alhamdan, <sup>3</sup>Ahmad Kholili

<sup>1</sup>Universitas Pakuan Bogor.

<sup>2</sup>Universitas alkhairiyah.

<sup>3</sup>SMK PGRI 2 Cibinong.

Received Date: 10 February 2025

Revised Date: 24 February 2025

Accepted Date: 26 February 2025

Published Date: 02 March 2025

**Abstract:** Learning effectiveness refers to the composed combination of human elements, materials, facilities, equipment, and procedures that change student behavior in a positive and better direction by leveraging students' potential and differences to achieve predetermined learning goals. Learning effectiveness is an important component of accomplishing educational goals. Religious studies are constantly used as a standard for conduct and attitudes. It is well known that acquiring Islamic Religious Education courses at private vocational schools in Bogor Regency does not yield the promised results. As a result, further study is needed to understand about the factors that contribute to increased learning effectiveness. The goal of this study is to identify strategies and methods for increasing learning effectiveness by investigating the relationship between the cooperative learning model's implementation factors, transformational leadership, and learning motivation. This study uses the route analysis approach to assess the influence of the factors analyzed, as well as the SITOREM method for indicator analysis, to generate strategies and methods for improving learning effectiveness.

**Keywords:** Learning Effectiveness, Implementation of the Cooperative Learning Model, Transformational Leadership, Achievement Motivation, SITOREM Analysis.

## I. INTRODUCTION

Education is a learning and teaching process that seeks to maximize human potential via various teaching and learning activities. The primary purpose of education is to assist individuals in acquiring the skills, information, and values required for daily living (Nuriansyah, 2020). Education is critical to human growth because it helps people comprehend their surroundings, their position in society, and how to handle future obstacles (Dermawan et al., 2023a). Aside from that, education serves as the basis for a country's social and economic growth by improving the quality of human resources and preparing citizens to engage in social, economic, and political life (Santoso, 2019).

According to the Big Indonesian Dictionary, effectiveness is derived from the term effective, which denotes impact or consequence. Effectiveness is the attempt to meet established goals in line with needs, plans, data, facilities, and available time in order to produce the best quantitative and qualitative outcomes possible. (Supardi, 2013, 164). To improve the efficacy of learning activities, numerous elements must be considered, including class circumstances, learning materials, media, and instruments.

Students at all educational levels, from primary to university, must receive instruction in Islamic religious education. Humanization, or the process of human maturation toward the construction of a whole human being (insan kamil), or the realization of true humanity, is what education is both in theory and in reality. The primary focus of attention in the actual execution of education is the realization of the objective of the educational process, which is the construction of a whole human being.

The educators of today are prepared to teach under both normal and unusual circumstances. For example, there are no longer any teachers who are unsure of how to plan and execute learning in a strategic, efficient, and effective manner because all the necessary materials along with applications are already available on the internet or Google; the teacher just needs to figure out how to use them, which takes time and effort to learn.

According to Miarso (2004), learning effectiveness is one of the quality criteria of education and is frequently assessed by reaching objectives. It may also be understood as "doing the right things" or accurately handling a situation. Effective learning, according to Supardi (2013), is a confluence of people, resources, facilities, tools, and processes meant to improve



and transform student behavior in accordance with their individual potential and differences in order to meet the established learning objectives.

Effective learning, according to Hamalik (2001), is learning that gives students the chance to learn on their own or engage in as many learning activities as they can. It is anticipated that giving students as many chances as possible for individual study and activities would aid in their understanding of the subjects being covered.

In order to transform student behavior in a good and better direction and make use of their individual peculiarities and capabilities to meet the established learning objectives, effective learning combines human components, materials, facilities, equipment, and procedures (Supardi, 2013: 164). The effectiveness of learning will rely on a number of variables. Among these is the way in which we, as educators, might package instructional methods. (Berdiati and Saefuddin, 2014: 40)

Quality, Appropriateness, Incentive, and Time (QAiT) are the four primary components of effective instruction that Slavin (1994) separated (Supardi, 2013: 169). Accordingly, the following guidelines must be followed in order to achieve a successful learning process: experiencing, engaging, reflecting, and generating wants.

According to Guntur (2004) in (Supardi 2013: 166–168), there are a number of essential components of successful learning, including clarity, variety, task orientation, student involvement in the learning process, achievement of high student success rates, and task orientation. Effective learning requires the proper management of a number of facilities, learning resources, and components. Media use in the classroom can inspire students and spark fresh passions and desires (Saefuddin and Berdiati, 2014:62).

In addition to conveying messages and lesson material at that time, it is envisaged that the usage of learning media would aid in improving learning effectiveness. The efficacy metrics that will be employed in this study center on the media—specifically, instructional videos. It is intended that using films as media can increase the quality of students' learning outcomes, make the learning process more engaging, and deliver information in depth.

In collaborative education, pupils collaborate and learn in small groups with a diverse group framework, often consisting of four to six individuals (Rusman, 2011: 202). According to Abdulhak (2001), not all group learning is considered cooperative learning (Rusman, 2011: 203). He claims that sharing processes among learning stakeholders is how cooperative learning is implemented, leading to a common understanding among the learning partners.

In keeping with the aforementioned opinions, Nurhayati (2002) (Rusman, 2011: 203) likewise regards cooperative learning as a method of instruction that entails students interacting with one another in small groups. Cooperative learning, according to Tom V. Savage, is a method that prioritizes group collaboration.

### **A) Learning Effectiveness**

According to the views and theories put forth by Dundon & Wilkinson (2020), Kaizen et al. (2012), Rabiah (2019), Poornima M. Charantimath (2020), Tribus (2010), Jayawardana (2017), Nurtanto et al. (2020), and Darma et al. (2021), learning effectiveness can be summed up as a combination of human elements, materials, facilities, equipment, and procedures to influence student behavior in a positive way and more effectively use the potential and distinctions that kids possess in order to accomplish the established learning objectives. The following are indications of the quality of learning: The first is clarity; the second is variety; the third is task orientation; the fourth is student participation in learning; and the fifth is the achievement of high academic achievement rates.

### **B) Transformational leadership**

Based on the opinions and theories presented by Fred Luthans. (2021 p, 392), Stanley C. Ross (2021. p 192), Mullins, Laurie J.(2016, p, 326), Kinicki, Angelo. (2016, p 246), Fred Luthans. (2021 p, 393), Gert Alblas and Ella Wijsman (2021, p 229-230), Stephen P. Robbins and Timothy A. Judge. (2019, p 476. p, 480), Debra L. Nelson. (2018, p. 57 p 211), Colquitt, Jason et al. (2019, p 456-457), Terri A. Scandura (2019, p 302), Joseph E. Champoux (2017, p, 412), and Andrew J. DuBrin, (2019, p, 252), can be synthesized that transformational leadership is the behavior of a leader who is able to create fundamental changes and is based on values, beliefs, attitudes, behavior, emotions in order to achieve a predetermined vision. The indicators of transformational leadership are as follows: 1). Ideal influence (Idealized influence), namely, the leader acts as a role model or role model, 2). Inspirational motivation (Inspirational motivation), namely, the leader creates a clear picture of the future situation in an optimistic manner, 3). Intellectual stimulation (Intellectual simulation), namely leaders stimulate people to be creative and innovative, and 4). Individual consideration, namely leaders, develops people by creating a supporting climate environment.

### C) Implementation of the Cooperative Learning Model

Based on the opinions and theories presented by Rusman (2018, p. 202), Warsono & Hariyanto (2014, p. 161), Roger (2015, p. 29), Syaifurahman & Ujiati (2013, p. 75) Parker (2015, p. 29), 2015.p.29), Hamdayama (2016, p. 145) can synthesize that the cooperative learning model is a type of learning that focuses on students working together in small groups to accomplish a common objective while utilizing a variety of learning activities to enhance skills. Students need to comprehend the course material and work together to solve challenges. The following are indications of the quality of learning: Promotive contact, personal responsibility, interpersonal and small-group abilities, and group processing are the first four components.

### D) Motivation to learn

Based on opinions and theories presented by George & Jones (2016: 157-160), Pinder (2015: 13), Robbins & Judge (2016: 214), Luthans (2016: 37-40), Schermerhorn, Hunt Jr, Osborn, & Bien (2015: 108-115), Schermerhorn (2015: 404), Greenberg & Baron (2017: 248), Robert & Angelo (2014: 205), Wexley & Yukl (2015: 16-18), Gomes (2014: 188), Robbins & Judge (2016: 201), Colcuitt, LePine, & Wesson (2015: 168), The following categories and indicators can be used to measure motivation to learn, which can be defined as the degree of encouragement, desire, and motion power that develops within an individual, both from within and outside of himself, to perform a job with high enthusiasm using all of his abilities and skills with the goal of maximum achievement: a). Indicators for intrinsic dimensions: 1) Accomplishment, 2) Admittance, 3) Accountability, 4) Advancement, and b) External Factors with the following indicators: 5) Reimbursement, 6) Study Environments, 7) Status, and 8) Study Methods.

### E) SITOREM

"Scientific Identification Theory to Conduct Operation Research in Education Management" is what SITOREM stands for, and it can be broadly understood as a scientific approach to finding variables (theory) to carry out "Operation Research" in the field of education management (Soewarto Hardhienata, 2017).

SITOREM is a technique used in the context of Correlation and Path Analysis study to perform: 1. Determine how strongly the independent and dependent variables are related, 2) Examine the value of the research findings for each indicator of the research variable, and 3) Examine the relative importance of each indicator for each research variable using the "Cost, Benefit, Urgency, and Importance" standards.

The priority list of indicators that must be maintained and those that must be improved right away can be established based on the strength of the connection among the variables under study and the weight of each independent variable measure that contributes the most organized. The average score of each indicator for each research variable is used to compute the analysis of the worth of the research results for each indicator. From the perspective of the study subject, the average score for each indication represents the real state of these indicators.

## II. METHODS

By examining the degree to which Transformational Leadership, Cooperative Learning Model Execution, and Motivation influence Learning Effectiveness, the dependent variable, this study seeks to identify methods and approaches to improve learning in Islamic religious education subjects at private vocational schools in Bogor Regency. Education as a separate variable. The SITOREM technique for indicator analysis and the use of surveys with a route analysis test methodology to test statistical hypotheses are the research methods utilized to identify the best ways to improve learning in Islamic religious education courses.

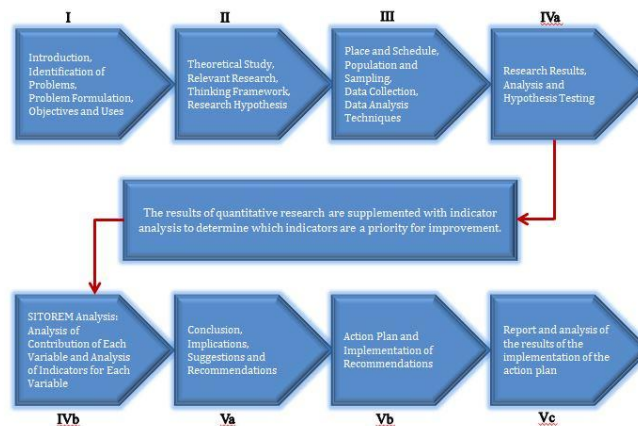
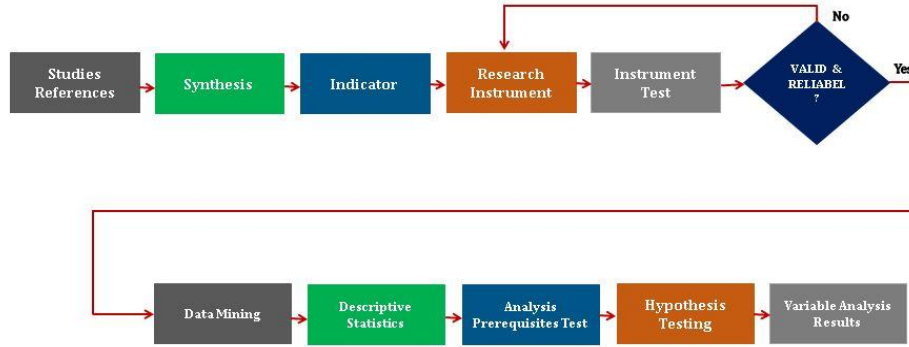


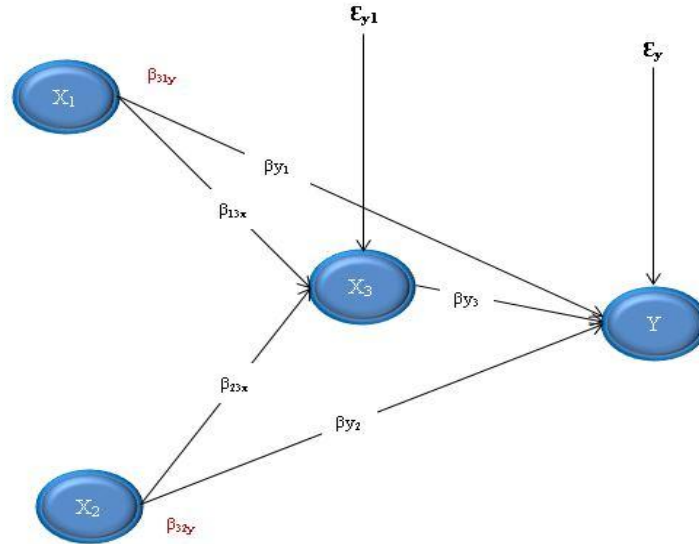
Figure 1. Quantitative and SITOREM Step



**Figure 2. Quantitative Research Step**

Using the Slovin formula derived from Umar, a sample of 168 instructors was selected from among the 289 teachers who were foundation permanent teachers (GTY) at Bogor Regency Private Vocational High Schools (SMK).

Teachers who participated in the study were given a questionnaire, which served as the research equipment for data collection. The research indicators whose circumstances will be examined are the source of the research instrument items. The validity and reliability of the research instrument were assessed before it was given to respondents.



**Figure 3. Research Constellation**

- X1 = Transformational Leadership
- X2 = Implementation of the Cooperative Learning Model
- X3 = Motivation to Learn
- Y = Learning Effectiveness

### III. RESULT AND DISCUSSION

#### A) Convergent Validity Test

Convergent validity is calculated in order to evaluate construct validity. The loading factor and Average Variance Extracted (AVE) data are used to determine convergent validity. If an instrument's loading factor and Average Variance Extracted (AVE) are both more than 0.5, it is considered to pass the convergent validity test. The following table displays the findings of the convergent validity test:

**Table 1. Convergent Validity Test Results**

| Variable                                                           | Dimensions          | Indicator                                     | Loading Factor | AVE   |
|--------------------------------------------------------------------|---------------------|-----------------------------------------------|----------------|-------|
| Learning Effectiveness (Y)                                         | -                   | Clarity                                       | 0.781          | 0.637 |
|                                                                    |                     | Variety                                       | 0.829          |       |
|                                                                    |                     | Task Orientation                              | 0.792          |       |
|                                                                    |                     | Engagement in learning                        | 0.841          |       |
|                                                                    |                     | Student success rates                         | 0.745          |       |
| Transformasional Leadership (X <sub>1</sub> )                      | -                   | Idealized influence                           | 0.748          | 0.646 |
|                                                                    |                     | Inspirational motivation                      | 0.863          |       |
|                                                                    |                     | Intellectual stimulation                      | 0.834          |       |
|                                                                    |                     | Individual consideration                      | 0.763          |       |
| Implementation of the Cooperative Learning Model (X <sub>2</sub> ) | -                   | Interaksi Promotif                            | 0.707          | 0.595 |
|                                                                    |                     | Akuntabilitas individu                        | 0.748          |       |
|                                                                    |                     | Keterampilan interpersonal dan kelompok kecil | 0.843          |       |
|                                                                    |                     | Pemrosesan kelompok                           | 0.728          |       |
| Motivation to Learn (X <sub>3</sub> )                              | Intrinsic Dimension | Achievement                                   | 0.838          | 0.565 |
|                                                                    |                     | Confession                                    | 0.81           |       |
|                                                                    |                     | Responsibility                                | 0.855          |       |
|                                                                    |                     | Progress                                      | 0.799          |       |
|                                                                    | Extrinsic Dimension | Compensation                                  | 0.804          |       |
|                                                                    |                     | Studying Condition                            | 0.851          |       |
|                                                                    |                     | Status                                        | 0.805          |       |
|                                                                    |                     | Study Procedure                               | 0.771          |       |

**B) Discriminant Validity Test**

Cross-loading is used to assess discriminant validity, and if the indicator's cross-loading value in one variable is higher than its correlation value in other variables, the indicator is deemed valid for measuring that variable. The following table displays the findings of the cross-loading calculation.

**Table 2. Results of Cross-Loading Discriminant Validity Testing**

| Indicator | Transformasional Leadership | Implementation of the Cooperative Learning Model | Motivation to Learn |            | Learning Effectiveness |
|-----------|-----------------------------|--------------------------------------------------|---------------------|------------|------------------------|
|           |                             |                                                  | Intrinsic           | Ekstrinsic |                        |
| X1.1      | 0.748                       | 0.298                                            | 0.303               | 0.288      | 0.271                  |
| X1.2      | 0.863                       | 0.3                                              | 0.365               | 0.292      | 0.374                  |
| X1.3      | 0.834                       | 0.346                                            | 0.387               | 0.309      | 0.409                  |
| X1.4      | 0.763                       | 0.286                                            | 0.259               | 0.196      | 0.312                  |
| X2.1      | 0.327                       | 0.707                                            | 0.386               | 0.369      | 0.498                  |
| X2.2      | 0.178                       | 0.748                                            | 0.233               | 0.246      | 0.371                  |
| X2.3      | 0.283                       | 0.843                                            | 0.292               | 0.261      | 0.525                  |
| X2.4      | 0.359                       | 0.728                                            | 0.311               | 0.223      | 0.379                  |
| X3.1.1    | 0.299                       | 0.327                                            | 0.838               | 0.58       | 0.371                  |
| X3.1.2    | 0.364                       | 0.321                                            | 0.81                | 0.546      | 0.364                  |
| X3.1.3    | 0.373                       | 0.365                                            | 0.855               | 0.594      | 0.39                   |
| X3.1.4    | 0.334                       | 0.346                                            | 0.799               | 0.563      | 0.383                  |
| X3.2.1    | 0.225                       | 0.289                                            | 0.576               | 0.804      | 0.338                  |
| X3.2.2    | 0.279                       | 0.361                                            | 0.587               | 0.851      | 0.412                  |
| X3.2.3    | 0.33                        | 0.276                                            | 0.54                | 0.805      | 0.298                  |
| X3.2.4    | 0.27                        | 0.272                                            | 0.531               | 0.771      | 0.255                  |
| Y.1       | 0.355                       | 0.419                                            | 0.321               | 0.304      | 0.781                  |
| Y.2       | 0.35                        | 0.483                                            | 0.407               | 0.325      | 0.829                  |
| Y.3       | 0.317                       | 0.485                                            | 0.358               | 0.329      | 0.792                  |
| Y.4       | 0.358                       | 0.577                                            | 0.397               | 0.341      | 0.841                  |
| Y.5       | 0.345                       | 0.4                                              | 0.331               | 0.319      | 0.745                  |

**C) Construct Reliability**

Cronbach alpha and composite reliability are two calculations that may be used to measure build dependability. According to the test criteria, the model is deemed trustworthy if the Cronbach alpha is better than 0.6 and the composite

reliability is greater than 0.7. The following table provides an overview of the findings from the Cronbach alpha and composite reliability computations.

**Table 3. Construct Reliability Testing Results**

| Variable                                                   | Cronbach's Alpha | Composite Reliability |
|------------------------------------------------------------|------------------|-----------------------|
| Transformational Leadership ( $X_1$ )                      | 0.858            | 0.898                 |
| Implementation of the Cooperative Learning Model ( $X_2$ ) | 0.817            | 0.879                 |
| Motivation to Learn ( $X_3$ )                              | 0.754            | 0.843                 |
| Learning Effectiveness ( $Y$ )                             | 0.890            | 0.912                 |

#### D) Coefficient of Determination ( $R^2$ )

The amount of the effect of exogenous factors on endogenous variables, or the extent to which endogenous variables may explain the variety of exogenous variables, is ascertained using the Determination Coefficient ( $R^2$ ). The following table displays the  $R^2$  findings.

**Table 4. Results of the Coefficient of Determination ( $R^2$ )**

| Variable Dependent             | R Square | R Square Adjusted |
|--------------------------------|----------|-------------------|
| Motivation to Learn ( $X_3$ )  | 0.255    | 0.248             |
| Learning Effectiveness ( $Y$ ) | 0.438    | 0.430             |

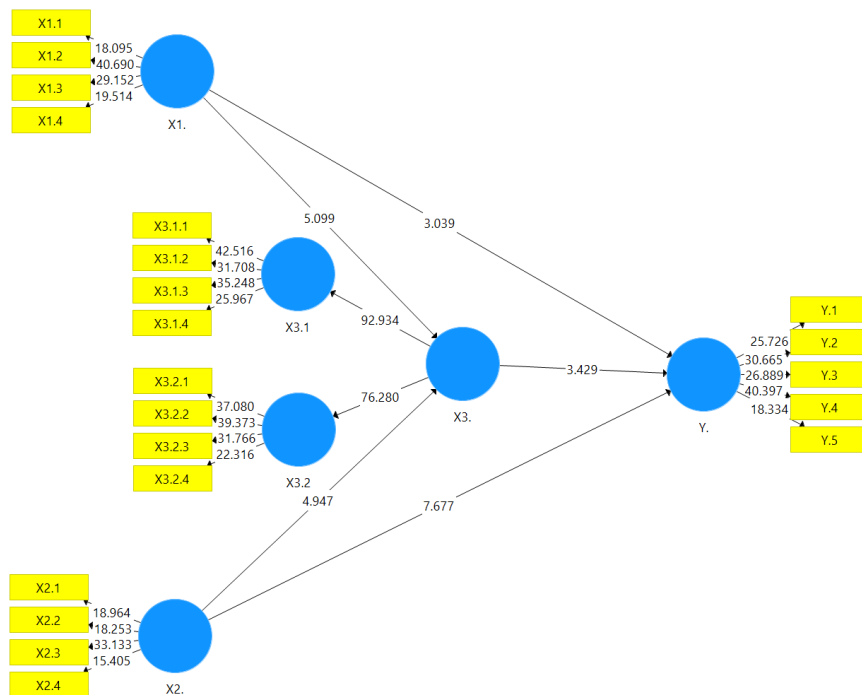
#### E) Predictive Relevance ( $Q^2$ )

The model's and the estimated parameters' ability to create the observed values may be gauged by the  $Q^2$  value. A model is considered adequate if its  $Q^2$  value is more than 0 (zero), while it is considered predictively irrelevant if its  $Q^2$  value is less than 0 (zero). The Predictive Relevance ( $Q^2$ ) test yielded the following findings:

**Table 5. Results of Predictive Relevance Testing ( $Q^2$ )**

| Variable Dependent             | SSO      | SSE      | $Q^2 (=1-SSE/SSO)$ |
|--------------------------------|----------|----------|--------------------|
| Motivation to Learn ( $X_3$ )  | 1832.000 | 1573.914 | 0.141              |
| Learning Effectiveness ( $Y$ ) | 1145.000 | 836.365  | 0.270              |

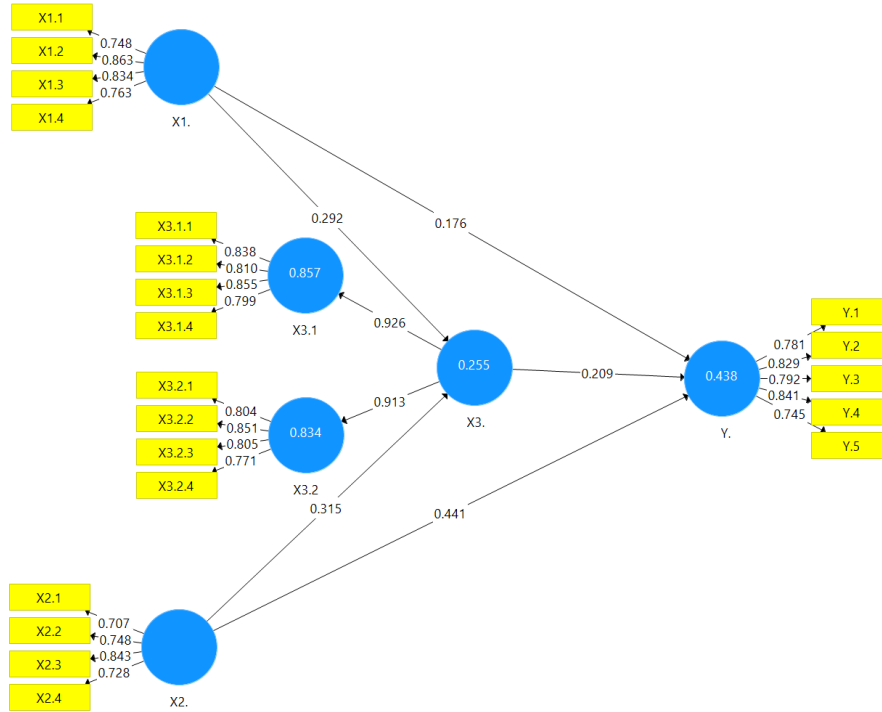
The results in Table 5 show that all variables produce Predictive Relevance ( $Q^2$ ) values greater than 0 (zero), which indicates that the model is said to be good enough.



**Figure 4. Research Constellation**

### F) Hypothesis test

To determine if exogenous factors have an impact on endogenous variables, significance testing is utilized. According to the evaluation criteria, there is a substantial impact of exogenous factors on endogenous variables if the P-value is less than the significant alpha 5% or 0.05 or if the T-statistics value is  $\geq$  T-table (1.96). The following tables and figures show the outcomes of the mathematical models and their significance tests.



**Figure 5 Analysis Results**

Complete hypothesis testing is presented in Table 6.

**Table 6. Hypothesis Testing Results**

| No. | Path                                                                                                        | Coefficient | T Statistics ( O/STDEV ) | P Values |
|-----|-------------------------------------------------------------------------------------------------------------|-------------|--------------------------|----------|
| 1.  | Transformational Leadership (X <sub>1</sub> ) -> Motivation to Learn (X <sub>3</sub> )                      | 0.292       | 5.099                    | 0.000    |
| 2.  | Transformational Leadership (X <sub>1</sub> ) -> Learning Effectiveness (Y)                                 | 0.176       | 3.039                    | 0.002    |
| 3.  | Implementation of the Cooperative Learning Model (X <sub>2</sub> ) -> Motivation to Learn (X <sub>3</sub> ) | 0.315       | 4.947                    | 0.000    |
| 4.  | Implementation of the Cooperative Learning Model (X <sub>2</sub> ) -> Learning Effectiveness (Y)            | 0.441       | 7.677                    | 0.000    |
| 5.  | Motivation to Learn (X <sub>3</sub> ) -> Learning Effectiveness (Y)                                         | 0.209       | 3.429                    | 0.001    |

#### a. The Influence of Transformational Leadership (X<sub>1</sub>) on Learning Motivation (X<sub>3</sub>)

A T statistics value of 5.099 with a p-value of 0.000 is obtained while examining the impact of Transformational Leadership (X<sub>1</sub>) on Learning Motivation (X<sub>3</sub>). According to the test findings, the p-value is less than 0.05, and the T statistics value is more than 1.96. This indicates that Learning Motivation (X<sub>3</sub>) is significantly impacted by Transformational Leadership (X<sub>1</sub>). The final coefficient value, which is 0.292, is positive. Therefore, it may be concluded that learning motivation tends to rise with improved transformational management.

#### b. The Influence of Transformational Leadership (X<sub>1</sub>) on Learning Effectiveness (Y)

When examining the relationship between Transformational Leadership (X<sub>1</sub>) and Learning Effectiveness (Y), a p-value of 0.002 and a T statistics value of 3.039 are obtained. According to the test findings, the p-value is less than 0.05, and the T statistics value is more than 1.96. This indicates that Learning Effectiveness (Y) is significantly impacted by



Transformational Leadership (X1). The resultant coefficient value, 0.176, is positive. Therefore, it can be concluded that learning efficiency is likely to grow with larger levels of transformational leadership.

**c. Effect of Implementing the Cooperative Learning Model (X2) on Learning Motivation (X3)**

A T statistics value of 4,947 with a p-value of 0.000 was obtained while examining the impact of using the Cooperative Learning Model (X2) on Learning Motivation (X3). According to the test findings, the p-value is less than 0.05, and the T statistics value is more than 1.96. This indicates that learning motivation (X3) is significantly impacted by the use of the cooperative learning model (X2). The final coefficient value, which is 0.315, is positive. Therefore, it can be concluded that the more effectively the Cooperative Learning Model is applied, the more probable it is to boost learning motivation.

**d. Effect of Implementing the Cooperative Learning Model (X2) on Learning Effectiveness (Y)**

Testing the relationship between Learning Effectiveness (Y) and implementing the Cooperative Learning Model (X2) yielded a p-value of 0.000 and a T statistics value of 7.677. The test's findings indicate that the p-value is less than 0.05, and the T statistics value is greater than 1.96. This indicates that applying the cooperative learning model (X2) has a major impact on learning effectiveness (Y). The resultant coefficient value, 0.441, is positive. Therefore, the more effectively the Cooperative Learning Model is applied, the more probable it is to improve learning outcomes.

**e. Influence of Learning Motivation (X3) on Learning Effectiveness (Y)**

The results of testing the relationship between Learning Motivation (X3) and Learning Effectiveness (Y) yield a T statistics value of 3.429 and a p-value of 0.001, indicating that there is a significant influence of Learning Motivation (X3) on Learning Effectiveness (Y). The resulting coefficient value is positive, specifically 0.290, suggesting that the more learning motivation, the more likely it is to increase learning effectiveness.

**Table 7. Indirect Effect Hypothesis Testing**

| No | Variabel Indirect                                                                                               | Coefisien | T Statistics<br>( O/STDEV ) | P Values |
|----|-----------------------------------------------------------------------------------------------------------------|-----------|-----------------------------|----------|
| 1. | Transformational Leadership (X1) -> Learning Effectiveness (Y) -> Motivation to Learn (X3)                      | 0.061     | 2.518                       | 0.012    |
| 2. | Implementation of the Cooperative Learning Model (X2) -> Learning Effectiveness (Y) -> Motivation to Learn (X3) | 0.066     | 2.943                       | 0.003    |

**f. The Influence of Transformational Leadership (X1) on Learning Effectiveness (Y) Through Learning Motivation (X3)**

Using Learning Motivation (X3) to test the impact of Transformational Leadership (X1) on Learning Effectiveness (Y), the results show a T statistical value of 2.518 and a p-value of 0.012. The test's findings indicate that the p-value is less than 0.05, and the T statistics value is more than 1.96. This indicates that Learning Effectiveness (Y) is significantly impacted by Transformational Leadership (X1) through Learning Motivation (X3). The impact of Transformational Leadership (X1) on Learning Effectiveness (Y) can thus be mediated by Learning Motivation (X3).

**g. The Effect of Implementing the Cooperative Learning Model (X2) on Learning Effectiveness (Y) Through Learning Motivation (X3)**

A T statistics value of 2.943 and a p-value of 0.003 are obtained when evaluating the impact of using the Cooperative Learning Model (X2) on Learning Effectiveness (Y) through Learning Motivation (X3). According to the test findings, the p-value is less than 0.05, and the T statistics value is more than 1.96. This indicates that through motivation for learning (X3), the use of the cooperative learning model (X2) has an impact on learning effectiveness (Y). Therefore, it can be said that the impact of the Cooperative Learning Model's execution (X2) on learning effectiveness (Y) can be mediated by motivation (X3).

**h. Optimal Solution for Improving Learning Quality**

The following summarizes study findings and identifies the best way to improve learning effectiveness based on the outcomes of statistical hypothesis testing, indicator priority determination, and indicator value calculation, as previously mentioned:

**Table 8. SITOREM Analysis**

| Transformational Leadership ( $\beta_1 = 0,176$ ) (rangk.III) |                          |                                     |                                  |                 |
|---------------------------------------------------------------|--------------------------|-------------------------------------|----------------------------------|-----------------|
| Indicator in Initial State                                    |                          | Indicator after Weighting by Expert |                                  | Indicator Value |
| 1                                                             | Idealized influence      | 1 <sup>st</sup>                     | Inspirational motivation (27.37) | 3.88            |
| 2                                                             | Inspirational motivation | 2 <sup>nd</sup>                     | Individual consideration (25.33) | 4.10            |



|                                                                                                  |                                      |                                            |                                              |                        |
|--------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------|----------------------------------------------|------------------------|
| 3                                                                                                | Intellectual stimulation             | 3 <sup>rd</sup>                            | Idealized influence (24.16)                  | 4.00                   |
| 4                                                                                                | Individual consideration             | 4 <sup>th</sup>                            | Intellectual stimulation (23.14)             | 3.61                   |
| <b>Implementation of the Cooperative Learning Model (<math>\beta_2 = 0,441</math>) (rangk.I)</b> |                                      |                                            |                                              |                        |
| <b>Indicator in Initial State</b>                                                                |                                      | <b>Indicator after Weighting by Expert</b> |                                              | <b>Indicator Value</b> |
| 1                                                                                                | Promotional Interaction              | 1 <sup>st</sup>                            | Promotive Interaction (26.47)                | 3.57                   |
| 2                                                                                                | Individual accountability            | 2 <sup>nd</sup>                            | Batch processing (24.54)                     | 4.02                   |
| 3                                                                                                | Interpersonal and small group skills | 3 <sup>rd</sup>                            | Interpersonal and small group skills (24.51) | 3.68                   |
| 4                                                                                                | Batch processing                     | 4 <sup>th</sup>                            | Individual accountability (24.48)            | 4.04                   |
| <b>Motivation to Learn (<math>\beta_3 = 0,209</math>) (rangk.II)</b>                             |                                      |                                            |                                              |                        |
| <b>Indicator in Initial State</b>                                                                |                                      | <b>Indicator after Weighting by Expert</b> |                                              | <b>Indicator Value</b> |
| 1                                                                                                | Achievement                          | 1 <sup>st</sup>                            | Progress (14.14)                             | 3.82                   |
| 2                                                                                                | Confession                           | 2 <sup>nd</sup>                            | Compensation (14.02)                         | 3.84                   |
| 3                                                                                                | Responsibility                       | 3 <sup>rd</sup>                            | Studying Condition (13.14)                   | 3.78                   |
| 4                                                                                                | Progress                             | 4 <sup>th</sup>                            | Confession (13.10)                           | 4.14                   |
| 5                                                                                                | Compensation                         | 5 <sup>th</sup>                            | Responsibility (12.06)                       | 4.56                   |
| 6                                                                                                | Studying Condition                   | 6 <sup>th</sup>                            | Study Procedure (12.02)                      | 4.56                   |
| 7                                                                                                | Status                               | 7 <sup>th</sup>                            | Achievement (11.12)                          | 3.98                   |
| 8                                                                                                | Study Procedure                      | 8 <sup>th</sup>                            | Status (10.40)                               | 4.02                   |
| <b>Efektivitas Pembelajaran</b>                                                                  |                                      |                                            |                                              |                        |
| <b>Indicator in Initial State</b>                                                                |                                      | <b>Indicator after Weighting by Expert</b> |                                              | <b>Indicator Value</b> |
| 1                                                                                                | Clarity                              | 1 <sup>st</sup>                            | Task Orientation (21.24)                     | 3.78                   |
| 2                                                                                                | Variety                              | 2 <sup>nd</sup>                            | Variety (21.06)                              | 3.65                   |
| 3                                                                                                | Task Orientation                     | 3 <sup>rd</sup>                            | Clarity (20.16)                              | 4.15                   |
| 4                                                                                                | Engagement in learning               | 4 <sup>th</sup>                            | Student success rates. (19.12)               | 3.86                   |
| 5                                                                                                | Student success rates                | 5 <sup>th</sup>                            | Engagement in learning (18.42)               | 4.16                   |
| <b>SITOREM ANALYSIS RESULT</b>                                                                   |                                      |                                            |                                              |                        |
| <b>Priority order of indicator to be Strengthened</b>                                            |                                      |                                            | <b>Indicators remain to be maintained</b>    |                        |
| 1 <sup>st</sup>                                                                                  | Promotional Interaction              |                                            | 1. Group processing                          |                        |
| 2 <sup>nd</sup>                                                                                  | Interpersonal and small group skills |                                            | 2. Individual accountability                 |                        |
| 3 <sup>rd</sup>                                                                                  | Progress                             |                                            | 3. Confession                                |                        |
| 4 <sup>th</sup>                                                                                  | Compensation                         |                                            | 4. Responsibility                            |                        |
| 5 <sup>th</sup>                                                                                  | Studying Conditions                  |                                            | 5. Study Procedure                           |                        |
| 6 <sup>th</sup>                                                                                  | Achievements                         |                                            | 6. Status                                    |                        |
| 7 <sup>th</sup>                                                                                  | Inspirational motivation             |                                            | 7. Individual consideration                  |                        |
| 8 <sup>th</sup>                                                                                  | Intellectual stimulation             |                                            | 8. Idealized influence                       |                        |
| 9 <sup>th</sup>                                                                                  | Task Orientation                     |                                            | 9. Clarity                                   |                        |
| 10 <sup>th</sup>                                                                                 | Variety                              |                                            | 10. Engagement in learning                   |                        |
| 11 <sup>th</sup>                                                                                 | Student success rates                |                                            |                                              |                        |

#### IV. CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS

The following conclusions may be drawn from the analysis's findings, the discussion of research findings, and the tested hypotheses:

1. Strategies to improve factors that positively impact learning effectiveness can be used to increase learning effectiveness.
2. Transformational leadership, the use of the cooperative learning model, and learning motivation are factors that positively impact the efficacy of learning. The outcomes of variable analysis using the SEM PLS approach demonstrate this.
3. Improving weak indicators and preserving excellent indicators for every study variable is the strategy to boost learning effectiveness.

Based on the research conclusions above, the following implications can be drawn from this research:

1. In order to increase the effectiveness of learning, it is necessary to strengthen transformational leadership and implement the cooperative learning model as an exogenous variable with learning motivation as an intervening variable.
2. If Transformational Leadership is to be developed, it is necessary to improve the indicators that are still weak, namely inspirational motivation and intellectual stimulation, as well as maintaining or developing indicators: individual consideration and role models.
3. Suppose the Implementation of the Cooperative Learning Model is to be developed. In that case, it is necessary to improve the indicators that are still weak, namely, Promotional Interaction and Interpersonal and Small Group Skills, as well as maintain or develop indicators such as group processing and individual accountability.

4. To increase Learning Motivation, it is necessary to improve indicators that are still weak, namely Progress, Compensation, Learning Conditions, and Achievement, as well as maintaining or developing indicators such as recognition, responsibility, learning procedures, and status.

Suggestions or recommendations that can be given to related parties are as follows:

1. School principals need to improve the quality of learning by strengthening Transformational Leadership, Implementing Cooperative Learning Models, and Learning Motivation by increasing Task Orientation and variation and Achieving High Student Success, as well as maintaining or developing Clarity and Student Involvement in Learning
2. The Ministry of Education, Culture, Research and Technology (Kemdikbudristek) and school organizing institutions need to develop teachers to increase learning effectiveness by providing appropriate direction to strengthen Transformational Leadership, Implementation of Cooperative Learning Models, and Learning Motivation in accordance with the results of this research.

## Acknowledgements

Thank you to those who have helped with this research. Hopefully, this research will be useful to society.

## V. REFERENCES

- [1] Huda, Miftahul. (2015). Model-model Pengajaran dan Pembelajaran: Isu-Isu Metodis dan Paradigmatik. Yogyakarta: Pustaka Pelajar.
- [2] Huda, Miftahul. (2015). *Cooperative Learning: Metode, Teknik, Struktur, dan Model Penerapan*. Yogyakarta: Pustaka Pelajar.
- [3] Syaifurahman & Ujiati, T. (2013). Manajemen dalam Pembelajaran. Jakarta Barat: PT Indeks.
- [4] Rusman. (2018). Model-model Pembelajaran Mengembangkan Profesionalisme Guru. Jakarta: PT Raja Grafindo Persada.
- [5] Warsono & Hariyanto. (2014). Pembelajaran Aktif. Bandung: PT Remaja Rosdakarya.
- [6] Hamdayama, Jumanta. (2016). Metodologi Pengajaran. Jakarta: PT Bumi Aksara.
- [7] Suprijono, Agus. (2015). Cooperative Learning Teori dan Aplikasi PAIKEM. Yogyakarta: Pustaka Pelajar.
- [8] Kinicki, A., & Fugate, M. (2016). Organizational behavior : a practical, problem-solving approach. In *McGraw-Hill Education* (First inte). McGraw-Hill Education Singapore. <https://doi.org/LK> - <https://worldcat.org/title/930003718>
- [9] Robbins, Stephen A. dan Timothy A. Judge. (2018). *Essential of Organizational Behavior*. Essex: Pearson Education Limited.
- [10] Schermerhorn, J. R., Hunt, J. G., & Osborn, R. N. (2016). Organizational Behavior. In *Jurnal Penelitian Pendidikan Guru Sekolah Dasar* (7th ed., Vol. 6, Issue August). John Wiley & Sons.
- [11] Gibson, J. L., Donnelly Jr, J. H., Ivancevich, J. M., & Konopaske, R. (2012). *Organizational Behavior, Structure, and Processes* (14th ed.). New York: McGraw-Hill.
- [12] Robbins, S. P., & Judge, T. (2018). *Essentials of organizational behavior*. Pearson.
- [13] Schein, E. H. (2017). *Organizational culture and leadership*. Hoboken: Wiley.
- [14] Bauer, Talya and Erdogan, Berrin. (2012). *An Introduction to Organizational Behavior*. Unnamed Publisher, Inc
- [15] Joseph, O. O., & Kibera, F. (2019). Organizational culture and performance: Evidence from microfinance institutions in Kenya. *SAGE open*, 9(1), 2158244019835934.
- [16] Ganyang, Machmed Tun. (2018). *Manajemen Sumber Daya Manusia (Konsep dan Realita)*. Bogor: IN MEDIA
- [17] Buchanan, D. A., & Huczynski, A. A. (2019). *Organizational behaviour*. Pearson UK.
- [18] Schermerhorn, J. R. (2013). *Management* (12th ed.). New Jersey: John Wiley & Sons, Inc.
- [19] Rusnadi, S., & Hermawan, A. (2023). Strategi Optimal Peningkatan Kualitas Layanan Guru Sekolah Menengah Kejuruan (SMK) Melalui Penguatan Knowledge Management, Komunikasi Interpersonal, Dukungan Organisasi dan Kepuasan Kerja. *Jurnal Syntax Admiration*, 4(11), 2127–2146.
- [20] Radnawati, D., & Hermawan, A. (2023). The Optimal Solution for Strengthening the Quality of Teacher Services Through Personality Development and Organizational Justice. *International Journal of Social Science Research and Review*, 6(12), 161–173.
- [21] Hermawan, A. (2023). *Pemodelan Kepemimpinan Melayani Kepala Sekolah*. Penerbit Lembaga Kajian DIALEKTIKA.
- [22] Hermawan, A., Ghazali, A. F., & Sayuti, M. A. (2023). Optimization for Increasing Teacher Performance through Strengthening Teamwork, Interpersonal Communication, Adversity Intelligence, and Work Motivation. *International Journal of Scientific Research and Management (IJSRM)*, 11(10), 5239–5248.
- [23] Hermawan, A., Muhammadi, A. M., & Indrati, B. (2023). Modeling and Optimization of Service Investigation Services: Empirical Study Using Pop-SDM Approach at Head of Private Smk School in Bogor District, Indonesia. *International Journal of Business and Social Science Research*, 4(9), 15–28.
- [24] Hermawan, A., Setyaningsih, S., & Hardhienata, S. (2021). Exploratory Sequential Analysis Of Servant Leadership Reviewing From Adversity Intelligence, Proactive Personality, Team Work, Organizational Commitment And Work Motivation. *Journal of Positive Psychology and Wellbeing*, 5(4), 969–986.
- [25] Hermawan, A., Setyaningsih, S., & Hardhienata, S. (2022a). Modeling and of Strengthening Servant Leadership. *Edunity: Social and Educational Studies*, 1(03).
- [26] Hermawan, A., Setyaningsih, S., & Hardhienata, S. (2022b). Servant Leadership Strengthening Modeling. *IJMIE: International Journal of Management, Innovation, and Education*, 1(1), 42–50.
- [27] Hermawan, A., Sunaryo, W., & Hardhienata, S. (2023). Optimal Solution for OCB Improvement Through Strengthening of Servant Leadership, Creativity, and Empowerment. *Aptisi Transactions on Technopreneurship (ATT)*, 5(1Sp), 11–21.
- [28] Hermawan, A., & Susanti, E. (2023). Pemodelan dan Optimasi Penguatan Kepemimpinan Melayani. *Jurnal Penelitian, Pendidikan Dan Pengajaran: JPPP*, 4(3), 232–250.
- [29] Rusnadi, S; Sumiati; Hermawan, A, (2023), Optimal Strategy to Improve the Quality of Vocational Teacher Services through Knowledge Management, Interpersonal Communication, Organizational Support and Job Satisfaction. *International Journal of Social Science And Human Research* ISSN (print): 2644-0679, ISSN (online): 2644-0695. DOI: 10.47191/ijsshr/v6i11-42, Impact factor- 6.686. <https://ijsshr.in/v6i11/42.php> P. 6888 – 6899

- [30] Hermawan, A; Ghozali, AF; Sayuti, MA (2023), *Modeling Strengthening Teacher Creativity*. IOSR Journal of Business and Management (IOSR-JBM) DOI. 10.9790/487X-2510044252 e-ISSN:2278-487X, p-ISSN: 2319-7668. Volume 25, Issue 10. Ser. 4 (October. 2023), PP 42-52 www.iosrjournals.org
- [31] Hermawan, A (2025), *Enhancing Quality Of Teacher Services Through Strengthening Knowledge Management, Interpersonal Communication, Organizational Support And Job Satisfaction*, Asian Business Research Journal. Vol. 10, No.1, 11-22, 2025 ISSN: 2576-6759. DOI: <https://doi.org/10.55220/25766759.245>. <https://ecsenet.com/index.php/2576-6759/article/view/245>
- [32] Hermawan, A; Sintesa, N; Wardani, AK (2025), *Improving the Quality of Vocational School Teacher Services through Strengthening Knowledge Management, Interpersonal Communication, Organizational Support and Job Satisfaction*. American International Journal of Business Management (AIJBM) ISSN- 2379-106X, www.aijbm.com Volume 08, Issue 02 (February- 2025), P. 37-51.
- [33] Hermawan, A; Wardani, AK; Satriyo, B; (2025), *Enhancing the Quality of Teacher Services through Strengthening Personality and Organizational Justice*. International Journal of Multidisciplinary Research and Growth Evaluation. ISSN (online): 2582-7138 Vol.6 Issue 01. P.397- 406
- [34] Hermawan, A (2025), *Enhancing Quality Of Teacher Services Through Strengthening Knowledge Management, Interpersonal Communication, Organizational Support And Job Satisfaction*, Jurnal Inovasi Pendidikan MH Thamrin. LPPM. Vol. 9 (1) Maret 2025 p-ISSN: 2549-3310 e-ISSN: 2623-2901 DOI: <https://doi.org/10.37012/jipmht.v9i1.2460> P.1-18
- [35] Siregar, UR; Hermawan, A (2024), *Strategies to Improve Teacher Engagement through strengthening Self-Efficacy, Interpersonal Communication, Organizational Culture and Job Satisfaction*, Russian Journal of Agricultural and Socio-Economic Sciences (RJOAS) ISSN 2226-1184 [http://rjoas.com/issue-2024-12/article\\_05.pdf](http://rjoas.com/issue-2024-12/article_05.pdf). P. 38-50.
- [36] Hermawan, A, (2024), *Improving quality of Teacher Services through Strengthening Knowledge Management, Interpersonal Communication, Organizational Support and Job Satisfaction*. International Journal of Social Science and Economics Invention (IJSSEI) ISSN: 2455-6289 Vol. 10 No. 04 (2024) | 2024-12-25 <https://doi.org/10.23958/ijsssei/vol10-i04/374>. P. 43-54
- [37] Hanum, U; Hermawan, A, (2024), *Optimizing Teacher Engagement: The Role of Self-Efficacy, Interpersonal Communication, Organizational Culture, and Job Satisfaction Using Path and SITOREM Analysis*, Bulletin of Social Studies and Community Development. 3 (1), 2024, 19-33. <https://imrecsjournal.com/journals/index.php/bsscd>
- [38] Wardani, AK; Hermawan, A; Setyaningsih, S, (2024), *Optimization of improving teacher organizational citizenship behavior (OCB) through strengthening transformational leadership and self-efficacy*, International Journal of Multidisciplinary Research and Growth Evaluation (IJMRGE) ISSN (online): 2582-7138 DOI: <https://doi.org/10.54660/IJMRGE.2024.5.6>. P.1348-1355.
- [39] Siregar, UR; Hermawan, A, (2024), *Strategies to Improve Teachers' Organizational Citizenship Behavior Through Strengthening Transformational Leadership and Self-Efficacy*. International Journal of Business and Applied Social Science (IJBASS) E-ISSN: 2469-6501 VOL: 10, ISSUE: 11 November/2024 DOI: <http://dx.doi.org/10.33642/ijbass.v10n11p4> P.35-43
- [40] Hermawan, A; Wardani, AK, (2024), *Strategy to Improve Organizational Image Throughing Personality, Servant Leadership, Organizational Culture and Service Quality*. PPSDP International Journal of Education Volume 3 (2) (Special Issue) 22 October 2024, 718-730 2 nd PPSDP International Conference on Educational Sciences (IConEds 2024) E-ISSN 2829-5196, P-ISSN 2830-3229. <https://ejournal.ppsdp.org/index.php/pijed/issue/view/13>
- [41] Wardani, AK; Hermawan, A, (2024), *Strategy to Improve the Quality of Teacher Services through Strengthening Personality and Organizational Justice*. International Research Journal of Economics and Management Studies (IRJEMS). Eternal Scientific Publications ISSN: 2583 – 5238 / Volume 3 Issue 11 November 2024 / Pg. No: 143-153 Paper Id: IRJEMS-V3I11P114, Doi: 10.56472/25835238/IRJEMS-V3I11P114
- [42] Hermawan, A; Wardani, AK; Susilowati, E; Hanum, U, (2024), *Strategies for Optimizing Teacher Service Quality through Strengthening Knowledge Management, Interpersonal Communication, Organizational Support, and Job Satisfaction*. Pedagogy Review. 3 (1), 2024, 01-19. DOI: <http://dx.doi.org/10.61436/pedrev> <https://imrecsjournal.com/journals/index.php/pedrev>
- [43] Hermawan, A, (2024), *A Combined Path-SITOREM Analysis to Investigate Effective Islamic Instructional Strategies through Transformational Leaderships, Motivation, and Cooperative Learning Method*. Research in Education, Technology, and Multiculture. 3 (1), 2024, 01-17 DOI: <http://dx.doi.org/10.61436/rietm> <https://imrecsjournal.com/journals/index.php/rietm>
- [44] Hardhienata, S. (2017). The development of scientific identification theory to conduct operation research in education management. *IOP Conference Series: Materials Science and Engineering*, 166(1), 012007.
- [45] Kreitner, R., & Kinicki, A. (2010). *Organizational Behavior*. New York: McGraw Hill.
- [46] Baran, B. E., Shanock, L. R., & Miller, L. R. (2012). *Advancing Organizational Support Theory into the Twenty-First Century World of Work*. *Journal of Business and Psychology*, 27, 123–147.
- [47] Colquitt, J. A., LePine, J. A., & Wesson, M. J. (2015). *Organizational Behavior*. New York: McGraw-Hill.
- [48] George, J. M., Jones, G. R., & Sharbrough, W. C. (2015). *Understanding and Managing Organizational Behavior*. New Jersey: Pearson Prentice Hall Upper Saddle River.