



LECTURERS IDENTIFICATION THROUGH STRATIFIED SAMPLING USING PEARSON PRODUCT MOMENT CORRELATION AND MULTIPLE LINEAR REGRESSION ANALYSES

Miessel Bruier Ananda*, Ahsan E. Lansao

MAZEDAN INT. JOURNAL OF APPLIED MATHEMATICS

e-ISSN:

Article id-MIJAM0101004

Vol.-1, Issue-1

Received: 13 Feb 2021

Revised: 18 May 2021

Accepted: 27 May 2021

Citation: Ananda, M. B., & Lansao, A. E. (2021). Lecturers' identification through stratified sampling using Pearson product moment correlation and multiple linear regression analyses. *Mazedan International Journal of Applied Mathematics*, 1(1), 18-22.

Abstract

This study determined the relationship and influence of instructional supervision practices on the leadership self-efficacy level of the public secondary school heads, as perceived by 257 teachers identified through stratified sampling. Pearson product moment correlation and multiple linear regression analyses revealed that instructional supervision practices have significant degree of relationship and influence on the level of leadership self-efficacy of the school heads. Also, descriptive statistics showed that the respondents practiced instructional supervision among teachers (supervision and evaluation, monitoring and feedbacking, leadership confidence, and time management); and possessed efficient level of leadership self-efficacy (leadership motivation and leadership behavior).

Moreover, Pearson product moment correlation and multiple linear regression revealed a positive correlation of instructional supervision practices with leadership self-efficacy (leadership motivation and leadership behavior), while instructional supervision practices, supervision and evaluation, leadership confidence, and time management significantly influenced leadership motivation. These are positive contributors to leadership motivation. Lastly, instructional supervision practices significantly influenced the leadership behavior of school heads. Thus, contributing positively to leadership behavior of the school heads.

Hence, administrators may continuously support and help teachers improve their teaching abilities through: continuous and effective feedback mechanisms; and consistent and objective teacher-evaluation. Also, teachers may always look for alternative ways to sustain and maintain their teaching performance, by incorporating feedbacks and recommendations of the school heads.

Keywords: Instructional Supervision, Leadership Self-Efficacy, Time Management, Philippines.

1. INTRODUCTION

In the context of DepEd Kidapawan City Division procedures, instructional supervision could be characterized as administrative activities and roles targeted at aiding teachers and students in ensuring high-quality instruction for school effectiveness. It entails supervising, equipping, and empowering instructors in order to offer students with relevant learning experiences (Okendu, 2012). According to Bobbio and Manganelli (2009), leaders are dedicated, goal-oriented, and capable of solving challenges effectively, practically, and rapidly. Most leadership classifications "believe that leadership is a process in which one person uses intentional influence over others to steer, shape, and promote activity and relationships in a group or organization." In the context of DepEd Kidapawan City Division procedures, instructional supervision could be characterized as administrative activities and roles targeted at aiding teachers and students in ensuring high-quality instruction for school effectiveness. It entails supervising, equipping, and empowering instructors in order to offer students with relevant learning experiences (Okendu, 2012). Leaders,

according to Bobbio and Manganelli (2009), are dedicated, goal-oriented, and capable of solving challenges effectively, practically, and rapidly. Most leadership classifications "believe that leadership is a process in which one person uses intentional influence over others to steer, shape, and promote activity and relationships in a group or organization."

Furthermore, instructional supervision involves interacting with teachers, students, and the curriculum (Quah, 2011). It will help improve teaching and learning outcomes, student performance, and educational goals and objectives. In this regard, Chiedozie & Victor (2017) emphasized the importance of instructional supervision practices fostering optimal teaching and learning. Bandura (1986) originated and expanded on the notion of leadership self-efficacy. It's the belief in one's own ability to complete tasks or problems. He classified powerful people as motivated, resilient, goal-oriented, and able to think under pressure or stress after evaluating the data of various studies.

[Cotabato Foundation College of Science and Technology \(CFCST\)
Doroluman, Arakan, Cotabato, Philippines](http://Cotabato Foundation College of Science and Technology (CFCST) Doroluman, Arakan, Cotabato, Philippines)

*Corresponding author email- ananda-mail21@gmail.com

As a result, the researcher is encouraged to undertake this study to examine if there is a link between instructional supervision practices and leadership self-efficacy among Kidapawan City Division public school administrators.

2. STATEMENT OF THE PROBLEM

The study aimed to determine the instructional supervision practices and their relationship and influence on the leadership self-efficacy level of public secondary school heads in the Kidapawan City Division. Specifically, it sought to answer the following research questions:

1. What is the extent of instructional supervision practices of public secondary school heads?
2. What is the level of leadership self-efficacy of public secondary school heads?
3. Is there a significant relationship between the instructional supervision practices and leadership self-efficacy of public secondary school heads?
4. Is there a significant influence on the instructional supervision practices and the leadership self-efficacy of public secondary school heads?

3. THEORETICAL FRAMEWORK

This study is based on Albert Bandura's Social Cognitive Theory (SCT) and Self-Efficacy Theory, published in 1986. The social cognitive theory holds that learning is influenced by observing others in social interactions, experiences, and media in psychology, education, and communication. Social cognitive theory incorporates cognitive, behavioral, and emotional theories of behavior change, according to Glanz (2001), making it easily relevant to dietary intervention for illness prevention and management. People learn not only through their own experiences, but also from watching others' behaviors and results. Observational learning, reinforcement, self-control, and self-efficacy are all important social cognitive processes associated to nutritional intervention.

Meanwhile, self-efficacy theory emphasizes the role of the individual and their perceptions of their skills as significant factors of successful results, according to Gallagher (2012). As a result, it promotes a democratic ideal that indicates that all people are capable of achieving their goals given the right opportunity and self-efficacy. Self-efficacy theory focuses on giving people and communities a sense of agency in order to attain their goals.

4. CONCEPTUAL FRAMEWORK

The goal of the study was to see if there was a link between instructional supervision techniques and public-school superintendents' leadership self-efficacy in the Kidapawan City Division.

The degree of instructional supervisory procedures is the independent variable in this study (supervision and evaluation of instruction; monitoring and feedbacking; leadership confidence; and time management). The principal's classroom visitation and lesson note monitoring tactics improved instructors' job performance, according to Sule, Arop, and Alade (2012). The respondents' level of leadership self-efficacy is the dependent variable (leadership motivation and leadership

behavior). It is the confidence in one's own potential to self-regulate thoughts and motivation in order to meet leadership problems successfully (Avolio, Hannah, Walumbwa, & Chan, 2012).

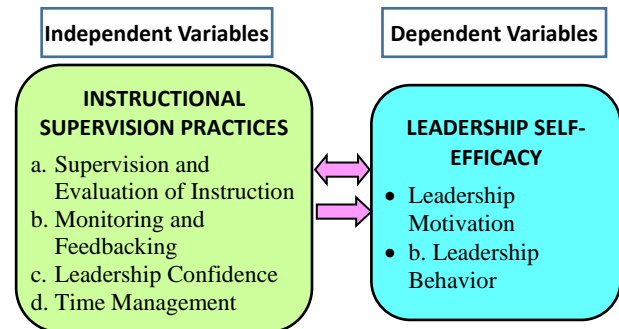


Figure 1 Schematic presentation showing the independent and dependent variables of the study.

5. METHODS

Research Design

This study used a descriptive survey and a correlational research approach to explore if there is a link or influence between instructional supervision practices and the leadership self-efficacy of public-school superintendents. The degree to which a link exists between two or more variables is studied utilizing a quantitative method of analysis in this sort of research. As a result, this design identifies whether an increase or decrease in one variable is linked to an increase or decrease in the other (Boucaud, 2017).

In this study, a descriptive survey was conducted to determine the range of instructional supervision approaches employed by respondents and their level of leadership self-efficacy. Simultaneously, the correlational design examined if there was a significant relationship and influence between instructional supervision techniques and public-school leaders' self-efficacy.

6. DATA GATHERING METHODS

The researcher gathered the data on April 2022 at Kidapawan City Division. The respondents were the public-school heads of the said division. The researcher requested authorization from the Superintendent of Schools Division to perform the study in order to collect the data.

The researcher presented the initial draft of the adapted survey questionnaire to the experts for further comments, and suggestions. He also made some revisions based on the comments and suggestions. Then he submitted the corrected to the expert for formal validation. The researcher distributed the adapted survey questionnaire to the respondents upon the approval of the concerned authorities. The researcher gathered, checked, collated, and encoded the data in Microsoft excel, and analyzed the same using SPSS software.

7. PARTICIPANTS OF THE STUDY

The respondents in this study were the principals of public schools in Kidapawan City Division. The sample size of the respondents was determined using stratified random sampling. Stratified random sampling, as defined by Frey (2018), is a population sampling approach in which the

population is divided into subgroups and units are chosen at random from the subgroups. In survey sampling, stratification of target populations is very common.

The number of schools and the sample size of instructors who rated on behalf of the school heads are shown in the table below. The sample size of the teachers was calculated using Slovin's formula. This study had 257 secondary school teachers as participants.

Table 1 Respondents of the Study

DISTRICT	Schools N=26	Teachers N = 721	Sample Size n=257	Percentage of Teachers
District I	3	426	152	59.14
District II	8	103	37	14.40
District III	7	94	33	12.84
District IV	8	98	35	13.62
	N = 26	N = 721	n = 257	100%

Statistical Tools and Data Analysis

The researcher utilized three (3) different statistical tools to analyze the gathered data.

Descriptive Statistics (Mean) determined the extent of practices of instructional supervision and the level of leadership self-efficacy;

Pearson Product Moment Correlation Coefficient (Pearson r) determined if there was a significant relationship between the respondents' instructional supervision practices and leadership self-efficacy. The researcher based his interpretation of the relationship from the scale developed by Garrett in 1975 (Edulsa, 2020).

Multiple Linear Regression Analysis determined the significant influence of the independent on the dependent variables of the study.

The researcher interpreted statistical findings using a two-tailed test at a 5% significance level.

8. RESULTS AND FINDINGS

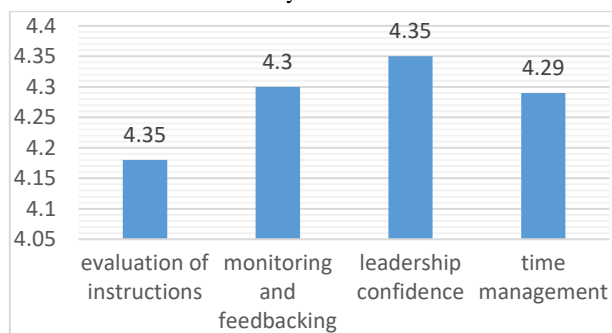
Quantitative Strand

This section dealt with the result of the quantitative data gathered through the survey questionnaires.

Summary of Results and Discussions

Research Problem No. 1

Table 2 Extent of instructional supervision practices of public secondary school heads



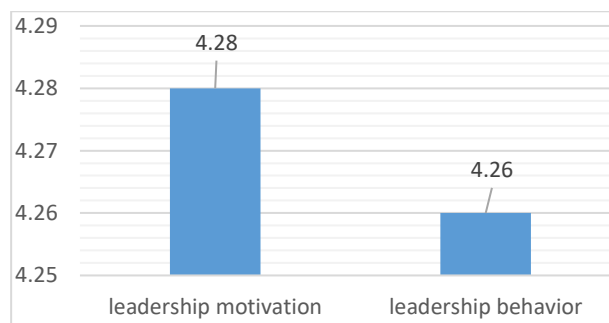
Level	Range	Description
5	4.50 - 5.00	Highly Practiced
4	3.50 - 4.49	Practiced
3	2.50 - 3.49	Moderately Practiced
2	1.50- 2.49	Rarely Practiced
1	1.00 -1.49	Very Rarely Practiced

Among the four (4) indicators of the extent of instructional supervision practices of public secondary school heads, leadership confidence got the highest weighted mean of 4.35 described as highly practiced. The findings reveal that public school principals were confident in their instructional monitoring skills. This indicates that the heads of public schools are confident in their ability to carry out the obligations and responsibilities imposed by the legislation. In other words, they will supervise their constituents' instructions.

Soderhjelm, Larsson, Sandahl, Bjorklund, and Palm (2017) backed up the findings, emphasizing the importance of leadership confidence in achieving favorable outcomes. Furthermore, according to Axelrod (2016), demonstrating high levels of leadership confidence is critical for effective leadership because it allows the leader to encourage his collaborators, or followers, to develop task-specific self-confidence that can improve their job performance.

Research Problem No. 2

Table 3 Level of leadership self-efficacy of public secondary school heads.



Level	Range	Description
5	4.50 - 5.00	Very Efficient
4	3.50 - 4.49	Efficient
3	2.50 - 3.49	Moderately Efficient
2	1.50- 2.49	Rarely Efficient
1	1.00 -1.49	Very Rarely Efficient

Among the two (2) indicators of leadership self-efficacy of public secondary school heads, leadership motivation got the highest weighted mean of 4.28 described as effective. It implies that public school administrators are extremely effective leaders, particularly when it comes to inspiring their teachers to take on larger leadership responsibilities and to go beyond their own self-interests. That is stepping out of their comfort zone and stretching the limits of what they are capable of.

According to Correia-Harker (2016), motivation is the process of sparking an employee's love for their work and helping them achieve their personal goals. Employee potential, quality production, and organizational success can all be enhanced when an administrator displays greater concern for their constituents. This is distinct from motivation derived from the actions of leaders or the leadership process. To gain a better understanding of leadership motivation.

Research Problem No. 3

The findings show that instructional supervision practices such as supervision and evaluation of instruction, monitoring and feedbacking, and leadership confidence and time management have positive effects on public

school heads' leadership self-efficacy in terms of leadership motivation and behavior. A positive R-value indicates that if one variable rises, the other rises as well, meaning that the higher the degree of leadership self-efficacy of public-school superintendents, the better.

The null hypothesis is rejected since the computed p-value is lower than the level of significance. It means that public school principals' instructional supervision approaches have an impact on their level of leadership self-efficacy. As a result of this phenomena, there is a higher level of leadership self-efficacy among public officials who supervise instruction. As a result, the more a leader practices good time management, supervisory methods, and monitoring processes, the more their motivation and behavior at work will improve.

The findings are in line with those of Ozdemir, Sahin, and Ozturk (2020), who discovered a moderate relationship between principals' instructional techniques and teachers' self-efficacy. Similarly, the findings were in line with those of Duyar (2013) and Rew (2013), who discovered a link between self-efficacy and instructional leadership. Furthermore, Derbedek (2008) discovered that instructional supervision by principals predicted leadership self-efficacy in primary and secondary schools. This was not the case in Hallinger, et al (2018)'s study, which found that the principal's instructional leadership, particularly time management, has no significant impact on self-efficacy.

Table 4 Relationship between the instructional supervision practices and leadership self-efficacy of public secondary school heads

Instructional Practices		Leadership Motivation	Leadership Behavior
Supervision and Evaluation of instruction	Pearson R	0.792**	0.793**
	Probability	0.000	0.000
Monitoring and feedbacking	Pearson R	0.766**	0.772**
	Probability	0.000	0.000
Leadership confidence	Pearson R	0.854**	0.847**
	Probability	0.000	0.000
Time management	Pearson R	0.851**	0.840**
	Probability	0.000	0.000

** Correlation is Significant at 0.01 level.

Research Problem No. 4

Table 5 Influence on the instructional supervision practices and the leadership self-efficacy of public secondary school heads

Instructional Practices		Leadership Motivation	Leadership Behavior
Supervision and Eval. of instruction	t-value	1.920	2.051
	probability	0.050*	0.041*
Monitoring & feedbacking	t-value	1.768	2.354
	Probability	0.068	0.019*
Leadership confidence	t-value	5.796	5.220
	Probability	0.000**	0.000**
Time management	t-value	6.705	6.120
	Probability	0.000**	0.000**

Instructional Practices on Leadership Motivation

These findings also show that instructional supervision techniques of secondary public school heads account for 80.2 percent of the coefficient of determination for leadership motivation level. Other factors not included in the study were responsible for the remaining 19.8%. In addition, how a school administrator approaches her or his

profession and the workplace have a considerable impact on her or his leadership ambitions. The school principal had the authority to make policies that set the tone in the workplace as the organization's accountable person. These actions can have a big impact on how a leader thinks about himself, his subordinates, and the work itself. This could be motivating for the school principal because it can have a favorable or negative impact on their performance.

Furthermore, supervision and evaluation, leadership confidence, and time management elements all had a substantial impact on secondary public school heads' leadership motivation. In terms of leadership motivation, these factors greatly influenced the secondary public school heads' leadership self-efficacy level.

McBrayer, Gutierrez de Blume, Cleveland, and Pannell (2021) found that overseeing and evaluating instruction, as well as monitoring student development, are all strong positive predictors of leadership motivation. The proponents went on to say that the practical ramifications of this include educational leaders and key stakeholders reflecting on their practices and organizing professional learning for skill development in order to enhance schools, including teachers' teaching abilities. Furthermore, the most recent findings are identical to Akins' research (2019). According to the scholar's research, instructional leadership is required in any organization. It claims that school leaders' motivation is predicted by their instructional approaches.

Instructional Practices on Leadership Behavior

The results also show that instructional supervision practices of secondary public school heads account for 79.1% of the coefficient of determination for the leadership behavior level. Other factors not included in the study accounted for the remaining 20.9 percent.

All of the factors appeared to have a substantial impact on the secondary public school principals' leadership conduct. In terms of leadership motivation, these factors influenced the secondary public school heads' leadership self-efficacy. Instructional leadership has a favorable impact on behavior because it promotes a more ordered and systematized working environment. The more a workplace is managed by a system and a leader, the better. The more work it can accomplish, because strong procedures have a significant impact on employee behavior.

The findings support Campbell's (2011) remark that in order to be an effective leader, a supervisor must first have a desire to learn, be open-minded, and welcome new challenges. These are the characteristics of effective leadership. In addition, school leaders' self-efficacy in terms of leadership is linked to the cognitive and behavioral activities required to fulfill a group's goals (Cobanoglu & Yurek, 2018).

9. CONCLUSIONS

The following conclusions were formed based on the findings:

The secondary public-school heads possess high commitment level. This means that they are practicing instructional supervision practices in monitoring their

teachers in instruction. They also show an efficient level of leadership self-efficacy instructional supervision skills.

Moreover, instructional supervision practices showed a positive relationship on the level of leadership self-efficacy of the public secondary school heads. These factors boosted their confidence in their leadership abilities. Furthermore, instructional supervision procedures had a considerable impact on secondary public school heads' leadership conduct. These factors improved the leadership self-efficacy of secondary public-school heads in terms of leadership behavior.

10. RECOMMENDATIONS

The following are the recommendations based on the study's findings.

1. The administrators must continuously support and help teachers improve their teaching abilities by providing them continuous feedback about their teaching performance. They must continue to perform their duties in evaluating teachers as part of their instructional supervision practices.
2. Teachers must always try to look for other ways to sustain and maintain their teaching performance and incorporating feedbacks and recommendations given by the school heads.
3. Administrators must also look into other factors that affect their leadership self-efficacy.
4. To validate the findings of the current study, a similar investigation with a bigger scope and more factors is advised.

Figure 2 presents the Modified Framework of the study. The figure shows that instructional supervision practices, in terms of: supervision and evaluation; leadership confidence; and time management, significantly influence the leadership motivation of the public secondary school heads.

Also, supervision and evaluation, monitoring and feedbacking, leadership confidence, and time management significantly influence the leadership motivation of the public secondary school heads.

In general, supervision and evaluation, leadership confidence and time management greatly influence the leadership self-efficacy level of the public secondary school heads.

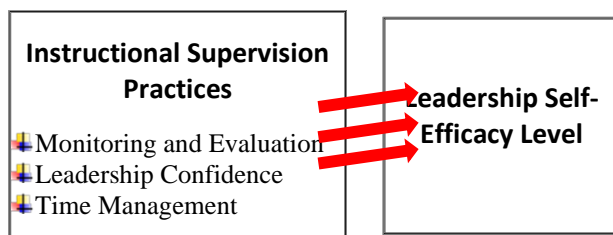


Figure 2 The Modified framework of the study

REFERENCES

- Bobbio A. & Manganelli, A. (2009). Leadership self-efficacy scale. A new multidimensional instrument. University of Padova.
- Boucaud, A. A. (2017). A Correlational Study Examining the Relationship Between Restorative Practices and

School Climate in Selected Elementary Schools in a Large Mid-Atlantic Urban School District (Thesis, Concordia University, St. Paul). Retrieved from https://digitalcommons.csp.edu/cup_commons_grad_edd/127

- Chiedozie, O. L. & Victor, A. (2017). Principals' application of instructional leadership practices for secondary school effectiveness in Oyo State. *Journal of the Nigerian Academy of Education*.
- Frey, Bruce. (2018). *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. 10.4135/9781506326139.
- Okendu, J.N. (2012). The influence of instructional process and supervision on academic performance of secondary school students of River State, Nigeria. *Academic Research International Journal*.
- Quah, C.S. (2011). Instructional leadership among principals of secondary schools in Malaysia. *International Research Journals*