



RESEARCH ARTICLE

THE MEDIATING EFFECT OF PRINCIPAL'S LEADERSHIP ATTRIBUTES ON THE RELATIONSHIP BETWEEN SCHOOL CLIMATE AND WORK ENGAGEMENT OF TEACHERS

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ABSTRACT

This study aimed to determine the mediating effect of principal's leadership attributes on the relationship between school climate and work engagement of public elementary school teachers in the division of Island Garden City of Samal. Stratified random sampling technique was used which included 363 teachers as respondents. Through non-experimental quantitative mediation analysis utilizing descriptive correlation technique of research, validated questionnaire, mean, regression techniques and Pearson r, results showed significant relationships between school climate, work engagement and principal's leadership attributes. There was a partial mediation on the effect of principal's leadership attributes on the relationship between school climate and work engagement. Accordingly, principal's leadership attributes are one of the reasons how school climate can influence work engagement. It cannot, however, completely account for the relationship between the two variables.

INTRODUCTION

Teachers' work engagement stretches many problems across schools globally (Saks *et al.*, 2018). It is a big challenge to establish both from the perspective of a school-teacher and the administrative level. Teachers' stresses and increasing attrition levels across schools in the world raised a red flag to educational institutions (Skaalvik *et al.*, 2017) and has thrown a spotlight on low work engagement as one culprit for these unseemly circumstances (Kavitha *et al.*, 2018). Subsequently, teachers' low work engagement will dramatically contribute to undesirable outcomes (Dawson, 2017). For teachers, it will lead to decreased self-confidence and well-being, thus, in worst cases, will lead to psychological health problems (Dollard *et al.*, 2010). Cognizant of the importance of studies on work engagement, with its varied literature trends, it is happening uniquely in every person (Bakker *et al.*, 2018). In academic literature, it has something to do with the positive emotional state of the mind (Bakker, 2017; Green Jr. *et al.*, 2017) which directly and indirectly affects your resources (Shahpouri *et al.*, 2016). That is why it will serve as a crucial factor to be earned by an individual and in an educational system specifically for teachers, and the institution as a whole. Because in the long run, it will directly impact job resources, personal resources (Kim *et al.*, 2019) health, desirable organizational and personal outcomes, and psychological empowerment (Aggarwal *et al.*, 2020).

The researcher did an extensive literature review for possible variables associated with work engagement, and school climate was the first variable considered relevant. It plays an essential factor in a teacher's self-efficacy (Aldridge *et al.*, 2016) which is a predictor towards work engagement and job satisfaction (Skaalvik *et al.*, 2014). School climate defines the quality of community the school have and staging a driving capacity to direct the school and its clientele, (students, teachers, and stakeholders) as to students' and school achievement (Berg *et al.*, 2016; Chirkina *et al.*, 2018; Maxwell *et al.*, 2017; Wang *et al.*, 2016). In addition, there is an extraordinary impact of having a good school climate towards the value of students' achievement and teachers' work engagement (Maxwell *et al.*, 2017). A significant goal to achieve that eventually leads to a school of excellence and quality. Numerous studies explore work engagement due to its impact on personal and organizational outcomes. However, the research is lacking in education, and work engagement (teachers) has been the central focus of this study especially today on the demands in the educational revolution. Where the transition period of the educational system globally is highly entreated. Further, the influence of the principal's leadership attributes on school climate has been studied extensively but not on work engagement. It is in the above context that the researcher took an interest in examining if the principal's leadership attributes mediate the relationship between school climate and the work engagement of teachers; hence, making this study a generation of new knowledge that can give a specific contribution to the field of education.

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Research Objective: This study's main thrust was to find out the mediating effect of principal's leadership attributes on the relationship between school climate and work engagement of public elementary school teachers. Specifically, the following objectives were formulated: to describe the level of school climate in terms of: physical environment; emotional environment; teaching and learning; relationships; community engagement; and morale in the school, second is to ascertain the level of work engagement of public elementary school teachers in terms of: vigor; dedication and absorption, third is to measure the level of the principal's leadership attributes. To determine the significance of the relationship between: school climate and work engagement of teachers; school climate and principal's leadership attributes; and principal's leadership attributes and work engagement of teachers. To determine the significance of the mediating effect of principal's leadership attributes on the relationship between school climate and work engagement of teachers.

Hypothesis: The following null hypotheses were formulated and tested at a 0.05 level of significance: there is no significant relationship between school climate and work engagement of teachers; there is no significant relationship between school climate and principal's leadership attributes; there is no significant relationship between the principal's leadership attributes and the work engagement of teachers. Principal's leadership attribute has no significant mediating effect on the relationship between school climate and work engagement.

RESEARCH METHODS

This study utilized a non-experimental quantitative design utilizing the descriptive correlation technique of research designed to gather data, ideas, facts, and information related to the study. In non-experimental research, it does not rely on manipulating variables. Rather, it observes how variables are related to one another, and describes the findings (Gliner *et al.*, 2011). In this study, the variables were not manipulated, and the setting was not controlled. Descriptive-correlation research design describes, interprets, and evaluates the relationship between variables, what exists and does not exist (Sukamolson, 2007). The study is descriptive since it assessed the levels of school climate and work engagement of teachers and the principal's leadership attributes among public elementary school teachers. Further, this is correlational for it investigated the relationship between variables such as school climate, work engagement, and principal's leadership attributes, with the use of the survey questionnaires as a tool in gathering the fundamental data. The mediating variable lies intermediate between causal factors and an outcome. It causes mediation in the dependent and independent variables. It further aims to estimate the way a variable affects the impact of X on Y. A mediator is presumed to cause the outcome and not vice versa. One reason for testing mediation is to understand the mechanism through which the initial variable affects the outcome (Baron and Kenny, 1986). Further, a mediator can be a potential mechanism where an independent variable can cause changes on a dependent variable. Thus, the principal's leadership attributes may function as a mediator when variations in the perceived school climate and work engagement account for the variations in the principal's leadership attributes. And, the variations in principal's leadership attributes significantly account for the variations in work engagement. And finally, the direct link between school climate and work engagement is no longer significant.

The interest of the study is to investigate the relationship between school climate and work engagement, the relationship of school climate and principal's leadership attributes, the relationship between principal's leadership attributes and work engagement, and the mediating effect of principal's leadership attributes on the relationship between school climate and work engagement of teachers. The respondents of the study were the 363 teachers of the public elementary school teachers of the Division of Island Garden City of Samal, Davao Region. In a desire to give everyone a chance to be included in the study, a stratified random sampling procedure was used to obtain a sampling frame. A summary of 20 public elementary schools with a category of big schools comprised of at least 10 teachers and above participated in the study. Public elementary school teachers in schools with a population of more than 10 teachers were included in the study. This includes Preschool to Grade-6 teachers either Permanent/ Substitute/ PTA Paid as long as they were teaching in the particular school in the course of the study. Moreover, any of the following persons assigned in the identified school were excluded from the study: ALS mobile teachers, SPED teachers, principals/school heads, non-teaching personnel, parents, and pupils. Further, respondents were oriented before the conduct of the study their rights and privileges to voluntarily withdraw or refuse to participate in the study if they wanted to do so. Thus, the researcher held no right to force anyone against their will and was not obliged to participate in the study. g school teachers are preferred since they can speak on behalf of the teachers in small schools with a population below 10.

Teachers in big schools ' lived experiences with their principals and their environment is profound and diverse than in small schools. Consequently, principals in big schools handle more challenging problems and situations than in small schools. Further, upon the course of the study, teachers voluntarily participated, and the researcher held no right to force anyone to participate against their will. Division of the Island Garden City of Samal has 51 public elementary schools (big and small schools), with 586 public elementary school teachers (Division Planning Office Data, June 2019) in total. To determine the appropriate number of samples selected, all public elementary teaching personnel in schools with a population of more than 10 teachers are included in the study, summing up to 363 teachers as respondents. In summary, there were twenty public elementary schools qualified for the study. The 363 teacher-respondents of this study were accumulated with the following breakdown. For Babak District, there were 10 identified schools. The district code was A, and schools under this district were coded with alphanumeric code starting from A1 to A10. These schools are as follows: A1 with 70 teachers, A2 with 14 teachers, A3 with 16 teachers, A4 with 11 teachers, A5 with 16 teachers, A6 with 14 teachers, A7 with 14 teachers, A8 with 17 teachers, A9 with 13 teachers, and A10 with 12 teachers. With a total sum of 197 respondents for District A. For Samal District, there were three schools included in the study. The district code was B and, schools under this district were coded with alphanumeric code starting from B1 to B3. These schools are as follows: B1 having 11 teachers, B2 having 39 teachers, and B3 having 11 teachers. A total of 61 teachers. And lastly, for the Kaputian District, there were a total of seven schools participated in the study. The district code was C, and schools under this district were coded with alphanumeric code starting from C1 to C7. These schools are as follows: C1 with 15 teachers, C2 with 10 teachers, C3 with 10 teachers, C4 with 13 teachers, C5 with 25 teachers, C6 with

11 teachers, and C7 with 21 teachers. This district has a total of 105 respondents. For more comprehensive interpretation and analysis of the data, the following statistical tools were utilized. Mean was used to determine the level of school climate, level of work engagement of teachers, and level of principal's leadership attributes to answer problems 1, 2, and 3. Pearson r was utilized to determine if the relationship between school climate and work engagement of teachers, school climate and principal's leadership attributes, and principal's leadership and work engagement of teachers is significant. Path Analysis was employed to prove the mediation and to strengthen the obtained result.

Ethical Considerations: There is a major ethical consideration that has distinct implications for this quantitative research. These issues and concerns derived basically from the methodology of the study. The ethical challenges applicable in this research concern were the proper operation of the study, confidentiality, and anonymity. This study followed the standards of the University of Mindanao Ethics Review Committee for the guidelines of ethical consideration, particularly in addressing the population and data.

RESULT AND DISCUSSION

Level of School Climate: Shown in Table 1 is the Level of *School Climate* of public elementary school teachers in the Island Garden City of Samal. The overall mean score was 4.42, verbally described as *very high*. The result shows that a desirable school climate was always manifested. The standard deviation was less than 1.00, which signified the consistency of responses among the respondents. Scrutinizing the individual results of the level of school climate of public elementary school teachers on the following indicators were as follows: *morale in the school* has a mean of 4.54 labeled as *very high* and got the highest mean score among indicators, and the lowest mean score is the *emotional environment* which has a mean of 4.29 with a descriptive level of *very high*. Of all the indicators, *morale in the school* dominates, which tells that the teachers are maintaining the standard values inside the school. We can also say that no teacher is left behind. Consequently, the teachers also have possessed emotional well-being considering their *emotional environment* inside the school premises, which can be said that most of them are emotionally stable. This means that there is no conflict arising between them, or if there is any, it is settled immediately.

The very high level of school climate is due to the very high rating given by the respondents on the physical environment, emotional environment, teaching and learning, relationship, community engagement, and morale in the school. These indicators registered an overall very high rating which was the product of the very high scores rated by the teachers. Of all the indicators, morale in the school dominates that yielded the highest mean score among the indicators. This very high level of response is parallel to the study of Greenwood *et al.* (2019) which tells that the teachers are maintaining the ethical standards inside the school. Each of them feels that he/she is part of the school community in consonance with the study of Dary *et al.* (2013) and that they belong to whatever endeavor the school is getting in. The item physical environment resulted in a very high-level rating second to the morale in the school. This is in agreement with the study of Fisk *et al.* (2016) which explicitly says that a physically clean and adequately structured workplace will support students and

teachers; health, learning, personal growth, and productivity. The *Relationship* also has a very high-level rating, third-highest among the indicators. An imminent and positive relationship among teachers in the workplace is a factor that immensely contributes to a highly desirable school climate. This analysis is supported by the study of Vollet *et al.* (2017). Moreover, community engagement is the fourth-ranked with a very high-level rating as well. Most of the teachers are active participants of the activities in the community, which is one of the essential roles that confirms the study of Maxwell *et al.* (2017). Thus, further establish a robust community engagement that provides more significant support and involvement of students' educational milestones, leading to school development and improvement, and therefore, school climate is highly desirable in consonance with the studies of Ma *et al.* (2016); Park *et al.* (2017). Teaching and learning also showed a very high level of rating from teachers and ranked fifth among the indicators. This is parallel with the studies of Berg *et al.* (2016); Chirkina *et al.* (2018); Wang *et al.* (2016), that good teaching and learning environment will enable students to make deep connections of basic knowledge of the different subjects being taught which will then translate a domino-effect to the system in the school performance per se most importantly the students' achievement. Finally, emotional environment ranked last yet still garnering a very high-level rating. Parallel to the study of Gill *et al.* (2018), the palpable assessment of feelings in the workplace affects school climate. It provides a secure and stable community that nourishes mental health and emotional feelings among teachers and students.

Table 1. Level of school climate of public elementary school teachers

Indicators	SD	Mean	Descriptive Level
Physical Environment	0.43	4.48	Very High
Emotional Environment	0.42	4.29	Very High
Teaching and Learning	0.39	4.38	Very High
Relationship	0.41	4.45	Very High
Community Engagement	0.46	4.39	Very High
Morale in the School	0.44	4.54	Very High
Overall	0.35	4.42	Very High

Level of Work Engagement: Reflected in Table 2 is the Level of *Work Engagement* of public elementary school teachers in the Island Garden City of Samal division. The overall mean score was 4.46, labeled as *very high*. The very high-level result means that public elementary school teachers' work engagement in the Island Garden City of Samal division is always manifested. Data revealed that the mean scores among the indicators are all in the same category at a very high level. Among the three indicators of work engagement, *dedication* obtained the highest mean score of 4.65, while *vigor* and *absorption* obtained mean scores of 4.39 to 4.34, respectively. Moreover, the results showed that teachers are performing their duties and responsibilities with ease and no pressure. They demonstrated the optimum levels of energy and not getting tired despite work challenges. They are investing efforts towards work and not giving up or being stressed out. Lastly, it was found out that the teachers were significantly happy immersed in work that it is difficult for them to detach themselves from work. They forget everything else around when at work. The level of work engagement of public elementary school teachers is very high. This finding tells that the teachers are performing their duties and responsibilities with ease and no pressure in consonance with the study of

Bakker (2017); Karatepe *et al.* (2016). They willingly do the task without strict supervision by their higher authority which is parallel to the studies introduced by Bakker (2017); Karatepe *et al.* (2016). Dedication got the highest mean score among the indicators, which is indicative of a very high-level rating. With dedication at work, it improves work ethics, performance, and school climate per se; thus, this is coherent to the study by Akif (2016). Vigor, the next in the rank indicator, which also resulted in a very high-level rating, explains why teachers generated optimum levels of energy and not getting tired despite work challenges of which agrees with the study of Bakker (2017). Further, parallel to the study of Green Jr. *et al.* (2017), teachers invest efforts towards work and not giving up or being stressed out. Moreover, with absorption, still, it has a very high-level result. In consonance with the study of Huang *et al.* (2016), teachers were inspired by something related to their job. They are enthusiastic about exploring things inside the school and in the community. They are proud of their positions and manifesting positive attitudes towards the job. They have shown satisfaction in everything they have received. They have felt a sense of significance from one's work and are directly inspired by it in any way. In addition, they forget everything else around when they are at work, parallel to the study of Shahpouri *et al.* (2016), that as driven by the passion for working, they forget time and not noticing that it's time to go home.

Table 2. Level of work engagement of public elementary school teachers

Indicator	SD	Mean	Descriptive Level
Vigor	0.46	4.39	Very High
Dedication	0.45	4.65	Very High
Absorption	0.48	4.34	Very High
Overall	0.39	4.46	Very High

Level of Principal's Leadership Attributes: The level of the *Principal's Leadership Attributes* is reflected in Table 3. It can be seen in the table that the overall mean score is 4.50. The overall mean score was verbally described as a *very high* level of principal's leadership attributes, which means that principals are always actively manifested excellent leadership attributes. There were 36 items of principal's leadership attributes in this study. However, all items were described as very high level. One item got the highest mean score which is the teachers' *works improve their teaching after observing classroom activities* with a mean rating of 4.59 or labeled as *very high*. Further, item 23, *having grade-level heads/team leaders that influence how money is spent*, has a mean ratio of 4.38 or *very high*, got the lowest mean score. To discuss in detail, these teachers signified that their principals had acquired effective administration in implementing school practices that enable them to abide by and do what is right. Furthermore, these teachers say that their principal is imparting to them the direction of school programs in fulfilling its vision and accomplishing the goals. Not only that but also their principal is looking after the welfare and development of each of them. In addition, the principal was also providing support to each teacher, especially when difficulties or problems arise in a classroom situation. That is why these teachers rated their principals very high level, for they have always seen their principals working beyond limits that established a community of confidence and trust towards each other. The level of principal's leadership attributes obtained a very high level. All the items in this variable reflect a very high descriptive level.

This result shows that the teachers have always seen the effectiveness of their principal's leadership, in consonance with the study of Ni *et al.* (2018). So, it can be said that the principals have implemented rules following the norms of the school and the Department of Education, Philippines. Moreover, these teachers said that a performance evaluation was conducted regularly by their principal and provided feedback. Also, the principal was providing instructional coaching to update the teachers with the new approaches in classroom teaching, making it an effective cardinal wheel of the school, which significantly confirms the study of Park *et al.* (2016). Further, in consonance with the study of Zheng *et al.* (2017), it is not a question why these teachers rated their principals very high level for they have always seen their principals working beyond limits, making them see and build trust-worthiness and inspiration towards their principals. Finally, for this newly-spiced curriculum in the educational institution here in our country, the K-12 Curriculum, the K-12 principals should also suit and fit their leadership attributes towards this new curriculum for and in the benefit of the school, teachers, and the students per se. Supported by the studies of Ferrari (2018); Ng *et al.* (2015), which implies that effective leadership strengths are unique in consideration of the various dramatic change/s in the system, environmental challenges, and other aspects affecting school climate, management, and leadership skills. It is a great challenge to stand up amidst changes.

Significance of the Relationship between School Climate and Work Engagement: Data outputs of the significant relationship tests between school climate and work engagement are displayed in Table 4.1. The overall coefficient of correlation is .635 with a p-value less than 0.05, described as a significant degree of correlation because the p-value is ≤ 0.05 level of significance. Thus, the null hypothesis of no significant relationship between school climate and work engagement relationship of the public elementary school teachers was therefore rejected. Further, the indicators of school climate correlated with the indicators of work engagement yielded the following results: *Physical environment* correlated with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .394 at a p-value less than 0.05. *Emotional environment* correlated with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .465 with a p-value less than 0.05. Moreover, *teaching and learning* correlated with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .603 at a p-value less than 0.05. *Relationship* with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .550 with a p-value less than 0.05. *Community engagement* correlated with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .503 with a p-value less than 0.05. *Morale in the school* correlated with *vigor*, *dedication*, and *absorption* yielded an overall r-value of .586 at a p-value less than 0.05. In addition, the correlation test between the indicators of school climate and work engagement yielded the following: *Vigor* linked with the physical environment, emotional environment, teaching and learning, relationship, community engagement, and morale in the school overall r-value of .600 at p-value less than 0.05. *Dedication* linked with the physical environment, emotional environment, teaching and learning, relationship, community engagement, and morale in the school got an overall r-value of .558 with a p-value less than 0.05. *Absorption* linked with the physical environment, emotional environment, teaching and

Table 3. Level of principal’s leadership attributes

Item	SD	Mean	Descriptive Level
Understanding and provides a rigorous core curriculum for most of our students.	0.55	4.49	Very high
Minimizing disruptions of instructional time.	0.57	4.49	Very high
Giving the staff a sense of overall purpose.	0.54	4.52	Very high
Providing useful assistance to me in setting short-term goals for teaching and learning.	0.59	4.48	Very high
Demonstrating high expectations for my work with students.	0.55	4.49	Very high
Giving me individual support to help me improve my teaching practices.	0.56	4.53	Very high
Encouraging me to consider new ideas for my teaching.	0.56	4.56	Very high
Modeling a high level of professional practice.	0.54	4.54	Very high
Developing an atmosphere of caring and trust.	0.56	4.52	Very high
Promoting leadership development among teachers.	0.54	4.54	Very high
Encouraging collaborative work among staff.	0.52	4.57	Very high
Creating conditions for teachers to collaborate during the school day.	0.52	4.57	Very high
Providing or locates resources to help staff improve their teaching.	0.53	4.51	Very high
Regularly observes classroom activities.	0.54	4.51	Very high
Teachers’ works improve their teaching after observing classroom activities.	0.52	4.59	Very high
Buffering teachers from distractions to their instruction.	0.59	4.42	Very high
Encouraging me to use data in my work.	0.54	4.50	Very high
Encouraging data use in planning for individual student needs.	0.52	4.52	Very high
Having a structured process to analyze student data.	0.55	4.49	Very high
Communicating school-wide goals to the teachers.	0.56	4.52	Very high
Being approachable and trustworthy.	0.57	4.54	Very high
Being an effective instructional leader.	0.59	4.53	Very high
Having grade-level heads/team leaders that influence how money is spent.	0.64	4.38	Very high
School-wide improvement goals drive teachers’ professional development.	0.54	4.47	Very high
There is a clearly defined expectation for learning for teachers and students.	0.53	4.49	Very high
Assessment practices provide accurate and meaningful data on student progress.	0.53	4.47	Very high
Teachers are accountable for collecting, understanding, and using data to respond to student learning.	0.54	4.49	Very high
Interventions and support are provided to enrich advanced students.	0.54	4.48	Very high
Receiving useful feedback about my teaching practices from my principal.	0.56	4.44	Very high
Discussing instructional issues with my principal.	0.55	4.43	Very high
Conditions encourage professional development.	0.53	4.47	Very high
There is a leadership team that has representation from all grade levels.	0.57	4.45	Very high
There is a planned and scheduled cycle of inquiry (data teams) to analyze student work.	0.55	4.43	Very high
There is a clear structure and process for decision-making.	0.55	4.44	Very high
There is a safe place for me and my students.	0.54	4.51	Very high
There is a scheduled and protected collaboration time.	0.57	4.48	Very high
Overall	0.42	4.50	Very high

Table 4.1. Significance of the Relationship between School Climate and Work Engagement

School Climate	Work Engagement			
	Vigor	Dedication	Absorption	Overall
Physical Environment	.375** (.000)	.363** (.000)	.272** (.000)	.394** (.000)
Emotional Environment	.455** (.000)	.396** (.000)	.335** (.000)	.465** (.000)
Teaching and Learning	.583** (.000)	.471** (.000)	.481** (.000)	.603** (.000)
Relationship	.540** (.000)	.449** (.000)	.413** (.000)	.550** (.000)
Community Engagement	.455** (.000)	.464** (.000)	.367** (.000)	.503** (.000)
Morale in the School	.528** (.000)	.574** (.000)	.396** (.000)	.586** (.000)
Overall	.600** (.000)	.558** (.000)	.462** (.000)	.635** (.000)

learning, relationship, community engagement, and morale in the school got an overall r-value of .462 with a p-value less than 0.05. To sum it up, school climate and work engagement show a positive moderate relationship; this implies that school climate has something to do with work engagement. So, if the school climate improves, the teachers become more engaged in their work. On the other hand, if the school climate diminishes, the teachers become less engaged in their work. The test of the relationship of the study revealed that there is a significant relationship between the levels of school climate and work engagement. Further, all indicators of school climate are significantly related to all the indicators of work engagement.

The findings support the idea of Albercht *et al.* (2018) which points out that school climate is a motivational construct to work engagement. This implies that school climate has something to do with work engagement. So, if the school climate improves, the teachers become more engaged in their work. On the other hand, if the school climate diminishes, the teachers become less engaged in their work. The result also agrees with the study of Eldor *et al.* (2017) which states that when a school climate quality is desirable, such as providing the teachers the capability to do his/her workloads in the way he/she is interested, it motivates them to be engaged at work. Further, this result supports the study of Aldridge *et al.* (2016),

Table 4.2. Significance of the relationship between School Climate and Principal’s Leadership Attributes

School Climate	Principal’s Leadership Attribute
Physical Environment	.379 ^{**} .000
Emotional Environment	.426 ^{**} .000
Teaching and Learning	.637 ^{**} .000
Relations	.541 ^{**} .000
Community Engagement	.505 ^{**} .000
Morale in the School	.700 ^{**} .000
Overall	.653 ^{**} .000

which stresses that if the principals should enhance the quality of school climate offered to teachers, which is a crucial part affecting teachers' work attitude. Teacher self-efficacy and job satisfaction are highly relational to school climate dimensions. It was further said that when a teacher is satisfied, it will result in work engagement due to factors that affect the situation due to a good school climate.

Significance of the Relationship between School Climate and Principal’s Leadership Attributes: Shown in Table 4.2 is the result of the significant relationship between school climate and the principal’s leadership attributes. School climate, when correlated with the principal’s leadership attributes, yielded an overall r-value of .653 with a p-value less than 0.05. Therefore, the two variables are significantly related to each other. Thus, the null hypothesis of no significant relationship between school climate and the principal’s leadership attributes relationship of the public elementary school teachers was therefore rejected. In addition, the data in the table reveals that the indicators of *school climate* significantly correlate with the principal’s leadership attributes. The indicators physical environment and emotional environment show low relationships towards principal’s leadership attributes with the r- values of 0.379 and 0.426, respectively. This means that principals' leadership ability is little affected by the utilization of school buildings and other facilities. Moreover, leadership ability is slightly affected by the emotional stability of the teachers. On the other hand, teaching and learning, relations, and community engagement signify moderate relationships towards the principal’s leadership attributes with the obtained mean scores of 0.637, 0.541, and 0.505, respectively. This means that principals can lead the teachers more effectively if they have better teaching performance, strong relations, and active participation in community activities. It is interesting to note that morale in the school sparks a high relationship towards the principal’s leadership attributes with the obtained mean score of 0.700. This means that the more the teachers abide by the school's norms and standards, the better the principal can lead them. Lastly, since school climate shows a positive moderate relationship towards the principal’s leadership, we can say that the principal’s leadership is influenced by school climate.

The findings of the study revealed that there is a significant relationship between levels of school climate and the principal’s leadership attributes. The finding is supported by the study of Okorji *et al.* (2016) which states that a positive relationship exists between school climate and principal's leadership attributes. This further supports the study of Lane (2016), which says that a correlation exists between school climate and leadership styles, which is related to the principal’s leadership attribute, and these two are dependent on each other's quality. Since the principal’s leadership attributes are moderately affected by school climate, the indicators of the

physical environment, and emotional environment, show low relationships towards the principal’s leadership attributes. This further means that principals' leadership ability is little affected by the utilization of school buildings and other facilities. Lastly, since school climate shows a positive moderate relationship towards principal’s leadership attributes when the workplace's quality is desirable, the principal will be motivated to lead the teachers. Thus, we can say that principal’s leadership attribute is influenced by school climate.

Significance of the Relationship between Principal’s Leadership Attributes and Work Engagement: Table 4.3 reflects the significant relationship between the principal’s leadership attributes and work engagement. Results yielded an overall r-value of .571 with a p-value less than 0.05; therefore, principal’s leadership attributes are significantly related to work engagement. Thus, the null hypothesis of no significant relationship between work engagement and principal’s leadership attributes relationship of the public elementary school teachers was therefore rejected. All three indicators of work engagement: *vigor*, *dedication*, and *absorption*, are significantly related to the principal’s leadership attributes with a p-value less than 0.05, with an r-value of .502, .503, .450, respectively. This means that the principal’s leadership affects the vigor and dedication of teachers in some aspects. Thus, it can be said that the principal’s leadership somewhat drives the teachers to reach the optimum levels of and influence them to be dedicated in their job. The principal’s leadership attributes, on the other hand, indicate a low correlation to absorption with a mean score of 0.450. This means that the principal’s leadership slightly affects teachers’ happiness towards work. So, we can say that the teachers still have a hard time detaching themselves from work with or without the principal's supervision. Further, as an overall view, the principal’s leadership attributes show a moderate correlation to work engagement with a mean score of 0.571. This means that some aspects of the principal’s leadership enable the teachers to get engaged to work.

The findings of the study revealed there is a significant relationship between principal’s leadership attributes and work engagement. This finding supports the idea of Karadağ *et al.* (2015) which finds out a small-magnitude positive effect of principal’s leadership attributes towards work engagement. In addition, it can be said that the principal’s leadership somewhat drives the teachers to reach the optimum levels and influence them to be dedicated in their jobs. This is also supported by the study of Bellibas *et al.* (2017) that states the principal's leadership styles affect teachers’ commitment to work. Moreover, the findings of the study of Jeong *et al.* (2016) and Zahed-Babelan *et al.* (2019) negate the result which stated that there was no positive impact between principals’ leadership attributes and work engagement of teachers. The study strongly showed a moderately positive impact between the two variables of principals’ leadership attributes and the work engagement of teachers.

Table 4.3. Significance of the Relationship between Principal’s Leadership Attribute and Work Engagement

Principal’s Leadership Attribute	Work Engagement			Overall
	Vigor	Dedication	Absorption	
	.502 ^{**}	.503 ^{**}	.450 ^{**}	.571 ^{**}
	.000	.000	.000	.000

On the Mediating Effect of Principal’s Leadership Attributes: Mediation still has no universal definition or general theory (Banks, *et al* 2010; Zariski, 2010). For triangulation, further mediation analysis is warranted. The following test is still considered to prove Baron and Kenny’s Theory (1986), that there are three steps to be met for a third variable to be acting as mediator. Further, a mediator variable represents an intervening variable or a mechanism through which an independent variable can influence a dependent variable (Baron, *et al* 1986; Peyrot, 1996). In this study, the mediator, the principal’s leadership attributes, explains how or why a relationship exists between the predictor, school climate, and the dependent variable, work engagement (Holmbeck, 1997; Lindley, *et al* 1993). The purpose of the first test is to establish that there is an effect to mediate. If the effect is not statistically significant, then the analysis stops in the causal steps approach. If the effect of the IV on the DV becomes non-significant at the final step in the analysis, full mediation will be achieved. It means all of the effects are mediated by the mediating variable. If the regression coefficient is substantially reduced at the final step but remains significant, only partial mediation is obtained. It means part of the IV is mediated by the MV, but other parts are either direct or mediated by other variables not included in the model. In this case, the effect of the IV on DV is significantly lessened after controlling MV. Therefore, only partial mediation took place since the effect is still significant.

Shown in Table 5 is the mediation analysis of school climate, work engagement, and principal’s leadership attributes. The computation on the effect size in the mediation test conducted among the three variables is shown in Figure 3. As reflected in the table, three steps were met for the third variable (principal’s leadership attributes) to be acting as mediator. In the table, these are categorized as Steps 1 to 4. In step 1, school climate was found to significantly predict the principal’s leadership attributes, the mediator, at 0.05 level of significance. In step 2, the principal’s leadership attributes significantly predict the work engagement relationship with a 0.05 level of significance. In step 3, school climate was also found to significantly predict work engagement at a 0.05 level of significance. Since the three steps (Paths A, B, C) are significant, further mediation analysis through Med-Graph is warranted. Further, this implies that part of the independent variable (school climate) is mediated by the mediator (principal’s leadership attributes), but other parts are either direct or mediated by other variables that are not included in the model. Therefore, partial mediation took place since the effect was found to be significant at the 0.05 level. Furthermore, supported by Figure 3 that showed the effect size measures how much of the effect of principal’s leadership attributes on work engagement relationship could be attributed to the indirect path. As shown in the figure, results revealed that the total effect size is 0.72, which is obtained by getting the sum of direct effect, which is 0.52, and indirect effect size (product of Path B and C), which is 0.20. Meanwhile, the ratio index, which is obtained by dividing the indirect effect by the total effect, obtained a value of 0.28, indicating that about 28 percent of the total effect of the independent variable on the dependent variable goes through the mediator variable, and about 72 percent of the total effect is either direct or mediated by other variables not included in the model. To conclude, since it is only partial mediation, it could not be claimed that the principal’s leadership attribute is the sole reason how school climate can influence work engagement.

This indicates that the principal’s leadership attribute is only one of the reasons how school climate can influence work engagement.

Table 5. Mediation Analysis of the Three Variables Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Principals Leadership Attributes	<---	School Climate	.794	.048	16.490	***	
Work Engagement	<---	Principals Leadership Attributes	.254	.048	5.306	***	
Work Engagement	<---	School Climate	.518	.058	8.887	***	

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
School Climate	.119	.009	13.528	***	
e1	.101	.007	13.528	***	
e2	.085	.006	13.528	***	

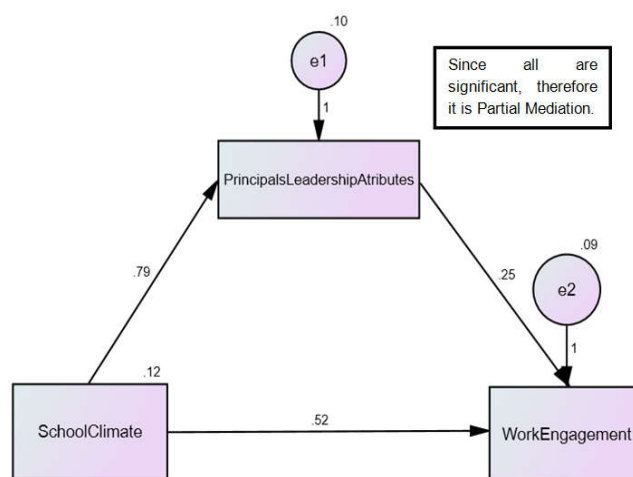


Figure 3. Path diagram for the regression model

In the study of mediation, the first step of Baron and Kenny’s mediation guidelines (1986) procedure that there is a correlation between the independent variable, school climate, to the dependent variable, work engagement, was established. Further, the second step was again established in this study since there is a significant relationship between the independent variable, school climate, and the mediating variable, the principal’s leadership attributes. Finally, testing the hypothesis in this study was again established due to the significance of the mediating variable, principal’s leadership attributes to the dependent variable, work engagement. Since all three steps were significant, only partial mediation took place. Yet, this is a positive result since the mediating variable still impacts the relationship between the independent and dependent variables. This study aimed to contribute to the literature regarding potential indirect, mediating variables for the relationship between school climate and work engagement. Distinctively, the principal’s leadership attribute was investigated as a potential mediating construct to explain how school climate affects work engagement. While full mediation was not found in this study, significant and vital direct effects were shown in consonance with the study of Aldridge *et al.* (2016) and Eldor *et al.* (2017) that may be of help in the enhancement of the existing researches on school climate and work engagement. Consequently, it is firmly in consonance

with the proposition of John (1999) that principal's leadership styles highly impact the level of work engagement of teachers and meaningful organizational school climate. Moreover, as manifested by the results, the principal's leadership attributes could be utilized as a mediator to enhance the school climate that established a necessary part for the success of the entire institution and result in outstanding performance. Further, Emerson (1976), the Social Exchange Theory, also supports the result that explained that social behavior involves social exchange which implied that a principal's leadership attributes as a social behavior significantly affects school climate and teachers work engagement as social exchanges in a school context per se. Specifically, the current study has found that the principal's leadership attribute is a positive and significant partial mediator of school climate and work engagement and met Baron and Kenny's (1986) mediation guidelines that there are three steps to be met for a third variable to be acting as mediator. The mediator principal's leadership attributes explained how the relationship existed between the predictor, school climate, and dependent variable, work engagement. Since the purpose of the first test is to establish that there is an effect to mediate, thus, if the effect is not statistically significant on the first step, then the analysis stops in the causal steps approach. Further, if the effect of the IV on the DV becomes non-significant at the final step in the analysis, then, full mediation will be achieved. With the result, the regression coefficient is substantially reduced at the final step and remained significant, with signs unchanged, therefore, only partial mediation was obtained. This means that part of the IV is mediated by the MV, but other parts were either direct or mediated by other variables not included in the model. In this case, only partial mediation took place since the effect is still significant at the final step.

Subsequently, findings revealed that school climate is a significant predictor of work engagement and principal's leadership attributes, principal's leadership attribute has a significant effect on work engagement of teachers, and lastly, principal's leadership attribute has a mediating effect on school climate and work engagement of teachers. This means that the principal's leadership attributes intervene in the school climate that leads to the work engagement of teachers. This intervention brought an agreement between school climate and work engagement. This implies that with the principal's leadership styles, the teachers will promote a good school climate and result in significant work engagement of teachers in consonance with the studies of Aldridge *et al.* (2016); Eldor *et al.* (2017).

Conclusion

With consideration of the findings of the study, conclusions are drawn in this section. The findings provide evidence that the consideration of school climate is relevant for research on work engagement of teachers, school climate and principal's leadership attributes, and principal's leadership attributes and work engagement. The respondents are agreeable with the idea that school climate is vital in work engagement. In effect, the respondents exhibit a very high level of school climate, a very high level of work engagement, and a very high level of principal's leadership attributes. This generally indicates that there was a significant relationship between school climate and work engagement. There was also a significant relationship between school climate and the principal's leadership attributes. And there was a significant relationship between the

principal's leadership attributes and work engagement. Further, there was a partial mediation on the effect of the principal's leadership attributes on the relationship between school climate and work engagement on the mediation analysis. In addition, the mediating effect causal steps approach in this study showed the significant relationship of the principal's leadership attributes and work engagement, indicating its partial mediating effect on the variables. The result agrees with the theory of Baron, *et al* (1986) which states that a mediator causes the outcome and not vice versa. It has been observed that the effect of school climate to work engagement is through the principal's leadership attribute but does not reverse the direction. Consequently, the findings are interpreted as a general acceptance of the JD-R Theory of Bakker and Demerouti (2018), which explained that the principal's leadership attributes / supervisory attributes (Job Resources) established impacts to work engagement. Signifying the positive effect of the principal's leadership attributes towards work engagement. Further, this also unambiguously confirms the assumption of John (1999) that principal's leadership styles highly impact the level of work engagement (commitment) of teachers and meaningful organizational school climate.

Recommendations

Based on the foregoing findings and conclusions, several recommendations are offered: Since it was established that there is a very high level of school climate of public elementary school teachers, very high level of work engagement, and a very high level on principal's leadership attributes, it is suggested that school principals may maintain the best practices they have in their schools to sustain the very high levels of positive school climate and effective principal's leadership attributes for achievable work engagement amongst their teachers. To maintain the very high school climate level, the school heads may continue to grab opportunities for training and seminars with designs and mechanisms to enhance their leadership skills, especially in this millennial era. Further, since the emotional environment got the lowest rate among the indicators of school climate, this may be improved to ensure a better school climate. Consequently, a very high level of work engagement means that teachers show a quality performance. Therefore, school heads may sustain and/or even improve this desirable quality of teachers by exposing them to more training/capability buildings to boost their skills to maintain and/or improve high-quality performance at work and as well as self-reward. Further, since the absorption got the lowest rate among work engagement indicators, this may be enhanced to build up better work engagement amongst teachers to meet the demands of the changing educational system. On the other hand, the very high level of principal's leadership attributes means that effective and positive attributes, qualities, values, and beliefs have been established by the school heads amongst their teachers at school. And these may be carried out for the rest of their service to achieve the institution's vision, mission, and goals. However, since having grade-heads/team leaders that influence how money is spent got the lowest rate among the items of principal's leadership attributes, this may be strengthened, especially financial literacy among teachers, to ensure transparency and trustworthiness. Additionally, the partial mediation of the principal's leadership attributes on the relationship between school climate and work engagement suggests that school heads may continue to build and strengthen their administrative/supervisory skills and functions. Thus, giving great emphasis on the productivity of

schools, teachers' welfare, and students' performances. And discover other areas for improvement to achieve satisfaction and fulfillment in their school handled. Furthermore, it may also be worth giving focus on work engagement mechanisms that leads to auspicious outcomes. This can help not only in achieving an advanced performance of school principals and teachers, but also in increasing avenues for better professional growth and development as it is likely to produce a positive ripple effect for teachers who are engaged at work, and the principal handling them per se. Finally, future studies toward examining other variables not included in the study that can be feasible to mediate the relationship between the variables will be of utmost importance to the research community.

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