



ISSN Online: 2167-7751 ISSN Print: 2167-7743

Effect of Leader-Member-Exchange and Public Service Motivation on Teacher Job Satisfaction in Ghanaian Senior High Schools: A Case of Senior High Schools in Greater Accra Region

Dennis Nkrumah, Seunghee Back

Department of Leadership, Yemyung Graduate University, Seoul, Korea Email: dennis.nkrumah@yahoo.com

How to cite this paper: Nkrumah, D., & Back, S. (2023). Effect of Leader-Member-Exchange and Public Service Motivation on Teacher Job Satisfaction in Ghanaian Senior High Schools: A Case of Senior High Schools in Greater Accra Region. *Open Journal of Leadership*, 12, 127-143.

https://doi.org/10.4236/ojl.2023.122009

Received: March 20, 2023 Accepted: June 11, 2023 Published: June 14, 2023

Copyright © 2023 by author(s) and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

http://creativecommons.org/licenses/bv/4.0/





Abstract

This study assessed the influence of LMX and PSM on teacher job satisfaction in Ghanaian secondary schools. The study sampled senior high school teachers currently teaching in the Greater Accra, Ghana. Greater Accra Region was chosen because it has the largest and most populous senior high schools in Ghana. A questionnaire was given to 200 teachers with the purpose of gauging their levels of public service motivation (PSM), leader-member exchange (LMX), and work satisfaction. The study employed correlation, linear and multiple regressions to examine the relationship between LMX and PSM and work satisfaction. The multiple regression analysis conducted revealed that LMX, PSM Comp and PSM SS had a positive and significant effect on teacher job satisfaction. These findings show that head teachers in public senior high schools should place a premium on developing excellent working relationships with their subordinates while striving to retain teachers' engagement and commitment to their schools.

Keywords

Leader Member Exchange, Public Service Motivation, Job Satisfaction, Senior High Schools

1. Introduction

In recent years, the concept of Leader-Member Exchange (LMX) has received a growing amount of attention within the realm of leadership theory than ever

before. Leader-Member Exchange theory describes how leaders and subordinates communicate and relate to one another in work teams (Graen & Uhl-Bien, 1995). The theory holds that a group's relationship with its leaders can be formed over the course of a certain amount of time through a number of strategies, including the wait-and-see game, temptation, and contact with other people, as well as bargaining (Dansereau Jr et al., 1975). This changes how leaders and subordinates interact (Laschinger et al., 2007). LMX can help to create more amicable and compatible environments between leaders and subordinates, such as trust and respect towards one another, as well as recognition and appreciation for one another. In the long term, this will result in outcomes that are more advantageous for them as individuals and for their respective businesses. A number of empirical research have found that the tighter the bond between leaders and followers, the greater the level of job satisfaction experienced by subordinates (Altunoğlu & Gürel, 2015; Durarajen, 2004; Martin et al., 2016). As a result, the members' ability to achieve and maintain job satisfaction is dependent on the quality of LMX. It can be observed that the LMX cannot only improve organizational performance, but it can also improve the job satisfaction of subordinates when this is taken into consideration.

Different interactions between leaders and subordinates might inspire them to devote everything to the organization. Motivation as a notion is often recognized as a critical instrument for determining an organization's performance and competitive advantage. Motivation, in its broadest sense, is the absence of a stimulus that strengthens, sustains, and leads an individual's conduct. However, for public sector personnel such as teachers, these motivating factors are directly related to their desire to contribute to the social world and serve its residents. It is considered that public sector personnel possess a sense of purpose and fervor for public service that private sector employees lack. Since its inception, the public sector has been emphasized as a duty, and a vocation rather than a job, because public sector personnel are meant to be motivated by the ethics of public service, in contrast to private sector employees. As a result, numerous studies have been conducted to determine the effect of public service motivation on employee work satisfaction. For instance, when a subordinate is highly motivated, he or she may exceed the leader's expectations, be willing to go beyond the call of duty, and protect the leader's interests.

Research conducted in both PSM and LMX has shown that there is a significant and positive correlation between each component and one's level of work satisfaction. A study on how these two characteristics interact with one another to explain teacher work satisfaction is something that is lacking from the prior studies. The researcher is only aware Alford (2014) investigations on the effect of LMX and PSM on job satisfaction. In light of this, we contend that there is a considerable vacuum in the existing body of research regarding the effect of the LMX and PSM on work satisfaction. Consequently, the purpose of this study is to investigate the influence of LMX and PSM on teacher work satisfaction.

2. Literature Review and Hypothesis

This section deals with a review of LMX and Job Satisfaction, and PSM and Job Satisfaction.

2.1. LMX and Job Satisfaction

Dansereau Jr et al. (1975) published the first report on LMX, which was initially viewed as a vertical-dyad linkage theory. All earlier ideas, which suggested that a leader should accord equal treatment and consideration to each of his followers, were completely contradicted by LMX, which asserted that a leader should treat all of his followers in a different manner than everyone else (Dansereau Jr et al., 1975). LMX is more concerned with the nature and standard of the transactional relationship that exists between a follower and a leader than it is with any other aspect of the trade process. Consequently, the dyadic relationship between a leader and his subordinates is the primary focus of this theory's research. It is important for managers and their staff to interact with one another, as demonstrated by the leader-member exchange (Altunoğlu & Gürel, 2015; Dansereau Jr et al., 1975). LMX is characterized as an exchange process between a leader and a follower that is contingent on the leader's interpersonal skills, qualities, trust, support, rewards, and satisfaction; also, LMX is a term that can refer to either the process of exchanging information or the process of approving new leaders (Erdogan & Bauer, 2015). Additionally, it highlights the necessity of subordinates and their immediate superiors having a work-related exchange connection (Bauer & Erdogan, 2015). A superior is responsible for developing a one-of-a-kind communication channel with each of his or her reports. The LMX characteristic is founded on mutual trust, affection, and respect (Lee et al., 2019).

The LMX theory has been applied to organizations to examine concepts such as employee job satisfaction and commitment (Altunoğlu & Gürel, 2015; Anand et al., 2011). The LMX literature indicates that high-quality LMX may have an effect on job satisfaction (Han & Jekel, 2011; Laschinger et al., 2007). According to Loi, Chan and Lam (2014), high-quality LMX is not only beneficial for organizational outcomes but also for follower job satisfaction. Shaikh et al. (2019) in their research showed that all of the dimensions had positive correlations, and one of the most important findings was that leader member interchange has a considerable effect on job satisfaction. When employees have positive interactions with their supervisors and believe that they are receiving greater supervisor assistance, they are more ready to put in more effort to attain their job objectives (Clemens et al., 2009). Durarajen (2004) discovered that high levels of LMX motivate employees to collaborate with their co-workers, which ultimately results in increased job performance for employees. On the other hand, low levels of LMX encourage employees to conceal their efforts or their unwillingness to cooperate, which has a negative impact on performance (Durarajen, 2004). A study by Martin et al. (2016) showed that LMX have a statistically significant positive impact on employee job satisfaction. Breevaart et al. (2015) also discovered that the LMX might have a considerable impact on job satisfaction and could play a role in organizing members' behavior in the workplace.

In summary, because numerous studies have demonstrated a link between high levels of LMX and increased job satisfaction, we hypothesize that LMX will have a significant and beneficial effect on job satisfaction.

H1: LMX is positively related to job satisfaction.

2.2. Public Service Management (PSM) and Job Satisfaction

PSM is a complex and exclusive notion with many dimensions, creating a barrier that makes it harder to explain the underlying psychological process (Park & Rainey, 2008). Perry and Wise (1990) describe PSM as an individual's tendency to respond to motivations embedded in public institutions and organizations. Motives relate to psychological faults or demands that an individual feels driven to erase. It drives people to perform significant public service, according to Brewer and Selden (1998). Public service motive promotes the benefit of a group, a state, a nation, or mankind, according to Rainey and Steinbauer (1999). PSM is also called the public service ethic or public service values and has been defined as a calling, a dedication to the public good, a sense of responsibility, and contribution, meaning that a public service ethic encourages individuals to self-select into public sector work (Bozeman & Su, 2015; Ritz et al., 2016).

Vandenabeele (2007) defined PSM as beliefs, attitudes and values that go beyond personal and corporate interests, pertains to the interests of a larger political group, and that encourage individuals to act appropriately when necessary.

The effectiveness of PSM and employee job satisfaction has increasingly become a topic of interest to researchers. Thus, PSM has been found to be empirically related to a variety of organizational behaviour including job satisfaction. As a result, it might be regarded as a significant motivator in the public sector. Vandenabeele (2007) explains that work satisfaction is believed to be a result of PSM since employment in the public sector helps individuals meet their prosocial demands. Those workers who have a high level of public service motivation are motivated to work because they have the chance to serve the public interest. For the reason that organizations within the public sector are in the greatest position to give their staff members with chances to work toward the greater welfare of society. A study by Dogbey (2020) found out that a passion for public service is an excellent predictor of work satisfaction in the Ghanaian Metropolitan Assemblies. Andersen and Kjeldsen (2013) in their study found that PSM is associated with job satisfaction among public sector employees. Based on the facts present, the authors of this study predict that the PSM will have a positive and significant impact on job satisfaction.

H2: PSM is positively related to job satisfaction.

3. Method

This is a quantitative research and the section discusses the approach and guide-

lines for achieving the research objectives. This includes methods, and procedures employed in assessing the relationships between the independent variables (LMX and PSM) and the dependent variable teacher job satisfaction.

3.1. Measurement Instruments

The research instrument comprises of three different scales used in measuring the variables under study that is LMX, PSM and teacher satisfaction. Thus, the questionnaire comprised of three scales.

LMX

To examine respondents' opinions of LMX quality, the researcher used the LMX-7 scale created by Graen and Uhl-Bien (1995) and administered it to them. This scale is suitable because it has been the most commonly used in measuring LMX. Furthermore, previous studies have obtained Cronbach's alpha that exceeds 0.86 on the LMX-7 scale (Cogliser et al., 2009; Scandura & Schriesheim, 1994; Somech & Bogler, 2002). Seven questions are rated on a 5-point Likert-type scale, and the total efficacy of dyads between leaders and subordinates is determined by the results of the scale. Sample items include, "Do you know where you stand with your leader (follower) and do you usually know how satisfied your leader (follower) is with what you do?" (1 = strongly disagree, 5 = strongly agree), "I have enough confidence in my leader (follower) that I would defend and justify his or her decision if he or she were not present to do so" (1 = strongly disagree, 5 = strongly agree).

PSM

The researcher adopted the PSM scale developed by (Perry, 1996). Previous studies have shown that PSM has a Cronbach's alpha that exceeds 0.85 (Brenya et al., 2017; Clerkin & Coggburn, 2012; Perry, 1996). The PSM scale has 24-items and is divided across a range of 4 distinct dimensions. Although one variable, "attraction to public policy," was eliminated for the sake of this study since earlier research has indicated that this dimension indicates self-interest and is less value and mission specific than the other dimensions (Alonso & Lewis, 2001; Pandey et al., 2008). PSM is comprised of four dimensions, and the researcher utilized 21 items to represent three of these dimensions, which formed the construct of PSM. The three subscales that were employed in this research were the PSM Compassion, the PSM Public Interest, and the PSM Self-Sacrifice scales, respectively. Using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree," respondents were asked to score their degree of agreement with various questionnaire topics.

Teacher job satisfaction

This study adopted job satisfaction scale developed by Judge et al. (2000). The researchers adapted the scale from the larger 18-item job satisfaction measure by Brayfield and Rothe (1951). The scale has a 5-point Likert-type and is considered as a reliable scale (internal consistencies at 0.80 or higher). The 5-point Likert scale ranges from "strongly disagree" to "strongly agree". Individual respondent scores are averaged to provide an overall estimate of job satisfaction.

3.2. Sample Size and Procedure

The study's respondents were teachers from public senior high schools. Due to time and resource constraints, the researcher sampled 200 teachers from 35 senior high schools for the study. This number of respondents is consistent with the view of Neuman and Robson (2014) who argued that a sample size greater than 100 is adequate for quantitative analysis and provides a representation of the population. Of the 200 questionnaires distributed to teachers, a total of 176 questionnaires were received from the respondents for the study. As shown in Table 1, majority of the respondents who responded to the survey were male (58%) and the remaining were female (42%). Most of the respondents were between the ages of (25 to 34) years and (35 to 44) years with a total of 68.8%. The teachers appeared to be well educated with 55.1% reporting a bachelor's degree, masters (41.5%) and professional (3.4%). Most of the respondents (40.9%) had taught in their respective schools for less than three years. While 28.4% have taught from 3 to 5 years, 10.8% have taught from 6 to 8 years, and 19.9% have taught for 9 years and above. With respect to the rank of respondents, 44.9% were principal superintendent, 35.8% were Assistant Director I and 19.3% were Assistant Director II.

The research analyzed the data using both descriptive and inferential statistics. Descriptive statistics included mean and standard deviation. The descriptive statistics were used to summarize the sample population and the measurements in

Table 1. Demographic profile of respondents (N = 176).

Variable	Category	Frequency	Percent
C	Male	102	58.0
Sex	Female	74	42.0
	18 to 24 years	15	8.5
A 15 c 15 c 1	25 to 34 years	60	34.1
Age distribution	35 to 44 years	61	34.7
	45 years and above	40	22.7
	First Degree	97	55.1
Level of education	Masters and above	73	41.5
	Professional Qualification	6	3.4
	Less than 3 years	72	40.9
37 . 1 1 1	3 to 5 years	50	28.4
Years taught in school	6 to 8 years	19	10.8
	9 years and above	35	19.9
	Principal Superintendent	79	44.9
Rank	Assistant Director I	63	35.8
	Assistant Director II	34	19.3

a research, as well as to characterize the fundamental characteristics of the data. Inferential statistics used included spearman correlation, T-test/ANOVA and multiple regressions.

A standard multiple regression analysis was employed to examine the effect of LMX on teacher satisfaction and teacher commitment respectively, as well as PSM on teacher satisfaction and teacher commitment. According to Petchko (2018), with the use of multiple regression analysis, researchers can figure out how strong of a relationship there is between an outcome and a group of predictor variables and how important each of the predictors is to the relationship, often without taking into account the effect of other predictors.

4. Analysis and Results

Overall reliability of constructs

The Cronbach's alpha test was carried out to examine the reliability of the constructs. Thus, Cronbach's Alphas test was performed on LMX, PSM compassion, PSM self-sacrifice, PSM public interest, Teacher satisfaction. As shown in **Table 2** demonstrates that Cronbach's alpha values range between 0.700 and 0.849. These values were deemed adequate indicators of scale dependability since they were within the required 0.70 range proposed by Hair et al. (2006).

Correlational Analysis

Spearman correlations were employed to test the relationship between the outcome variable (teacher satisfaction) and predator variables (LMX and PSM). **Table 3** presents the correlations between all variables, including PSM subscales.

From **Table 3**, the correlation coefficient value between the LMX and teacher satisfaction was 0.193 with a p-value < 0.05. Since the p-value is less that $\alpha = 0.05$, it suggest that there is a positive and statistically significant relationship between the LMX and teacher satisfaction. Similarly, PSM and teacher satisfaction obtained a correlation coefficient value of 0.065 with a p-value of 0.390. This suggests that there is a positive but statistically insignificant relationship between PSM and teacher satisfaction.

Multiple Regression Analysis

The multiple regression analysis was employed to examine the effect of LMX and PSM on teacher satisfaction. It is important to state that there is no significant correlation between LMX and PSM (r = 0.014, p-value = 0.203), indicating that multiple regression analysis can be conducted.

Table 2. Reliability test.

Coefficient	
0.849	
0.739	
0.750	
0.700	
0.731	

Table 3. Spearman's rho correlations.

		TC	TJS	LMX Total	PSM Total	PSM COMP	PSM SS	PSM PI
TC	Correlation Coefficient	1.000						
TJS	Correlation Coefficient	0.207**	1.000					
LMX Total	Correlation Coefficient	0.191*	0.193*	1.000				
PSM Total	Correlation Coefficient	0.123	0.065	0.014	1.000			
PSMCOMP	Correlation Coefficient	0.172*	0.184*	0.616**	0.622**	1.000		
PSMSS	Correlation Coefficient	-0.046	-0.121	0.185*	0.716**	0.125	1.000	
PSMPI	Correlation Coefficient	0.263**	0.132	0.388**	0.460**	0.023	0.134	1.000

^{**.} Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 4 presents the model summary of the multiple regression for Job Satisfaction with LMX and PSM. From the table, the Adjusted R² value was 0.46 indicating that the independent variables (LMX and PSM) explain 46% of the variability of job satisfaction.

In **Table 5**, we examine whether or not the overall regression model provides a satisfactory fit to the data. As can be observed from the table, LMX and PSM significantly predicted job satisfaction, F(2,173) = 5.265, p < 0.05. Thus, the regression model is an appropriate representation of the data.

From **Table 6**, it could be observed that LMX (b = 0.152, p-value < 0.05) significantly explained larger portion of the variations in teacher job satisfaction. On the contrary, PSM (b = 0.080, p-value > 0.05) did not significantly explain the variations in teacher job satisfaction.

Since PSM total did not significantly predict job satisfaction, further regression analysis (forward and backward regressions) was performed using PSM subscale (compassion, public interest, and self-sacrifice) to determine which of the subscales could significantly predict job satisfaction. Table 7 presents the result on the forward multiple regression analysis for Job Satisfaction with LMX and PSM subscales. As shown in the table below, only LMX and PSM self-sacrifice were entered into model 2. This suggests that these two variables accounted for the variations in job satisfaction. PSM compassion and PSM public interest were excluded from the model because they did not significantly predict job satisfaction.

Table 4. Model summary for job satisfaction with LMX and PSM.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.240^{a}	0.057	0.46	3.949

a. Predictors: (Constant), PSM Total, LMX Total.

Table 5. ANOVA for job satisfaction with LMX and PSM.

	Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	164.216	2	82.108	5.265	0.006^{b}
1	Residual	2697.943	173	15.595		
	Total	2862.159	175			

a. Dependent Variable: TJS. b. Predictors: (Constant), PSM Total, LMX Total.

Table 6. Multiple regression analysis of job satisfaction using LMX and PSM.

	Model		ndardized fficients	Standardized Coefficients	t	Sig.
			Std. Error	Beta	_	
	(Constant)	12.849	2.982		4.309	0.000
1	LMX Total	0.152	0.047	0.307	3.231	0.001
	PSM Total	0.080	0.044	0.171	1.803	0.073

a. Dependent Variable: TJS.

Table 7. Forward multiple regression with LMX and PSM for job satisfaction.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	10.593	2.724		3.888	0.000
1	LMX Total 1	0.099	0.037	0.199	2.681	0.008
	(Constant)	13.513	2.889		4.677	0.000
2	LMX Total 1	0.118	0.037	0.239	3.205	0.002
	PSMSS	0.152	0.056	0.200	2.687	0.008

a. Dependent Variable: TJS.

Table 8 presents the result on the backward multiple regression analysis for Job Satisfaction with LMX and PSM subscales. The backward multiple regression provided three models. From the table below, Model 3 was considered the best fit for the data F(2,173) = 7.331, p < 0.05. The backward method entered all the four variables and then removed PSM compassion and PSM public interest. The forward model, as well as the backward model, arrived to the same conclusions.

Table 8. Backward multiple regression with LMX and PSM for job satisfaction.

	Model		dardized ficients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
	(Constant)	13.146	2.987		4.401	0.000
	LMX Total 1	0.087	0.056	0.176	1.560	0.121
1	PSMCOMP	0.065	0.086	0.077	0.747	0.456
	PSMSS	0.156	0.057	0.206	2.740	0.007
	PSMPI	0.044	0.106	0.036	0.411	0.681
	(Constant)	13.435	2.897		4.638	0.000
	LMX Total 1	0.100	0.047	0.202	2.130	0.035
2	PSMCOMP	0.050	0.079	0.060	0.637	0.525
	PSMSS	0.155	0.057	0.204	2.729	0.007
3	(Constant)	13.513	2.889		4.677	0.000
	LMXTotal1	0.118	0.037	0.239	3.205	0.002
	PSMSS	0.152	0.056	0.200	2.687	0.008

a. Dependent Variable: TJS.

Regression Tree Results

The regression trees results performed on the dependent variable (job satisfaction) with LMX, PSMCOMP, PSMSS and PSMPI as the explanatory variables. The CRT growing method, which attempts to maximize within-node homogeneity, was used in running the both regression trees. Minimum parent nodes of 100 cases, minimum child nodes of 10 cases as well as 10 cross-validations were used. As shown in **Figure 1**, the regression tree for teacher job satisfaction comprised of five nodes with three terminal nodes. **Figure 2** presented the explanatory variable importance for teacher job satisfaction. The result showed that PSMSS is the most important variable in creating node splits followed by LMX.

5. Discussion

The Spearman's rho correlations analysis conducted revealed that LMX had a positive relationship with teacher job satisfaction, thus confirming hypothesis 1a. This finding is consistent with previous research findings (Bhatti et al., 2015; Han & Jekel, 2011; Koçoğlu et al., 2014; Mardanov et al., 2008; Nikolić et al., 2013; Volmer et al., 2011). The Spearman's rho correlations analysis conducted revealed that PSM Total had a positive relationship with teacher job satisfaction, however was not statistically significant and does not support hypothesis 1b. These findings are inconsistent with earlier studies (Caillier, 2015; Camilleri & Heijden, 2007; Cun, 2012; Leisink & Steijn, 2009; Li, 2009; Liu et al., 2008; Park

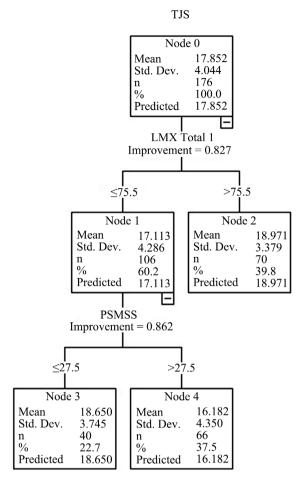


Figure 1. Regression tree for teacher job satisfaction.

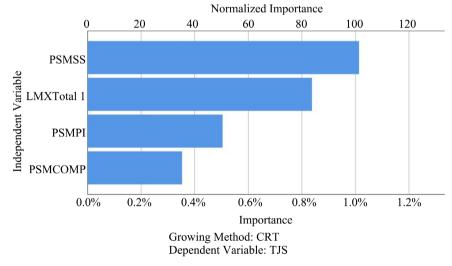


Figure 2. Explanatory variable importance for teacher job satisfaction regression tree.

& Lee, 2020; Vandenabeele, 2009). The lack of statistical significance between these variables could be attributed to the small sample size or a self-selecting sample. It is possible that the disparities between the samples used in this study

and those used in earlier investigations are to blame for the lack of a statistically significant relationship between these factors. It is important to mention that, PSMCOMP and PSMPI had a positive relationship with teacher job satisfaction, however, only PSMCOMP was found to be statistically significant.

The study tested the synergistic effects of LMX and PSM on teacher job satisfaction using multiple regressions. A standard multiple regression revealed that the two explanatory variables (LMX and PSM) explained about 46% of the variations in teacher job satisfaction. The low coefficient of determination suggests that other explanatory variables could help reduce the variance in teacher job satisfaction. However, the results revealed that only LMX had a significant effect on teacher work satisfaction. This finding shows that the quality of a teacher's perceived relationship with his or her head teacher is more effective than a teachers public service motivation in minimizing unexplained variance in teacher job satisfaction. These findings are consistent with prior research findings of Alford (2014), whose study indicated that workers' satisfaction is not dictated by PSM, but is favourably influenced by the strong working relationships they have with their managers and co-workers. On the contrary, these findings were not consistent with the findings of Westover and Taylor (2010) and Taylor and Westover (2011). According to the findings of their study, job satisfaction is determined not only by the extrinsic qualities of the workplace but also by the workers' capacity to exercise autonomy in their work and by the workers' ability to maintain positive working relationships with their supervisors and fellow employees. As a result of their research, they discovered that work relationships with management and PSM both have a major role in explaining the variation in job satisfaction. Alford (2014) intimated that the disparity in findings might be because past studies only utilized a single question to evaluate both participants' happiness with their employment and their relationships with management, whereas the current study employed multi-item scales for each construct. Alford also mentioned that the one item that was used to evaluate the relationship with supervisors was more of a measurement of the happiness of the supervisors than it was of the perceived strength of the link between a supervisor and an employee.

Despite the fact that the overall PSM score was not statistically significant, a further analysis was undertaken using forward and backward regressions to determine which PSM subscales were given greater weight in the regression model. Results from both forward and backward regressions revealed that LMX was the main explanatory variables accounting for most of the unexplained variance in job satisfaction. However, among the PSM Subscales, PSM Self-Sacrifice was identified as having strong predictive power in both the forward and the backward models to explain the variations in teacher job satisfaction. This finding is in congruent with the findings of Liu et al. (2008) whose study demonstrated that self-sacrifice on the part of PSMs is a positive and substantial predictor of work satisfaction in China's public sector. It was also consistent with the findings of Sadiq (2018) whose findings emerged that Self-sacrifice of PSM had the

strongest determinant while defining job satisfaction. On the contrary, the finding contradicts Alford's (2014) findings, where PSM Self-Sacrifice was part of the backward regression, but it did not make a difference in the model. This finding suggest that a teacher's perceived relationship with his or her headmaster is the most important factor in determining teacher satisfaction, followed by teachers' readiness to give up certain things that might benefit them personally, such as personal accomplishment or income.

The study also used regression tree analyses to show the relevance of LMX and PSM subscales in explaining variation in job satisfaction. The explanatory variable LMX was responsible for classifying all of the nodes into either high or low categories. In terms of variable importance, PSM self-sacrifice was ranked first in importance when explaining teacher job satisfaction. Multiple regressions and canonical correlation provide different findings, which might be due to the linear nature of prior tests vs the non-linear structure of regression trees. The inconsistencies that were found in both the linear and the non-linear analyses provide evidence that the relationship between LMX and the PSM subscales is intricate and calls for a great deal of more study.

6. Conclusion

Given the importance of teacher's performance in the senior high schools, it is necessary for stakeholders, practitioners, and management of senior high schools to have a comprehensive understanding of the relationships between the factors that impact teacher job satisfaction. Results from the study suggest that quality leadership promote public service orientation among teachers, which have positive effect on teacher job satisfaction. As a result, the study advocates for effective leadership development training with the goal of fostering mutual trust, respect, and responsibility between principals and teachers. The findings of this study reveal how important public service orientation (self-sacrifice and public interest) are in keeping teachers satisfied with their schools and jobs and suggest further studies on public service motivation. This study corroborates previous research and expands current literature.

7. Limitations and Future Research

This research, like all others, had several shortcomings that needed to be addressed. First, the focus on only teachers at the senior high schools as well as the sample size chosen poses challenges to the generalizability of the findings of this study to the senior high schools and other educational institutions in Ghana. In addition, regarding the fact that senior high schools in Ghana have come under a lot of pressure due to the Free Senior School policy implemented by the Government, there is a propensity for respondents to suppress pertinent information in answer to queries about their leaders, so they may not be forthright with their comments.

Future research with a larger sample size would improve the generalizability of the findings. In addition, future study should take into account additional or-

ganizational outcomes such as teacher performance behavior, empowerment, and work flexibility. Furthermore, the multiple regressions and canonical correlation employed in the study provided different findings, which might be due to the linear nature of prior tests vs the non-linear structure of regression trees. Hence, future study might assess whether there are any curvilinear impacts on teacher satisfaction. The use of other statistical analyses, such as the structural modeling equation, could be used in future research efforts.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Alford, W. A. (2014). Effects of Leader-Member Exchange and Public Service Motivation on Job Satisfaction and Organizational Commitment in a Public Workforce Sample. MSc. Thesis, University of Central Arkansas.
- Alonso, P., & Lewis, G. B. (2001). Public Service Motivation and Job Performance: Evidence from the Federal Sector. *The American Review of Public Administration*, *31*, 363-380. https://doi.org/10.1177/02750740122064992
- Altunoğlu, A. E., & Gürel, E. B. B. (2015). Effects of Leader-Member Exchange and Perceived Organizational Support on Organizational Innovation: The Case of Denizli Technopark. *Procedia-Social and Behavioral Sciences*, 207, 175-181. https://doi.org/10.1016/j.sbspro.2015.10.170
- Anand, S., Hu, J., Liden, R. C., & Vidyarthi, P. R. (2011). Leader-Member Exchange: Recent Research Findings and Prospects for the Future. In A. Bryman, D. Collinson, K. Grint, B. Jackson, & M. Uhl-Bien (Eds.), *The Sage Handbook of Leadership* (pp. 311-325). SAGE.
- Andersen, L. B., & Kjeldsen, A. M. (2013). Public Service Motivation, User Orientation, and Job Satisfaction: A Question of Employment Sector? *International Public Management Journal*, 16, 252-274. https://doi.org/10.1080/10967494.2013.817253
- Bauer, T. N., & Erdogan, B. (2015). *The Oxford Handbook of Leader-Member Exchange*. Oxford University Press.
- Bhatti, G. A., Islam, T., Mirza, H. H., & Ali, F. H. (2015). The Relationships between LMX, Job Satisfaction and Turnover Intention. *Science International*, *27*, 118-127.
- Bozeman, B., & Su, X. (2015). Public Service Motivation Concepts and Theory: A Critique. *Public Administration Review, 75,* 700-710. https://doi.org/10.1111/puar.12248
- Brayfield, A. H., & Rothe, H. F. (1951). An Index of Job Satisfaction. *Journal of Applied Psychology*, *35*, 307-311. https://doi.org/10.1037/h0055617
- Breevaart, K., Bakker, A. B., Demerouti, E., & Van Den Heuvel, M. (2015). Leader-Member Exchange, Work Engagement, and Job Performance. *Journal of Managerial Psychology*, *30*, 754-770. https://doi.org/10.1108/JMP-03-2013-0088
- Brenya, E., Adu-Gyamfi, S., Kyei, E. Y., Tariah, F. P., Nmerukini, A., Boateng, E. K., & Angmor, R. Y. (2017). Public Service Motivation in Ghanaian Civil Service: A Case Study of Ejisu-Juabeng Municipality. *International Journal of Public Administration*, 40, 164-175. https://doi.org/10.1080/01900692.2015.1089443
- Brewer, G. A., & Selden, S. C. (1998). Whistle Blowers in the Federal Civil Service: New Evidence of the Public Service Ethic. *Journal of Public Administration Research and*

- Theory, 8, 413-440. https://doi.org/10.1093/oxfordjournals.jpart.a024390
- Caillier, J. G. (2015). Transformational Leadership and Whistle-Blowing Attitudes: Is This Relationship Mediated by Organizational Commitment and Public Service Motivation? *The American Review of Public Administration*, 45, 458-475. https://doi.org/10.1177/0275074013515299
- Camilleri, E., & Van Der Heijden, B. I. (2007). Organizational Commitment, Public Service Motivation, and Performance within the Public Sector. *Public Performance & Management Review*, 31, 241-274. https://doi.org/10.2753/PMR1530-9576310205
- Clemens, E. V., Milsom, A., & Cashwell, C. S. (2009). Using Leader-Member Exchange Theory to Examine Principal-School Counselor Relationships, School Counselors' Roles, Job Satisfaction, and Turnover Intentions. *Professional School Counseling, 13*, 75-85.
- Clerkin, R. M., & Coggburn, J. D. (2012). The Dimensions of Public Service Motivation and Sector Work Preferences. *Review of Public Personnel Administration*, *32*, 209-235. https://doi.org/10.1177/0734371X11433880
- Cogliser, C. C., Schriesheim, C. A., Scandura, T. A., & Gardner, W. L. (2009). Balance in Leader and Follower Perceptions of Leader-Member Exchange: Relationships with Performance and Work Attitudes. *The Leadership Quarterly*, 20, 452-465. https://doi.org/10.1016/j.leaqua.2009.03.010
- Cun, X. (2012). Public Service Motivation and Job Satisfaction, Organizational Citizenship Behavior: An Empirical Study Based on the Sample of Employees in Guangzhou Public Sectors. *Chinese Management Studies*, 6, 330-340. https://doi.org/10.1108/17506141211236758
- Dansereau Jr., F., Graen, G., & Haga, W. J. (1975). A Vertical Dyad Linkage Approach to Leadership within Formal Organizations: A Longitudinal Investigation of the Role Making Process. *Organizational Behavior and Human Performance*, 13, 46-78. https://doi.org/10.1016/0030-5073(75)90005-7
- Dogbey, K. E. D. (2020). *Public Service Motivation and Job Satisfaction of Employees of Metropolitan Assemblies in Ghana.* MSc. Thesis, University of Cape Coast.
- Durarajen, A. (2004). *Leader-Member Exchange and Job Satisfaction.* MSc. Thesis, University of Sains Malaysia.
- Erdogan, B., & Bauer, T. N. (2015). Leader-Member Exchange Theory: A Glimpse into the Future. In T. N. Bauer, & B. Erdogan (Eds.), *The Oxford Handbook of Leader-Member Exchange* (pp. 413-422). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199326174.013.0023
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-Based Approach to Leadership: Development of Leader-Member Exchange (LMX) Theory of Leadership Over 25 Years: Applying a Multi-Level Multi-Domain Perspective. *The Leadership Quarterly*, 6, 219-247. https://doi.org/10.1016/1048-9843(95)90036-5
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2006). *Multivariate Data Analysis*. Pearson Prentice Hall.
- Han, G., & Jekel, M. (2011). The Mediating Role of Job Satisfaction between Leader-Member Exchange and Turnover Intentions. *Journal of Nursing Management*, 19, 41-49. https://doi.org/10.1111/j.1365-2834.2010.01184.x
- Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and Job Satisfaction: The Mediating Role of Job Characteristics. *Journal of Applied Psychology*, 85, 237-249. https://doi.org/10.1037/0021-9010.85.2.237
- Koçoğlu, M., Gürkan, G. Ç., & Aktaş, H. (2014). The Mediating Role of Workload on the Relationship between Leader Member Exchange (LMX) and Job Satisfaction. *Canadian*

- Social Science, 10, 41-48.
- Laschinger, H. K. S., Purdy, N., & Almost, J. (2007). The Impact of Leader-Member Exchange Quality, Empowerment, and Core Self-evaluation on Nurse Manager's Job Satisfaction. *JONA: The Journal of Nursing Administration*, 37, 221-229. https://doi.org/10.1097/01.NNA.0000269746.63007.08
- Lee, A., Thomas, G., Martin, R., Guillaume, Y., & Marstand, A. F. (2019). Beyond Relationship Quality: The Role of Leader-Member Exchange Importance in Leader-Follower Dyads. *Journal of Occupational and Organizational Psychology*, 92, 736-763. https://doi.org/10.1111/joop.12262
- Leisink, P., & Steijn, B. (2009). Public Service Motivation and Job Performance of Public Sector Employees in the Netherlands. *International Review of Administrative Sciences*, 75, 35-52. https://doi.org/10.1111/joop.12262
- Li, X.-H. (2009). An Empirical Study on Public Service Motivation and the Performance of Government Employee in China. *Canadian Social Science*, *4*, 18-28.
- Liu, B., Tang, N., & Zhu, X. (2008). Public Service Motivation and Job Satisfaction in China: An Investigation of Generalisability and Instrumentality. *International Journal* of Manpower, 29, 684-699. https://doi.org/10.1108/01437720810919297
- Loi, R., Chan, K. W., & Lam, L. W. (2014). Leader-Member Exchange, Organizational Identification, and Job Satisfaction: A Social Identity Perspective. *Journal of Occupational and Organizational Psychology*, 87, 42-61. https://doi.org/10.1111/joop.12028
- Mardanov, I. T., Heischmidt, K., & Henson, A. (2008). Leader-Member Exchange and Job Satisfaction Bond and Predicted Employee Turnover. *Journal of Leadership & Organizational Studies*, *15*, 159-175. https://doi.org/10.1177/1548051808320985
- Martin, R., Guillaume, Y., Thomas, G., Lee, A., & Epitropaki, O. (2016). Leader-Member Exchange (LMX) and Performance: A Meta-Analytic Review. *Personnel Psychology*, 69, 67-121. https://doi.org/10.1111/peps.12100
- Neuman, W. L., & Robson, K. (2014). Basics of Social Research. Pearson Canada Toronto.
- Nikolić, M., Vukonjanski, J., Nedeljković, M., Hadžić, O., & Terek, E. (2013). The Impact of Internal Communication Satisfaction Dimensions on Job Satisfaction Dimensions and the Moderating Role of LMX. *Public Relations Review, 39*, 563-565. https://doi.org/10.1016/j.pubrev.2013.09.002
- Pandey, S. K., Wright, B. E., & Moynihan, D. P. (2008). Public Service Motivation and Interpersonal Citizenship Behavior in Public Organizations: Testing a Preliminary Model. *International Public Management Journal*, 11, 89-108. https://doi.org/10.1080/10967490801887947
- Park, J., & Lee, K.-H. (2020). Organizational Politics, Work Attitudes and Performance: The Moderating Role of Age and Public Service Motivation (PSM). *International Review of Public Administration*, 25, 85-105. https://doi.org/10.1080/12294659.2020.1750755
- Park, S. M., & Rainey, H. G. (2008). Leadership and Public Service Motivation in U.S. Federal Agencies. *International Public Management Journal*, *11*, 109-142. https://doi.org/10.1080/10967490801887954
- Perry, J. L. (1996). Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity. *Journal of Public Administration Research and Theory, 6*, 5-22. https://doi.org/10.1093/oxfordjournals.jpart.a024303
- Perry, J. L., & Wise, L. R. (1990). The Motivational Bases of Public Service. *Public Administration Review*, *350*, 67-373. https://doi.org/10.2307/976618
- Rainey, H. G., & Steinbauer, P. (1999). Galloping Elephants: Developing Elements of a

- Theory of Effective Government Organizations. *Journal of Public Administration Research and Theory, 9,* 1-32. https://doi.org/10.1093/oxfordjournals.jpart.a024401
- Ritz, A., Brewer, G. A., & Neumann, O. (2016). Public Service Motivation: A Systematic Literature Review and Outlook. *Public Administration Review*, *76*, 414-426. https://doi.org/10.1111/puar.12505
- Sadiq (2018). Determinant Power of "Public Service Motivation" for "Job Satisfaction" and "Customer Service Orientation": In Case of People's Republic of China. *Open Journal of Social Sciences*, *6*, 29-42. https://doi.org/10.4236/jss.2018.61003
- Scandura, T. A., & Schriesheim, C. A. (1994). Leader-Member Exchange and Supervisor Career Mentoring as Complementary Constructs in Leadership Research. *Academy of Management Journal*, *37*, 1588-1602.
- Shaikh, G. M., Thebo, J. A., Jamali, M., Sangi, F., Sangi, S. A., & Sheikh, G. M. (2019). The Impact of Quality Leader Member Exchange on Job Satisfaction Mediating Effect of Organizational Commitment. *Sociology International Journal*, 3, 411-419. https://doi.org/10.15406/sij.2019.03.00206
- Somech, A., & Bogler, R. (2002). Antecedents and Consequences of Teacher Organizational and Professional Commitment. *Educational Administration Quarterly, 38*, 555-577. https://doi.org/10.1177/001316102237672
- Taylor, J., & Westover, J. H. (2011). Job Satisfaction in the Public Service: The Effects of Public Service Motivation, Workplace Attributes and Work Relations. *Public Manage-ment Review*, 13, 731-751. https://doi.org/10.1080/14719037.2010.532959
- Vandenabeele, W. (2007). Toward A Public Administration Theory of Public Service Motivation: An Institutional Approach. *Public Management Review*, *9*, 545-556. https://doi.org/10.1080/14719030701726697
- Vandenabeele, W. (2009). The Mediating Effect of Job Satisfaction and Organizational Commitment on Self-Reported Performance: More Robust Evidence of the PSM—Performance Relationship. *International Review of Administrative Sciences*, *75*, 11-34. https://doi.org/10.1177/0020852308099504
- Volmer, J., Niessen, C., Spurk, D., Linz, A., & Abele, A. E. (2011). Reciprocal Relationships between Leader-Member Exchange (LMX) and Job Satisfaction: A Cross-Lagged Analysis. *Applied Psychology*, *60*, 522-545. https://doi.org/10.1111/j.1464-0597.2011.00446.x
- Westover, J. H., & Taylor, J. (2010). International Differences in Job Satisfaction: The Effects of Public Service Motivation, Rewards and Work Relations. *International Journal of Productivity and Performance Management, 59,* 811-828. https://doi.org/10.1108/17410401011089481