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Pay Equity, Unionization, and Teacher Performance in Uganda's Public Education Sector

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Abstract

This study examines how perceived pay equity affects staff performance in low-resource public-service environments. Using an integrated framework of Equity Theory, Herzberg's Two-Factor Model, and the Job Demands-Resources (JD-R) Framework, the study evaluates job satisfaction as a mediating psychological bridge, and resource availability and unionization as critical operational and institutional moderators. We analyze survey data from 400 educators across primary, secondary, and tertiary institutions in Uganda using Covariance-Based Structural Equation Modeling (CB-SEM). The findings show that pay equity predicts staff performance directly ($\beta = 0.245$, $p < 0.001$) and indirectly through job satisfaction ($\beta = 0.159$, $p = 0.001$). Resource availability positively moderates the equity-satisfaction relationship ($\beta = 0.235$, $p < 0.001$), whereas unionization shows a weak, non-robust effect ($\beta = 0.086$, $p = 0.039$; 95% BC CI [-0.041, 0.204]). Compensation reforms must align with resource provisioning to optimize service delivery, in line with Equity Theory principles.

Keywords: *Job satisfaction, Pay equity, Resource availability, Staff performance, Unionization.*

1.0 Introduction

Pay equity, the perception that compensation is fair and proportional to the value of work performed, has attracted sustained scholarly attention as a driver of workforce motivation, retention, and organizational productivity (OECD, 2023; World Economic Forum, 2023). In frontline public service contexts, equitable compensation carries meaning well beyond financial remuneration, functioning as a signal of institutional respect and procedural fairness (Pham et al., 2020). Industrial relations research reinforces this picture. As Blanchflower et al. (2021) and Ott

(2024) found, collective union representation strengthens employee bargaining power, clarifies pay structures, and protects occupational well-being. Bakker and Demerouti (2007) argue that performance is optimized when institutions balance the psychological and operational demands placed on workers and the resources, recognition, and fair reward structures available to them.

Sub-Saharan Africa's public sector operates under distinct pressures. Tight fiscal environments, fragmented labor bargaining arrangements, and severe resource deficits shape the institutional landscape across the region (Oh et al., 2025). Within the East African Community (EAC), public educators contend with structural wage stagnation, pronounced regional compensation disparities, and delayed promotion cycles (Rwigema, 2022). In Western and Southern Africa, empirical observations suggest that teacher unionization may foster a collective consciousness of wage rights and institutional accountability; however, state control and institutional inertia severely constrain its ability to translate member discontent into meaningful policy change (Amankwaah, 2023; Matla & Xaba, 2019). This has resulted in the persistent problem of teacher disengagement and absenteeism, along with declining instructional effectiveness in regional education authorities (Ssegawa, 2019).

Public education in Uganda is the bedrock of national human capital development, but the sector is beset with systemic operational crises related to pay and labor relations. Despite public policies stating that all educators should be paid the same, there are huge disparities in the remuneration of primary, secondary, and tertiary educators and between the urban areas and the remote rural areas (Olum et al., 2024). Industrial unions like the Uganda National Teachers' Union (UNATU) actively lobby for periodic wage adjustments. However, their bargaining influence is often restricted by bureaucracy and fragmented institutional frameworks (Kibikyo, 2012). Ugandan educators are also frustrated with their jobs, as Olum et al. (2024) point out, because of politicized promotion tracks,

long salary delays, and lack of adequate physical infrastructure. Such systemic failures lower occupational morale and compromise instructional quality across the country (Nabukenya, 2013).

The public education sector in Uganda is engaged in a performance crisis. In response to this, the government has put in place reforms in public service in a bid to standardize the pay structure. Various efforts have been unsuccessful because of inconsistent policies regarding pay (Olum et al., 2024; Ssegawa, 2019). There is favoritism when it comes to promotions, delays in payments, and differences in resource availability across regions (Rwigema, 2022). Teacher unions aim to provide collective advocacy efforts. However, the fragmentation of institutions and the weakness of industrial relations regimes erode the ability of teacher unions to provide binding structural improvements (Kibikyo, 2012).

The core problem is the misalignment between psychological perceptions of fairness and actual job performance under severe constraints in the workplace. Current literature often looks at compensation, employee satisfaction, and performance as direct linear sequences. However, in resource-constrained public institutions, goodwill or perceived pay equity alone has not sufficed to ensure operational performance when teachers lack the basic pedagogical tools or institutional supports (Nabukenya, 2013; Olum et al., 2024). Lack of explicit research on the role of structural conditions (resource availability) and institutional voice mechanisms (unionization) in translating equity perceptions into performance leaves policy interventions at risk of misallocating resources towards isolated pay raises that do not translate into improvements in educational outcomes.

While there is a large body of literature proving the importance of pay fairness in forming positive attitudes towards work among employees (Blanchflower et al., 2021; Ott, 2024), an important theoretical paradox, “the translation problem,” appears in the field of contemporary human resources management (HRM). Existing HRM models presuppose that fair pay leads to job

satisfaction, which later leads to the improvement of performance. But this linear assumption does not hold in low-resource public sector settings. In contexts like Uganda's public education system, where structural constraints, political patronage, chronic resource scarcity, and institutional power imbalances dominate daily work, positive psychological attitudes do not automatically translate into productive behavior. Employees may feel pay is fair or intrinsically satisfying, but be operationally incapable of delivering high performance because of missing instructional tools, overcrowded classrooms, or a weak collective voice.

Accordingly, the study seeks to establish the conditional mechanisms that shape the relationship between perceived pay equity and staff performance in Uganda's public education sector. A moderated mediation model frames the analysis, placing job satisfaction as the psychological channel through which pay perceptions operate. It also casts unionization and resource availability as the institutional and operational factors that either carry or collapse that translation.

The findings of this study have implications for organizational behavior and HRM in the public sector in theoretical, practical, and contextual terms. It contributes to the HRM literature by addressing the proliferation of multi-theory frameworks. The model presents a moderated mediation of how the perception of fairness (Equity), hygiene factors (Herzberg), and supportive circumstances (JD-R) interact. It offers evidence-based thinking for the Ministry of Public Service, Ministry of Education and Sports, and public service actors to improve the use of non-monetary operational support, industrial relations governance, and compensation reform to optimize frontline public service delivery in Uganda.

We study public primary, secondary, and tertiary schools in the four regions of Uganda and offer feedback to international development agencies (such as UNESCO and the World Bank) and teacher unions to build contextually appropriate human capital approaches in Sub-Saharan Africa.

The rest of the paper presents the literature review, hypothesis development, methodology, analytical results and discussion, and limitations and future research possibilities.

2.0 Theoretical Framework and Hypothesis Development

2.1 Integrated Theoretical Framework

The study did not focus on the theoretical models as independent and parallel views but rather integrated Adams' (1963) Equity Theory, Herzberg's (1959) Two-Factor Model, and Bakker and Demerouti's (2007) Job Demands-Resources (JD-R) Framework into a single causal model. Each governs a distinct stage of the behavioral process as it unfolds within public sector HRM.

Equity Theory (Adams, 1963) captures the initial cognitive moment, the point at which educators weigh their input-to-outcome ratios against those of institutional peers and form attitudes accordingly. Herzberg's (1959) Motivator-Hygiene Theory then identifies the psychological threshold that must be cleared: compensation equity functions as a hygiene factor whose absence generates dissatisfaction and whose presence enables baseline satisfaction. At the third stage, the JD-R Framework (Bakker & Demerouti, 2007) acts as a behavioral filter, specifying how structural job resources determine whether psychologically satisfied employees can actually convert that satisfaction into measurable performance. Satisfaction alone is not enough, as the right conditions must allow it.

This model states that the unionization and resource availability variables act as a moderating influence on the relationship between pay equity and job satisfaction. It suggests that teachers' perception of pay equity as related to their satisfaction is dependent on unionization.

2.2 Perceived Pay Equity and Staff Performance: An Equity Theory Perspective

Adams' (1963) Equity Theory suggests that social equity is determined by a comparison of one's ratio of work inputs (effort, qualifications, time, etc.) and outcomes (compensation, recognition, etc.) with that of relevant comparison groups. Cognitive dissonance occurs when workers feel they are not doing enough or receiving enough compared to what they expect and what other workers receive. Employees adjust their effort, disengage, or lower performance on the tasks they do to achieve psychological equilibrium (Adams, 1963). Despite the fact that the roles of teachers are standardized in public education, the perceived gap in pay between teachers in public education and those in other sectors leads to severe demotivation (Oh et al., 2025).

Recent research on global management shows that a fair and transparent salary system can make employees more inclined to be good organizational citizens, and it can improve their front-line service quality (OECD, 2023; Pham et al., 2020). Conversely, enormous differences in perceived compensation in Sub-Saharan public institutions cause collaboration and organizational commitment to wane (Kipkebut, 2010; Rwigema, 2022). In Uganda, regional inequities, slow promotion cycles, and unclear salary adjustments compound inequities in pay systems (Olum et al., 2024). When teachers in Uganda perceive inequitable compensation with respect to their inputs, they sacrifice their instructional effort, as noted by Ssegawa (2019). Based on Equity Theory, we propose that perceived compensation fairness has a direct impact on employee work output.

H1: *Perceived pay equity is positively associated with staff performance in public education institutions.*

2.3 The Mediating Role of Job Satisfaction: A Motivator-Hygiene Perspective

Herzberg's (1959) Two-Factor Model draws a conceptual boundary between hygiene factors (e.g., compensation, administrative policies, and working conditions), which prevent dissatisfaction,

and motivators (e.g., achievement, recognition, and responsibility), which generate intrinsic drive and sustained performance. Pay equity sits firmly on the hygiene side of that boundary. When employees perceive fair compensation, occupational distress recedes, and satisfaction, the affective groundwork for professional engagement, becomes possible (Herzberg, 1959; Muguongo et al., 2015).

Job satisfaction is presently confirmed to be a significant psychological linkage between organizational justice and performance, based on recent studies (Katebi et al., 2021; Spector, 2022). In the public sector, where reward structures are not as prevalent, intrinsic and affective states have a major impact on employee performance (Kim & Fernandez, 2017; Wang et al., 2022). The idea of fair compensation systems in the African education systems suggests satisfaction for the employees and therefore effort and commitment to the job (Salifu, 2016). This pattern is prevalent in Uganda's education and health sectors; perceived fairness in compensation leads to overall job satisfaction, which then leads to improved service provision and reduced absenteeism (Nabukenya, 2013; Olum et al., 2024). We suggest, by using Herzberg's hygiene threshold along with empirical evidence:

H2: *Job satisfaction mediates the relationship between perceived pay equity and staff performance.*

2.4 The Moderating Role of Resource Availability: A JD-R Enabler Perspective

The Job Demands-Resources Framework (Bakker & Demerouti, 2007) describes two components of job environments, namely job demands (elements that require sustained physical or mental effort) and job resources (physical, social, or organizational factors that facilitate goal achievement and reduce job demands). According to the JD-R model, job resources are the main boundary condition that allows psychological states to translate into actual performance outcomes (Pirrotta et

al., 2025). High motivation and satisfaction can only result in severe constraints on behavior if the operational tools are not adequate.

Research from around the world demonstrates that teacher satisfaction, coupled with pedagogical materials, physical infrastructure, and technological support, strongly amplifies instructional effectiveness (OECD, 2023; Panakaje et al., 2024). Acute material limitations result in "operationally constrained" employee morale in low-resource public sectors in Sub-Saharan Africa (Matla & Xaba, 2019). In Kenya, Muguongo et al. (2015) found that teachers working in overcrowded and poorly equipped classrooms were not able to achieve high performance due to the fact that they were not satisfied with their working conditions. Likewise, empirical studies in Uganda indicate that teachers may be satisfied with their jobs but face multiple challenges, such as shortages of textbooks, laboratory equipment, and basic facilities, that hinder them from performing basic pedagogical duties (Nabukenya, 2013; Olum et al., 2024; Ssegawa, 2019). Resource availability facilitates the transformation of psychological satisfaction into actual performance, as the JD-R theory suggests.

H3: *Resource availability positively moderates the relationship between job satisfaction and staff performance, such that the relationship is stronger when resource availability is high.*

2.5 The Moderating Role of Unionization: An Industrial Relations Voice Perspective

Unionization theory (Freeman & Medoff, 1985) elucidates how unified representation gives workers a formal voice, reduces perceived power imbalances, and increases procedural justice. Union mechanisms, including the resolution of grievances, transparent pay structures, and initiatives to promote worker well-being, are factors that enhance the psychological sense of pay equity (Blanchflower et al., 2021; Jung et al., 2024).

Union representation provides an institutional buffer that boosts the positive attitudinal effects of fair pay practices in the African public sector (Kipkebut, 2010; Salifu, 2016). Trade unions like the Uganda National Teachers' Union (UNATU) play a vital role in the public education system in Uganda by validating the complaints of teachers and recommending adjustments in wages in the system (Kibikyo, 2012). Olum et al. (2024) found that unionized teachers reported higher levels of trust in the process and job satisfaction when they believed collective bargaining systems protected their right to compensation. Unionization also strengthens the positive attitudinal translation of equity perceptions into job satisfaction.

H4: *Unionization positively moderates the relationship between perceived pay equity and job satisfaction, such that the relationship is stronger at higher levels of unionization presence.*

Figure 1 illustrates the synthesized moderated mediation framework, depicting the direct, mediated, and conditional pathways linking perceived pay equity, job satisfaction, unionization, resource availability, and staff performance.

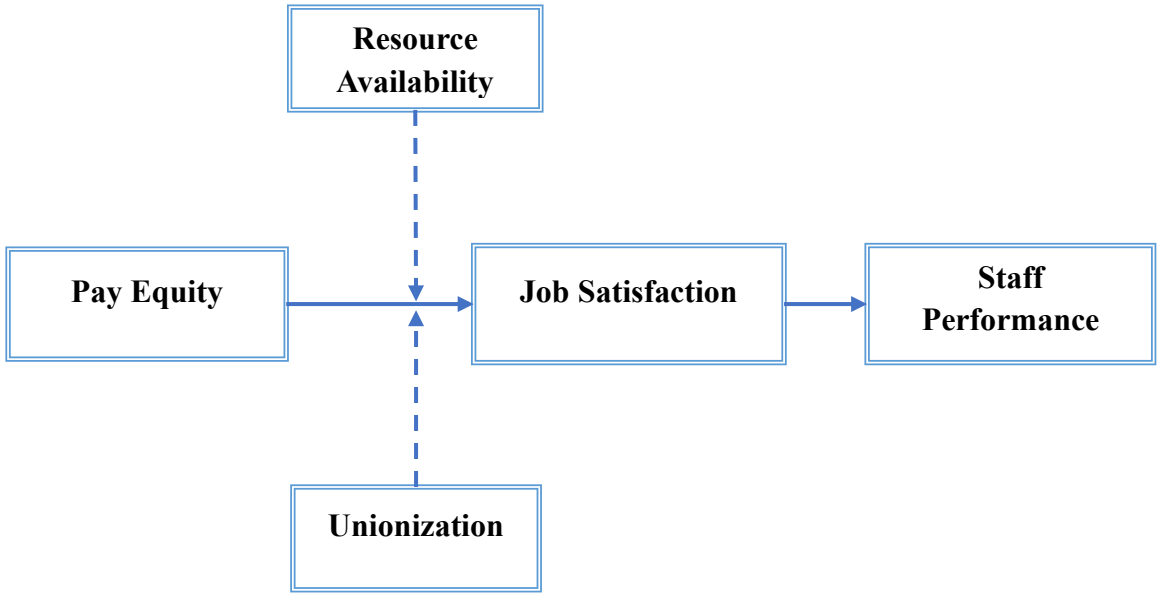


Figure 1: *Conceptual Model of Pay Equity, Job Satisfaction, Resource Availability, Unionization, and Staff Performance.*

Source: *Researcher's conceptualization*

3.0 Research Methodology

3.1 Research Design and Paradigm

This study used a quantitative, cross-sectional survey design with a positivist research philosophy. The study tested the direct, mediated, and moderated relationships between the latent constructs simultaneously using Structural Equation Modeling (SEM).

3.2 Population and Sampling Strategy

The present investigation targeted teachers in public primary, secondary, and tertiary institutions in Uganda. Private institutions were deliberately omitted because their compensation structures, labor relations, and resource allocations are subject to independent commercial frameworks rather than public sector HRM mandates.

A stratified voluntary sampling process was used to ensure the regional and institutional diversity within the public education sector. The sampling frame was stratified into the four main administrative regions of Uganda (Central, Eastern, Western and Northern), and then sub-stratified by education level (Primary, Secondary, Tertiary). Public educators in each stratum were asked to participate voluntarily through targeted public online forums, verified professional educator networks, and regional teacher association channels.

According to Krejcie and Morgan (1970), a population of over 100,000 requires a minimum sample of 384 responses at a 95% confidence level. A total of 700 online survey instruments were accessed, and 400 responses were fully completed and valid (completion rate 57.1%). This sample size meets Kline's (2016) baseline recommendation of a 10:1 respondent-to-item ratio and provides adequate statistical power for covariance-based Structural Equation Modeling (Hair et al., 2019).

3.3 Data Collection Instruments and Operationalization

The researchers operationalized all constructs using validated scales they had adapted to Uganda's public education context. Each construct was represented by 4 items as to minimize respondent fatigue and to be parsimonious. All items were measured using a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

Perceived Pay Equity was measured using items borrowed from Colquitt's (2001) Organizational Justice Scale, focusing specifically on distributive and procedural compensation fairness relative to peer workloads and qualifications.

Job Satisfaction was tested using scales customized from Spector's (2022) Job Satisfaction Survey (JSS). It incorporates affective (overall emotional fulfillment) and cognitive (appraisal of working conditions and support) facets.

Staff Performance was tested using items adapted from Koopmans' (2015) Individual Work Performance Questionnaire (IWPQ), focusing on task execution, instructional discipline, and contextual performance.

Resource Availability was measured using items modified from Bakker and Demerouti's (2007) JD-R instrument, which assessed physical infrastructure, teaching materials, and operational facilities.

Unionization was operationalized using items adapted from Freeman and Medoff (1985), which captured perceived union voice, grievance representation, and local collective activity.

3.4 Methodological Rigor and Diagnostic Checks

3.4.1 Common Method Bias (CMB) Diagnostics

As all data were collected using cross-sectional self-report measures, common method variance posed a potential methodological risk. To address this, we implemented procedural and statistical

controls per Podsakoff et al. (2003). Procedural controls included randomly ordering scale items, ensuring respondent anonymity, and refining item phrasing to reduce social desirability bias. Statistically, an exploratory factor analysis (Harman's Single-Factor Test) revealed that the first unrotated factor accounted for 28.4% of the total variance, well below the 50% threshold. The investigators added a common latent factor (CLF) to the SEM measurement model. Introducing the CLF did not significantly alter the typical factor loads ($\Delta\beta < 0.10$), suggesting that the validity of the results is unlikely to be affected by common method bias.

3.4.2 Measurement Validity and Reliability

Confirmatory factor analysis (CFA) in AMOS assessed model diagnostics. Construct reliability was established via Cronbach's alpha ($\alpha \geq 0.70$) and Composite Reliability (CR ≥ 0.70). All Average Variance Extracted (AVE) values exceeded the 0.50 threshold (Hair et al., 2019), confirming convergent validity. The Fornell-Larcker criterion established discriminant validity, verifying that the square root of the AVE for each construct exceeded its inter-construct correlations.

3.5 Analytical Strategy

The data analysis was carried out in two steps of structural equation modelling (Hu and Bentler, 1999). The first phase (measurement model) was conducted to assess the overall model fit with Chi-square/DF (χ/DF < 3.0), Comparative Fit Index (CFI ≥ 0.95), Root Mean Square Error of Approximation (RMSEA ≤ 0.06), and Standardized Root Mean Square Residual (RMR ≤ 0.06). The second stage (structural model) evaluated direct, mediated, and moderated pathways. To avoid committing the error of causalizing cross-sectional data with causal language, we analyzed paths only as patterns of association or conditions. We examined hypothesized mediation (H2)

and conditional interaction paths (H3, H4) using bias-corrected bootstrapping with 5,000 resampling iterations at a 95% confidence interval (Preacher et al., 2007). Interaction terms were mean-centered before estimation of the model to address multicollinearity concerns.

3.6 Ethical Considerations and Research Governance

Recognized ethical principles governing social science research with human participants shaped every procedural choice, with sustained attention to voluntary participation, data confidentiality, and protection from harm. This anonymous, non-invasive attitudinal survey was conducted according to the strict ethical code set out in the Declaration of Helsinki.

The mandatory landing page of the survey was an online informed consent form. Participants were told about the sole academic and non-commercial purpose of the investigation, the voluntary nature of their participation, and explicitly that educators could leave the survey at any time without penalty, administrative scrutiny, or prejudice to their employment status and that there were no financial incentives so that responses were not coerced before accessing the instruments.

Participants indicated formal consent by clicking an initial agreement box before proceeding to the survey items. To guarantee anonymity, no personally identifying information (name, phone number, IP address, specific school name, etc.) was collected. Data were compiled on a regional and institutional level with the help of alphanumeric codes.

All survey responses were sent and stored through encrypted channels and in password-protected storage, which only the main researcher could access. The routine academic data-handling process will securely store the data before its permanent removal.

4.0 Results - Measurement Model Fit Assessment (CFA)

The Confirmatory Factor Analysis (CFA) was carried out to test the construct validity and dimensional adequacy of the measurement model before testing the hypotheses in AMOS. We evaluated the absolute goodness-of-fit, incremental goodness-of-fit, and parsimony-adjusted goodness-of-fit indices against statistical thresholds (Hu & Bentler, 1999; Hair et al., 2019).

Table 1 summarizes the fit indicators, observed empirical values, and recommended standard values.

Table 1: Measurement Model Fit Indices

Fit Indicator	Empirical Value	Recommended Threshold	Design Interpretation
Absolute Fit			
χ^2	186.198	-	Not significant (p = 0.072)
DF	160	-	Reflects a highly over-identified, stable structural model.
χ^2/DF	1.168	≤ 3.00	Excellent fit (indicates minimal discrepancies).
GFI	0.956	≥ 0.90	Marginally acceptable (sensitive to latent variable complexity).
AGFI	0.942	≥ 0.90	Excellent fit
RMR	0.026	< 0.08	Excellent fit (reflects exceptionally low residual variance).
Incremental Fit			
CFI	0.996	≥ 0.95	Excellent fit (exceeds conservative baseline criteria).
TLI	0.995	≥ 0.95	Excellent fit (robust indicator of model parsimony).
NFI	0.975	≥ 0.95	Excellent fit (sits safely within standard tolerances).
Parsimony-Adjusted Fit			
RMSEA	0.021	< 0.06	Excellent fit (indicates tight error approximation).

Source: *Calculated from primary data*

Cutoff criteria: *Hu and Bentler (1999)*

Table Legend:

χ^2: Chi-square
GFI: Goodness of Fit Index
AGFI: Adjusted Goodness of Fit Index
CFI: Comparative Fit Index
TLI: Tucker-Lewis Index
NFI: Normed Fit Index
RMR: Root Mean Square Residual
RMSEA: Root Mean Square Error of Approximation

The measurement model demonstrated an exceptionally robust fit across all diagnostic criteria. The normed chi-square ratio (χ^2/DF = 1.168) falls comfortably below the recommended upper limit of 3.00, indicating a minimal discrepancy between the sample covariance matrix and the implied theoretical model matrix (Hu & Bentler, 1999). Absolute fit indices further support model adequacy, with GFI = 0.956 and AGFI = 0.942, exceeding the recognized 0.90 threshold. Additionally, the Root Mean Square Residual (RMR = 0.026) shows negligible residual covariance and remains well below the 0.08 benchmark.

The comparative fit indicators (incremental fit) were above the normal strict criteria. Specifically, the Comparative Fit Index (CFI = 0.996), Tucker-Lewis Index (TLI = 0.995), and Normed Fit Index (NFI = 0.975) were all greater than the benchmark of 0.95, indicating that the measurement framework was performing significantly better than an assumed null model (Hair et al., 2019).

The RMSEA was 0.021, a number well below the conservative criterion of 0.06, indicating good parsimony-adjusted fit. Additionally, the test of close fit was not significant (p = 0.072), which indicates that the measurement model is not over-parameterized and is a good fit to the empirical data.

Collectively, these values offer good evidence for the construct validity and structural stability of the measurement model and provide a strong foundation for structural path analysis and hypothesis testing.

4.1 Reliability, Validity, and Inter-Construct Correlations

In line with SEM standard practice (Fornell & Larcker, 1981; Hair et al., 2019), we ran reliability and validity diagnostics for all latent constructs; Table 2 presents descriptive statistics, reliability indices, convergent validity measures, and the discriminant validity matrix.

The descriptive statistics provide a vital picture of the baseline perceptions of Ugandan public educators. Resource Availability (M=1.703, SD=0.73) and Job Satisfaction (M=1.803, SD=0.89) had the lowest mean scores on the 5-point Likert scale, suggesting chronic operational shortages and pervasive dissatisfaction in the public education sector. Staff Performance (M = 2.127, SD = 1.13) and Pay Equity (M = 2.128, SD = 1.20) were also below the average of 2.50. They both reflect long-standing views about unfair compensation and limited operational output. The only exception was unionization, with a moderate-to-high mean (M = 3.279, SD = 1.41), indicating active union participation and visibility among public school teachers, although institutional constraints remain.

Internal consistency and construct reliability were assessed by Composite Reliability (CR) and Maximal Reliability (MaxR[H]). The Composite Reliability (CR) values for all five latent variables were between 0.838 (Resource Availability) and 0.953 (Unionization) and were much higher than the recommended minimum threshold of 0.70 (Hair et al., 2019). Furthermore, the Maximal Reliability (MaxR[H]) values ranged from 0.845 to 0.953, indicating the high stability of the construct and low measurement error in the indicators.

Convergent validity is a measure of the degree to which the items measuring a latent construct are correlated. Convergent validity can be considered valid if Average Variance Extracted (AVE) is greater than 0.50 (Fornell & Larcker, 1981). The AVE values ranged from 0.565 (Resource Availability) to 0.835 (Unionization), as shown in Table 2. Convergent validity was fully supported, and all latent constructs had an AVE above 0.50.

Discriminant validity is the validation that every latent construct is empirically different from the other constructs in the conceptual model. This was confirmed with two sound statistical tests. For each construct (bold diagonal values in Table 2), it was found that the square root of the AVE

(√AVE) was higher than the highest correlation between the construct and any other construct (the off-diagonal values). Similarly, Hair et al. (2019) stated that MSV for every construct needs to be lower than the AVE for each construct. Every construct satisfied the condition MSV < AVE, confirming that the shared variance between variables is substantially lower than the variance captured by the construct indicators themselves.

Table 2: Descriptive Statistics, Construct Reliability, Validity, and Correlation Matrix

Variable	Mean	SD	CR	AVE	MSV	MaxR(H)	PERF	JSAT	PEQ	RES	UNION
PERF	2.127	1.13	0.921	0.744	0.293	0.924	**0.862**				
JSAT	1.838	0.89	0.888	0.665	0.293	0.889	0.541	**0.815**			
PEQ	2.128	1.20	0.943	0.805	0.196	0.949	0.426	0.443	**0.897**		
RES	1.703	0.73	0.838	0.565	0.193	0.845	0.339	0.439	0.239	**0.751**	
UNION	3.279	1.41	0.953	0.835	0.030	0.953	0.087	0.174	0.026	0.034	**0.914**

Source: *Computed from primary data*
Notes: *PERF = Staff Performance; JSAT = Job Satisfaction; PEQ = Pay Equity; RES = Resource Availability; UNION = Unionization; SD = Standard Deviation; CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance;* MaxR(H) *= Maximal Reliability. Values in bold along the diagonal represent the square root of the Average Variance Extracted (√AVE). Off-diagonal elements are inter-construct Pearson correlation coefficients.*

4.2 Structural Model and Hypothesis Testing

To evaluate the hypothesized direct, indirect (mediated), and conditional (moderated) relationships, we executed structural equation modeling (SEM) with maximum likelihood estimation in AMOS. We evaluated indirect and moderated effects using bias-corrected bootstrapping with 5,000 resampling iterations and a 95% confidence interval (BC CI) (Preacher et al., 2007). Table 3 presents the structural path coefficients (β), critical ratios (CR/t-value), bootstrap confidence intervals, p-values, and corresponding hypothesis decisions.

Table 3: Structural Path Coefficients and Hypotheses Summary

Hypothesis	Path/Relationship	β	CR/t-value	95% BC CI	p-value	Decision
Direct Effects						
H1	PEQ→PERF	0.245	5.295	-	<0.001	Supported
	PEQ→ JSAT	0.309	7.248	-	<0.001	Supported
	JSAT→PERF	0.391	8.454		<0.001	
Mediated Effects						
H2	PEQ→JSAT→PERF	0.159	[0.128, 0.364]	-	0.001	Supported
Moderated Effects						
H3	PEQ*RES→JSAT	0.235	4.910	[0.090, 0.378]	<0.001	Supported
H4	PEQ*UNION→JSAT	0.086	2.068	[-0.041, 0.204]	0.039	Supported (Weak/conditional)

Source: *Computed from primary data*

Note: *PEQ = Pay Equity; JSAT = Job Satisfaction; PERF = Staff Performance; RES = Resource Availability; UNION = Unionization; BC CI = Bias-Corrected Confidence Interval. Bootstrap sample = 5,000.*

The structural analysis showed that perceived pay equity had a direct positive effect on staff performance, with a statistically significant result ($\beta = 0.245$, $t = 5.295$, $p < 0.001$). This confirms H1, as an increase in perceived compensation equity directly links to an increase in work performance among Uganda's public school teachers.

Further, both direct paths were statistically significant, with pay equity having a strong positive effect on job satisfaction ($\beta = 0.309$, $t = 7.248$, $p < 0.001$) and job satisfaction having a strong positive effect on staff performance ($\beta = 0.391$, $t = 8.454$, $p < 0.001$).

To test whether job satisfaction mediates the relationship between pay equity and staff performance (H2), we performed a bias-corrected bootstrap procedure with 5,000 resamples.

The standardized indirect effect of pay equity on staff performance via job satisfaction was statistically significant ($\beta = 0.159$, $p = 0.001$), with a 95% bias-corrected confidence interval strictly excluding zero ([0.128, 0.364]). As both the direct effect (PEQ → PERF, $\beta = 0.245$) and the indirect effect remain statistically significant, H2 is fully supported, demonstrating a complementary partial mediation. Job satisfaction functions as a vital psychological mechanism through which perceived compensation equity translates into tangible occupational performance.

The interaction effect of whether job satisfaction moderates the relationship between resource availability and staff performance (JSAT x RES → PERF) was positive and statistically significant (β = 0.235, t = 4.910, p < 0.001). The 95% bootstrap confidence interval [0.090, 0.378] did not contain zero, thus supporting H3. This finding shows that resource availability is an important enabling boundary condition, because job satisfaction has a significantly stronger relationship with staff performance when teachers work in well-resourced settings.

An interaction effect test (PEQ x UNION → JSAT) found a small but positive path coefficient (β = 0.086, t = 2.068, p = 0.039). But this interaction shows high sampling variability and is not statistically robust across bootstraps, as the 95% bias-corrected bootstrap confidence interval spans from negative to positive values [-0.041, 0.204]. Therefore, the effect size of H4 is close to zero; although the surface p-value is weak, there is no empirical evidence for it. The small effect does not imply a lack of theoretical relevance; it only shows that the operational capacity of teacher unions is very low in Uganda's industrial relations system.

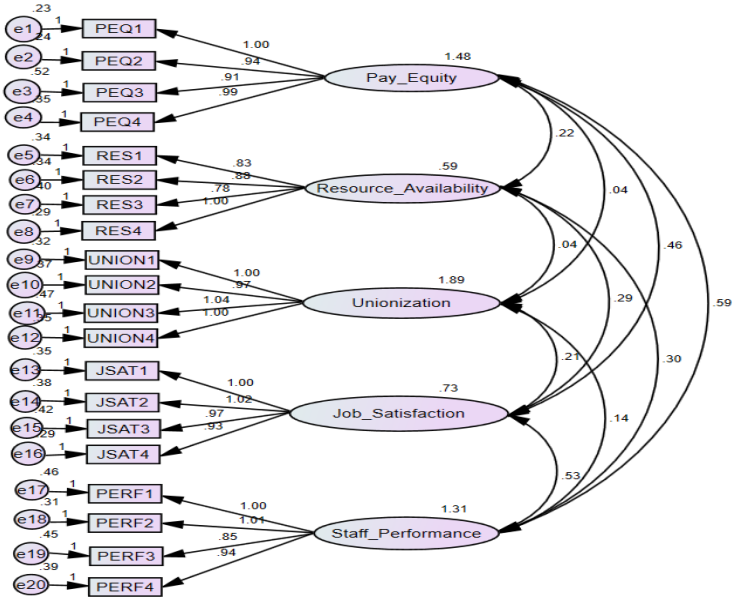


Figure 2: *Measurement model*
Source: *Generated using SPSS-AMOS version 27 based on primary data*

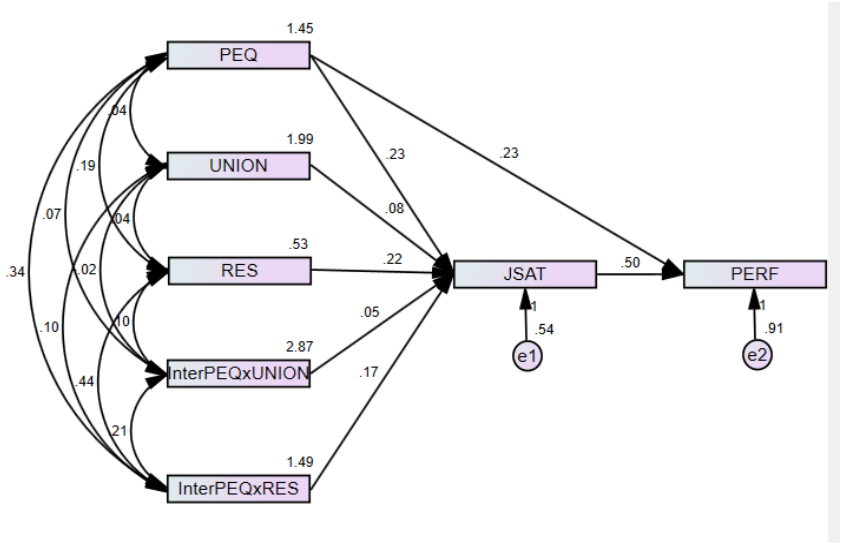


Figure 3: *Moderated-mediation path model*
Source: *Generated based on primary data*

5.0 Discussion

This investigation explored the mediating processes that shape the relationship between perceived pay equity and employee outcomes in the public education system in Uganda. The study addressed a major theoretical paradox in the study of public sector human resource management, the "translation problem," in which the linkage between positive employee attitudes and equity perceptions and tangible outputs was not clear in a highly politicized and resource-constrained public sector context.

5.1 The Direct and Mediated Pathways: Equity, Satisfaction, and Performance

Structural estimates verified the positive association between perceived wage justice and staff performance ($\beta = 0.245$, $p < 0.001$), verifying H1. Existing scholarship on pay equity has established a connection between adequate remuneration and increased effort and work quality (OECD, 2023; Pham et al., 2020). In particular, Adams's (1963) equity theory argues that teachers' perceptions of their inputs and outputs compared with their peers affect their psychological state and motivation. For instance, in Ugandan education, salary disparities between urban and rural

areas, as well as unclear promotion guidelines, trigger demotivation, which limits individual effort toward accomplishing tasks (Olum et al., 2024; Ssegawa, 2019).

In addition, the bias-corrected bootstrapped analysis revealed that job satisfaction partially mediated the pay equity-performance relationship ($\beta = 0.159$, $p = 0.001$) in support of H2. This substantiates Herzberg's (1959) Two-Factor proposition: compensation equity acts as a crucial hygiene factor that brings equilibrium to the workplace and establishes the psychic threshold (job satisfaction) that enables positive occupational conduct. Findings across several Sub-Saharan African countries indicate that compensation inequity leads teachers to perceive an affective state that makes them more involved in pedagogical and collaborative tasks (Muguongo et al., 2015; Salifu, 2016). However, because the relationship explains only part of the variance in job satisfaction, psychological readiness alone does not explain the total variance in public institutions' performance.

5.2 Resource Availability as an Enabling Condition

One of the main contributions of this study is to verify the positive moderation of resource availability on the satisfaction-performance link ($\beta = 0.235$, $p < 0.001$), as supported by H3. Situated within the Job Demands-Resources Framework of Bakker and Demerouti (2007), this finding offers insight into how public sector performance functions. Resource availability is a critical enabling condition, not a simple statistical modifier.

The findings of this study parallel those of previous studies in African schools in that well-trained teachers in poorly equipped schools are limited in their ability to operate effectively due to large classes, inadequate pedagogical support, and substandard buildings (Matla & Xaba, 2019; Nabukenya, 2013). Moral (high job satisfaction) translates into measurable classroom productivity when supported by the operational capacity, infrastructure, textbooks, and teaching technologies

(Panakaje et al., 2024). Operational inputs are necessary for psychological satisfaction to come to the fore.

5.3 Deconstructing the Weak Moderation of Unionization

The relationship between pay equity and unionization on job satisfaction was statistically significant ($\beta = 0.086$, $p = 0.039$), but the 95% bias-corrected bootstrap confidence interval crossed zero (BC CI = [-0.041, 0.204]). This weak, non-robust impact is not just a matter of procedure but reflects a deeper institutional understanding of public sector industrial relations in Sub-Saharan Africa.

When unions can effectively and meaningfully engage in collective bargaining and offer procedural voice mechanisms, job satisfaction improves, as Freeman and Medoff (1985) suggest. In Uganda, although teachers are nominal members of unions like the Uganda National Teachers' Union (UNATU), the reality of union representation suffers from two major drawbacks: namely, pay governance is centralized and is not strictly followed by the government, which slows down the process of solving academic conflicts; and the lack of collective bargaining power, which is a result of low membership rates in unions (Kibikyo, 2012). Nominal union membership alone serves as a weak proxy for active procedural voice. Consequently, the current structural form of union presence fails to meaningfully alter how teachers psychologically process pay equity into job satisfaction.

6.0 Implications

6.1 Theoretical Implications

This study advances contemporary human resource management scholarship in three ways. The paper clarifies theoretical sprawl by combining the elements of three well-known theories,

namely Equity Theory (Adams, 1963), Herzberg's (1959) Two-Factor Model, and the JD-R Framework (Bakker & Demerouti, 2007), into a unified causal architecture. It shows how attitudes form through cognitive fairness appraisals, how hygiene factors create psychological thresholds, and how job resources serve as psychological filters.

Second, the investigation helps resolve what might be called the translation problem. The study qualifies the linear assumption of an automatic link between job satisfaction and performance and shows that structural resources determine the extent to which psychological readiness converts into tangible output in low-resource environments.

The study also puts industrial relations in context. The results reveal that nominal unionization, without institutional bargaining capacity, is an ineffective way to soften attitudinal expectations in the centralized public sector in developing countries.

6.2 Practical and Managerial Implications

Conclusions for school administrators and public sector human resource practitioners include championing appropriate interventions to address employee motivation.

The paper advocates a comprehensive management approach. School leaders need to understand that fixing pay dissatisfaction (hygiene) will not improve instructional quality without providing basic pedagogical tools (enabling resources).

Transparency in governance also matters. Administrators who openly communicate promotion criteria and workload allocation give teachers a perceivable sense of procedural fairness. Our data suggest that this has downstream effects on motivation that financial interventions alone cannot replicate.

6.3 Policy Implications

The paper contains recommendations to the Ministry of Public Service, the Ministry of Education and Sports, and to development partners in Uganda.

The government should actively coordinate public investments. Operating budget allocations must accompany wage increases. Unless teachers receive an adequate salary boost in addition to textbooks, laboratory, and classroom infrastructure, their performance will not improve at an optimum level.

Policymakers need to enhance the governance of industrial relations. They need to move away from antagonistic or limiting labor relations and find practical, binding ways to engage in collective bargaining with teacher unions, and empower teachers with a procedural voice beyond mere membership.

6.4 Societal Implications

The successful translation at the macro level, within the society, of a concept of compensation fairness to teaching performance will have a direct influence on the quality of public education. High teacher motivation, along with strong state support for effective education, reduces educational inequality in the region and increases trust in the state's education system.

7.0 Limitations and Future Research

Although this study was useful theoretically and empirically, some limitations necessitate conducting further research.

We employed a cross-sectional survey design in the study. Structural equation modeling provided a clear picture of the paths in our model, but cross-sectional data prevented us from drawing

strong causal conclusions. Future inquiries could use longitudinal or lagged experimental designs to examine the effect of pay equity and resource allocation on performance over time.

Perceptual measures were used in this study, with potentially problematic measures of social desirability and common method bias used for key constructs such as staff performance on self-report survey measures. Common method bias diagnostics showed low method variance, and future studies should use objective performance indicators such as the percentage of students passing a standardized assessment or attendance audits.

There are limitations in the geographic and sectoral coverage of the study. The investigation was limited to public education institutions in Uganda. The structural dynamics relate to the general public management issue in Sub-Saharan countries, but care should be taken not to generalize the results to private institutions or to other forms of public administration in other countries. A cross-national comparison across East Africa and other regions would enhance the model's generalizability.

8.0 Conclusion

This study examined the mediating role of job satisfaction, unionization, and resource availability in the relationship between perceived pay equity and staff performance in Uganda's public education sector. The inquiry combined the core tenets of Equity Theory, Herzberg's Two-Factor Model, and the JD-R Framework, and showed that perceived pay equity directly and indirectly affected staff performance, both through increased job satisfaction and through mediation by operational circumstances. Resource availability enables satisfied educators to translate their morale into measurable instructional output. In contrast, unionization has a weak moderating effect, likely because of structural constraints on union power in centralized public administration systems.

Ultimately, however, a coherent, coordinated public-sector education reform strategy is needed that aligns transparent, fair pay, adequate infrastructure, and effective industrial relations oversight.

Declarations

Funding: *No third-party funding received.*

Disclosure: *The author declares no conflicts of interest.*

Data availability: *The corresponding author can provide the underlying data upon request.*

Ethics Approval and Consent to Participate

Ethical approval for this entire study was granted by the Institutional Ethics Committee at SRM University AP. The committee formally approved the research under institutional procedures for minimal-risk studies involving human participants. All procedures were performed in accordance with the ethical standards of the institutional committee, the 1964 Helsinki Declaration and its later amendments, and national guidelines issued by the Uganda National Council for Science and Technology. We obtained informed consent from all individual participants included in the study, and participation was voluntary, confidential, and anonymous.

Consent to publish: *Not applicable.*

Clinical Trial Number: *Not applicable*

References

Adams, J. S. (1963). Towards an understanding of inequity. *The Journal of Abnormal and Social Psychology*, *67*(5), 422–436. https://doi.org/10.1037/h0040968

Ahmed, A. A. (2024). The role of salary on teacher performance in secondary school. *Journal of Learning and Educational Policy*, (44), 35–45. https://doi.org/10.55529/jlep.44.35.45

Amankwaah, E. (2023). Trade union, collective bargaining, and its effect on membership growth among public university lecturers in Ghana. *Social Sciences & Humanities Open*, *8*(1), 100593–100593. https://doi.org/10.1016/j.ssaho.2023.100593

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309–328. https://doi.org/10.1108/02683940710733115

Blanchflower, D. G., Bryson, A., & Green, C. (2021). Trade unions and the well-being of workers. *British Journal of Industrial Relations*, *60*(2), 255–277. https://doi.org/10.1111/bjir.12627

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*(3), 386–400. https://doi.org/10.1037//0021-9010.86.3.386

Education Service Commission. (2019). *Annual Performance Report FY 2018/2019*. Education Service Commission, Kampala, Uganda. https://www.esc.go.ug/wp-content/uploads/2018/04/Annual-Report-FY-18-19.pdf

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, *18*(3), 382–388. https://doi.org/10.2307/3150980

Freeman, R. B., & Medoff, J. L. (1985). What do unions do? *ILR Review*, *38*(2), 244–263. https://doi.org/10.1177/001979398503800207

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/https://doi.org/10.1108/EBR-11-2018-0203

Herzberg, F. (1959). *The motivation to work* (2nd ed.). John Wiley & Sons.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jung, H., Kim, K.-J., & Shin, I. (2024). Different but synergistic effects of union and manager leadership on member job satisfaction. *Behavioral Sciences*, *14*(4), 287–287. https://doi.org/10.3390/bs14040287

Katebi, A., HajiZadeh, M. H., Bordbar, A., & Salehi, A. M. (2021). The relationship between "job satisfaction" and "job performance": A meta-analysis. *Global Journal of Flexible Systems Management*, *23*(1). https://doi.org/10.1007/s40171-021-00280-y

Kibikyo, D. L. (2012). Privatization, labor conditions and firm performance in Uganda. *American Journal of Economics*, *2*(1), 15–24. https://doi.org/10.5923/j.economics.20120201.03

Kim, S. Y., & Fernandez, S. (2017). Employee empowerment and turnover intention in the U.S. federal bureaucracy. *The American Review of Public Administration*, *47*(1), 4–22. https://doi.org/10.1177/0275074015583712

Kipkebut, D. (2010). *Organizational commitment and job satisfaction in higher educational institutions: the Kenyan case.* PhD Thesis. Middlesex University. Repository.Mdx.Ac.Uk. https://repository.mdx.ac.uk/item/82zq3

Koopmans, L. (2015). *IWPQ - Individual Work Performance Questionnaire Instruction Manual*. https://www.crforum.co.uk/wp-content/uploads/2025/02/Koopmans-Individual-Work-Performance-Questionnaire-Instruction-Manual.pdf

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, *30*(3), 607–610. https://doi.org/10.1177/001316447003000308

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, (140), 1–55.

Matla, S. J., & Xaba, M. I. (2019). Teachers' job satisfaction at well-performing, historically disadvantaged schools. *International Journal of Educational Management*, *34*(4), 725–736. https://doi.org/10.1108/ijem-08-2019-0303

Muguongo, M. M., Muguna,, A. T., & Muriithi, D. K. (2015). Effects of compensation on job satisfaction among secondary school teachers in Maara sub-county of Tharaka Nithi county, Kenya. *Journal of Human Resource Management*, *3*(6), 47–59. https://doi.org/10.11648/j.jhrm.20150306.11

Nabukenya, S. (2013). *Financial rewards and employee performance in health services, Uganda*. Kampala International University. https://doi.org/http://hdl.handle.net/20.500.12306/7615

OECD. (2023). *Pay equity and fair wages*. OECD. https://www.oecd.org/

Oh, J., Cheevaprawatdomrong, J., & Wolf, S. (2025). Predictors of teacher turnover in public and private preprimary classrooms in Ghana. *Teaching and Teacher Education*, *166*, 105172. https://doi.org/10.1016/j.tate.2025.105172

Olum, S., Adyanga, A. F., & Ocan, J. (2024). Theoretical review of pay restructuring in Uganda's public service health sector. *International Journal of Advanced Research*, *7*(1), 35–54. https://doi.org/10.37284/ijar.7.1.1656

Ott, J. (2023). Unionization rate. *Springer eBooks*, 7346–7347. https://doi.org/10.1007/978-3-031-17299-1_3087

Panakaje, N., Rahiman, H. U., Parvin, S. M. R., Shareena, P., Madhura, K., Yatheen, N., & Irfana, S. (2024). Revolutionizing pedagogy: Navigating the integration of technology in higher education for teacher learning and performance enhancement. *Cogent Education*, *11*(1). https://doi.org/10.1080/2331186x.2024.2308430

Pham, L. D., Nguyen, T. D., & Springer, M. G. (2020). Teacher merit pay: A meta-analysis. *American Educational Research Journal*, *58*(3), 000283122090558. https://doi.org/10.3102/0002831220905580

Pirrotta, L., Cantarelli, P., & Belle, N. (2025). Exploring the role of staffing needs in JD-R theory: evidence from public healthcare organizations. *Management Decision*, *63*(13), 282–301. https://doi.org/10.1108/md-07-2024-1718

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42*(1), 185–227. https://doi.org/10.1080/00273170701341316

Rwigema, P.-C. (2022). Impact of teachers' welfare on quality education in the East African Community: Theoretical perspective. *Strategic Journal of Business & Change Management*, *9*(1). https://doi.org/10.61426/sjbcm.v9i1.2217

Salifu, G. S. (2016). *Effects of trade union on job satisfaction in an organization*. MBA Thesis. University of Education, Winneba. https://doi.org/http://41.74.91.244:8080/handle/123456789/4288

Salifu, I., Alagbela, A. A., & Ofori, C. G. (2017). Factors influencing teaching as a career choice (FIT-Choice) in Ghana. *Teaching Education*, *29*(2), 111–134. https://doi.org/10.1080/10476210.2017.1365360

Spector, P. E. (2022). *Job satisfaction: From assessment to intervention*. Routledge. https://psycnet.apa.org/doi/10.4324/9781003250616

Ssegawa, L. (2019). *The impact of teachers' remuneration on performance of schools under Universal Primary Education (UPE) system in Uganda. A case study of Kayunga District*. Kampala International University. https://doi.org/https://irbackend.kiu.ac.ug/server/api/core/bitstreams/06c56a7a-ba54-48f5-a799-e7fe1cb02044/content

UNESCO. (2024). Global Education Monitoring Report, 2024/5, Leadership in education: Lead for learning. *UNESCO*. https://doi.org/10.54676/eflh5184

Wang, X., Chen, X., Zhou, H., & You, X. (2022). A study on the relationship between compensation gap within the top management team and corporate performance: An empirical research based on the moderation effect of fairness preference. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.916832

World Economic Forum. (2023). *Global Gender Gap Report 2023*. World Economic Forum. http://reports.weforum.org/global-gender-gap-report-2023