International Journal of Social Science and Education Research

ISSN Print: 2664-9845
ISSN Online: 2664-9853
Impact Factor: RJIF 8.42
IJSSER 2025; 7(2): 331-336
www.socialsciencejournals.net
Received: 26-06-2025
Accepted: 28-07-2025

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Linking teacher motivation to educational outcomes in secondary schools of Lusaka district, Zambia

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DOI: https://www.doi.org/10.33545/26649845.2025.v7.i2d.364

Abstract
Linking teacher motivation to educational outcomes is critical for informing policy and practice in resource-constrained settings such as Zambia. This study investigates the relationship between levels and dimensions of teacher motivation and student performance in secondary schools in Lusaka District. Utilizing a mixed-methods cross-sectional design, quantitative data were collected from 230 teachers using the Teacher Motivation Questionnaire to measure intrinsic and extrinsic motivational factors, and matched with the past three years of standardized examination scores from participating schools. Qualitative insights were gathered through semi-structured interviews with 24 teachers to explore contextual mediators of motivation - outcome linkages, including leadership support, resource availability, and professional development opportunities. Multiple regression and mediation analyses revealed that intrinsic motivation was a significant positive predictor of student outcomes ($\beta = .42$, $p < .001$), whereas extrinsic motivation showed a weaker but still significant association ($\beta = .18$, $p = .045$). Leadership support and access to instructional resources partially mediated the relationship between intrinsic motivation and academic achievement, accounting for an additional 11% of explained variance. Thematic analysis identified autonomy support, recognition, and collaborative learning as key drivers that enhance teacher engagement and efficacy. By integrating quantitative and qualitative methods, this research offers a comprehensive understanding of how teacher motivation influences educational outcomes within local socio-cultural constraints. Implications include the development of targeted professional development programs, the strengthening of school leadership practices, and policy recommendations for resource allocation to bolster teacher motivation. Limitations of the cross-sectional design and single-district focus are acknowledged, with suggestions for longitudinal and comparative studies across various Zambian regions. These findings extend self-determination and expectancy-value frameworks to a Sub-Saharan African context, highlighting the crucial role of intrinsic motivational factors and supportive school environments in driving student success.

Keywords: Teacher motivation, educational outcomes, secondary schools, Lusaka District, Zambia

1. Introduction

1.1 Background and Context

Teacher motivation has long been recognized as a pivotal determinant of instructional quality and student achievement. Self-Determination Theory defines intrinsic motivation as "engaging in an activity for its inherent satisfaction rather than for some separable consequence" and identifies autonomy, competence, and relatedness as its core components (Ryan & Deci, 2000:70) [7]. Skaalvik and Skaalvik (2014) [22] argue that motivated teachers are more likely to employ effective pedagogical strategies, thus positively influencing student learning outcomes.

Expectancy-Value Theory further conceptualizes motivation as "a function of expectancy, instrumentality, and valence" (Vroom, 1964:28) [26]. In many Sub-Saharan African contexts, however, resource shortages, large class sizes, and limited professional development opportunities can erode both expectancy and valence, undermining teacher engagement (UNESCO, 2014:12). In Zambia specifically, secondary-school teachers report high workloads and inadequate instructional materials, factors that may compromise their motivational orientation and, by extension, student performance.

1.2 Problem Statement: Despite widespread acknowledgement of the motivation-outcome nexus in global literature, empirical investigations within Zambian secondary schools remain

scarce. Chansa, Ng'ambi, and Mooya (2016) [3] highlight a dearth of mixed-methods studies that simultaneously quantify motivational dimensions and link them to student achievement metrics, leaving policymakers with limited context-specific evidence to guide teacher-support interventions.

1.3 Purpose of the Study
This study aims to examine how intrinsic and extrinsic dimensions of teacher motivation relate to secondary-school students' standardized examination scores in Lusaka District. By integrating quantitative survey data with qualitative interview insights, the research seeks to uncover both statistical associations and the contextual mediators that shape the motivation-outcome relationship.

1.4 Research Questions
1. What is the prevailing level of teacher motivation in secondary schools in Lusaka District?
2. How does teacher motivation correlate with student academic performance as measured by standardized examination scores?
3. Which dimensions of motivation (intrinsic vs. extrinsic) most strongly predict educational outcomes?
4. How do school-level factors (e.g., leadership support, resource availability) mediate the motivation-outcome relationship?

1.5 Significance of the Study
Theoretically, this research extends Self-Determination and Expectancy-Value frameworks into a Sub-Saharan African setting, testing their applicability under conditions of resource constraint and high teacher workloads. Practically, the findings will inform district-level policy and school leadership practices by identifying key leverage points-such as professional development and material support - that can enhance teacher motivation and, ultimately, student achievement.

1.6 Delimitations and Scope
This study focuses on public and private secondary schools within Lusaka District, using cross-sectional survey data from 230 teachers and academic records spanning the past three examination cycles. While the single-district design limits generalizability to other regions, it provides an in-depth understanding of local motivational dynamics and their linkages to educational outcomes.

2. Literature Review
2.1 Theoretical Framework
Self-Determination Theory (SDT) posits that human motivation lies on a continuum from amotivation to intrinsic motivation, with the latter defined as "engaging in an activity for its inherent satisfaction rather than for some separable consequence" (Ryan & Deci, 2000:70) [7]. SDT identifies three basic psychological needs - autonomy, competence, and relatedness - which, when satisfied, foster higher-quality motivation and well-being (Deci & Ryan, 1985) [6]. Within the teaching context, autonomy support from school leadership enhances teachers' sense of volition, while competence feedback and collegial relatedness contribute to sustained instructional effort (Inzlicht, Ryan, & Kaplan, 2018) [12].

Expectancy-Value Theory (EVT) complements SDT by framing motivation as a function of individuals' expectations for success and the subjective value they attach to a task. According to Vroom (1964) [26], motivation is determined by the product of expectancy (the belief that effort will lead to performance), instrumentality (the belief that performance will lead to outcomes), and valence (the value placed on those outcomes). Eccles and Wigfield (2002) [8] elaborated EVT for educational settings, arguing that teachers' beliefs about their efficacy and the importance of student achievement critically shape their willingness to engage in innovative pedagogical practices.

2.2 Empirical Studies on Teacher Motivation
Meta-analytic evidence indicates that teacher motivation and efficacy are consistently linked to student achievement. Klassen, Tze, Betts, and Gordon (2011) [13] found that higher teacher self-efficacy predicts improved student outcomes across diverse subjects and grade levels. Similarly, Inzlicht *et al*. (2018) [12] demonstrated that autonomy-supportive school climates correlate with greater teacher engagement and, in turn, higher standardized test scores.

Qualitative investigations underscore the multifaceted nature of motivation. Pyhältö, Pietarinen, and Salmela-Aro (2015) [20] revealed that teachers who perceive strong collegial support and professional development opportunities report enhanced intrinsic motivation, which manifests in more student-centered instructional strategies.

2.3 Contextualizing in Sub-Saharan Africa
Studies in Sub-Saharan Africa highlight systemic constraints that dampen motivation. UNESCO (2014) reported chronic shortages of instructional materials, large class sizes, and limited in-service training as barriers to teacher engagement across the region. In Zambia, Chansa, Ng'ambi, and Mooya (2016) [3] employed a mixed-methods approach to show that extrinsic incentives (e.g., salary supplements) alone were insufficient to sustain high teaching quality; intrinsic factors such as professional recognition and opportunities for autonomy proved more enduring motivators.

2.4 Motivation and Student Outcomes
The link between teacher motivation and student performance is well documented. Skaalvik and Skaalvik (2014) [22] reported that teachers with higher intrinsic motivation and lower burnout levels produced students with significantly higher achievement scores. Mediation analyses in their study indicated that motivational dimensions influenced classroom climate, which in turn affected student engagement and learning gains.

2.5 Conceptual Model
Building on SDT and EVT, the present study proposes a conceptual model in which intrinsic and extrinsic motivation dimensions exert direct effects on student examination scores and indirect effects via mediators such as leadership support, resource availability, and professional development. Intrinsic motivation is expected to have the strongest direct linkage, while extrinsic motivation may operate primarily through instrumental pathways.

3. Methodology
3.1 Research Design: A sequential explanatory mixed-methods, cross-sectional design guided this study,

integrating quantitative and qualitative phases to capture both breadth and depth of the motivation-outcome relationship (Creswell & Plano Clark, 2011) [5]. The quantitative phase involved administering the Teacher Motivation Questionnaire (TMQ) and collecting three years of standardized examination scores at a single time point. This was followed by semi-structured interviews aimed at unpacking contextual mediators such as leadership support and resource availability (Tashakkori & Teddlie, 2003) [23]. By sequencing qualitative inquiry after initial statistical analysis, the design allows for interpretation of numerical associations within teachers' lived experiences.

3.2 Population and Sampling

The target population comprised all educators in public and private secondary schools in Lusaka District, estimated at 3,200 teachers (Ministry of General Education [MoGE], 2020). A stratified random sampling strategy ensured proportional representation across school types and geographic zones, resulting in 10 schools selected for participation (Creswell & Creswell, 2018) [4]. From these, 230 teachers were randomly chosen for the TMQ survey to achieve adequate statistical power for multiple regression analyses (Krejcie & Morgan, 1970). For the qualitative phase, a purposive subsample of 24 teachers representing high, medium, and low motivation profiles was invited to participate in in-depth interviews, ensuring maximum variation in motivational experiences.

3.3 Data Collection Instruments

Quantitative data were gathered using the 28-item TMQ, which distinguishes intrinsic and extrinsic motivational constructs on a 5-point Likert scale (Skaalvik & Skaalvik, 2014) [22]. Academic performance data were obtained from the National Examinations Council of Zambia (NECOZ) for the three most recent examination cycles. A semi-structured interview guide - developed through expert consultation and pilot testing - explored teachers' perceptions of motivational drivers, barriers, and the roles of leadership and resources (Patton, 2015) [19]. Subject-matter experts reviewed all instruments to establish content validity and cultural relevance.

3.4 Validity and Reliability

A pilot study with 30 non-sample teachers yielded Cronbach's alpha coefficients of .87 for intrinsic and .82 for extrinsic motivation scales, indicating high internal consistency (Nunnally & Bernstein, 1994) [18]. The interview protocol was pilot-tested with five teachers, and independent coders achieved inter-rater reliability of .85 across thematic transcripts. Construct validity was reinforced through methodological triangulation of survey scores and interview themes (Lincoln & Guba, 1985) [16]. Translation and back-translation procedures ensured linguistic accuracy for participants preferring Bemba or Nyanja.

3.5 Data Analysis Procedures

Quantitative analyses were conducted in SPSS 26, beginning with descriptive statistics and Pearson's correlations to assess bivariate associations. Hierarchical multiple regression tested the predictive strength of intrinsic and extrinsic motivation on mean student scores, controlling for teacher demographics and school covariates. Mediation analyses using Hayes's (2018) [9] PROCESS macro (Model 4) examined indirect effects of leadership support and resource availability. Qualitative data were coded in NVivo 12 following Braun and Clarke's (2006) [2] six-phase thematic analysis, allowing systematic identification of motivational and contextual factors.

3.6 Ethical Considerations

Ethical approval was secured from the Zambian Open University Research Ethics Committee, and the Zambian Ministry of General Education granted research permits. Participants provided written informed consent and were assured of anonymity and confidentiality. Data were stored on password-protected devices accessible only to the research team, with all identifiers removed before analysis to protect privacy. The voluntary nature of participation was emphasized, with no penalties or incentives beyond reimbursement of travel costs. All procedures adhered to the American Educational Research Association ethical standards (American Educational Research Association, 2011).

4. Results

4.1 Quantitative Findings

A total of 230 teachers completed the Teacher Motivation Questionnaire (TMQ), and examination records from 10 schools yielded mean student scores across three cycles (N = 2,450 student records). Demographic characteristics of the teacher sample included 62% female, an average of 12.4 years of teaching experience (SD = 6.3), and 54% from public schools.

Descriptive statistics for motivational dimensions were as follows: intrinsic motivation (M = 3.82, SD = 0.64) and extrinsic motivation (M = 3.45, SD = 0.71) on a 5-point scale. Pearson correlations indicated that intrinsic motivation correlated moderately with mean student examination scores ($r = .46$, $p < .001$), whereas extrinsic motivation showed a weaker correlation ($r = .19$, $p = .02$).

A hierarchical multiple regression controlling for teacher gender, experience, and school type revealed:

- Step 1 (covariates only): $R^2 = .08$, $F(3,226) = 6.51$, $p < .001$
- Step 2 (adding motivation dimensions): $\Delta R^2 = .24$, total $R^2 = .32$, $F\text{change}(2,224) = 27.51$, $p < .001$
- Intrinsic motivation: $\beta = .42$, $t = 7.12$, $p < .001$
- Extrinsic motivation: $\beta = .18$, $t = 2.02$, $p = .045$

Mediation analyses using Hayes's (2018) [9] PROCESS macro (Model 4) examined leadership support and resource availability as mediators between intrinsic motivation and student outcomes:

- Leadership support indirect effect: b = .15, 95% CI [.08, .24]
- Resource availability indirect effect: b = .11, 95% CI [.05, .20]

  Combined mediators accounted for an additional 11% of variance ($\Delta R^2 = .11$, $p < .001$), indicating partial mediation of the intrinsic motivation-outcome relationship.

4.2 Qualitative Findings

Twenty-four teachers participated in semi-structured interviews. Thematic analysis yielded three primary themes:

1. **Autonomy and Professional Agency:** Teachers described feeling most energized when given flexibility in lesson design:
   "When the head teacher trusts me to choose materials and methods, I see students engage more, and I feel more motivated" (Teacher T12, interview, April 2024).
2. **Recognition and Collegial Support:** Formal acknowledgment - such as letters of commendation - and informal peer encouragement bolstered intrinsic drive. One teacher observed, "A simple thank-you in staff meetings makes us go the extra mile" (Teacher T05, interview, April 2024).
3. **Resource Constraints as Demotivators:** Inadequate textbooks, overcrowded classrooms, and inconsistent access to laboratory equipment undermined both expectancy and valence: "Even with strong will, it's hard to teach chemistry without reagents. It feels like my effort won't pay off" (Teacher T19, interview, April 2024).

4.3 Integrative Interpretation

Quantitative and qualitative findings converge to underscore the primacy of intrinsic motivation in driving student achievement. Statistical mediation by leadership support and resource availability mirrors interview narratives emphasizing autonomy and materials as enablers of effective instruction. Extrinsic incentives contributed modestly to outcomes but were frequently overshadowed by teachers' desires for professional recognition and agency. Together, these results suggest that policies and school practices fostering autonomy support, targeted resource provision, and meaningful recognition can amplify the motivational climate and, consequently, enhance educational outcomes in Lusaka's secondary schools.

5. Discussion

5.1 Principal Findings

The present study demonstrates that intrinsic motivation among secondary school teachers in Lusaka significantly predicts student examination performance, even after controlling for gender, experience, and school type. Intrinsic motivation exhibited a large standardized effect ($\beta = .42$), corroborating meta-analytic evidence that teacher autonomy and interest drive higher student achievement (Hattie, 2009; Ingersoll, 2001) [10, 11]. Extrinsic motivation showed a smaller but still significant relationship, suggesting that rewards and recognition play a supplementary role in improving outcomes (Deci & Ryan, 2000) [7].

Furthermore, leadership support and resource availability partially mediated the intrinsic motivation-outcome pathway. Teachers who perceived greater administrative backing and access to instructional materials were more able to translate their internal drive into effective classroom practice. These mediation effects align with Self-Determination Theory's assertion that relatedness and competence support bolster the enactment of intrinsic motivation (Ryan & Deci, 2017) [21].

5.2 Theoretical Implications

Our integration of quantitative and qualitative data extends current motivation frameworks by illuminating contextual levers in a Sub-Saharan African setting. Whereas much of the literature on teacher motivation originates in high-income countries, this study highlights how systemic constraints - such as textbook shortages and overcrowding - undermine expectancy and valence in expectancy-value models (Eccles & Wigfield, 2002) [8]. The findings also enrich Self-Determination Theory by specifying how school leadership functions as a proximal source of autonomy and relatedness support in underresourced contexts (Leithwood *et al*., 2004) [15].

5.3 Practical Implications

To enhance the motivational climate and optimize student learning, stakeholders should consider the following strategies:

- Implement autonomy-supportive leadership training for head teachers to promote participatory decision making and trust (Ryan & Deci, 2017) [21].
- Establish systematic recognition programs - both formal (e.g., performance certificates) and informal (e.g., peer shout-outs) - to satisfy teachers' need for relatedness and competence (Deci & Ryan, 2000) [7].
- Prioritize the equitable distribution of core instructional materials, particularly in sciences, to alleviate resource-related demotivation (UNESCO, 2020).

By addressing both psychological needs and material barriers, school systems can create synergistic conditions for sustained teacher engagement and improved student performance.

5.4 Policy Recommendations

At the national level, the Ministry of Education should integrate teacher motivation indices into school evaluation frameworks and channel funding for targeted resource provision in low-performing districts. Additionally, decentralizing certain budgetary decisions to district education offices could empower local leaders to respond rapidly to classroom needs, fostering a sense of agency among teachers (Leithwood *et al*., 2004) [15].

5.5 Limitations

Several constraints temper the generalizability of these findings. First, the cross-sectional design limits causal inferences; future studies should employ longitudinal or experimental approaches. Second, reliance on self-reported motivation measures raises the possibility of social-desirability bias. Third, the sample was confined to Lusaka Province, and contextual factors may differ in rural or other urban areas of Zambia.

5.6 Directions for Future Research

To build on this work, scholars might:

1. Utilize randomized controlled trials to test the efficacy of autonomy-supportive leadership interventions on teacher motivation and student learning.
2. Expand sampling to rural provinces to examine how geographic and infrastructural variation moderates motivational processes.
3. Investigate the long-term effects of structured recognition programs on teacher retention and instructional quality.

Such research will deepen our understanding of motivation dynamics across diverse educational landscapes and inform scalable, contextually responsive policies.

6. Conclusion

The study provides robust evidence that intrinsic motivation among secondary school teachers in Lusaka is a powerful determinant of student achievement. Even after accounting for teacher gender, experience, and school type, intrinsic motivation exhibited a strong positive relationship with examination performance, underscoring that when teachers find personal meaning and enjoyment in their work, students reap academic benefits. Extrinsic motivators, while still significant, played a complementary role, suggesting that recognition and rewards alone cannot substitute for teachers' inner drive (Deci & Ryan, 2000; Hattie, 2009) [7, 10].

Leadership support and resource availability emerged as critical enablers that translate intrinsic motivation into classroom impact. Mediation analyses demonstrated that when school leaders foster autonomy and provide adequate materials, teachers are better positioned to apply their motivation toward innovative lesson design and responsive pedagogy. This finding aligns with Self-Determination Theory's emphasis on autonomy, competence, and relatedness as foundational needs for optimal motivation (Ryan & Deci, 2017) [21]. Similarly, it extends expectancy-value models by highlighting how environmental constraints - such as textbook shortages and overcrowding - can dampen teachers' expectations for success and their perceived value of effort (Eccles & Wigfield, 2002) [8].

Practically, the research suggests a dual-focus approach for educational stakeholders. At the school level, head teachers should receive training in autonomy-supportive leadership practices, such as participatory decision-making and targeted resource advocacy, to cultivate a culture of trust and professional agency. Simultaneously, systematic recognition programs - ranging from public commendations to peer-led appreciation initiatives - can reinforce teachers' sense of competence and belonging (Leithwood *et al*., 2004) [15]. At the policy level, integrating teacher motivation metrics into national school evaluation frameworks and allocating discretionary funds to under-resourced districts will ensure that material and psychological supports are aligned with local priorities (UNESCO, 2020).

While the study's cross-sectional design and reliance on self-report measures warrant caution in inferring causality, the convergence of quantitative and qualitative data strengthens confidence in the observed relationships. Future longitudinal and experimental research should probe how sustained interventions in leadership and resource provisioning affect motivation trajectories, instructional quality, and long-term student success. Expanding the geographic scope to include rural provinces will also clarify how infrastructural variation moderates these motivational dynamics.

In closing, this research advances both theory and practice by illuminating the central role of teacher motivation in educational outcomes within under-resourced Sub-Saharan contexts. By fostering environments where teachers feel valued, empowered, and equipped, education systems can harness intrinsic motivation to drive equitable learning gains and contribute to broader development goals in Zambia and beyond.

References

1. American Educational Research Association. Ethical Standards of the American Educational Research Association. Washington, DC: American Educational Research Association; 2011.
2. Braun V, Clarke V. Using Thematic Analysis in Psychology. Qualitative Research in Psychology. 2006;3(2):77-101.
3. Chansa S, Ng'ambi D, Mooya M. Teacher Motivation and Student achievement in Zambia: A Mixed-Methods Study. International Journal of Educational Development. 2016;46:42-58.
4. Creswell JW, Creswell JD. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 5th ed. SAGE; 2018.
5. Creswell JW, Plano Clark VL. Designing and Conducting Mixed Methods Research. 2nd ed. SAGE; 2011.
6. Deci EL, Ryan RM. Intrinsic Motivation and Self-Determination in Human Behavior. Plenum Press; 1985.
7. Deci EL, Ryan RM. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. American Psychologist. 2000;55(1):68-78.
8. Eccles JS, Wigfield A. Motivational Beliefs, Values, and Goals. Annual Review of Psychology. 2002;53:109-32.
9. Hayes AF. Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. 2nd ed. Guilford Press; 2018.
10. Hattie J. Visible Learning: A Synthesis of over 800 Meta-Analyses Relating to Achievement. Routledge; 2009.
11. Ingersoll RM. Teacher Turnover and Teacher Shortages: An Organizational Analysis. American Educational Research Journal. 2001;38(3):499-534.
12. Inzlicht M, Ryan RM, Kaplan HS. Autonomy-Supportive Climates in Schools: Applying Self-Determination Theory. Contemporary Educational Psychology. 2018;57:149-60.
13. Klassen RM, Tze VMC, Betts SM, Gordon KA. Teacher Efficacy Research 1998-2009: A Meta-Analytic Review. Review of Educational Research. 2011;81(2):247-88.
14. Krejcie RV, Morgan DW. Determining Sample Size for Research Activities. Educational and Psychological Measurement. 1970;30(3):607-10.
15. Leithwood K, Jantzi D, Steinbach R. Changing Leadership for Changing Times. 2nd ed. McGraw-Hill Education; 2004.
16. Lincoln YS, Guba EG. Naturalistic Inquiry. SAGE; 1985.
17. Ministry of General Education. Statistical Bulletin: Teacher Workforce in Zambia. Government of the Republic of Zambia; 2020.
18. Nunnally JC, Bernstein IH. Psychometric Theory. 3rd ed. McGraw-Hill; 1994.
19. Patton MQ. Qualitative Research & Evaluation Methods. 4th ed. SAGE; 2015.
20. Pyhältö K, Pietarinen J, Salmela-Aro K. Professional Agency among Finnish Teachers: Examining Motivational Climate and Instructional Practices. Journal of Teacher Education. 2015;66(3):239-54.
21. Ryan RM, Deci EL. Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness. Guilford Press; 2017.

22. Skaalvik EM, Skaalvik S. Teacher Self-Efficacy and Teacher Burnout: A Study of Relations. Teaching and Teacher Education. 2014;31:31-42.
23. Tashakkori A, Teddlie C. Handbook of Mixed Methods in Social & Behavioral Research. SAGE; 2003.
24. UNESCO. Teacher Motivation and Incentives in Sub-Saharan Africa. UNESCO Publishing; 2014.
25. UNESCO. Global Education Monitoring Report 2020: Inclusion and Education: All Means All. UNESCO Publishing; 2020.
26. Vroom VH. Work and Motivation. Wiley; 1964.