

District Administrative Practices, Geographical Accessibility, and Teacher Outcomes in Mangochi District, Malawi Journal Section: Educational Management and Administration

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ABSTRACT

The provision of education services in different geographical areas is a challenge in most decentralised education systems in sub-Saharan Africa. The study aimed at finding out how district administrative practices influence motivation and job performance of the teachers of Accessible and Hard-to-Reach public primary schools in Mangochi District, Malawi. The research method used was convergent parallel mixed methods design, which involved using structured survey questions with 196 teachers in 33 schools, key informant interviews with 43 education administrators, and five years (2020–2024) of longitudinal Education Management Information System (EMIS) data. The results of exploratory factor analysis revealed three factors of the motivational dimension which fit with Herzberg's Two-Factor Theory: Intrinsic Motivation, Hygiene Dissatisfaction and Job Dissatisfaction. Hard-to-Reach teachers had significantly lower IM scores and significantly higher scores on both the dissatisfaction dimensions (all $p \leq .001$). The stratum coefficient for Job Dissatisfaction was reduced to non-significance by administrative practice variables ($\Delta R^2 = .477$, $p < .001$) and was almost entirely due to the variable of perceived administration supportiveness ($\beta = -.699$, $p < .001$). In contrast, the relationship between remoteness and Intrinsic Motivation was mostly direct. Qualitative results confirmed these trends, and the factors identified were supervision gaps, professional isolation and inequitable performance appraisal. The results indicate that increasing administrative support systems is a viable and affordable way to increase teacher wellbeing and educational equity, beyond just decreasing distance.

Keywords: teacher motivation; administrative practices; educational equity; hard-to-reach schools; Malawi; decentralisation

INTRODUCTION

It is widely acknowledged that teacher motivation is one of the most powerful school-level factors that contribute to instructional quality and learner achievement (Mallillin, 2021; Agno et al., 2018). Motivated teachers are more likely to be punctual, engaging in more learner-centred practice and more likely to feel committed to the school whereas demotivated teachers are more likely to be absent, less likely to feel committed, and less likely to be engaging in more learner-centred practice (Evans & Yuan, 2018; Ravishankar et al., 2016). In sub-Saharan Africa, teachers' working conditions in rural and hard-to-reach locations remain highly problematic and likely affect their motivation, as evidenced by poor transportation, inadequate housing, and low-level interaction with district administrators (Bennell & Akyeampong, 2007; Mulkeen & Chen, 2008; UNESCO, 2011).

These dynamics are very evident in Malawi. After the introduction of Free Primary Education in 1994, there was a rapid increase in enrolment, yet the number of teachers, schools, administrative and support staff were not commensurate to the growth in enrolment (Kadzamira & Rose, 2003; Chimombo, 2005). Since then, the responsibility for deployment, supervision and professional support of teachers has been devolved to District Education Offices (DEOs), and their ability to ensure equitable access to schools is also limited by distance, road conditions and means of transport (Kayange, 2020; Ministry of Education, 2023). Previous studies in Malawi on teacher motivation have mostly aggregated rural schools into a single category, thereby obscuring these intra-rural differences and failing to capture the differences between schools that are Hard-to-Reach and those that, despite being classified as rural, are easily accessible (Asim et al., 2019).

The district of Mangochi provides a fascinating context for analysis of this variation as it includes, within one administrative area, schools from tarmac-adjacent to truly isolated. This study has applied a classification of Accessible and Hard-to-Reach schools based on the type of road and the distance between the school and the District Education Manager's (DEM) office and Teacher Development Centre (TDCs) which is better suited to reflect practical accessibility to the district administration than settlement type alone.

The literature on teacher motivation in remote areas has tended to focus on material disadvantage, such as lack of housing, low hardship allowances, and resource scarcity (World Bank, 2005; Zickafoose et al., 2024). In comparison, little has been said about whether the quality and consistency of district-level administration—supervision, performance appraisal, and general supportiveness—can explain differences in motivation beyond the geographic ones, between accessible and hard-to-reach schools. This gap becomes significant for the policy because remoteness effects may be significant when they are transmitted primarily through administrative practice quality, meaning that programs that enhance supervision and support systems may be much more feasible and cost-effective than the extensive road investments or universal housing programs.

The study therefore investigated (a) the differences in teacher motivation, job performance, and levels of school resourcing between Accessible and Hard-to-Reach primary schools in Mangochi District; (b) the differences in administrative practice by stratum; and (c) whether differences in administrative practices explain the association between school accessibility and teacher motivation outcomes. The study is based upon Herzberg's (1959) Two Factor Theory and Barney's (1991) Resource Based View by conceptualizing administrative capacity as an organisational resource that can influence the motivation of teachers irrespective of physical remoteness.

The study makes three contributions to the literature. Methodologically, it suggests a composite accessibility classification, based on administration, instead of the prevailing Education Management Information System (EMIS) settlement typology. Empirically, it separates factors of teacher motivation into different components and examines how different teachers are affected by different aspects of administrative practice in one decentralised district. In practice, it provides district leaders in Malawi and, more generally, in other decentralised systems in the region with information on the effectiveness of district policy interventions, both geographic and administrative, in the short-term.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Teacher Motivation and Job Performance

Teacher motivation is the internal and external influences that motivate teachers in terms of commitment, enthusiasm and professionalism (Agno et al., 2018). The differences between intrinsic motivators (achievement, recognition, and professional growth) and extrinsic or hygiene factors (supervision, remuneration, and working conditions) have always proven useful in understanding variation in teachers' job performance in different contexts (Alsheikh et al., 2017; Asasira et al., 2025). Job satisfaction and dissatisfaction have now come to be seen as separate but related phenomena and consequently, have implications for the measurement and modelling of motivation (Mallillin, 2021). From the standpoint of measurement this means that instruments which combine satisfaction and dissatisfaction on a single scale may mask exactly the sort of asymmetric response to administrative practice noted later in this article.

Geographical Disparities and Educational Inequality

There is a consistent pattern of negative links between rural and remote school placement and access to qualified staff, professional development and supervisory support in the literature, both internationally and regionally (Bennell & Akyeampong, 2007; UNESCO, 2011). Specifically in Malawi, remoteness has been associated with lower levels of supervision and support, delayed material deliveries, and fewer opportunities for professional growth (Kayange, 2020; Meke & Selemani, 2022; Ravishankar et al., 2016). National analyses of teacher deployment in Malawi based on data have also indicated that teacher deployment in remote schools is systematic and is used to fewer teachers than the policy calls for while the deployment mechanisms that are meant to address this imbalance have not had a significant practical impact (Asim et al., 2019). The evidence from Ghana also indicates that geographic and infrastructural disadvantage negatively affects motivation of rural teachers, which

indicates that the situation in Malawi is not necessarily unique, but rather may be a reflection of a broader regional situation.

Administrative Practices as an Organisational Resource

In various industries, it is proven that supervision, communication, recognition and performance appraisal affect employee motivation and organizational commitment (Eisenberger et al., 1986; Alsheikh et al., 2017). In educational systems, the supervisory relationship between administrators and teachers has been suggested as a lever other than, and possibly more malleable than, geography (Mulkeen & Chen, 2008). The National Education Standards (Ministry of Education, Science and Technology [MoEST] 2015), the Continuing Professional Development Framework (MoEST 2018) and the National Education Sector Investment Plan (MoEST 2020) make strong statements on the need to support equity in supervision and appraisal, but there is limited independent empirical evidence of the implementation of these principles at district level. This is an interesting omission, as supervision and appraisal are, in principle, more directly in the control of district administrators than transport infrastructure, or teacher housing.

THEORETICAL FRAMEWORK

Herzberg's (1959) Two Factor Theory separates motivators from hygiene factors, where a motivator is a factor that will produce satisfaction when it is present and a hygiene factor is a factor that will produce dissatisfaction when it is absent but will produce satisfaction when it is present. The theory is very well established in providing a framework for breaking down motivation into empirically viable dimensions, instead of lumping motivation together as a single construct. The Resource Based View (Barney, 1991) also adds to this by considering district administrative capacity, supervisory routines and appraisal systems as resources that can be distributed (or not distributed) unevenly throughout a school network. Both theories indicate that geographical remoteness can have a negative effect on teacher motivation, either directly, via hygiene issues stemming from living conditions and/or indirectly, due to differential provision of administrative support resources, including supervision and appraisal.

Research Gap

There has been limited research that considers both geographical accessibility and the quality of administrative practice as potential explanations for variations in teacher motivation in the same decentralised district simultaneously. This study is designed to fill that gap and the method of the study enables the relative contribution of each to be examined directly.

METHODOLOGY

Research Design

The study adopted a convergent parallel mixed method design as adopted by Applied Educational Research (AER) (Dawadi et al., 2021) where quantitative and qualitative strands were equally prioritized, collected simultaneously, and analysed separately, and then combined at the interpretation stage.

Study Area and Sample

The study was carried out in Mangochi District in Malawi, which has both Accessible and Hard-to-Reach schools operating under the same administrative structure. Those schools with tarmac road access, that were within 25 kilometres of the DEM office and those that had a TDC within 60 kilometres of the DEM office were deemed to be Accessible, with the remainder of schools being Hard-to-Reach. It is noted that this composite classification resulted in 85 of the district's schools being classified as Accessible, which is a very different result from using the EMIS Urban/Semi-Urban/Rural/Remote classification, under which only 5 schools would have been classified as Accessible.

Thirty-three schools, 196 teachers (80 Accessible and 116 Hard-to-Reach) were chosen through stratified random sampling. A priori sample size was determined using G*Power 3.1 for multiple regression with a medium effect size ($f^2 = .15$), $\alpha = .05$, a power of .80, and six predictors, which was inflated to 196 to account for the fact that teachers are clustered in schools (Snijders & Bosker, 2011), resulting in a design effect ($DEFF = 1 + (m - 1) \times ICC = 2.0$, with $ICC = .20$ and cluster size $m = 6$). The key informant interviews were conducted with forty-three (33 headteachers, 7 Primary Education Advisors, 3 district officials) who were purposively selected, headteachers from the 33 schools sampled and Primary Education Advisors and district officials from both accessibility strata within the supervisory zones of the district. The cross-sectional sample was complemented with a longitudinal EMIS sample of 2020–2024 (which consists of 1,470 school-year observations), enabling the cross-sectional results to be compared with multi-year trends and not only the 2020 school-year results.

Instruments and Validation

The Teacher Motivation Questionnaire was developed based upon validated instruments translated into Chichewa and back translated into English by other independent translators to ensure the semantic equivalence and subsequently piloted with teachers outside the sample of the final target population before administration. Exploratory Factor Analysis (Principal Axis Factoring - oblique rotation) yielded a three-factor solution with 14 items which had acceptable internal consistency ($\alpha \geq .804$ for all factors). Based on the recommendations of MacCallum et al. (1999), that smaller sample sizes would be judged adequate for factor analysis based on the communality, the sample size was judged to be adequate for the task. The triangulation of teacher job performance was conducted with headteacher ratings (Professional Engagement, Teacher Effectiveness, Learner Progress) and with school-level EMIS indicators (PSLCE pass rates, promotion and dropout rates); the former was based on a single rater per teacher (no inter-rater reliability data was available) which was treated as a limitation rather than a valid guarantee. The semi-structured interview guides for headteachers, Primary Education Advisors and district officials focused on supervision practices, distribution of resources, and the perceived drivers of teacher motivation, which enabled a direct comparison of the perspectives of the administrators with the teacher self-reports and EMIS.

Analytical Approach

Motivation (and distance) variables were not normally distributed; group differences within strata were compared with Mann–Whitney U tests, categorical differences with chi-square or Fisher's exact tests, and continuous associations with Spearman correlation. Each of the motivational factors was modelled in 3 different groups: teacher-level controls (gender, years of service, workload, socioeconomic status, material adequacy); remoteness variables (stratum, distance from TDC, distance from DEM); and administrative practice variables (inspection frequency, effectiveness, performance appraisal occurrence, predictability, and administrative supportiveness); enabling the change in the stratum coefficient across blocks to be observed directly.

The initial plan for multilevel modelling was to take teachers into account, but the intraclass correlation estimates for all three outcomes were very small and not statistically significant ($ICC = 3.6$ per cent for Intrinsic Motivation, 4.0 per cent for Hygiene Dissatisfaction, 0.0 per cent for Job Dissatisfaction; all $p > .43$), and the realised design effect (1.19) was considerably lower than assumed at sampling. In keeping with the advice provided (Hox et al., 2010; Snijders & Bosker, 2011), hierarchical OLS was used, (see Appendix 1 for a description of the method). The normality of the residuals, the homoscedasticity, and the multicollinearity ($VIF < 3.3$ in all models) were examined and no violations were found. Data were missing in one case out of 196 (Little's test, $\chi^2 = 115.18$, $df = 164$, $p = .999$), which was treated using listwise deletion.

Formal mediation analysis (Baron & Kenny, 1986; Hayes, 2018) was taken into account but not performed because it is assumed that formal mediation analysis would require the temporal-precedence assumption, which cannot be met in this cross-sectional design where administrative practice and motivation are measured in the same moment. The attenuation pattern, across regression blocks, is therefore reported and is interpreted as an attenuation pattern consistent with, but not confirmatory of, an indirect pathway.

Qualitative data collected from the interview transcriptions and open-ended questions on the survey were analysed thematically using the six phases of Braun and Clarke (2006). The data from the quantitative and qualitative tools were combined at the stage of data interpretation by means of joint display matrices.

Ethical Considerations

Ethical clearance for data collection was done before the collection process. The respondents could opt-out at any time and were not coerced to participate, informed consent was taken. Coded identifiers were used to anonymise data and it was kept securely. District education authority granted permission for access to EMIS data.

RESULTS

Respondent Profile

116 (59.2 per cent) of the 196 teachers who responded were from Hard-to-Reach schools, and 80 (40.8 per cent) were from Accessible schools; 53.6 per cent of teachers were male, and most (54.6 per cent) held entry-level professional grades. A total of 43 administrators were interviewed.

Resource and Placement Disparities

The overall ratio for Hard to-Reach schools was significantly higher than that of Accessible schools (Mann-Whitney $U = 40.00$, $p < .001$; mean ranks 21.50 vs 10.08) with a mean ratio for the district of 84.94 (SD = 48.13) which is more than the national average of 62:1 (Ministry of Education, 2023). This widening gap was evidenced in the Longitudinal EMIS data alongside an increase in the mean pupil-teacher ratio of the Hard-to-Reach schools from 82.78 in 2020 to 93.50 in 2024, alongside a reduction in the mean number of teachers in Hard-to-Reach schools in both years (13.88 in 2020 and 10.67 in 2024).

The Hard-to-Reach schools were also significantly disadvantaged with respect to grade of their teachers, with 97.4 per cent of teachers having entry level degrees, compared with 82.5 per cent at accessible schools ($\chi^2 = 16.54$, $df = 4$, $p = .002$). The distance of Hard-to-Reach schools from the DEM office and TDC, and from the nearest school was all significantly larger (all $p < .05$), and class inspections were significantly fewer ($U = 75.50$, $p = .043$). There were no significant differences of strata for physical infrastructure (water, electricity, teaching materials; all $p > .35$) or PSLCE pass rates ($U = 78.00$; $p = .781$) indicating that while there is a significant difference of the staffing and supervisory level, resourcing and outcome parity also exists. Accessible schools reported a simple infrastructure parity that is not reflected in the logistical burden, as in Hard-to-Reach schools, the lead teacher had to go to Teacher Development Centres to collect materials at their own time and cost.

Motivation and Administrative Practice Differences

The three dimensions of motivation varied significantly between strata (Table 1). Hard-to-Reach teachers had significantly higher rates of Hygiene Dissatisfaction and Job Dissatisfaction and significantly lower rates of Intrinsic Motivation (all $p \leq .001$). These patterns were also supported by headteacher ratings: Hard-to-Reach teachers were rated much lower on Professional Engagement, and headteacher ratings were highly correlated with survey-based measures of motivation (Professional Engagement with Job Dissatisfaction, $\rho = -.684$, $p < .001$; Learner Progress with Intrinsic Motivation, $\rho = .675$, $p < .001$).

Table 1 Mann-Whitney U Results for Key Teacher Motivation and Performance Outcomes by Stratum

Outcome (Herzberg Factor)	H-t-R Mean Rank	Accessible Mean Rank	U	Z	p
Intrinsic Motivation	85.00	118.08	3074.00	-4.01	< .001
Hygiene Dissatisfaction	111.86	79.13	3090.00	-3.97	< .001
Job Dissatisfaction	109.88	82.00	3320.00	-3.38	.001

HT Rating: Professional Engagement	88.49	113.01	3479.00	-3.19	.001
Dropout Rate	108.66	83.76	3461.00	-3.03	.002

Note. H-t-R = Hard-to-Reach. Source: Primary survey data (2024/2025).

The differences in administrative practices were significant and in line with the motivation gap. Hard-to-Reach teachers were significantly less likely to have received a performance appraisal ($\chi^2 = 42.34$, $p < .001$) and fewer class inspections ($U = 1902.00$, $p < .001$) than Accessible teachers (70.0 per cent had received a performance appraisal and 33.7 per cent had received at least one class inspection). Inspection frequency had a strong negative relationship with distance to DEM office ($\rho = -.509$, $p < .001$) and strong negative relationship with distance to TDC ($\rho = -.617$, $p < .001$). When looking at the dataset as a whole, the single strongest correlate of Job Dissatisfaction was perceived administrative supportiveness ($\rho = -.704$, $p < .001$), and interestingly, this was not correlated with geographic distance ($\rho = -.099$ to $-.027$, both non-significant), meaning that supportiveness was related to Job Dissatisfaction independently of remoteness rather than directly as a consequence of it.

Hierarchical Regression: Does Administrative Practice Account for the Remoteness Association?

The final hierarchical regression models are shown in Table 2. The stratum coefficient remained significant ($\beta = .337$, $p = .005$) for Intrinsic Motivation despite the added contribution of administrative practice variables ($\Delta R^2 = .040$, $p = .209$), with only class inspection frequency being significant ($\beta = .180$, $p = .023$). For Hygiene Dissatisfaction, there was again a moderate level of added variance ($\Delta R^2 = .031$, $p = .395$), and the stratum coefficient reduced by 14.8 per cent but remained significant ($\beta = -.259$, $p = .035$). For Job Dissatisfaction, on the other hand, the administrative block contributed significantly ($\Delta R^2 = .477$, $p < .001$) to the model, bringing overall model R^2 from .069 to .546, while the stratum coefficient lost its significance ($\beta = -.156$, $p = .076$). The majority of this variance was accounted for by the perceived level of administrative supportiveness ($\beta = -.699$, $p < .001$), and no other administrative variable was significant beyond the contribution of supportiveness.

Table 2 Final Block Hierarchical OLS Regression Coefficients for Teacher Motivation Outcomes (N = 196)

Predictor (Final Block)	Intrinsic Motivation β (p)	Hygiene Dissatisfaction β (p)	Job Dissatisfaction β (p)
School Stratum (H-t-R = 1)	.337 (.005)	-.259 (.035)	-.156 (.076)
Class inspection frequency	.180 (.023)	.095 (.253)	-.048 (.512)
Administrative supportiveness	—	-.112 (.184)	-.699 (< .001)
ΔR^2 (administrative block)	.040 (.209)	.031 (.395)	.477 (< .001)
Total model R^2	.218	.196	.546
Stratum β attenuation	4.3%	14.8%	32.2% (to n.s.)

Note. β = standardised coefficient; p in parentheses. ΔR^2 = variance added by the administrative-practice block (Block 3) over Blocks 1–2. n.s. = not significant. Source: Primary survey data (2024/2025).

This finding suggests that the relationship between remoteness and teacher motivation is not linear. The relationship between remoteness and Job Dissatisfaction is significantly reduced by controlling for administrative supportiveness, suggesting that this relationship is mediated, whereas the relationship between remoteness and Intrinsic Motivation appears to be largely direct. Due to cross-sectional design, this attenuation is not necessarily viewed as a formal mediation.

Qualitative Themes

Four interrelated themes emerged from the content of the interview data, which reinforced and clarified the quantitative findings: low frequency and/or logistical challenges in access to supervision in Hard-to-Reach schools; professional isolation due to limited contact with peers and administrators; inequity in access to professional development and performance feedback; and the importance of supportive leadership as a priority

over material incentives. One headteacher said that the teachers in remote schools sometimes experience isolation as they do not have frequent visits from the supervisor, and opportunities for teachers to interact with each other are limited; another said that 'motivation is not all about money' and that teachers want to feel valued, motivated and developed professionally. A third administrator said that transport is directly linked to gaps in supervision, and that some schools were hard to reach and required a lot of resources and time to go to, while some areas were virtually off-limits during the rainy season.

DISCUSSION

The results provide three key learnings. First, in Mangochi District teachers in the Hard-to-Reach schools are disadvantaged in multiple ways, as is the case in other parts of the region, in terms of staffing, supervision, appraisal and living conditions (Bennell and Akyeampong, 2007; Ravishankar et al., 2016; Anamuah-Mensah et al., 2025). However, despite the significant adverse working conditions and administrative support for teachers in Hard-to-Reach areas, this disadvantage was not reflected in lower PSLCE pass rates or promotion rates, suggesting that these teachers exhibit a resilience to instructional output that warrants further study. There is a need to be wary of focussing on examination results as a measure of teacher well-being or the quality of administrative support in remote schools as this could lead to the failure to identify the inequities reported by this study.

Second, importantly for this study, administration did not uniformly affect the 3 Herzberg dimensions. When compared to the factors of remoteness, the original distinction of Herzberg (1959) between intrinsic motivators and achievement, recognition, and professional growth was confirmed, and the relationship between remoteness and the intrinsic motivators was still significant after administrative practice was added to the regression model, suggesting that some intrinsic motivators may be more related to factors associated with the remote working environment than to the supervisory contact alone. Job Dissatisfaction, on the other hand, was more typical of a hygiene-type outcome, and was highly sensitive to perceived administrative supportiveness, with the remoteness association being rendered insignificant when these two variables were present. This implies that, from a Resource-Based View perspective (RBV) (Barney, 1991), administrative supportiveness is an organisational resource which, in principle, districts may be able to deploy and move freely, independent of the physical geography, as administrative supportiveness was not correlated with distance from administrative centres in this sample.

Third, these results are correlational and not causal. Because of the cross-sectional design, the direction of influence between administrative practice and teacher motivation could not be determined and no attempt was made at formal mediation testing for this reason. The pattern of attenuation for Job Dissatisfaction aligns with but does not confirm a mediation pathway from remoteness to dissatisfaction through administrative practice; alternative pathways by which remoteness influenced dissatisfaction through reverse pathway, that is, dissatisfied teachers perceive support less positively, and/or omitted confounding variables cannot be ruled out.

The findings build on literature on Malawian and regional education in two ways. The block-wise design of this study enables us to compare the contribution of remoteness and administrative quality in explaining rural disadvantage, at least descriptively, within a single decentralised district, where most previous studies have examined remoteness and administrative quality as related but undifferentiated aspects of rural disadvantage. It also highlights that the conventional notion in policy that disadvantage in remote schools is a resource or infrastructure issue is less applicable to Job Dissatisfaction, where it seems administrative practice, rather than geography and material resources, is the key determinant of teacher support – supporting the focus in Malawi's own policy frameworks (MoEST, 2015, 2018; Ministry of Education, 2020) on supervision and appraisal as levers of teacher support, although implementation of these provisions seems less uniform in practice.

The pattern also addresses how Herzberg's (1959) framework can be applied in a decentralised African education system. Job Dissatisfaction and Hygiene Dissatisfaction were found to be hygiene-type outcomes, that is, one that varied with the presence or absence of the supervisory contact and appraisal, while Intrinsic Motivation was found to be more of a motivator-type outcome, less linked to the administration variables measured here, and more closely related to the remoteness itself, perhaps because of additional dimensions of the remote working and living environment not fully captured by this measure of supervision frequency. The differences in response

within the same decentralised district seem to support disaggregation of motivation into separate facets when assessing remote area policy versus treating it as a single outcome and broadly agree with the compounding disadvantage found for rural teachers in the Ghanaian context (Anamuah-Mensah et al., 2025). In terms of a Resource Based View (Barney, 1991), practical implications are that, unlike the provision of road infrastructure or housing stock, administrative supportiveness is a resource that is relatively easy for districts to control, and therefore is a relatively low cost resource to bring into use to reduce the gap in job dissatisfaction even before improvements in physical accessibility are achieved.

These results also address a general paradox of decentralised education systems: whilst decentralisation can help place the administration closer to the schools, it can also increase or even be a source of geographic disparities if district offices do not have the means to transport, staff or incentivise remote schools to reach them as frequently as ones with greater accessibility (Kayange, 2020; Ministry of Education, 2023). The lack of correlation between distance and administrative supportiveness in this sample is a positive policy implication: that is, the district's current level of administrative supportiveness is not a natural result of geography but the result of practice and priorities that district office administrators can, at least in principle, change without delay or waiting for infrastructure upgrades.

CONCLUSION AND POLICY IMPLICATIONS

This study was an attempt to investigate if the differences in teacher motivation and job performance of Accessible and Hard-to-Reach primary schools are explained by the district level administrative practices in Mangochi District in Malawi. Hard-to-Reach schools were structurally disadvantaged in staffing, supervision and living conditions, and the teachers in these schools had significantly poorer scores on all three dimensions of the Herzberg motivation. The quality of administrative practice was a significant contributor to the relationship between remoteness and job dissatisfaction, and perceived supportiveness was particularly related to remoteness.

The results suggest several policy recommendations. First, the frequency of supervision and of inspections could be differentiated by stratum of accessibility of schools, as already provided in the National Education Standards, while there is a special budget for the transport of Hard-to-Reach schools (MoEST, 2015). Second, universal performance appraisal, which is currently used under a quarter of Hard-to-Reach teachers in this sample, could be a minimum practice rather than something that is done at the discretion of the administration. Thirdly, although material provisioning was the strongest correlate of job dissatisfaction in this study, headteacher and Primary Education Advisor training in positive, feedback-based supervision could have more of an effect on teacher wellbeing than the provision of resources. Fourth, in that the administration was not as effective in influencing intrinsic motivation, there is a need to pilot other complementary measures in addition to the administrative changes, such as living conditions and professional isolation, like structured peer networks and digital communication platforms.

These recommendations are based on a single district, cross sectional study, and are not intended to be prescriptive to other districts. The underlying rationale of the audit – comparing the frequency of supervision, the percentage of students covered by the appraisal, and how supportive the supervision was perceived to be – could be used at relatively low cost in other districts, before any district would invest in more capital-intensive interventions, and the auditor could use a classification of the accessibility type, similar to the one suggested here.

Limitations and Future Research

A number of restrictions qualify these findings. Because of the cross-sectional study design, the direction of the relationship between administrative practice and teacher motivation cannot be determined. Teacher assignment by strata was not random, therefore, unobserved selection factors like personal preference, professional networks, etc. are not excluded as alternative causes of the results. There were no inter-rater data available and headteachers' performance ratings were based on the work of a single rater per teacher. Classroom observation was not undertaken, instead self-report, headteacher judgement and school-level EMIS indicators were used to assess performance. The findings are based on one district and a replication is required before generalisation can

be made to other parts of Malawi or the region. Although the five-year EMIS series was used to contextualise staffing and pupil-teacher ratio trends, the administrative practice variables themselves (supervision, appraisal, supportiveness) were measured only at one point in time, so the analysis cannot show whether administrative practice in Hard-to-Reach schools has been improving, worsening, or static over the period; panel measurement of administrative practice is needed to address this. The intrinsic-motivation and dissatisfaction subscales, while internally consistent, were derived from a relatively small item pool and may not capture finer-grained variation within each construct (for example, distinguishing dissatisfaction rooted in supervisory neglect from that rooted in workload or recognition); more granular, multi-item operationalisations of these sub-dimensions would sharpen future measurement. Finally, although Hard-to-Reach teachers maintained PSLCE pass rates and promotion rates comparable to their Accessible counterparts despite poorer motivation scores, this study did not examine the mechanisms underlying that resilience; qualitative or longitudinal designs that probe coping strategies, community support, or compensatory effort among remote teachers would help explain how instructional performance is sustained under adverse conditions. Moving forward, longitudinal designs that test for temporal precedence needed to conduct formal mediation analyses (Hayes, 2018), replication across districts with varying administrative and geographic characteristics, and intervention studies to examine the impact of specific administrative changes (e.g., universal appraisal or structured supervision schedules) on teacher motivation over time should be prioritised. Future instruments should also include independent, multi-rater teacher performance ratings, including structured classroom observation protocols, to minimize the use of single-rater headteacher judgements, and improve the validity of comparisons of teacher performance across accessibility strata.

Data Availability and Author Contribution Statement

Data used in this study are available from the corresponding author upon reasonable request, subject to the conditions of the ethical clearance used when the data were first collected. The preparation of the manuscript and the analysis and collection of the data were the responsibility of the author alone. There is no conflict of interest, and no funding was received for this study.

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