

Outputs Register: The Impact of GIS-Supported Teacher Allocation in Sierra Leone

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1. Overview

EdTech Hub, Fab Inc, and the Education Workforce Initiative have produced the outputs listed in this document as part of the EdTech Hub-commissioned research project on 'GIS-supported teacher allocation in Sierra Leone'. This research project began in January 2022.

This document lists all outputs produced under this project. All outputs are available to the public via the EdTech Hub Evidence Library.

All completed outputs have been assigned a DOI and made available under [Creative Commons Attribution 4.0 International](#).

2. Background to the research project

The education workforce is the most important school-level determinant of student learning ([Education Commission, 2019](#)). In Sierra Leone, this challenge is particularly acute. Here, the pupil-to-qualified-teacher ratio rises from 44:1 for schools in urban centres to 76:1 for schools in rural areas ([Mackintosh et al., 2020](#)). Meanwhile, an average of a quarter of the workforce are absent from school on any given day. Even though the Teaching Service Commission (TSC) has created new protocols for teacher deployment, these reforms have not achieved the intended results.

In this context, the TSC is exploring new options – including an innovative teacher preference matching model – to harness geospatial data to strengthen workforce allocation. EdTech Hub and research partners Fab Inc and the Education Commission are undertaking a Hub-Led Research (HLR 3) Study to support the TSC to build evidence on the most feasible approach to GIS-supported teacher allocation in Sierra Leone. Using a mixed-methods study, we are assessing the impact of this approach on teacher attendance and retention. This approach has used both qualitative and quantitative research methods, resulting in the outputs listed below.

The HLR 3 Study seeks to understand whether improving teacher allocation using GIS data can increase job uptake, decrease teacher absenteeism, and improve teacher retention.

This document provides an overview of all the outputs produced from the study. These include, academic publications, reports, working papers, blog posts and presentations.

Our research partners on this study, the Education Commission and Fab Inc, have done extensive work on education data consolidation and the development of options for teaching workforce reforms in Sierra Leone through the Education Workforce Initiative (EWI).

To align with this research project, EdTech Hub has worked with Fab Inc and the TSC, through its country engagement work, to create an open-source, flexible algorithm for the teacher deployment exercise, to make the process easier and quicker. Using this integrated approach of research and technical assistance, we continue to engage with the TSC to support their efforts in improving the teacher deployment exercise. As part of this work, we engaged with stakeholders in both the TSC and the Ministry of Basic and Senior Secondary Education (MBSSE). We wanted to understand what has and has not worked well regarding teacher deployment, and going forward, how stakeholders believe teacher deployment can be improved. You can find the relevant paper on this [here](#).

3. Academic publications

For HLR 3, we produced one article for submission to an academic journal. Preprint details are given below

3.1. Understanding Teacher School Choice Preferences: What Matters Most for Teacher Deployment in Sierra Leone

(2023). *Understanding Teacher School Choice Preferences: What Matters Most for Teacher Deployment in Sierra Leone?* [Preprint]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0171>. Available at <https://docs.edtechhub.org/lib/KAAC2B78>. Available under [Creative Commons Attribution 4.0 International](#).

4. Reports and working papers

The research team prepared reports and working papers as part of HLR 3. These outputs are available to the public via the links below:

4.1. Inception report (not published)

McBurnie, C., Beoku-Betts, I., Bapna, A., Atherton, P., Bellinger, A.,

Bernard-Jones, L., Bhutoria, A., Godwin, K., & Mackintosh, A. (2021). *Inception Report: The Impact of GIS-Supported Teacher Allocation in Sierra Leone*. <https://doi.org/10.53832/edtechhub.0055>. Available at <https://docs.edtechhub.org/lib/QAH4K4D6>. Available under [Creative Commons Attribution 4.0 International](#).

4.2. Literature review

Vijil, A., McBurnie, C., Bellinger, A., Godwin, K., & Haßler, B. (2022). *Factors Related to Teacher Absenteeism in Sierra Leone: Literature review* (No. 2). EdTech Hub. <https://doi.org/10.53832/edtechhub.0170>. Available from <https://docs.edtechhub.org/lib/MS3CKE8G>. Available under [Creative Commons Attribution 4.0 International](#).

4.3. What matters most for teacher deployment? A case study on teacher preferences in Sierra Leone

McBurnie, C., Godwin, K., Beoku-Betts, I., Bernard-Jones, L., & Haßler, B. (2022). *What Matters Most for Teacher Deployment? A case study of teacher preferences in Sierra Leone* (No. 3). EdTech Hub. <https://doi.org/10.53832/edtechhub.0095>. Available at <https://docs.edtechhub.org/lib/8GN4RWMR>. Available under [Creative Commons Attribution 4.0 International](#).

4.4. School Leaders' Preferences on School Location in Sierra Leone

Espinoza-Revollo, P., Ramirez, A., Atherton, P., & Mackintosh, A. (2022). *School Leaders' Preferences on School Location in Sierra Leone: An individual and school-level study* [Technical Report]. EdTech Hub. <https://doi.org/10.53832/edtechhub.0106>. Available at <https://docs.edtechhub.org/lib/MFH269TU>. Available under [Creative Commons Attribution 4.0 International](#).

4.5. School-to-School Mobility Patterns and Retention Rates of Payroll Teachers in Sierra Leone

Espinoza-Revollo, P., Ali, Y., Garrod, O., Atherton, P., Mackintosh, A., Ramirez, A., Beoku-Betts, I., & Haßler, B. (2023). School-to-School Mobility Patterns and Retention Rates of Payroll Teachers in Sierra Leone (Working Paper No. 48). EdTech Hub.

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4.6. Forthcoming

Lurvink, A.-F., Khanu, A., Cameron, E., Kamara, J., Mansaray, K., & Godwin, K. (2023). Teacher Retention and Mobility in Sierra Leone: What factors contribute to teachers' motivation to stay or leave schools? EdTech Hub.

<https://doi.org/10.53832/edtechhub.0168>. Available at

<https://docs.edtechhub.org/lib/CQ8JNCH8>. Available under Creative Commons Attribution 4.0 International,

<https://creativecommons.org/licenses/by/4.0/>.

5. Blog posts

Over the duration of HLR 3, we published several blog posts that the public can access.

5.1. Using technology to improve the equity of teacher allocation in Sierra Leone: the challenge and a way forward

McBurnie, C., Vijil, A., & Haßler, B. (2022, May 8). Using technology to improve the equity of teacher allocation in Sierra Leone: The challenge and a way forward. *EdTech Hub*. Available at:

<https://edtechhub.org/2022/05/06/using-technology-to-improve-the-equity-of-teacher-allocation-in-sierra-leone-the-challenge-and-a-way-forward/>

<https://docs.edtechhub.org/lib/KAZQRPA7>

5.2. When teachers are asked to deploy other teachers, we learn a lot about teacher preferences

McBurnie, C., Godwin, K., & Bernard-Jones, L. (2022, May 1). *When teachers are asked to deploy other teachers, we learn a lot about teacher preferences* [EdTechHub]. Available at:
<https://edtechhub.org/2022/05/13/when-teachers-are-asked-to-deploy-other-teachers-we-learn-a-lot-about-teacher-preferences/>
<https://docs.edtechhub.org/lib/BPUZD5T5>

5.3. Where do teachers go, and where do they stay?

Lurvink, A.-F., Espinoza-Revollo, P., Ali, Y., Garrod, O., Atherton, P., Mackintosh, A., Ramirez, A., Beoku-Betts, I., Haßler, B., Godwin, K., & Godwin, A.-F. L., Patricia Espinoza-Revollo, Yusuf Ali, Oliver Garrod, Paul Atherton, Alasdair Mackintosh, Ana Ramirez, Iman Beoku-Betts, Björn Haßler and Katie. (2023, March 22). *Where do teachers go, and where do they stay?* *EdTech Hub*. Available at:
<https://edtechhub.org/2023/03/22/where-do-teachers-go-and-where-do-they-stay/>
<https://docs.edtechhub.org/lib/LC8X4TCC>

6. Presentations

6.1. The impact of GIS-supported teacher allocation in Sierra Leone: high-level findings on teacher preferences in Sierra Leone

McBurnie, C., Godwin, K., Beoku-Betts, I., & Haßler, B. (2022). *The impact of GIS-supported teacher allocation in Sierra Leone: High-level findings on teacher preferences in Sierra Leone*.
<https://doi.org/10.5281/zenodo.6504993>. Available under Creative Commons Attribution 4.0 International,
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EdTech Hub, Education Commission, & Fab Inc. (2022). *The Impact of GIS-Supported Teacher Allocation in Sierra Leone* (HLR3 Output No. 1). EdTech Hub. <https://doi.org/10.53832/edtechhub.0055>. Available from <https://docs.edtechhub.org/lib/QAH4K4D6>. Available under Creative Commons Attribution 4.0 International. ([details](#))

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Espinoza-Revollo, P., Ali, Y., Garrod, O., Atherton, P., Mackintosh, A., Ramirez, A., Beoku-Betts, I., & Haßler, B. (2023). *School-to-School Mobility Patterns and Retention Rates of Payroll Teachers in Sierra Leone* (Working Paper No. 48). EdTech Hub. <https://doi.org/10.53832/edtechhub.0143>. Available from <https://docs.edtechhub.org/lib/DE7XUSMJ>. Available under Creative Commons Attribution 4.0 International. ([details](#))

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Mackintosh, A., Ramirez, A., Atherton, P., Collis, V., Mason-Sesay, M., & Bart-Williams, C. (2020a). *Education Workforce Spatial Analysis in Sierra Leone* (p. 31) [Research and Policy Paper]. Education Commission. <https://educationcommission.org/wp-content/uploads/2020/12/2-EW-Spatial-Analysis-Paper.pdf>. (details)

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