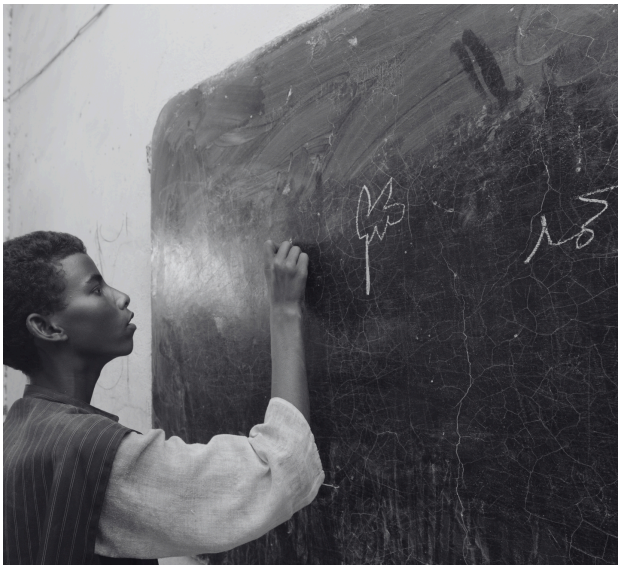
Leveraging Social Policy Expertise to Address Educational Inequality

Education is indispensable for improving life chances, alleviating poverty, and ensuring access to fundamental rights. Yet, despite its profound potential, quality education remains elusive for many, with glaring disparities persisting across nations and demographics. The impact of educational disparities on individuals and societies underscores the urgency of designing targeted interventions. These disparities typically stem from a complex interplay of socioeconomic factors, necessitating comprehensive and proactive measures for effective resolution.

Given its paramount importance, collaboration across diverse backgrounds is essential to tackle this challenge. The integration of social policy and education has gained traction, aiming to address poverty and inequality, primary impediments to quality education. Concurrently, education emerges as a powerful tool in breaking the cycles perpetuated by social protection initiatives.



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To enhance educational equity, the Development Analytics team fosters forward-thinking strategies and provides a holistic understanding of **i)** designing targeted interventions to address barriers in access to education, **ii)** providing anticipatory strategies for addressing school dropout, **iii)** analyzing education landscape and trends and **iv)** assessing learning outcomes and disparities. When applied to the realm of education, our unique expertise in social policy proves highly impactful in extending support to those encountering difficulties in accessing educational opportunities, particularly in reaching the most marginalized individuals. Utilizing household surveys and administrative data with a specific focus on education enables us to extract valuable insights and inform targeted interventions.

How is this research study useful for policy impact?

- **Analyzing Education Landscape and Trends**: Examining recent trends and developments with a focus on access to quality education across different poverty statuses, household dynamics, and child-related characteristics.
- **Designing Informed Targeted Interventions to Adress Social Barriers in Accessing Education Programmes and Services:** Conducting in-depth assessments to identify and analyze barriers that hinder children's access to education services and designing conditional cash transfer programmes more effectively.
- **Assessing Learning Outcomes and Disparities**: Assessing children's learning outcomes and disparities in the learning environment, taking into account various factors such as socioeconomic status, access to resources, and external shocks like the pandemic.
- **Leveraging Machine Learning for School-Dropout Prediction:** Predicting the likelihood of school dropout among students through machine learning algorithms

What kind of datasets are needed to carry out such a study?

To conduct a comprehensive study of this nature, a **household survey** capturing essential details such as school enrollment, retention, and indicators of the learning environment for children is indispensable. Additionally, information on household expenditure or income is vital for assessing the socioeconomic status of children's households. These surveys provide invaluable insights into children's education status and overall well-being, offering data on schooling, educational opportunities, learning environments, and general welfare. Through data analysis, our team is dedicated to leveraging household surveys to inform education policy decisions and design interventions aimed at ensuring equitable access to education for all children.

Moreover, conducting a thorough study with practical implications for predicting school dropout rates necessitates access to **administrative school data** containing detailed school attendance records and grades in a panel format for the targeted student population. This data fusion approach allows for the assessment of children most susceptible to dropping out of school, as well as a more detailed examination of the characteristics of at-risk children, by integrating nationally representative socioeconomic surveys with routinely collected administrative data. The combined dataset is pivotal for conducting a deeper analysis into the

demographic characteristics of children and for devising effective strategies to address inequalities in access to education.

What are the previous project references where Development Analytics carried out this study or studies related to addressing inequalities in access to education?

Development Analytics has spearheaded numerous mixed-methods analyses examining trends in children's vulnerabilities that impede their access to education. Our analytical approaches aim to identify and provide better opportunities, ultimately fostering increased access to quality education for all. Some of our related projects to date include:

- **Documentation of Education Response in Türkiye during the Covid-19 Pandemic and its Effect on Children's Access to and Retention in Education.**

  The global landscape is increasingly vulnerable to disruptive shocks, including pandemics and climate change. For instance, due to the pandemic's disruption of face-to-face education, millions of children worldwide are predicted to experience learning losses, leading to long-term consequences such as lifetime earnings loss at the rate of 14% of global GDP today.[1]

  Addressing the serious setbacks brought on education by the pandemic as a disruptive shock, our study pursued two main objectives: (i) comprehensively understanding and documenting the policies enacted, alongside the challenges encountered by children, teachers, and schools during the prolonged closure of educational institutions in Türkiye, and (ii) assessing the COVID-19 pandemic's impact on children's educational achievements while pinpointing vulnerable demographic groups.

  In a collaborative effort with UNICEF Türkiye, we developed analytical frameworks to delve into various facets of the crisis, including children's learning outcomes, dropout rates, engagement in child labor, as well as conducting simulations and estimations utilizing household-level datasets. Our analysis highlights the severity of the problem and identifies specific characteristics of children most susceptible to adverse effects, thereby aiding in targeted intervention strategies. The results of this study were published in the Journal of Vulnerable Children and Youth Studies.

- **School dropout prediction and feature importance exploration in Malawi using household panel data: machine learning approach.**

  Predictive modelling for school dropouts through machine learning (ML) models is particularly deemed important for further investigation in Malawi, where the initial net enrolment rate in primary school is high at 88.8%, but the net enrolment rate in secondary school drops to 16.4% in 2019 in the country.[2]

  Utilizing ML algorithms for school dropout prediction poses significant challenges, particularly in low-income countries where financial and technical constraints hinder data collection and management. To address this, the study advocates leveraging existing household panel data to forecast school dropout probabilities.

  The study proposes a method for utilizing pre-existing household datasets, emphasizing the incorporation of sample weights in data-scarce contexts. Additionally, it underscores the importance of children's characteristics in predicting dropout likelihood, aiming to support interventions addressing the social and economic challenges faced by primary-school students in Malawi. Conducted as part of a research thesis at Tilburg University, the study was published in the Journal of Computational Social Science.

If you're interested in conducting a comparable study within your country's context, assessing disparities in access to quality education using similar methodologies, please click the button below to register your interest. Our technical team will then reach out to discuss the specifics of potentially conducting such a study with you

Register your Interest

We look forward to being in touch !

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Sources

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[2] Malawi National Statistical Office. (2020). *The third integrated household panel survey 2019 report.* Zomba, Malawi: Malawi National Statistical Office.