

Nichodemus Werre Amollo, MSc

Humanitarian Data Scientist | Research Evaluation Specialist | Causal Discovery Expert

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MISSION STATEMENT:

"I build the systems that ensure help reaches those who need it most."

My family was a beneficiary of a cash transfer program. I know that a precise, timely transfer is not just transaction—it is agency. Now, as a Data Scientist with 8+ years of experience, I combine **humanitarian needs frameworks** with **advanced causal inference** to answer the most critical question in aid: *Who needs this next dollar the most?* I am seeking to bring my expertise in **Targeting, Crisis Detection, and Operational Data Systems** to GiveDirectly's Emergency Cash team.

HUMANITARIAN DATA & CRISIS EXPERTISE

Crisis Needs Analysis: Humanitarian data sources (MIRA, IPC, vulnerability indices) | Displacement monitoring | Real-time crisis event detection | Population vulnerability assessment | Multi-hazard risk analysis

Targeting & Beneficiary Identification: Poverty targeting algorithms | Eligibility criteria design | Geographic targeting for crisis-affected areas | Demographic/subpopulation analysis | Beneficiary registration systems

Data Integration & Tools: Multi-source data fusion (satellite imagery, CDRs, administrative records) | Geospatial analysis (GIS/mapping) | Real-time data dashboards | Crisis monitoring systems | Data visualization for field operations

Analysis Methods: Spatial analysis for crisis zones | Time series forecasting for early warning | Clustering algorithms for vulnerability segmentation | Causal inference in non-randomized contexts | Mixed-methods needs assessment

PROFESSIONAL EXPERIENCE

Lead Data Scientist & Program Evaluation Specialist

Georgetown University – gui2de | Apr 2023 – Present

- Designed crisis-targeted evaluation frameworks for emergency response programs, translating humanitarian needs data into targeting criteria and beneficiary identification protocols for 3+ countries.
- Built real-time crisis monitoring dashboards integrating early warning indicators and vulnerability data; enabled rapid deployment decisions for emergency interventions across Kenya, Uganda, Tanzania, Rwanda.
- Implemented field-level digital systems (ODK/SurveyCTO) for crisis needs assessments across 5,000+ participants; designed data quality protocols for high-stakes targeting in humanitarian contexts.

- Conducted heterogeneous needs analysis across demographics and conflict/vulnerability zones; identified key populations for targeted crisis cash assistance and resource prioritization.

Senior Research Data Scientist

Kenya Medical Research Institute (KEMRI) | Apr 2021 – Mar 2023

- Designed crisis early warning systems using DHIS2 health surveillance data and community networks; reduced crisis detection lag from 2 weeks to 3 days, enabling rapid humanitarian response.
- Built vulnerability segmentation models (clustering, survival analysis) to identify populations most at risk during health crises; informed targeted crisis assistance strategies for vulnerable communities.
- Engineered real-time data pipelines merging health, livelihood, and socioeconomic data for crisis-affected rural populations (2,000+ individuals); achieved 95%+ data quality for targeting accuracy.
- Collaborated with community leaders and local networks to validate data sources and ensure cultural appropriateness of crisis assessment tools.

Research Data Manager

JOOST & VLIR-UOS Regional Program | Nov 2019 – Apr 2021

- Managed multi-country social protection datasets (8,000+ observations across Kenya, Uganda, Rwanda); developed targeting methodologies for vulnerable populations based on needs assessments.
- Built evidence dashboards for government partners showing livelihood vulnerability, poverty incidence, and targeting criteria; directly informed government social protection programs.
- Designed participatory needs assessment frameworks with communities; ensured vulnerable populations (marginalized groups, crisis-affected areas) were central to program design.

Research Data Analyst

LERIS Hub | Sep 2017 – Jul 2019

- Conducted mixed-methods vulnerability assessments for youth employment programs; identified crisis-affected and vulnerable populations for targeted livelihood support.
- Designed targeting tools for poverty/vulnerability identification; generated evidence briefs informing government and NGO decisions on resource allocation to vulnerable communities.
- Applied advanced targeting methods (propensity scoring, machine learning segmentation) to identify beneficiaries for social protection programs in marginalized areas.

EDUCATION & ADVANCED TRAINING

- MSc Statistics & Data Science (In Progress)** • JOOUST | Expected Jun 2026

- **Graduate Certificate, Social Impact Analytics (Distinction)** • University of San Francisco | Jan 2025 – Dec 2025
- **Certificate, Research Methodology & Quantitative Methods** • Johns Hopkins | Apr 2018 – Sep 2019
- **Advanced R for Data Analysis** • DataCamp | 2023
- **Data Science Professional Certificate** • DataCamp | 2023
- **AWS Certified Cloud Practitioner** • Amazon Web Services | 2022
- **BSc Statistics (Honours)** • University of Nairobi | 2016

TECHNICAL SKILLS & TOOLS

- **Data Analysis:** R (Advanced) | Python (Advanced) | SQL (Advanced) | Stata
- **Crisis Tools:** GIS/Geospatial analysis | DHIS2 | ODK/SurveyCTO | Crisis monitoring systems
- **Visualization:** Tableau | Looker | Power BI | ArcGIS mapping
- **Methods:** Clustering | Survival analysis | Targeting algorithms | Spatial analysis | Time series forecasting
- **Humanitarian Frameworks:** MIRA | IPC | Vulnerability assessments | Multi-hazard risk analysis

SELECTED CONSULTANCIES

- CMMB – Global Fund PMTCT Effectiveness Study (Technical Lead, 2024): protocol design support, ethics documentation support, analysis and reporting.
- NEPHAK – Community Health Dashboards (Consultant, 2023): built automated dashboards for logistics indicators and community-led monitoring.
- Dalberg / MMV – RAS Uptake Study (Lead Consultant, 2024): desk review, tool development, analysis, final reporting.

PUBLICATIONS

- Amollo, N. W., Ogol, J., Museve, E., Owenga, J. A., Aduda, D. O., & Onguru, D. (2025). Financial Determinants of Effective Hypertension and Diabetes Care in Rural Primary Health Facilities in Kisumu, Kenya: A Mixed-Methods Study.
- Ouma, O. J., Omondi, D., Akinyi, I., Amollo, N. W., et al. (2025). Addressing Priority Gaps in Access and Quality of NCD Services in Primary Care Settings in Rural Kenya: A Participatory Approach to Intervention Development. Research Square (preprint). doi:10.21203/rs.3.rs-6077243/v1
- Mangale, D. I., Adhiambo, H., Adagi, P. A., et al. (2025). Characteristics and mortality risk among esophageal cancer patients with varied HIV status seeking care in western Kenya: A 10-year analysis. (Role: Data management and analysis)
- Odeny, T. A., Adhiambo, H. F., Mangale, D. I., et al. (2025). Survival disparities in cervical cancer patients with and without HIV at JOOTRH. (Role: Data management and analysis)