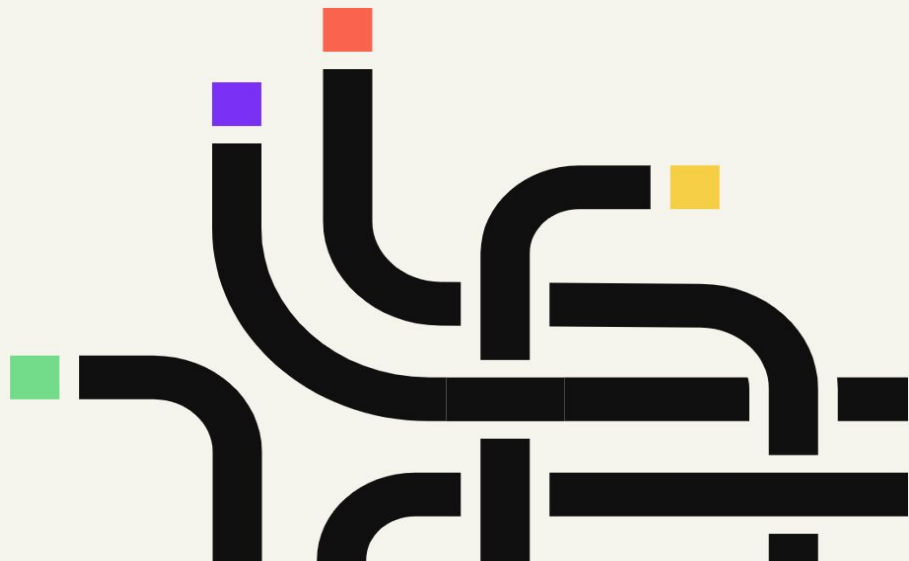


MERL Center: Open Source Tools and Processes for M&E

Tuesday, September 20



Presenters



Stephanie Coker

Senior Evaluation & Learning Consultant
TCC Group



Ronald Munjoma

Independent Consultant



Mutsa Chinyamakobvu

M&E Data Specialist
Datalab, South Africa



Shriya Singh

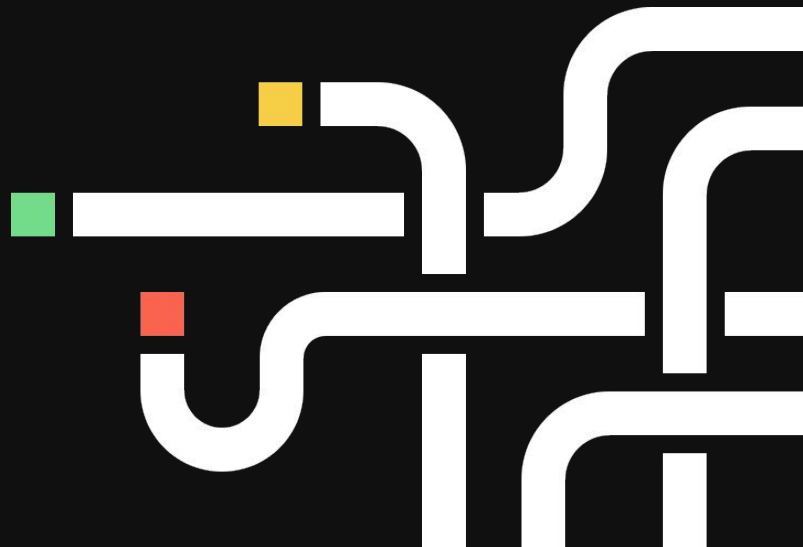
HCI & Design Researcher
Data Visualization Team, Erevna

Please introduce yourself in the chat!

Today, we will present on:

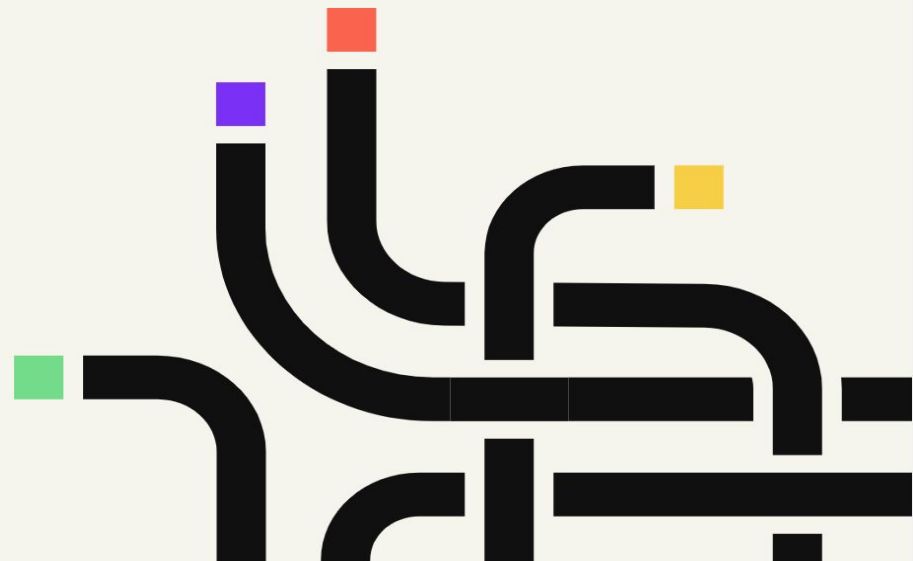
- What is the MERL Center?
- Open Source Usage in Southern Africa
 - Ronald Munjoma
- HCD approaches to M&E Capacity Development
 - Mutsa Chinyamakobvu
- Monitoring and Evaluation Activity on GitHub
 - Shriya Singh, Stephanie Coker

Monitoring and Evaluation Activity on GitHub



What is the MERL Center?

Stephanie Coker



MERL Center

What is Open Source?

- The term open source refers to something people can modify and share because its design is publicly accessible.*
- Open source projects, products, or initiatives embrace and celebrate principles of open exchange, collaborative participation, rapid prototyping, transparency, meritocracy, and community-oriented development.

*<https://opensource.com/resources/what-open-source>



Why the MERL Center?

- GitHub Social Impact, Tech for Social Good founded the MERL Center in September 2019 at the MERL Tech Conference
- MERL practitioners often work in silos. They wanted a way to collaborate on content on relevant tech topics, like open source software and open data.



	Functional Area 1	Functional Area 2	M & E	Functional Area 4	Functional Area 5
Sector 1	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 2	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 3	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 4	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 5	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 6	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used
Sector 7	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used	OS Tools Used

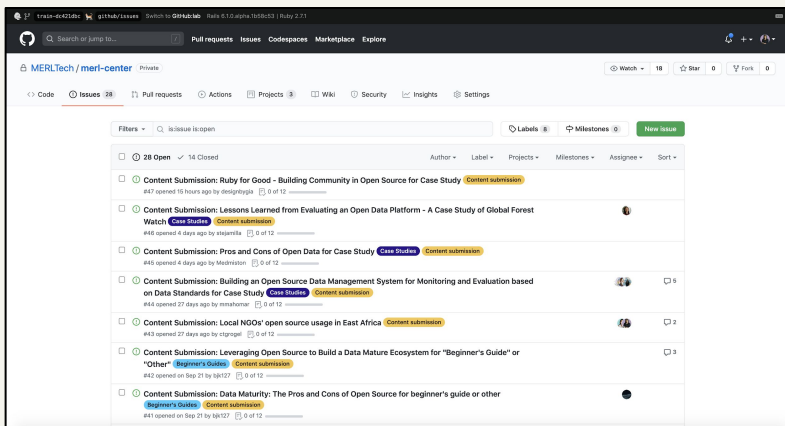


Collaboration in the MERL Center

- 50+ members in 15+ countries
- More than ¼ members are women of color
- Private, public, social sector
- Data scientists, project managers, UX designers, strategists and more

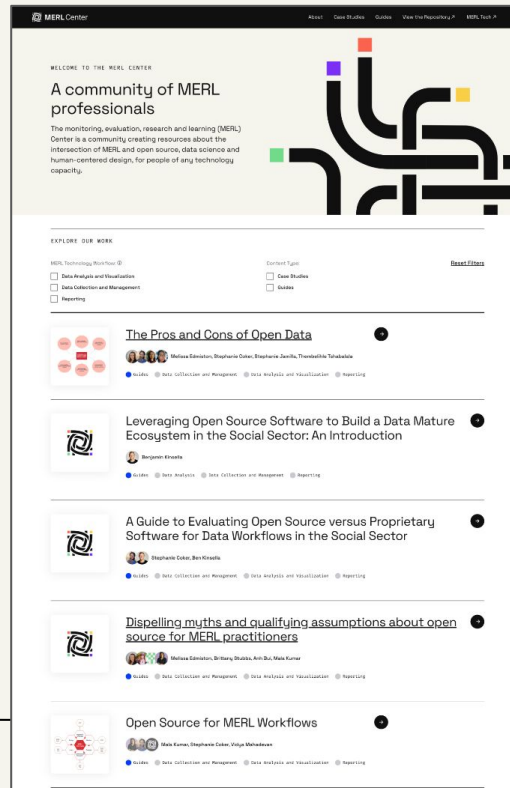
[Read member testimonials here](#)

Collaborate on GitHub, Google Workspace, Slack



Use GitHub Pages to Publish to Our Website:

<https://merlcenter.org>



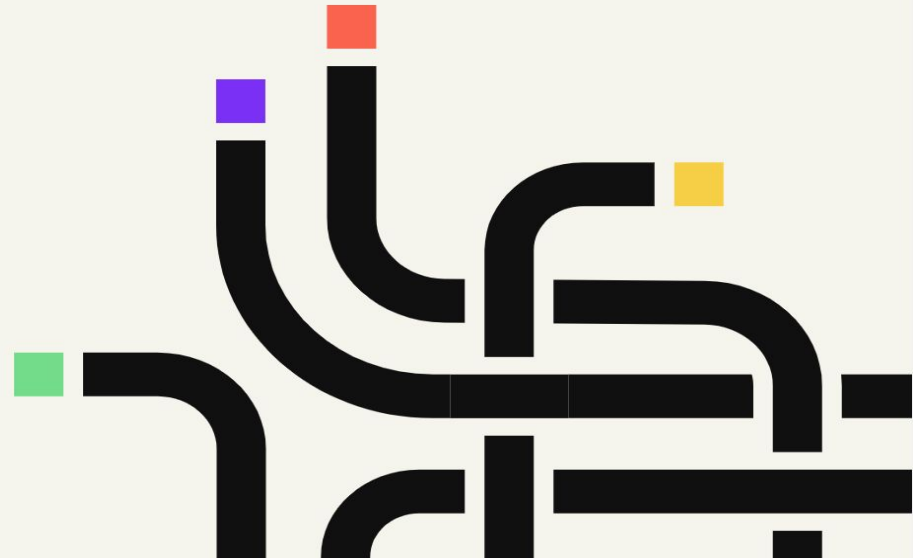
Brief History of the MERL Center

- September 2019 - Founded by the GitHub Tech for Social Good team at the MERL Tech conference in Washington, DC
- December 2019 - Grew to 20+ members in three continents
- August 2020 - Welcomed its first cohort of stipend recipients
- October 2020 - Presented the MERL Center concept to the American Evaluation Association (AEA) conference
- February 2021 - Grew to 40+ members in five continents
- September 2021 - Website launched
- February 2022 - Scope expanded to include data science and human-centered design
- March 2022 - Presented at MozFest. [Click here to view the slides.](#)
- March 2022 - Second stipend application to be launched. [Click here for the application requirements and links.](#)



HCD approaches to M&E Capacity Development

Mutsa Chinyamakobvu



Objectives of HCD and M&E

- HCD
 - To close the longstanding research-to-practice gap (Lyon AR et al., 2020)
 - To improve the *usability* of solutions (Hartson, 1998)
 - Both the “ease of use” and the “usefulness”
 - Addressing implementation strategies by re-designing evidence based practices
- M&E
 - To assess implementation strategies and whether they are achieving the intended outcomes
 - To identify bottlenecks through periodic evaluation of project outputs and outcomes



MERL Capacity Development

Method: Comparative Case Analysis



Approach: Presentation on the principles of M&E, and the need for quality data

- M&E Workshop, a Skills Development Provider, South Africa
 - **Context:** Community engagement, awareness raising programmes and skills-based trainings to sensitise citizens to opportunities availed through a Wind-farm Installation Project
 - **Participants:** Project Team of 5
 - **Purpose:** To help the team understand and adopt M&E Practices



MERL Capacity Development

Method: Comparative Case Analysis



Approach: Facilitated session on the gap between perception and reality

- M&E Workshop, a rural development university, Uganda
 - **Context:** This Centre aspires to create a core of visionary female leaders to champion rural transformation through agricultural innovation
 - **Participants:** Faculty, staff and students
 - **Purpose:** Teach M&E and its relevance to farming projects



Comparative Study

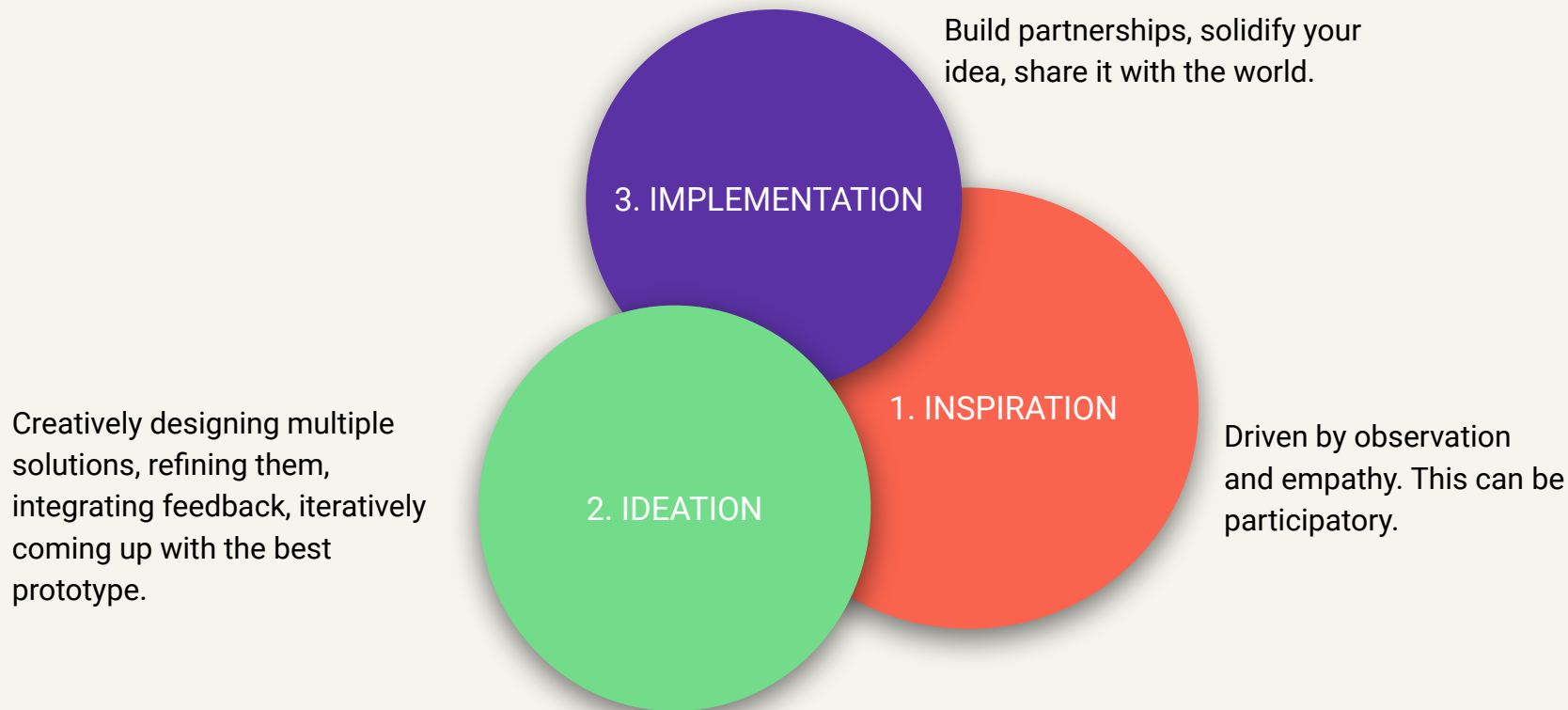
A human centred-approach to MERL Capacity Development

	Skills Development Provider	Rural Development Centre
Empathy Lens (Think like a...)	Project team member	Field worker
Workshop Delivery Method	Presentation Slides	A picture to lead a topical discussion
My goal (as the facilitator)	Have them understand the basic principles of M&E and query the following about their data collection: why, when, what, where and how	Have them understand the need for articulating milestones and their causality (outputs, outcomes, goals), and the need to measure and track these
Their needs	I didn't know	I definitely didn't know
Workshop Satisfaction Rating	100%	90%
Content Adoption Rating	40%	TBC




Human Centred Design





Process Map





Human Centred Design




A MERL Centre Definition


 [MERL](#) / [MERL-Center-public](#) Public








 Notifications  Fork 8  Star 16 

[Code](#) [Issues 1](#) [Pull requests](#) [Discussions](#) [Actions](#) [Projects 1](#) [Security](#) [Insights](#)

 main [MERL-Center-public / human-centered-design-definition.md](#) [Go to file](#) 

 [malakumar85](#) Create human-centered-design-definition.md   Latest commit 2e2be88 on May 6 [History](#)

 1 contributor

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Human-centered design (HCD)

Human-centered design (HCD) is a framework that places the needs, desires and behaviors of key stakeholders, beneficiaries, users or participants at the center of design and implementation decisions. HCD can be used to create and inform digital products, physical products, programs and communities. It can rely on iterative cycles of co-creating, collaborating, testing and refining solutions. HCD bases design decisions on how stakeholders or end-users already think, communicate and engage. In MERL, HCD can be used to inform who is asked what, when and how. It can provide insights on why something is happening. In using HCD for MERL, it is important to consider human rights and equitable solutions.



Human Centred Design

Recall the MERL Centre Definition

- THEM
 - What are the **needs** and **desires** of the participants?
 - How do participants **already think, communicate and engage**?
 - How will the participants **iteratively build on** the content to improve/adopt M&E practices?
- US
 - What are we trying to **create/inform** through this workshop/seminar?
 - What **insights** do we want to give?

Needs Analysis

M&E of our M&E



Capacity Building Effectiveness

- Capacity-building efforts should prepare managers to deal with complexity, uncertainty and change
- Training is most effective when it is designed to **serve a purpose** within an organizational change process
- Capacity building is more a process of social experimentation than of social engineering. Management systems cannot be imported, but need to be developed within organizations.



Understand your setting

System Level (Damschroder et al., 2009)	Example HCD techniques (Dopp et al., 2019a)
Outer setting	Experience models: Specification of relationships between innovation attributes, people, organizations, and places in different use cases or scenarios to identify key aspects that may enable or inhibit implementation. Design charrette sessions: Participatory workshop in which key stakeholders engage in creative or complex decision making in response to user research.
Inner setting	Process maps: Represent system-level processes in ways that highlight the critical individuals, their actions, the targets of the actions, and situational triggers as they unfold over time. Observational field visits: Observe the settings in which an innovation will be used to gather information about the everyday activities, environments, interactions, objects and users in that setting.



Comparative Study

A human centred-approach to MERL Capacity Development

	Skills Development Provider	Rural Development Centre
System Level	Outer	Inner
Empathy Lens (needs, desires and behaviors)	Needed M&E to keep better track of their projects	Wanted to learn how to measure and articulate their growth
Empathy Lens (how do they think, communicate and engage)	They may be in the office but they communicate and engage across desks, through phone calls, and site visits	Due to the amount of field work, they set aside specific time and space for development tasks, away from the field
Empathy Lens (how will they iteratively build on this knowledge)	They will amend their project management tools to incorporate M&E	They will appoint someone to collect and manage data, then create a feedback system
What do we want to create/inform?	Inform the creation of a monitoring system and evaluation tools	Create an M&E framework that encompasses their work and its outcomes and impact



Closing remarks

“Project employees should also be sensitized to change their view of M&E as an accountability tool and embrace the right evaluational philosophies so as not to lose the M&E aspect of knowledge generation.”
(Horton D., 1999)





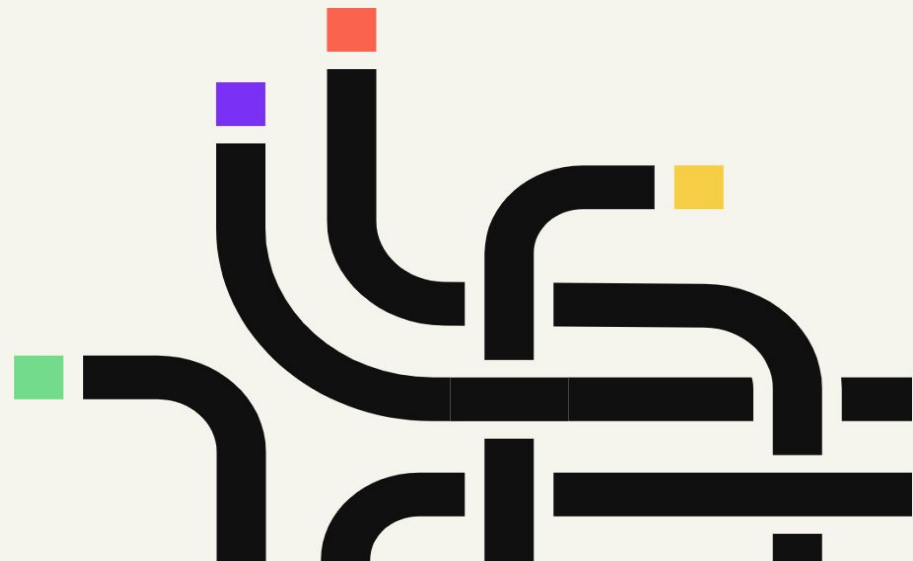
Q&A

1. What are some of the contexts in which you have done capacity building in M&E?
2. In what ways did you center your audience, and was it effective? Why or why not?



Monitoring and Evaluation Activity on GitHub

Shriya Singh and Stephanie
Coker



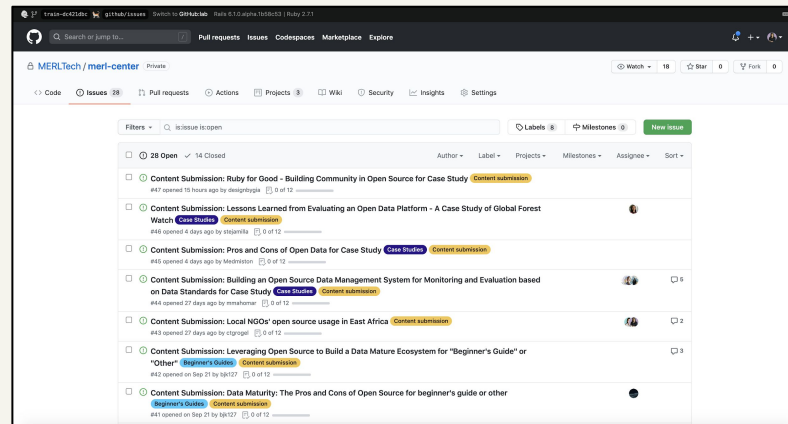
Purpose of Scan of Monitoring and Evaluation Activity of GitHub

- Intention

GitHub is a version-control system that has been used by a majority of M&E practitioners as the preferred medium of collaboration. It could be a great source of information to allow us to study the trends in the M&E community's user behaviour and future prospects of tools that are in use.

- Method

We conducted this experiment using Boolean Searches and visualized our results.



Search Terms and Definitions

MERL Search Term	Definition
"monitoring and evaluation" OR "M&E" OR "MERL" OR "Evaluation" OR "MEAL"	Combined Boolean search terms for MERL
Formative Evaluation	An evaluation conducted during the course of project implementation with the aim of improving performance during the implementation phase. Related term: process evaluation.
Impact Evaluation	A systematic study of the change that can be attributed to a particular intervention, such as a project, program or policy. Impact evaluations typically involve the collection of baseline data for both an intervention group and a comparison or control group, as well as a second round of data collection after the intervention, sometimes even years later.
Logic Model	A logic model, often a visual representation, provides a road map showing the sequence of related events connecting the need for a planned program with the programs' desired outcomes and results.
Operations Research	A process to identify and solve problems in program implementation and service delivery. It involves identifying a problem and testing a strategy to address the problem. The goal is to increase the efficiency, effectiveness, and quality of services delivered by providers, and the availability, accessibility, and acceptability of services desired by users
Outcome Evaluation	This form of evaluation assesses the extent to which a program achieves its outcome-oriented objectives. It focuses on outputs and outcomes (including unintended effects) to judge program effectiveness but may also assess program processes to understand how outcomes are produced



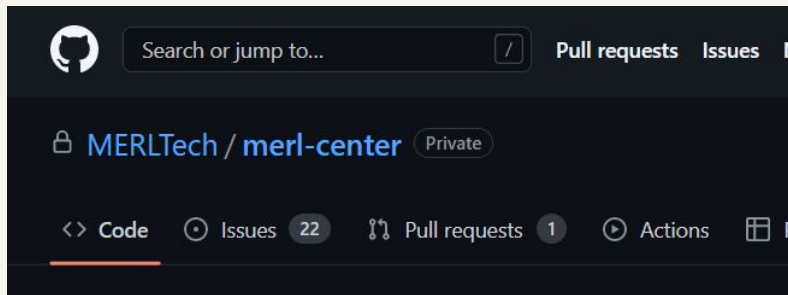
Search Terms and Definitions

MERL Search Term	Definition
Participatory Evaluation	An evaluation in which managers, implementing staff and beneficiaries work together to choose a research design, collect data, and report findings
Process Evaluation	An assessment conducted during the implementation of a program to determine if the program is likely to reach its objectives by assessing whether or not it is reaching its intended beneficiaries (coverage) and providing the intended services using appropriate means (processes)
Program Evaluation	Evaluation of a set of interventions designed to attain specific global, regional, country, or sector development objectives. A program is a time-bound intervention involving multiple activities that may cut across sectors, themes and/or geographic areas
Summative Evaluation	Evaluation of an intervention or program in its later stages or after it has been completed to (a) assess its impact (b) identify the factors that affected its performance (c) assess the sustainability of its results, and (d) draw lessons that may inform other interventions
Thematic Evaluation	An evaluation that focuses on a specific cross cutting area

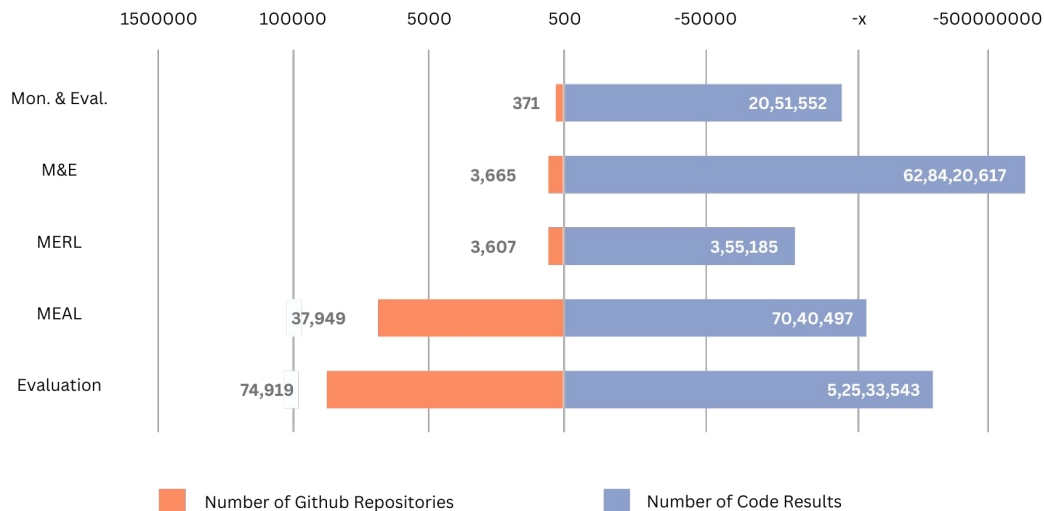


GitHub Activity and Definitions

- Number of GitHub Repositories
 - A virtual space that contains all of your project's files and each file's revision history
- Number of Code Results
- Number of Issues
 - A feature used to track ideas, feedback, tasks, or bugs for work on GitHub
- Number of Users
- Number of Commits
 - A commit records changes to one or more files in your repository
- Number of Packages
- Top 5 languages

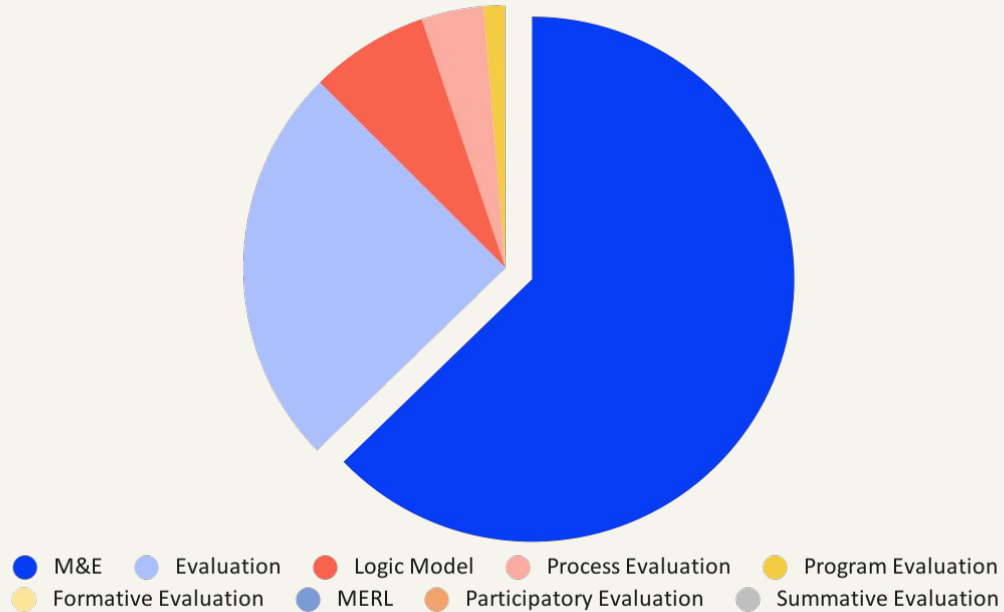


Results: Number of GitHub Repositories Vs Code Results



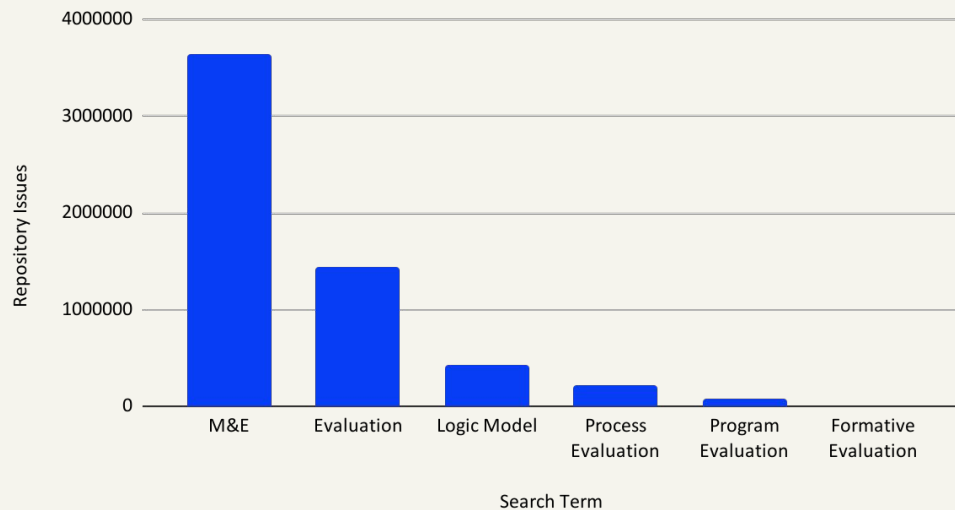
Results: Number of Issues

Repository Issues

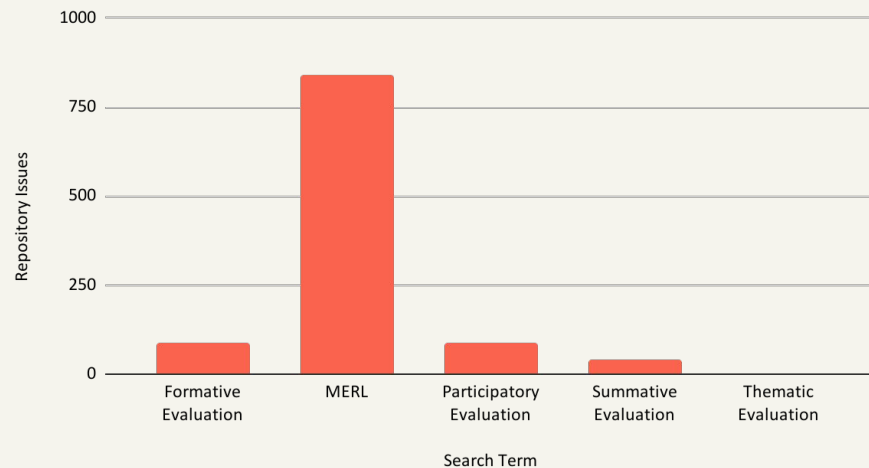


Results: Highest & Lowest Number of GitHub Issues

Search terms that yielded the most issues

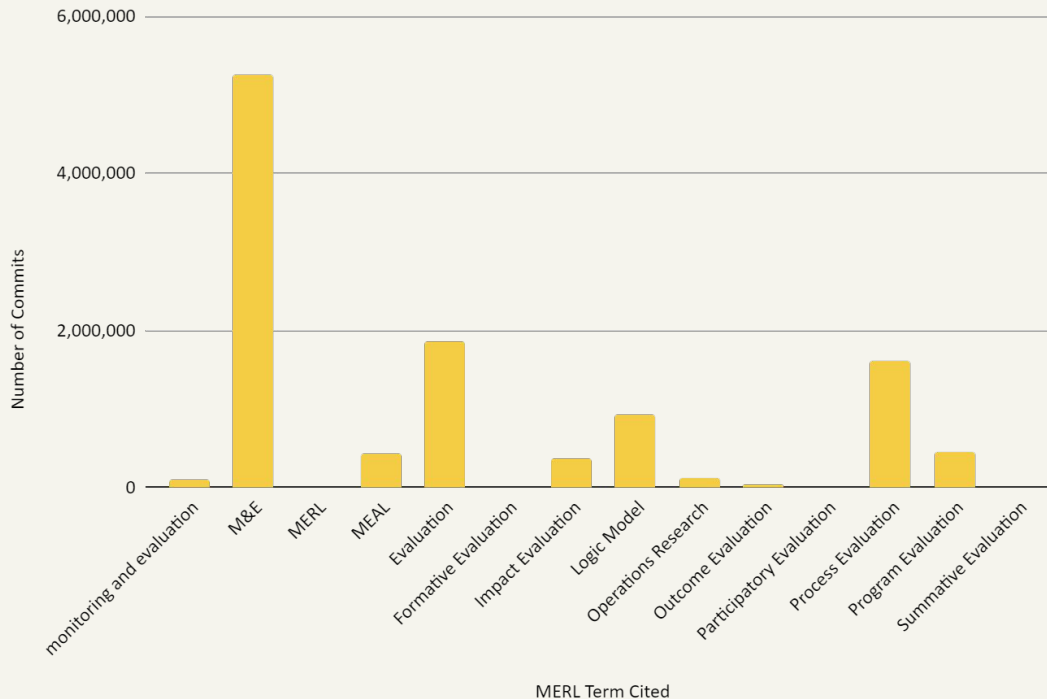


Search terms that yielded least issue results



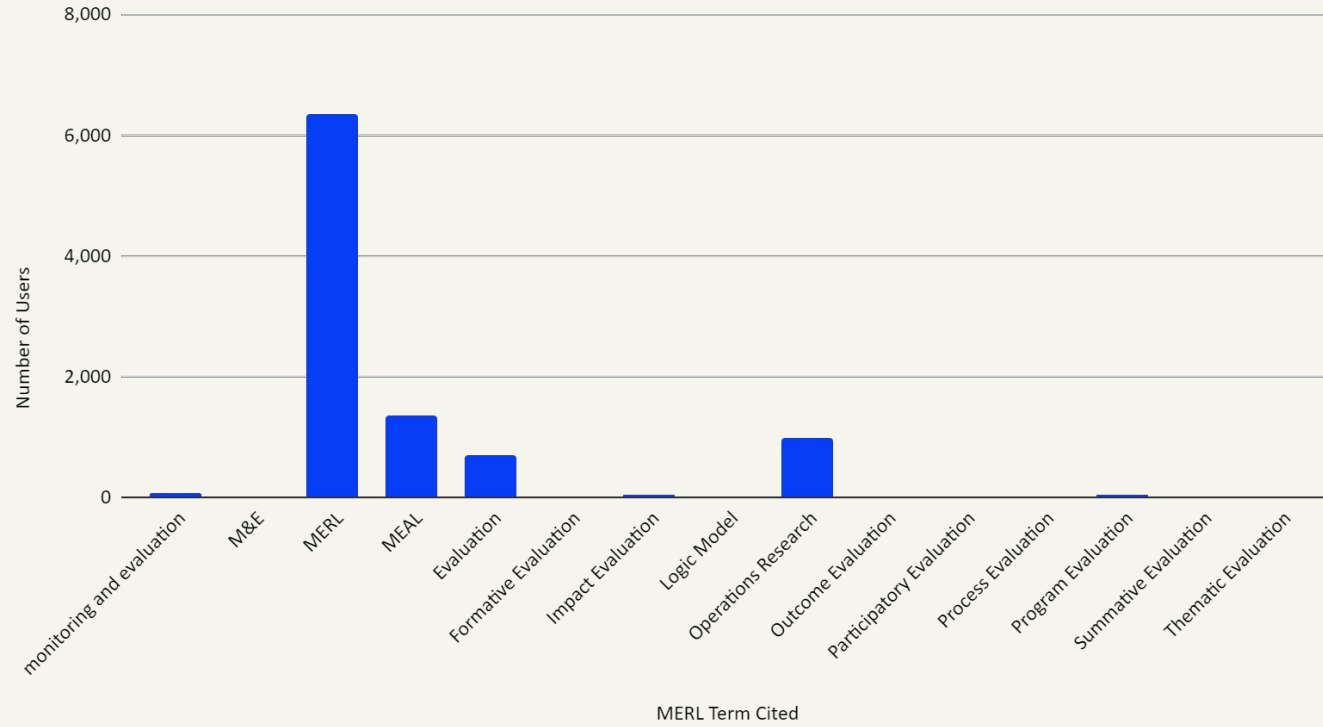
Results: Number of Commits

Number of Commits

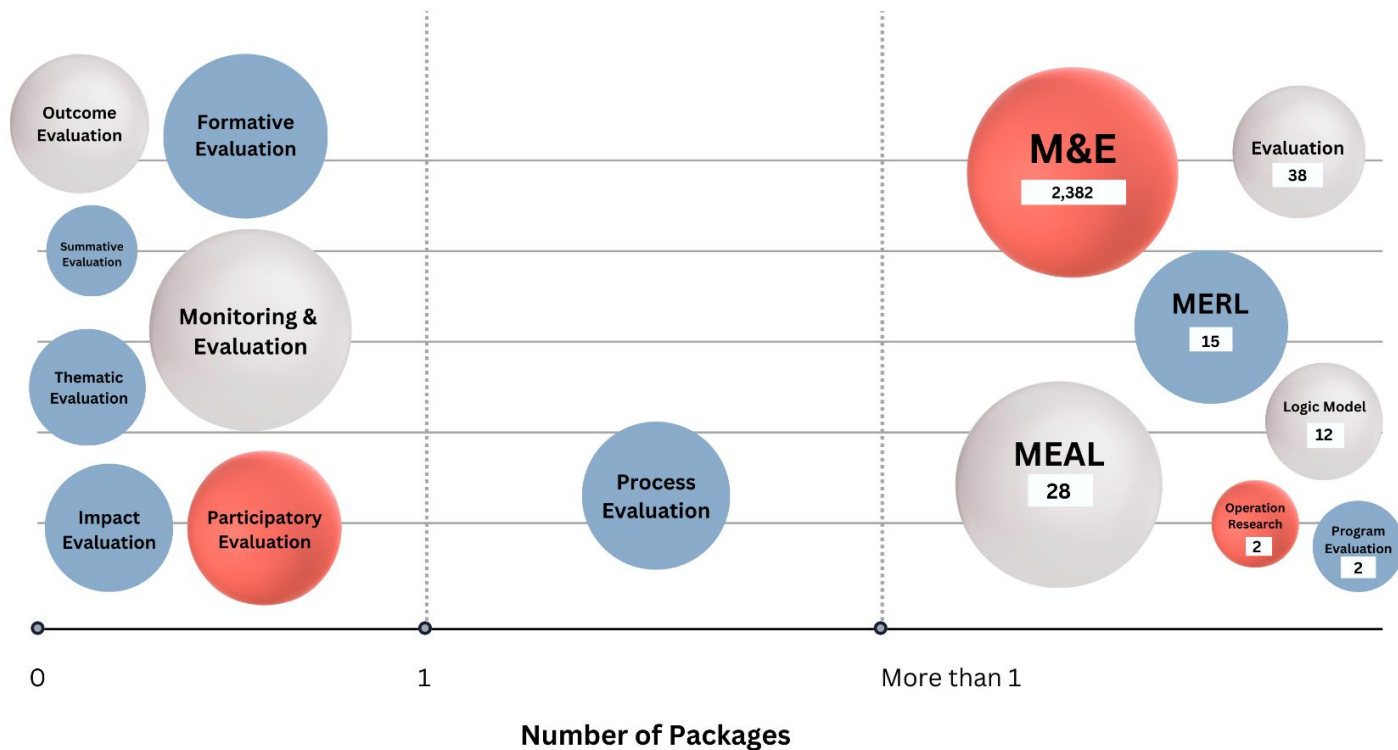


Results: Number of Users

Number of Users



Results: Number of Packages



Results: Top 5 languages



What does this tells us about Monitoring and Evaluation Activity on GitHub?

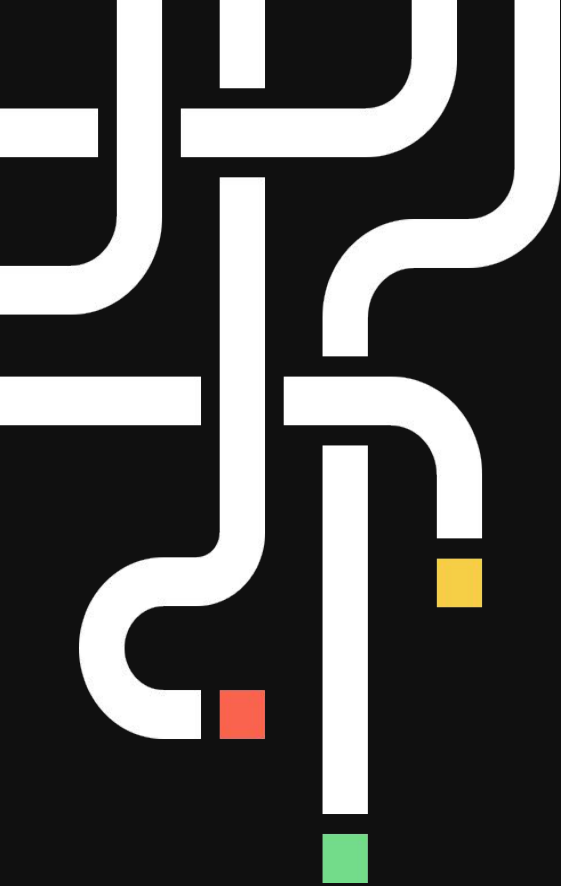
- M&E Professionals are active in the GitHub space, contributing more than 5000,000 pieces of code
- Logic Model, Operations Research and Program Evaluation were top three results for repositories
- Our case study allowed us to observe certain patterns and trends which are developing currently; HTML, TeX, Markdown, XML and C++ were found to be the most favoured tools and languages by the M&E practitioners on GitHub, with Python and CSV coming close.
- People conduct monitoring, thematic evaluation, summative evaluation, participatory evaluation without the use of any packages.
- M&E, Evaluation and Logic Model had the highest number of issues cited on GitHub.



Implications for the field

- There are a lot of future prospects in open-source collaboration for M&E practitioners.
- From our analysis of themes in MERL repositories on GitHub, a majority of repositories were used for training data, monitoring project progress, hosting workshops and tutorials as well as for peer evaluation.
- Transparency is one of the key aspects of MERL and an open version control platform allows one to do just that. It should come as no surprise that people have been using such a platform to share data more efficiently with team members and facilitate better collaboration of resources.
- Although MERL professional are using GitHub and contributing to code, we don't see a lot of packages being produced. In particular, when searching for types of evaluation, there were very few packages. There is an opportunity for those in working MERL to become leaders in open source communities and spaces.





Q&A

1. Have you used GitHub before?
2. What are the ways in which you've used GitHub?
3. Are any of these findings surprising or interesting to you?





Wrap-Up

- We have a couple of exciting opportunities for open source projects in our MERL community.
- Join me at the MERL Center Info Session on 22 Sept , 14:00 SAST
- Here's how to join the MERL Center:
https://docs.google.com/forms/d/e/1FAIpQLSfL084nxYwWt07pSGVPGybwp35S_uCjN1ga5NKXq0ijPbkjRtQ/viewform

