

Opportunities for promoting Open Science through Community Engagement in Higher Education Institutions (HEIs). A case of Eastern and Southern Africa Management Institute (ESAMI)

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Article History	Abstract
Original Research Article	<i>The study aimed at identifying opportunities for promoting Open Science through Community Engagement in HEIs by using ESAMI as a case study. However, empirical research on the opportunities for community engagement by HEIs is lacking. This study adopted a qualitative methodology using the desktop approach based on exploratory design and a theoretical model by classical Sherry Arnstein's (1969) Ladder of Citizen Participation in developing this article. Data was collected using review of literature and several documents. Data was analysed using narratives. It was concluded that community engagement provides several opportunities for HEIs to engage in open science. It was recommended that HEIs should use the opportunity of benchmarking on the ESAMI's best practices of undertaking open science through community engagement.</i> Keywords: Open science, Open access, Citizen science, Open innovation, Science shops and Community Engagement.
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Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited. Citation: Nuwagaba, I., Kiuluku, P., Kalaba, D., Mumba, J., Waruhiu, H., Yona, L., & Malisa, L. (2026). Opportunities for promoting open science through community engagement in higher education institutions (HEIs): A case of Eastern and Southern Africa Management Institute (ESAMI). UKR Journal of Education and Literature, 2(4). 204-213.	

Introduction

Open Science is a key pillar for Africa's sustainable development, supporting scientific research, innovation and evidence-based policies. Harnessing the potential of basic sciences, engineering and emerging technologies is critical for tackling global challenges and speeding up progress on the African Union's Agenda 2063 and the United Nations Sustainable Development Goals (SDGs).

It is critical to boost science literacy, research and innovation to take advantage of this demographic dividend, as young Africans are expected to make up 42% of the world's youth by 2030 (UNESCO, 2025). Factors such as increased membership rates and the lack of access to scientific equipment are among several reasons why scholars in Africa confront obstacles in accessing research.

From their very beginning, Open Access and open science have been about improving access to knowledge for those who need it most in Africa. Three years after the initial

decision to enter into a partnership that would promote open-science principles in the region, the East African Science and Technology Commission (EASTECO), Tanzania's Commission for Science and Technology (COSTECH), Public Library of Science (PLOS) and Training Centre in Communication Africa convened a High-Level Multi-Sectoral National Open Science Dialogue for Academic and Research Institutions in Tanzania in mid-February 2023 to discuss the matter (Munyaradzi, 2025).

Open Science offers significant potential benefits for ESAMI, particularly in terms of enhancing community engagement, fostering collaboration, and promoting innovation in research. However, the challenges associated with resources, integration, data security, and expertise cannot be overlooked. By carefully considering these factors and adopting a well-planned strategy, ESAMI can

harness the power of Open Science Shop 2.0 to enhance its research capacity and influence in Africa's development.

With the right infrastructure and commitment, ESAMI can position itself at the forefront of open science initiatives in the region, driving impactful change through community-driven research and collaborative knowledge-sharing. The main objective of the study was to find out the opportunities for community engagement by Eastern and Southern African Management institute.

Literature review

Theoretical framework for HEI promotion of community participation for open science

The study was guided by the standard Ladder of Citizen Participation Theory of Sherry Arnstein (1969). There are several ideas of community engagement, but they are all developed upon one traditional theory. The theory is predicated on the concept that citizen participation in community engagement is a categorical term for citizen's power (Stout, 2004). The notion posits several methods and different kinds of community engagement in public matters and not all of these provide the same effects. The approach recognised various types of involvement from non-participation through tokenism to true citizen power.

So, community engagement is in the shape of a ladder with the lowest rungs leading to non-community participation; the middle rungs signifying tokenism while the highest rungs of the ladder represent true citizen power. Community participation in public affairs is sometimes a hollow ritual with no genuine powers to influence both outcomes and processes. The classical poster of French students in 1968 that has been widely reproduced in participation literature, had pointed out that community engagement without power redistribution leads to helplessness and hollow disappointments. This kind of participation in community interaction simply serves to allow those in power to falsely pretend that all public interests were considered yet only their sides benefited.

The global context of open science

The institutional antecedent of Open Science dates back to the 2000s in policies on e-government, which eventually became theoretically open government. The process was launched by UN in 1997, and the concepts were further elaborated by EU and USA (Golub & Lund, 2021). Initially, the overall notion was about participation by making data and knowledge available for free use and reuse (Nelhans & Nolin, 2022). A wider viewpoint was offered in 2021 with the UNESCO guideline on Open Science that emphasised social and cultural inclusion and sustainability and promoted potential for innovation through community involvement (UNESCO, 2023).

On one hand, the Open Access (OA) movement and Open Science advocates are critical of the capitalist and the state access barriers to research and already warned in 1985 about the scientific, social and economic dangers of commodification and policies that obstructed the participation and access to knowledge (Leonelli, 2023). In contrast, the openness movement also aims at empowering traditional research sharing with new online technologies that expedite scholarly communication and attaches it "to the temporal dynamic of capitalism that requires constant acceleration of economic growth" (Haider, 2018).

Open science in European Union

Open innovation was the first to be launched and second Open Science. The difficulty was that Europe, the world's leading "research power", rarely succeeded in "turning research into innovation" and "getting research results to the market" (European Commission, 2016). Open Science is closely related to economic activity and the opening of science for practical research and entrepreneurship. However, citizen science (CS) is also part of the EU's goal as a complement to open innovation (European Commission, 2023).

The European Commission states that citizen science is strongly related to digital information and communication technologies (ICTs) that the technology enables the crowdsourcing of ordinary citizens' brain power, just as sharing rooms on the Airbnb platform (Franzen, 2019). Similarly, Tennant et al. (2020) argued that the diversity of the wider scholarly community made it difficult to talk of one openness and saw potential for many new academic communities of practice to emerge in the cross-fertilisation of the principles and practices of Free and Open-Source Software (FOSS) and Open Scholarship (Fillet, 2025).

Open Science in Africa

Open Science is a key pillar for Africa's sustainable development, supporting scientific research, innovation and evidence-based policies. Harnessing the potential of basic sciences, engineering and emerging technologies is critical for tackling global challenges and speeding up progress on the African Union's Agenda 2063 and the United Nations Sustainable Development Goals (SDGs). It is critical to boost science literacy, research and innovation to take advantage of this demographic dividend, as young Africans are expected to make up 42% of the world's youth by 2030 (UNESCO, 2025). Factors such as increased membership rates and the lack of access to scientific equipment are among several reasons why scholars in Africa confront obstacles in accessing research.

That's why Open Access and open science have been focused on providing access to knowledge for people who need it most in Africa from their start. In mid-February

2023, the East African Science and Technology Commission (EASTECO), Tanzania's Commission for Science and Technology (COSTECH), Public Library of Science (PLOS), and Training Centre in Communication Africa convened a High-Level Multi-Sectoral National Open Science Dialogue for Academic and Research Institutions in Tanzania to address the issue – three years after the decision to enter into a partnership that would advance open-science principles in the region (Munyaradzi, 2025).

Community engagement by Higher Education Institutions (HEIs)

However, some community engagement in HEI has established policy frameworks to help internal stakeholders grasp the concept and establish procedures for the management of community engagement programs (Mohale, 2023). Consistent with the worldwide movement of HEI–community engagement activities, an increasing number of Dutch HEI incorporate social interaction in their mission statements and strategic plans (Van der Meulen et al., 2019).

In the past decade, HEIs in Africa have been encouraged to promote social responsibility and community engagement in their teaching and research operations (Santhosh, Sahayaraj, Binesh & Preethi, 2025). Several studies suggest that HEIs such as ESAMI have a key role to play in responding to society needs and can increase their societal influence at the local, national and worldwide levels through community participation (Farnelle, 2024). Most of the world is showing growing interest and active in addressing social inequality, rebuilding trust and strengthening social cohesion at a local level (Farnell, 2020).

Community engagement at ESAMI

Therefore, through Delphi technique, ESAMI has been able to develop an integrated science shop model that can be used for community engagement at Macro, Meso and Micro levels. Open Science will be one of the key focuses at the Eastern and Southern African Management Institute (ESAMI) in, particularly through the inaugural ESAMI Research Colloquium in November 2026. This event will highlight open science principles, including open access to research, open data, and open engagement with societal actors. The colloquium aims to foster collaboration among researchers, faculty, professionals, and students, promoting knowledge exchange and discussions on various research themes. In essence, ESAMI's embrace of open science in 2025 signifiedd

a commitment to making research more accessible, transparent, and impactful, contributing to the broader global movement towards open and collaborative research

practices (Eastern and Southern Africa Management Institute (ESAMI), 2025).

The Open Science under FOSTER Project

Open Science in East Africa has enjoyed substantial institutional support through the FOSTER Project, a European Union-funded initiative to increase the adoption and implementation of Open Science principles in higher education and research institutions in the region. The project involves an international consortium composed of the University of Zaragoza (Spain), Vrije Universiteit Amsterdam, the European Union Policy Development and Research Institute, the International School of Social and Business Studies (Slovenia), Daystar University, St. Paul's University and Garissa University in Kenya, the Eastern and Southern Africa Management Institute (ESAMI) and the University of Dar es Salaam in Tanzania (Oiro, 2025). The FOSTER Project is a three-year project (1 January 2025–31 December 2027) aimed to promote scientific collaboration, institutional capacity and information sharing through an extensive set of activities. These include Open Science awareness campaigns, institutional policies, dissemination and stakeholder engagement forums, capacity-building programmes, informal training courses, curriculum development, staff exchange and benchmarking initiatives and the creation of an Open Science Hub. The hub is anticipated to be one of the few specialised Open Science hubs in sub-Saharan Africa, providing an important platform for enhanced cooperation, research excellence, innovation, and long-term development of higher education in the region (St. Paul's University, 2025).

Methods and materials

This study adopted a qualitative methodology using the desktop approach based on exploratory design and a theoretical model by classical Sherry Arnstein's (1969) Ladder of Citizen Participation in developing this article. According to Steward (1984), a theoretical approach can be used in instances where empirical study is not possible. To get insights on what has so far been realized as far as open science by HEIs are concerned, a theoretical review was embarked on to collect data.

Data was therefore collected using literature review, document analysis and focus group discussion held at Vrije University in Amsterdam, Netherlands. Then the data was analysed using narratives and descriptions to assess, evaluate community engagement that ESAMI is using at Macro, Meso and Micro levels. The collected and analysed data were also used to find out what works in terms of opportunities associated with community engagement by ESAMI with the various stakeholders at Macro, Meso and Micro levels.

Results and discussion

Opportunities for ESAMI's community engagement

From the focus group discussion, review of literature and analysis of a number of documents, we had with fellow researchers at Vrije University in Amsterdam, Netherlands, it was found out that there are a number of opportunities arising from ESAMI's community engagement at various Macro, Meso and Micro levels which include good will of different member states, good regional reputation, diverse participation, signing of Memorandum Of Understanding (MOUs) with different Ministries, Departments and Agencies (MDAs) in various sectors, Donors' Trust and reliability. This enables ESAMI to get several participants and students for training and teaching in her various short executive courses and long post graduate courses of master's and PhD.

There are also open doors for undertaking consultancy for the different government arms in those member states in the various areas of strategic plan development, development of policy documents, monitoring and evaluation, organizational capacity assessment, human resources audits, integrated financial management and data analytics. In addition, this promotes a number of partnerships with various local, national and international agencies whether bi-lateral or multi-lateral in nature for teaching and research collaboration, as has been the case with SIDA and Lundi University under Trade Training Centre in Africa (trapca), Swiss University, North West University in South Africa, Maastricht University in Netherlands, University of Arizona in USA, University of Zaragoza Spain, Vrije University Amsterdam, the European Union Policy Development and Research Institute, the International School of Social and Business Studies Slovenia; Day star University, St. Paul's University and Garissa University in Kenya and the University of Dar es salaam in Tanzania under the Foster Project. Other opportunities that ESAMI gets when undertaking community engagement under Macro, Meso and Micro include the following:

Opportunities for ESAMI's community engagement at Macro level

Community engagement at the macro level offers ESAMI significant opportunities to influence policy, improve governance, and drive social change. By actively involving diverse communities in decision-making processes, organizations can build trust, enhance the effectiveness of initiatives, and ensure that policies and programs are more inclusive and responsive to local needs. This approach can lead to more sustainable and impactful outcomes for both people and the planet.

Generally, community engagement offers ESAMI the following opportunities at Macro level:

Improved Policy and Governance:

Community engagement can inform policy development, ensuring that decisions are more aligned with the needs and priorities of the people they affect. This can lead to more effective and legitimate governance structures.

Enhanced Program Effectiveness:

When communities are involved in the design and implementation of programs, the solutions are more likely to be relevant, culturally appropriate, and sustainable.

Increased Trust and Legitimacy:

Open and transparent engagement processes build trust between communities and organizations, fostering a sense of shared ownership and responsibility.

Sustainable Development:

Community engagement is crucial for achieving sustainable development goals by ensuring that development projects are aligned with local needs and priorities, promoting social equity, and protecting the environment.

Social Change:

Community engagement can be a powerful tool for driving social change by empowering communities, promoting social justice, and fostering collective action.

Better Decision-Making:

By incorporating diverse perspectives and local knowledge, community engagement can lead to more informed and effective decision-making.

Resource Mobilization:

Community engagement can help to mobilize resources and support for initiatives by fostering a sense of ownership and commitment among community members.

Opportunities for ESAMI's community engagement at Meso level

Community engagement at the Meso level, which involves institutions and organizations within a community, presents ESAMI opportunities to foster collaboration, build trust, and promote shared ownership of initiatives. This level of engagement can lead to positive impacts on local governance, service delivery, and overall community well-being. Generally, community engagement at Meso level offers ESAMI the following opportunities:

Enhanced Collaboration and Partnership:

Cross-sectoral collaboration: Meso-level engagement encourages partnerships between different organizations (e.g., schools, healthcare providers, businesses, community groups) to address community issues collectively.

Bridging the gap: It helps bridge the gap between local needs and larger institutional structures, ensuring that policies and programs are relevant and responsive to community priorities.

Increased Community Ownership and Empowerment:

Shared decision-making: When communities are actively involved in planning and decision-making processes, they feel a greater sense of ownership and responsibility for the outcomes.

Capacity building: Meso-level engagement can empower community members by providing opportunities for skill development, leadership training, and participation in governance structures.

Improved Service Delivery and Outcomes:

Targeted interventions: By understanding community needs and priorities, organizations can design and implement more effective and targeted programs and services.

Increased access to resources: Community engagement can help improve access to essential services, such as healthcare, education, and social support.

Better health and well-being: By addressing social determinants of health and promoting community well-being, meso-level engagement can have a positive impact on overall health outcomes.

Strengthening Local Governance:

Accountability and transparency: When communities are engaged, they can hold institutions accountable for their actions and decisions, promoting transparency and good governance.

Sustainable development: Meso-level engagement can contribute to sustainable community development by fostering local expertise, promoting community-led initiatives, and ensuring that development efforts are aligned with community values and priorities.

Opportunities for ESAMI's community engagement at Micro level

Community engagement at the micro level offers significant opportunities to foster positive change within small, localized settings. By focusing on building relationships, understanding specific needs, and tailoring interventions, community engagement can lead to increased participation, improved outcomes, and a stronger sense of ownership. This approach is particularly relevant in diverse communities where a one-size-fits-all approach may not be effective. Generally, community engagement at Micro level offers ESAMI the following opportunities:

Enhanced Participation and Empowerment:

Micro-level engagement allows for more direct and meaningful participation from community members.

It can empower individuals by giving them a voice in decisions that affect their lives and promoting a sense of control over their environment.

Examples include participatory budgeting, where residents directly decide how to allocate local funds, or community-led initiatives for addressing local issues.

Improved Outcomes:

By understanding the unique needs and priorities of a specific community, interventions can be more effective and better tailored to local contexts.

For example, in health interventions, community engagement can lead to increased uptake of services, improved health behaviors, and better overall health outcomes.

Similarly, in environmental management, engaging residents in planning and decision-making can lead to more sustainable and community-supported solutions.

Strengthened Relationships and Social Capital:

Micro-level engagement provides opportunities to build trust and foster relationships between community members and local organizations.

These relationships can create a stronger sense of community, increase social cohesion, and improve the overall well-being of residents.

Activities like community clean-up events, social gatherings, or collaborative problem-solving sessions can help build these connections.

Increased Accountability and Transparency:

When community members are actively involved in decision-making processes, it can lead to greater accountability and transparency from local authorities.

This can help ensure that resources are used effectively and that the needs of the community are being addressed in a fair and equitable manner.

Sustainable Solutions:

Community engagement can lead to more sustainable solutions because residents are more likely to support and maintain initiatives that they have helped to create.

By involving community members in the design and implementation of projects, it ensures that solutions are relevant, feasible, and culturally appropriate.

Conclusion and recommendations

Study findings from the focus group discussion, review of literature and analysis of a number of documents, indicated that there are a number of opportunities arising from ESAMI's community engagement at various Macro, Meso and Micro levels which include good will of different member states, good regional reputation, diverse participation, signing of Memorandum of Understanding (MOUs) with different Ministries, Departments and Agencies (MDAs).

This enables ESAMI to get several participants and students for training and teaching in its various short executive courses and long post graduate courses of master's and PhD. There are also open doors for undertaking consultancy for the different government arms in those member states in the various areas of strategic plan development, development of policy documents, monitoring and evaluation, organizational capacity assessment, human resources audits, integrated financial management and data analytics.

Therefore, this study provides insight into how other HEI can get the opportunity of understanding well how to use community engagement as ESAMI does, adding a new perspective to the research literature in this area, which is dominated by Anglophone cases. In summary, the ESAMI's community engagement Model provides an opportunity to other HEIs in identified a hybrid framework of participatory governance for service delivery at Macro, Meso and Micro levels.

Secondly, the ESAMI community engagement model provides an opportunity to other HEIs to be able to rank the most contributing elements in participatory governance in terms of conducting research, consultancy, teaching various stakeholders before identifying the most effective participants in the community engagement leading to a chain of results in terms of outputs, outcomes and impact created.

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