



Assessing University-Society Engagements: Towards a Methodological Framework

Teklu Abate Bekele¹ · Denis Thaddeus Ofoyuru² ·
Emnet Tadesse Woldegiorgis³

Accepted: 15 September 2023 / Published online: 17 October 2023
© The Author(s), under exclusive licence to Springer Nature B.V. 2023

Abstract

Higher education institutions pursue three distinct yet interrelated missions of education, knowledge production, and community engagement. Until the last decades of the twentieth century, the third mission, also known as community engagement, has received little attention. Although the third mission generally aims to contribute to the socio-cultural and economic transformations of society, its distinct characteristics are still under-theorized. None of the existing methodological and conceptual frameworks provides a holistic analysis of significant engagement indicators that transcend specific application contexts. Collecting data on university engagement with society and making meaningful interpretations is thus a challenge to researchers and practitioners. To contribute to filling this gap, this modified Delphi study proposes a comprehensive methodological framework of university-society engagements in Africa. The core thesis is that engagement is ubiquitous- university missions and support systems embody it. The framework thus constitutes eight engagement domains aligned with university core functions (teaching, knowledge production, and societal service) and support systems (governance, digitalization, internationalization, partnerships, and sustainability), with 52 items, rating scales, and descriptors. The framework contributes to conceptual and methodological clarity, informs data collection, and interpretations of the different modalities of university engagements. The alignment of engagement domains to university activities and the simplified articulations of the indicators ensure straightforward interpretations and applications of the framework by practitioners and researchers. It is also significant as it comes at a time when universities are expected to contribute more directly and significantly to the realizations of the UN 2030 SDGs and the African Union 2063 centennial development ambitions.

Keywords Community engagement · Societal service · University mission · The third mission · University-society engagement

Introduction

Higher education institutions (HEIs) pursue three distinct yet interrelated missions of teaching, knowledge production, and community service. Also known as *community engagement*, the third mission has been relegated behind the two missions until the last decades of the twentieth century (Maassen et al., 2019; Rubens et al., 2017). Globalization, discourses surrounding the knowledge society and economy, funding and accountability measures, and global development regimes like the Millennium Development Goals (MDGs) and the 2030 Sustainable Development Goals (SDGs) appear to contribute to the further reinvigoration of the third mission.

This revitalization has partially spurred the emergence of diverse conceptual and methodological frameworks (e.g. Addie, 2018; Fitzgerald et al., 2012; Frondizi et al., 2019; Laredo, 2007; Marhl and Pausits, 2011; Montesinos et al., 2008; Schalkwyk, 2015; Secundo et al., 2017; Trencher et al., 2014). These frameworks aspire to problematize and define the nature of university-societal engagements. While these frameworks and related literature expand our understanding, they do have limitations that impact their applicability.

One persistent challenge is the conceptual conundrum that hinders the establishment of a common understanding of the third mission. Without clear operationalizations, varied terminologies are employed, including community service, third leg/third stream (with education and research as the first and second streams/legs) (Rubens et al., 2017), service learning, outreach, community engagement, scholarly engagement, university-industry linkages, and popularization of science (Schalkwyk, 2015, p. 205), community engagement (Benneworth, 2013; Boyer, 2016), and entrepreneurial activities (Frondizi et al., 2019; Marhl and Pausits, 2011; Montesinos et al., 2008; Rubens et al., 2017; Trencher et al., 2014). This terminological inconsistency contributes to the conceptual confusion surrounding the third mission.

Another issue is that many indicators found in university engagement frameworks primarily revolve around the third mission. The problem with this approach is that it narrows down engagement to a dedicated third mission only, disregarding the embedded nature of engagement within teaching and research as well (Bekele & Ofoyuru, 2021; Fitzgerald et al., 2012).

The third issue is that, while the individual frameworks provided particulars about emerging university-society engagements (USE), none of them provides a comprehensive and holistic analysis of the significant domains of engagement, associated indicators and scales that transcend specific application contexts. There is “no agreed upon common understanding of the exact nature of the third mission” (Maassen et al., 2019, p.8) which warrants further problematization and operationalization (Bekele & Ofoyuru, 2021; Maassen et al., 2019; Niederberger & Spranger, 2020).

Fourthly, most of the existing frameworks have been developed within Western/Northern realities (Bekele & Ofoyuru, 2021; Schalkwyk, 2015) which restricts their salience and fecundity to successfully explain USE in the developing world,

including Africa. African HE is a colonial creation (Assie-Lumumba, 2006; Cloete & Maassen, 2015) lacking local relevance. Its primary mission has been to generate and transmit ideology alien to Africa (Balsvik, 2005; Kom, 2005; Mayaki, 2019). The domineering pedagogies prevalent in African campuses also restrict critical scholarly engagements and humanely faculty-student relationships (Dei et al., 2019; Kom, 2005; Nhemachena & Mawere, 2022). Moreover, an analysis of the current strategic plans of 30 universities in 14 countries indicate that universities are recently repositioning themselves to become more relevant and significant to their society (Bekele & Ofoyuru, 2021). Consequently, problematizing and theorizing USE in Africa needs to consider these contextual realities and trends.

There is thus a clear need for “identifying and formulating standards or guidelines for theoretical and methodological issues and developing measurement tools and identifying indicators” (Niederberger & Spranger, 2020, p.2). This study makes a valuable contribution to address this gap through a critical examination of USE and the development of a comprehensive methodological framework. The framework aims to assess the scope, depth, and quality of USE in Africa, which is a continent that has been relatively underexplored in this regard. By employing a modified Delphi method that incorporates empirical data and conceptual mapping of existing literature, this study presents a methodological framework comprising eight domains and 52 indicators aligned with the core functions of universities (teaching, knowledge production, and service) and support systems (governance, digitalization, internationalization, partnerships, and sustainability). The framework proposes rating scales for assessing the extent and quality of USE.

Once further validated, this framework has the potential to enhance conceptual clarity, improve data collection, and facilitate interpretations of various modalities of USE. This contribution is particularly timely, as it stimulates discussions on the conceptual and methodological aspects related to this critical topic that intersects higher education and sustainable development. Moreover, its significance is heightened by the current expectations of the United Nations and its member countries, which emphasize the role of HEIs in directly and significantly contributing to the achievements of the 2030 SDGs.

For clarity, some terms need operational definitions. This study focuses on USE within the contexts of globalization, internationalization, massification of higher education, and global development regimes such as the 2030 SDGs. Our usage of *university* includes HEIs which have dedicated engagements with their society. *Society* refers to the spheres of influence universities claim to have such as cities and towns, communities, districts, states, provinces, countries, regions, continents, and the world society at large (Bekele & Ofoyuru, 2021; Frondizi et al., 2019).

Engagement is thus conceived as embedded in teaching and knowledge production and can also have a dedicated third mission of service or developmental outreach (Bekele & Ofoyuru, 2021; Fitzgerald et al., 2012). The assumption is that the three university missions address societal needs and challenges concomitantly and synergistically (Bekele & Ofoyuru, 2021; Fitzgerald et al., 2012). Although *engagement* and *third mission* somehow conceptually overlap, see the literature review section, the former is used in this study for consistency and its comprehensiveness. The

subsequent sections discuss the research methodology employed and the literature review that triggered the development of the methodological framework.

Methodology

Delphi method

The Delphi method relies on expert judgements to investigate issues that lack common interpretations and is used to develop standards or guidelines (Green, 2014; Niederberger & Spranger, 2020) and establish consensus (Schmalz et al., 2021; Skulmoski et al., 2007). A modified Delphi method was deemed appropriate in this study based on three key considerations. Firstly, there is a lack of common interpretations and clear standards for studying USE, making it necessary to gather expert judgments to further problematize the phenomenon. Secondly, unlike most traditional Delphi studies, an extensive review of theoretical and empirical literature as well as methodological frameworks was conducted to precisely define the knowledge frontier. Thirdly, empirical data was collected in one round from experts to “ensure that the conceptualization of the construct makes theoretical sense to scholars in the field” (Artino et al., 2014, p. 464). Additional rounds of data collection were deemed unlikely to yield significant new insights and “one often sees a fall in the response rate” (Skulmoski et al., 2007, p. 11) due partly to experts’ tight schedules. Sufficient agreement levels on most of the indicators were achieved in one round data collection. The subsequent stages of this modified Delphi study are discussed in detail below.

Conceptual mapping

A configurative, integrative review (Gough & Thomas, 2016; Hallinger, 2013) was conducted to identify the core conceptual, theoretical, and methodological features of USE. Two graduate research assistants conducted independent electronic literature searches employing ERIC, Google Scholar, and Scopus search engines. For quality and scope, only journal articles, books and doctoral dissertations were considered. The following keywords were alternatively used for the search: University/higher education (HE) missions, university/HE functions, university/HE third mission, university/HE service, university/HE outreach, university/HE- society/community service, university/HE third stream/leg, university/HE engagement with society, emerging university/HE engagement with society, social relevance and significance of university/HE, university/HE-society/community engagements and linkages, universities/HEI and socio-economic development, universities/HEIs and society/community development, universities/HEIs and economic and social development, university/HE and society/community partnerships, university/HE and economic development, and entrepreneurship and higher education/university.

As configurative reviews are not intended to be an exhaustive search (Gough et al., 2012; Newman & Gough, 2020), this study did not intend to include all possibly available literature on engagement. Instead, the review, which is discussed later,

aimed at providing theoretical and methodological grounding for the development of a comprehensive engagement framework.

Questionnaire development

Questionnaire development involved several steps. Firstly, we identified literature on USE, including university third mission, methodological frameworks, and theoretical frameworks. Based on these, three independent analyses were conducted to identify the core features of engagement. The conceptual mapping was instrumental in informing the development of a comprehensive methodological framework for engagement, consisting of eight domains and 100 indicators. These indicators were aligned with university core missions including teaching/learning (15 indicators), research (15 indicators), and societal service (14 indicators), as well as support systems such as governance (12 indicators), internationalization (12 indicators), partnerships (12 indicators), digitalization (10 indicators), and sustainability (10 indicators), see Table 3 below for detail.

In line with suggestions by Niederberger and Spranger (2020) and Nwori (2011), a seven-point Likert scale was used to rate each item or indicator, where 1, 2, 3, 4, 5, 6, and 7 respectively refer to strongly agree, agree, somewhat agree, neither agree nor disagree, somewhat disagree, disagree, and strongly disagree. An option for comments from panelists about domains, indicators, and the general organization of the framework was also provided.

Panel selection

The selection of the panel for the Delphi studies involved identifying experts with a deep understanding of the issues under study (Green, 2014; Nwori, 2011). Previous research suggests that the minimum sample size for Delphi panelists can vary, with studies recommending sample sizes of 12 (Vogel et al., 2019), 27 (Mengual-Andrés et al., 2016), 10–15 (Nwori, 2011; Skulmoski et al., 2007), 20 (Iqbal & Pipon-Young, 2009), and 11–30 (Woodcock et al., 2020). This study identified 30 professors, associate professors, senior lecturers, and senior researchers teaching and/or researching higher education topics in Africa. Publications on higher education in Africa as journal articles, book chapters, or books was one of the criteria for selecting experts. Experts were identified using electronic search based on their publications and our networks. The selected panelists were working in notable universities in Egypt, Ethiopia, Nigeria, Norway, Uganda, South Africa, and the UK. Some of them held senior leadership positions as director, provost/chancellor, and secretary-general.

We explained the purpose of the study to all potential panelists and secured the consent of 14 for participation by email. We assured them of voluntary participation; withdrawal from the study at any point without explanations; as well as privacy and confidentiality. We asked the experts to judge the salience of the indicators based on their expert opinions which did not in any way interfere with their personal lives and that of the operations of their institutions. Three reminding emails were sent to all, and 14 participants completed the survey based on which analysis was performed.

Data collection and analysis

As web services are known for facilitating efficient Delphi studies (Iqbal & Pison-Young, 2009; Mengual-Andrés et al., 2016), data collection and analysis for this study were conducted using SurveyMonkey. This platform was chosen to enable virtual data collection from panelists located both within and beyond Africa. Given that physical contact was neither necessary nor feasible, SurveyMonkey provided a practical solution for gathering data from the panelists involved in the study.

Various agreement levels are combined to get overall consensus percentages for Delphi studies. Niederberger and Spranger (2020) and Woodcock et al. (2020) indicate 60% or 75% consensus thresholds, respectively. In this study, we did not expect resounding consensus about engagement indicators due to the contentious nature of the phenomenon itself and the intersubjective nature of social research generally. Because of these and because the survey was developed based on an extensive literature review and that the panel data was needed for triangulation and validation, 60% was considered acceptable. Strongly agree, agree, and somehow agree percentages were combined to show overall consensus while disagree, somehow disagree, and strongly disagree were combined to show overall disagreement. The subsequent section maps out the core theoretical, conceptual and methodological features of USE.

Configurative literature review

As indicated above, a configurative literature review was conducted to precisely define the knowledge frontier and then to inform the drafting of the methodological framework this study proposes. The major results of the review are succinctly presented below.

Over the past three decades, there has been a notable proliferation of theoretical and conceptual frameworks exploring emerging functions of universities. These frameworks include the entrepreneurial university model (Clark, 1998; Etzkowitz, 2014), Mode 2 knowledge production (Gibbons et al., 1994), Mode 3 (Barnett, 2004; Carayannis & Campbell, 2006; Jimenez, 2008), and academic capitalism and the new economy (Slaughter & Rhoades, 2009). These frameworks have contributed to the evolving understanding of universities' roles and functions amid societal transformations. Although the specific foci and contexts of these frameworks vary and their generalizability across different settings is not yet fully established, they collectively examine universities' positionings to directly address socio-economic development. These frameworks generally explore the ways in which universities are adapting and responding to the changing demands and challenges of their spheres of influence. Below are some of the key works that directly influenced the development of the methodological framework proposed in this study.

Several conceptual frameworks explain the role of knowledge production in society. This involves what Guston et al. (1994) called a “new social contract” of science whereby academic researchers are called upon to serve the needs of “users” or society including industry and government. For instance, Gibbons et al. (1994) developed Modes 1 and 2 as research strategies to discuss the contexts and purposes of

knowledge production. Mode 1, which is associated with traditional science organized around disciplinary cultures, is more academic with little interest in application whereas Mode 2 is situated primarily within application contexts and is driven by varied interests. Rhoades and Slaughter (2006) further developed the notion of the commercialization of education and research. Frameworks branded as Mode 3 also appear to offer alternative explanations to Mode 2, including the issue of socio-economic development, democratization, and public accountability (Bekele, 2021; Sandstrom, 2014). Modes 2 and 3, tend to complement Mode 1 but the successive modes highlighted inadequacy in their respective predecessors.

The triple helix model refers to interactions among university, industry, and government to foster socio-economic development (Etzkowitz & Leydesdorff, 2000). This model also denotes internal transformations in structures and functions within the three helices that allow them to take on new roles beyond the traditional ones. Carayannis and Campbell (2012) proposed the quadruple helix model adding media-based public and civil society to the triple helix, and later the quintuple helix model adding “natural environment, natural environments of society” to the quadruple helix (p. 20). Overall, the helices models explain how and why university functions and governance become more outward-looking, inclusive, participatory, transparent, and socially accountable.

Clark (1998) also provided an analytical framework within the notion of the entrepreneurial university. Clark drew from the analysis of the five key organizational elements of transformation. Strengthened steering (managerial) core needs to become “quicker, more flexible, and especially more focused in reactions to expanding and changing demands” (Clark, 1998, p. 2). An enhanced developmental periphery entails professionalized interdisciplinary outreach offices, centers, or units responsible for knowledge transfer, fundraising, continuing education, intellectual property development, industrial contact, and alumni affairs. Diversified funding is a base for (institutional) self-reliance and sustainability. A stimulated academic heartland (academic departments) needs to build strong connections with the outside world and provide income from diversified sources. Moreover, a university-wide entrepreneurial culture that embraces change is part of the entry. Although the elements of entrepreneurialism hold significant potential in shaping the development of methodological frameworks to explain USE, it is important to acknowledge that these elements were observed within the specific contexts of five European case universities.

Engagement domains and indicators

While the above frameworks explain alternative research trajectories on emerging university functions, none provides holistic engagement domains and indicators. This research has extracted traces of engagement indicators and proxies and categorized them along university core functions and support structures to facilitate understanding, see Table 1 below. Literature suggests that education, research (knowledge production), partnership, development, governance, sustainability, and internationalization are recognized as the key domains of USE (Barke & Hankins, 2021; Bieluch

Table 1 University-society engagement domains and proxy indicators

Domains	Indicators	Frameworks
Governance	Agile, flexible, democratic (transparent, inclusive, participatory, accountable), entrepreneurial culture	Barnnet, 2004; Carayannis & Campbell, 2006; Clark, 1998, 2004; Rhoades & Slaughter, 2006
Education	Socially relevant curricula, engaging pedagogies, advanced thinking skills, student internship, diversified student population, continuing education	Barnnet, 2004; Carayannis & Campbell, 2006; Clark, 1998; Rhoades & Slaughter, 2006
Research	Application-driven, transdisciplinary, knowledge as reflexive, novel quality control systems, the plurality of the scientific method, external funding	Barnnet, 2004; Carayannis & Campbell, 2006; Clark, 1998; Gibbons et al., 1994; Rhoades & Slaughter, 2006
Developmental outreach	Professionalized outreach offices for knowledge transfer, fundraising, continuing education, intellectual property development, industrial contact, and alumni affairs	Barnnet, 2004; Carayannis & Campbell, 2006; Clark, 1998; Gibbons et al., 1994; Slaughter & Rhoades, 2006
Partnership	Engagements with local, national, continental, and global actors, knowledge management regimes (professional associations, societies, networks, publishers)	Carayannis & Campbell, 2006; Etzkowitz & Leydesdorff, 2000
Sustainability	Outreach offices, entrepreneurial culture, diversified income, intellectual property, alumni fundraising	Clark, 1998; Rhoades & Slaughter, 2006; Slaughter & Rhoades, 2009

et al., 2021; Bölling & Eriksson, 2016). These domains give rise to various indicators, including legal agreements, strategic visions, application driven research and promotion criteria, among others (Boyer, 2016; Derrett, 2013; Milne & Hamilton, 2021).

The domains listed below are discussed in the literature as areas of USE. For instance, a university-industry partnership is taken as a way to integrate the activities of universities with business communities (Bieluch et al., 2021). Partnership schemes are framed within the principles of inclusiveness, mutuality, and shared decision-making (Swick et al., 2021). *Governance* concerns coordination, strategic leadership, management of funding, quality assurance processes, and the integration of related policy (Abaurre, 2014; Ofoyuru, 2018; Paton et al., 2014; Swick et al., 2021). *Education* involves student placement in the form of internships, skills training, public dialogues, and practicum programs (Glass et al., 2011; Karasik & Hafner, 2021; Ofoyuru, 2018). *Research* draws on the role of communities in the process of research and utilization of outputs (Barke & Hankins, 2021; Derrett, 2013; Hart and Aumann, 2013).

Service is also recognized as an important engagement domain (Benneworth, 2013; Boyer, 2016; Ofoyuru, 2018). Indicators of service include agricultural extension, university-managed business incubators, technology transfer, extra-mural education, distance education, legal advice, service learning, clinical services, and management consulting (Banya, & Elu, 2001; Benneworth, 2013). Moreover, *internationalization* ambitions such as recruiting international students and faculty, exchange programs, mobility schemes, joint programs, co-publishing, and international research collaborations are also considered as vital (Syed Kechik et al., 2014). *Sustainability* primarily involves establishing synergy between university vision and culture, democratic practices including transparency and accountability, inclusive and participatory partnerships, dedicated offices for partnerships, and partnerships with industry (Bekele et al., 2021).

Overall, the frameworks and the various engagement domains and proxy indicators highlighted above do not adequately capture and reflect specific socio-economic and political contexts in which universities operate. While they contribute to a macro conceptual mapping, they do not provide logically coherent and comprehensive frameworks for assessing the quality and scope of USE.

Various methodological frameworks (e.g. Frondizi et al., 2019; Jongbloed et al., 2008; Laredo, 2007; Loi and Guardo, 2015; Rubens et al., 2017; Trencher et al., 2014; Schalkwyk, 2015; Zomer and Benneworth, 2011) have identified alternative sets of engagement indicators. Accordingly, USE mainly manifests through community service by transferring knowledge. This transfer is justified both as a means to generate revenue for the university and as a manifestation of the university's prosocial behavior aimed at contributing to socio-economic transformations. However, the frameworks lack detailed and elaborate domains of indicators and organizing logics, which hinders the conceptualization of USE.

Other frameworks (e.g. Addie, 2018; Fitzgerald et al., 2012; Marhl and Pausits, 2011; Montesinos et al., 2008; Secundo et al., 2017) offer better explanatory power as they identify more comprehensive domains and indicators, which can significantly contribute to our understanding of the evolving nature of USE. However, they

also have several limitations that challenge their salience and interpretations across different contexts.

Firstly, there exists a terminological ‘chaos’ that hampers the establishment of a shared understanding among stakeholders. Terms such as third mission, community service, community engagement, university engagement, entrepreneurialism, outreach, service university, service learning, and university-industry linkages are used in the literature without clear operationalizations.

Secondly, most of the domains and indicators coalesce primarily around the concept of third *mission*. This usage restricts engagement to a dedicated third mission only while in practice the frameworks demonstrate the embedded nature of engagement to university core functions of teaching and research as well. Consequently, theorizing engagement by focusing exclusively on the third mission seems restrictive and is inconsistent to emerging conceptions of university missions. The forces of globalization, technological transformations, and development policy regimes such as the SDGs are significant drivers that necessitate the inclusion of engagement indicators linked to core functions and support structures of universities such as governance, technology, internationalization, partnerships, and sustainability. The aforementioned engagement indicators are not directly aligned with these, making it difficult for stakeholders to easily understand and apply the methodological frameworks to assess the extent and quality of university engagements.

Thirdly, recognizing engagement both as a process and an outcome could potentially trigger and drive strategic investment, implementation, and monitoring and assessment efforts. However, the existing frameworks often failed to provide clear and adequate distinctions between engagement as a process and engagement as an outcome. This lack of clarity hinders the comprehensive understanding and effective measurement of the various dimensions of engagement.

Fourthly, it is important to note that the frameworks depict universities as the primary producers, disseminators, and translators of scientific knowledge. However, there is a growing recognition that international organizations are also emerging as alternative knowledge production sites (Bekele et al., 2021; Zaap, 2020) alongside think tanks and government research units. Moreover, universities often engage in research collaborations and partnerships with these international organizations. Therefore, it is necessary to consider this evolving landscape when identifying indicators for USE to ensure a comprehensive and accurate assessment of knowledge production and dissemination dynamics.

Fifthly, it is worth noting that all the frameworks, except for Schalkwyk (2015), have been developed within Western/Northern contexts. While frameworks and theories are generally assumed to have broader applicability, it is important to recognize that the operations of universities are significantly influenced by contextual and national realities (Wit & Altbach, 2021). Therefore, it is crucial to consider the diverse realities and perspectives across different regions when adopting and adapting these frameworks to ensure their relevance and effectiveness. As indicated in the introduction section, African HE operates within mosaic cultures and endures colonial legacies (Assie-Lumumba, 2006) and lacks critical scholarly engagements and humanely faculty- student relationships (Dei et al., 2019; Kom, 2005; Nhemachena & Mawere, 2022). Population size, level of industrialization and democratization,

mindset and institutional culture, and local/national knowledge systems affect the quality and extent of USE. As African universities define *society* to include their spheres of influence at local, provincial or state, national, regional/continental, and global levels (Bekele & Ofoyuru, 2021), frameworks that reflect these dimensions are needed for meaningful study of engagement.

Consequently, frameworks that overcome these and possibly other limitations of existing frameworks are needed for creating common understanding of engagement among stakeholders (Fronzizi et al., 2019; Maassen et al., 2019; Niederberger & Spranger, 2020). This is even more significant for settings such as Africa where there is a dearth of literature on the topic (Bekele & Ofoyuru, 2021; Schalkwyk, 2015).

Towards a comprehensive methodological framework

To contribute to filling this clear gap in our understanding of USE, this study proposes a holistic and generic methodological framework developed based on extensive reviews of theoretical and methodological frameworks, and empirical data. The framework is holistic as it constitutes eight engagement domains aligned with university core functions (teaching–learning, research, service) and supporting structures (governance, digitalization, internationalization, partnerships, and sustainability). The original framework consists of 100 indicators spread across the eight engagement domains.

As detailed in the methodology section ([Panel selection](#)), 14 higher education experts reviewed the methodological framework using a 7-point scale of strongly agree, agree, somehow agree (jointly denoting agreement); disagree, somehow disagree, and strongly disagree (jointly denoting disagreement), and neither agree nor disagree. Applying the 60% agreement threshold, 52 of the 100 items secured clear consensus, see [Table 2](#) for the final indicators. Engagement domains of teaching–learning, research, societal service, governance, internationalization, partnerships, digitalization, and sustainability respectively constitute 8, 7, 6, 7, 7, 7, 7, and 3 indicators. Compared to existing methodological frameworks, this framework proposes a substantial number of indicators better reflecting the versatility and complexity of USE.

The framework is also generic, for it identifies the most salient features of USE beyond institutional and national peculiarities, discussed later. *Methodological framework* denotes the presence of a *logic* and an *analytical* perspective to it, having its own theoretically informed principles, assumptions, domains, indicators, and rating scales to assess USE. The framework adds conceptual clarity and contributes to stakeholder shared interpretations of the different modalities of USE.

Additional attributes of the framework include the following. One, the framework adopts a results framework, including inputs and enabling environments (e.g. supportive policies and guidelines, material and human resources), processes (e.g. active student engagement, community-oriented approaches, inclusive and participatory decision making), outputs (e.g. number of highly engaged faculty, number of professional development programs, number of institutional networks), and outcomes (e.g. student acquisition of skills and competencies,

Table 2 Methodological framework of university-society engagements

Domain	Indicator	Agreement (%)	Score
Teaching–Learning	Curricula reflect societal challenges or needs.	75	2
	Curricula embody local or national knowledge systems.	67	2
	Teaching content informed by contemporary research results.	83	2
	Diversified student population across programs.	67	2
	Adoption of student internships or experiential instruction.	75	2
	Student projects address societal needs or challenges.	67	2
	Instruction promotes skills and competencies relevant to society.	64	2
	The assessment focuses on student skills and competencies.	70	2
Total	8 indicators		16
Research	Research problems mirror societal needs or challenges.	64	2
	Multimethod adopted for studying the research problem.	75	2
	Research engaging graduate students.	75	2
	Number of formal collaborations with other research organizations.	64	2
	Publications in peer-reviewed national and international venues.	75	2
	Research result dissemination in local and national conferences.	83	2
	Researcher engagement in public discussions or discourses.	73	2
Total	7 indicators		14
Service	Consulting (paid) with local, national, and international entities.	92	2
	Academics engaged in public dialogue/lecture.	75	2
	Academics serve as a scientific advisory and board members in society.	75	2
	Number of co-publications with local and national entities.	67	2
	Number of student internships in public and private entities.	64	2
	Relevant distance education programs are available.	64	2
Total	6 indicators		12
Governance	Strategic long-term university vision and planning.	82	2
	Institutional autonomy and academic freedom.	67	2
	Transparency and accountability systems.	83	2
	Inclusive and participatory decision-making at various levels.	64	2
	Centralized and efficient financial management.	73	2
	Faculty and staff incentives and reward systems.	64	2
	<i>University-wide forum for policy-oriented discussions.</i>	64	1
Total	7 indicators		13
Digitalization	Accessible university technology services.	64	2

Table 2 (continued)

Domain	Indicator	Agreement (%)	Score
	University community’s favorable attitude toward technology.	83	2
	Technology-supported teaching, learning, and research.	73	2
	Automation or digitization of university business processes.	73	2
	Institutional policies for technology use, property rights, security.	82	2
	<i>Continuous research or experimentation on strategic technology use.</i>	64	1
	Permanent technology support services, or helpdesks.	70	2
Total	7 indicators		13
Internationalization	Curricula embody international content.	75	2
	International staff, faculty, and student presence.	75	2
	Formal networks with universities and other entities abroad.	92	2
	Research collaboration with international entities.	83	2
	Number of international co-publishing.	75	2
	Faculty, staff, and student presentations at international conferences.	100	2
	Consulting services to international entities.	73	2
Total	7 indicators		14
Partnerships	Institutional networks with local, national, continental, or global actors.	83	2
	Regulations, policies, or laws to govern partnerships.	67	2
	Partnerships in alignment with the university mission.	75	2
	Partnerships built on mutual understanding and reciprocity.	67	2
	<i>Shared decision-making at various levels.</i>	64	1
	Shared knowledge management systems.	64	2
	Open access to partnership outputs, outcomes.	67	2
Total	7 indicators		13
Sustainability	<i>Permanent centers or units for coordinating overall engagement.</i>	67	1
	University-wide culture (mindset) for societal engagement.	67	2
	Diversified and sustainable income sources.	75	2
Total	3 indicators		5
Grand total	52 indicators		100

publications and policy briefs, faculty participation in national policy making and planning). Two, both qualitative and quantitative indicators are included to capture the complexity of the phenomenon. Three, the necessity of fine-tuning university engagements with national, continental, and global realities enhances the societal relevance and significance of universities in Africa. The framework

is consistent with the logic of development and sustainability ushered in the UN 2030 SDGs and in the African Union the Africa We Want 2063 ambitions.

Universities also operationalize societal needs and challenges differently due to variations in contextual realities. Many indicators are thus dedicated to addressing the notion of local contexts, including the inclusion of local knowledge systems and societal needs in university curricula and pedagogy, community participation in the operations of universities, policy and legislative frameworks, infrastructures, and partnerships with civil society groups, non-profit organizations, and business communities. More specifically, the embodiment in curricula of societal needs and local knowledge systems is conceived as a vital manifestation of USE in Africa, see the first two items of the framework in Table 2. To exemplify the proposed embodiment, we draw on Asabiyya and Ubuntu humanistic philosophies respectively from Northern and Southern Africa and Yoruba and Zara Yacob epistemologies respectively from Western and Eastern Africa. Our intention is not to approximate African philosophy through them but to demonstrate the existence of relevant local knowledge systems that could further cement USE in Africa.

If carefully integrated, these African knowledge systems could partly be considered remedies for the local irrelevance of curricula, domineering faculty-student relationships, and faculty-centered education prevalent in African HEI (Bekele et al., 2023). Ubuntu, which means “*a person is a person through other persons*” (Letseka, 2013, p. 339) and Asabiyya, which generally means humanity to others (Shihade, 2022), promote such values as empathy, open communication, engagement, sharing, harmony, cooperation, congruence, and a common worldview. If systematically integrated into education, these humanely values could trigger and drive the reconceptualization of the existing master–slave faculty-student relationships in African campuses.

Moreover, the Yoruba (from Nigeria) and Zara Yacob (from Ethiopia) epistemologies could contribute towards stimulating and supporting meaningful student and faculty scholarly engagements. The Yoruba discourse employs rigorous methodologies and criteria for the production and evaluation of any type of information and knowledge (Wiredu, 2004; Hallen, 1998, 2004). Knowledge produced through first-hand experience that involves testimony is accorded the highest status (*imo*). Rigorous discussions, analyses, testimonies, and reflections are also conducted to distinguish between more reliable and less reliable information (*igbagbo*). Alternatively, Zara Yacob’s rational philosophy called *Hatata* is a distinctive and profound mode of thinking (Sumner, 1978, 2004; Teodros, 2004; Wiredu, 2004). Intentionally doubting the truth value of a phenomenon, systematically dissecting and interrelating ideas, identifying alternative and even conflicting explanations, qualifying them based on the power of reasoning, and finally drawing the most compelling conclusions could induce more faculty and student agency and meaningful engagements (Bekele et al., 2023).

Overall, embodying in curricula Asabiyya and Ubuntu humanistic philosophies and Yoruba and Zara Yacob empiricist and rationalist epistemologies could be considered a powerful strategy to improve the local relevance of HE, which is a vital expression of USE in Africa. Further validation of the methodological framework concerns the development of specific guidelines and rubrics to assess the embodiment in curricula of African knowledge systems and societal needs.

Rating university-society engagements

Existing methodological frameworks do not have ratings and descriptors, making engagement comparisons nearly impossible. Addie (2018) developed an engagement framework with three core categories (Mediation, Centrality, and Difference), 9 indicators, and 19 items. Although this methodology was found relevant in understanding engagement in European and North American universities, it has limitations when applied in other contexts. First, the framework is limited in scale and does not allow a robust explanation and comparison of engagement. The single-digit levels of engagement are also hard to interpret. Second, the indicators are linked to the concepts of mediation, centrality, and difference, which are difficult to explain and understand, especially for practitioners. These limitations partly triggered the development of the comprehensive framework with more elaborate domains, items, and scales.

The framework we are proposing has eight domains and 52 indicators that cut across university core functions and its supporting systems, see Table 2. All the items (indicators) receive two points each, making a total of 104. As the number is usually considered a cap in daily usage and implies a sense of completeness, 100 is the highest engagement score a university could get. To deal with the four extra points, we considered slightly different weights for four items, see those in *Italics* in Table 2. We kept untouched those item weights linked to the core university functions (teaching–learning, research and service) but took one item from each of the supporting systems categories (governance, digitalization, partnerships and sustainability) having agreement percentages lower than 70% and assigned them one point each. In instances where two or more items having the same agreement levels existed within a category, we made judgment about the relative significance of each and assigned one point for the one which appeared pragmatically or conceptually less significant. This appears a subjective exercise, but it does not affect our overall formula as it concerns only four items. Engagement is thus best expressed on a flexible continuum ranging from 1–100.

The assumption is that universities engage with society in some ways and to some extent; the maximum and minimum engagement scores a university can get are 100 and 1, respectively. However, for a meaningful interpretation, ranges of scores are considered, see Table 3. Except for the lowest level of engagement, dubbed as lagging or minimal, equal interval sizes are used. A university with a score between 90 and 100 has an outstanding or ideal engagement with its society, whereas scores below 40 indicate minimal engagement characteristic of the laggards. In between, various engagement levels are found which might best reflect the diversity of African universities as manifested in their extent and quality of engagement with their spheres of influence at several levels.

Some practical implications of the methodological framework are worth considering. First, a university can use this framework to report an overall engagement level along the eight domains. Second, departments, schools, faculties, or colleges within a university can also use the framework to assess their performances along the eight engagement domains. In fact, one typically starts with this analysis level and aggregates data to the entire university. Third, universities can use the

Table 3 Rating of engagement by descriptors

Engagement descriptor	Engagement score	Explanatory notes
Outstanding	90–100	Exemplar/superior/distinguished/ideal engagement
Advanced	80–89	Excellent engagement
Proficient	70–79	Competent/very good engagement
Dedicated	60–69	Moderate/average engagement
Developing	50–59	Expanding/budding engagement
Emerging	40–49	Beginning engagement
Lagging	Below 40	Minimal engagement

framework to compare their extent of engagement over time. Fourth, the framework also allows for inter-university comparisons. Fifth, a university or department can also use one or more of the eight engagement domains to assess their performances in those areas only. Overall, this framework allows intra-university, intra- and inter-domain, and inter-university engagement comparisons.

However, the limitations of this study needs to be acknowledged. Although the sample size (14) satisfies basic requirements from Delphi studies, the inclusion of more scholars from the five regions of Africa could have added more insights. Moreover, the inclusion of varied voices, including university leaders, civil society leaders, and experts working in national, continental and international development organizations could have added more salience. These are considered the major stakeholders who aspire to harness sociocultural and economic transformations of societies through education and knowledge production. Email invitations to participate in this study were sent to 20 leaders but none responded positively. Future scholarly engagements should overcome these and similar challenges.

Further operationalization, validation, and or falsification of the methodological framework across varied contexts can enhance its fecundity. Issues for interrogation include the validation of the framework considering research versus generalist universities, the social sciences and humanities versus the natural sciences and engineering fields, and private versus public universities. More immediate scholarly engagement involves the development of guidelines and rubrics for data collection and analysis, especially for those indicators linked to the inclusion in curricula of local knowledge systems and local societal needs and challenges. The original insights this study offers should be considered as *critical first steps* needed towards developing rigorous and user-friendly methodological tools to assess the quality and extent of emerging university engagements with their spheres of influence.

Acknowledgements We are grateful to TLG Fellows Farah Sherif Sharawy, Reem Ahmed Al-Sulaimani, and Sumood Abdulhadifor for their research assistance linked to literature review.

Author contribution All the authors substantially contributed to the planning, conduct, and write up stages of the research.

Funding This work was partially supported by the U.S. Department of State, Bureau of Near Eastern Affairs, Office of Assistance Coordination through the Tomorrow's Leaders Graduate (TLG) Program administered at the American University in Cairo. The University of Johannesburg covered expenses linked to professional proofreading of the manuscript.

Data availability Available upon request.

Declarations

Competing interest The authors declare they have no conflict of interests.

References

- Addie, J. (2018). Urbanizing university strategic planning: An analysis of London and New York City. *Urban Affairs Review*, 55(6), 1612–1645.
- Abaurre, R. (2014). Engagement Across Geography: A DualCurriculum Program for Brazilian-American Engagement. *Journal of Higher Education Outreach and Engagement*, 18(3), 30–35.
- Artino, A. R., Jr., La Rochelle, J. S., Dezee, K. J., & Gehlbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Medical Teacher*, 36(6), 463–474.
- Assie-Lumumba, N. T. (2006). *Higher education in Africa: Crises, reforms and transformation. (A working Paper Series)*. Centre for Development of Social Science Research in Africa.
- Balsvik, R. R. (2005). *Haile Selassie's students: The intellectual and social background to revolution 1952–1974*. Addis Ababa University Press.
- Banya, K., & Elu, J. (2001). The World Bank and financing higher education in Sub-Saharan Africa. *Higher Education*, 42, 1–34.
- Barke, J., & Hankins, S. (2021). Legacy in collaborative research: Reflections on a community research project. *Journal of Community Engagement and Scholarship*, 14(1), 11. <https://link.gale.com/apps/doc/A689769431/AONE?u=anon-618b9d99&sid=googleScholar&xid=4f86e4c8>
- Barnnet, R. (2004). Learning for an unknown future. *Higher Education Research & Development*, 23(3), 247–260.
- Bekele, T. A. (2021). Problematizing scientization in international organizations. *Nordic Journal of Comparative and International Education*, 5(3), 6–22.
- Bekele, T. A., Amponsah, S., & Karkouti, I. (2023). African philosophy for successful technology integration in higher education. *British Journal of Educational Technology*, 1–19. <https://doi.org/10.1111/bjet.13364>
- Bekele, T. A., & Ofofuru, D. T. (2021). Emerging university-society engagements in Africa: An analysis of strategic plans. *Journal of Comparative and International Higher Education*, 13(1), 151–180.
- Bekele, T. A., Toprak, M., Karkouti, I., & Wolsey, T. (2021). Regional intergovernmental organizations in the Global South: Emerging education policy nodes between the Global and the National. *Educational Policy Analysis Archives*, 29(130), 1–21.
- Benneworth, P. (2013). University engagement with socially excluded communities. In P. Benneworth (Ed), *University engagement with socially excluded communities* (pp. 3–31). Springer Netherlands. <https://doi.org/10.1007/978-94-007-4875-01>
- Bieluch, K. H., Silka, L., & Lindenfeld, L. A. (2021). Stakeholder preferences for process and outcomes in community-university research partnerships: Implications for research collaborations. *Journal of Community Engagement and Scholarship*, 13(2), 1–14.
- Bölling, M., & Eriksson, Y. (2016). Collaboration with society: The future role of universities? *Identifying Challenges for Evaluation. Research Evaluation*, 25(2), 209–218.
- Boyer, E. (2016). The scholarship of engagement. *Journal of Higher Education Outreach and Engagement*, 20(1), 15–28.
- Carayannis, E. G., & Campbell, D. F. J. (2006). 'Mode 3': Meaning and implications from a knowledge systems perspective. In E. G. Carayannis & D. F. J. Campbell (Eds.), *Knowledge creation, diffusion,*

- and use in innovation networks and knowledge clusters: A comparative system approach across the United States, Europe, and Asia (pp. 1–25). Praeger.
- Carayannis, E. G., & Campbell, D. F. J. (2012). *Mode 3 knowledge production in quadruple helix innovation systems: Twenty-first-Century democracy, innovation, and entrepreneurship for development*. Springer.
- Clark, B. R. (1998). The entrepreneurial university: Demand and response. *Tertiary Education and Management*, 4(1), 5–16.
- Clark, B. R. (2004). Delineating the character of the entrepreneurial university. *Higher Education Policy*, 17(4), 355–370.
- Cloete, N., & Maassen, P. (2015). Role of universities and the African context. In N. Cloete, P. Maassen, & B. Tracey (Eds.), *Knowledge production and contradictory functions in African higher education* (pp. 1–17). African Minds.
- de Wit, H., & Altbach, P. G. (2021). Internationalization in higher education: Global trends and recommendations for its future. *Policy Reviews in Higher Education*, 5(1), 28–46. <https://doi.org/10.1080/23322969.2020.1820898>
- Dei, D., Osei-Bonsu, R., & Amponsah, S. (2019). *A philosophical outlook on Africa's higher education in the twenty-first century: Challenges and prospects*. IntechOpen <https://doi.org/10.5772/intechopen.86885>
- Derrett, R. (2013). *Celebrating worthy conversations In University engagement with socially excluded communities* (pp. 33–46). Springer.
- Etzkowitz, H. (2014). The entrepreneurial university wave: from ivory tower to global economic engine. *Industry and Higher Education*, 28(4), 223–232.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and “Mode 2” to a Triple Helix of university-industry-government relations. *Research Policy*, 29, 109–123.
- Fitzgerald, H. E., Bruns, K., Sonka, S. T., Furco, A., & Swanson, L. (2012). The centrality of engagement in higher education. *Journal of Higher Education Outreach and Engagement*, 16(3), 7–26.
- Fronzizi, R., Fantauzzi, C., Colasanti, N., & Fiorani, G. (2019). The evaluation of universities’ third mission and intellectual capital: Theoretical analysis and application to Italy. *Sustainability*, 11(3455), 1–23.
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge*. The dynamics of science and research in contemporary society.
- Glass, C. R., Doberneck, D. M., & Schweitzer, J. (2011). Unpacking faculty engagement: The types of activities faculty members report as publicly engaged scholarship during promotion and tenure. *Journal of Higher Education Outreach and Engagement*, 15(1), 7–29.
- Gough, D., & Thomas, J. (2016). Systematic reviews of research in education: Aims, myths and multiple methods. *Review of Education*, 4(1), 84–102.
- Gough, D., Thomas, J., & Oliver, S. (2012). Clarifying differences between review designs and methods. *Systematic Reviews*, 1(28), 1–9.
- Green R. A. (2014). The Delphi technique in educational research. *Sage Open*, 1–8, <https://doi.org/10.1177/215824401452977>
- Guston, D. H., & Keniston, K. (Eds.). (1994). *The fragile contract: University science and the federal government*. MIT Press.
- Hallen, B. (2004). Contemporary Anglophone African philosophy: A survey. In K. Wiredu (Ed.), *A companion to African philosophy* (pp. 99–143). Blackwell Publishing.
- Hallen, B. (1998). Yoruba epistemology. *Routledge Encyclopedia of Philosophy*. Routledge. <https://doi.org/10.4324/9780415249126-Z005-1>
- Hallinger, P. (2013). A conceptual framework for systematic reviews of research in educational leadership and management. *Journal of Educational Administration*, 51(2), 126–149. <https://doi.org/10.1108/09578231311304670>
- Hart, A., & Aumann, K. (2013). Challenging inequalities through community–university partnerships. In P. Benneworth (Ed.), *University engagement with socially excluded communities* (pp. 47–65). Springer.
- Iqbal, S., & Pison-Young, L. (2009). The Delphi method. *Methods*, 22, 598–600.
- Jimenez, J. (2008). Research socially responsible: May we speak of a mode 3 knowledge production? *Electronic Journal of Communication, Information & Innovation in Health*, 2(1), 48–56.
- Jongbloed, B., Enders, J., & Salerno, C. (2008). Higher education and its communities: Interconnections, interdependencies and a research agenda. *Higher Education*, 56, 303–324.

- Karasik, R. J., & Hafner, E. S. (2021). Community partners' satisfaction with community-based learning collaborations. *Journal of Community Engagement and Scholarship*, 14(1), 1.
- Kom, A. (2005). Redesigning the African university: Emerging from subalternity. *CODESRIA Bulletin*, 1–2, 4–8.
- Laredo, P. (2007). Revisiting the third mission of universities: Toward a renewed categorization of university activities? *Higher Education Policy*, 20, 441–456.
- Legrand, F., Boulkedid, R., Elie, V., Leroux, S., Valls, E., et al. (2014). A Delphi process to optimize quality and performance of drug evaluation in neonates. *PLoS ONE*, 9(9), 1–15.
- Letseka, M. (2013). Educating for *Ubuntu/botho*: Lessons from Basotho indigenous education. *Open Journal of Philosophy*, 3(2), 337–344.
- Loi, M., & Guardo, M. C. (2015). The third mission of universities: An investigation of the espoused values. *Science and Public Policy*, 42, 855–870.
- Maassen, P., Andreadakis, Z., Gulbrandsen, M., & Stensaker, B. (2019). *The place of universities in society*. Study for the Global University Leaders Council.
- Marhl, M., & Pausits, A. (2011). Third mission indicators for new ranking methodologies. *Evaluation in Higher Education*, 5(1), 43–64.
- Mayaki, I. S. (2019). *Africa's critical choices: A call for a Pan-African roadmap*. Routledge.
- Mengual-Andrés, S., Roig-Vila, R., & Mira, J. B. (2016). Delphi study for the design and validation of a questionnaire about digital competences in higher education. *International Journal of Educational Technology in Higher Education*, 13(1), 1–11.
- Milne, E., & Hamilton, L. K. (2021). Navigating personal, professional, institutional, and relational dimensions of community-engaged research. *Journal of Community Engagement and Scholarship*, 14(1), 12.
- Montesinos, P., Carot, J. M., Martinez, J., & Mora, F. (2008). Third mission ranking for world class universities: Beyond teaching and research. *Higher Education in Europe*, 33(2), 259–271.
- Newman, M., & Gough, D. (2020). Systematic reviews in educational research: Methodology, perspectives and application. In O. Zawacki-Richter, M. Kerres, S. Bedenlier, M. Bond, & K. Buntinspp (Eds.), *Systematic reviews in educational research: Methodology, perspectives and application* (pp. 3–22). Springer VS.
- Nhemachena, A., & Mawere, M. (2022). Academics with clay feet? Anthropological perspectives on academic freedom in twenty-first century African universities. *Journal of African American Studies*, 26, 142–165. <https://doi.org/10.1007/s12111-022-09584-4>
- Niederberger, M., & Spranger, J. (2020). Delphi technique in health sciences: A map. *Methods*, 8, 1–10.
- Nowotny, H., Scott, P., & Gibbons, M. (2003). Introduction: 'Mode 2' revisited: The new production of knowledge. *Minerva*, 41, 179–194.
- Nwori, J. (2011). Using the Delphi technique in educational technology research. *TechTrends*, 55(5), 24–30.
- Ofoyuru, D. T. (2018). *Institutional and disciplinary perspectives for community transformation in Gulu University*. Unpublished Doctoral Dissertation Makerere University.
- Paton, V. O., Reith, C. C., Harden, K. K., Abaurre, R., & Treblay, C. (2014). Boundary spanning: Engagement across disciplines, communities and geography. *Journal of Higher Education Outreach and Engagement*, 18(3), 23.
- Pugh, R., Lamine, W., Jack, S., & Hamilton, E. (2018). The entrepreneurial university and the region: What role for entrepreneurship departments? *European Planning Studies*, 26(9), 1835–1855.
- Rhoades, G., & Slaughter, S. (2006). Mode 3, academic capitalism and the new economy: Making higher education work for whom? In V. P. J. Tynjälä & G. Boulton-Lewis (Eds.), *Higher education and working life-collaborations, confrontations, and challenges* (pp. 9–33). Elsevier.
- Rubens, A., Spigarelli, F., Cavicchi, A., & Rinaldi, C. (2017). Universities' third mission and the entrepreneurial university and the challenges they bring to higher education institutions. *Journal of Enterprising Communities: People and Places in the Global Economy*, 11(3), 354–372.
- Salomaa, M. (2019). Third mission and regional context: Assessing universities' entrepreneurial architecture in rural regions. *Regional Studies, Regional Science*, 6(1), 233–249. <https://doi.org/10.1080/21681376.2019.1586574>
- Sandstrom, G. (2014). Higher education and science for development: The historical and conceptual foundations of Mode 3 knowledge. *Education Sciences & Society*, 1, 15–44.

- Schalkwyk, F. (2015). University engagement as interconnectedness: Indicators and insights. In N. Cloete, P. Maassen, & B. Tracey (Eds.), *Knowledge production and contradictory functions in African higher education* (pp. 203–229). African Minds.
- Schmalz, U., Spinler, S., & Ringbeck, J. (2021). Lessons learned from a two-round Delphi-based scenario study. *Methods*, 8, 1–17.
- Secundo, G., Perez, S. E., Martinaitis, Ž., & Leitner, K. H. (2017). An intellectual capital framework to measure universities' third mission activities. *Technological Forecasting & Social Change*, 123, 229–239.
- Shihade, M. (2022). Asabiyya. In D. M. Menon (Ed.), *Changing theory: Concepts from the Global South* (pp. 169–180). Routledge.
- Skulmoski, G. J., Hartman, H. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education*, 6, 1–21.
- Slaughter, S., & Rhoades, G. (2009). *Academic capitalism and the new economy: Markets, state, and higher education*. The Johns Hopkins University Press.
- Sumner, C. (1978). *The treatise of Zera Yacob and of Walda Heywat: An analysis*. Commercial Printing Press.
- Sumner, C. (2004). The light and the shadow: Zera Yacob and Walda Heywat: Two Ethiopian philosophers of the seventeenth century. In K. Wiredu (Ed.), *A companion to African philosophy* (pp. 172–182). Blackwell Publishing.
- Swick, D. C., Powers, J. D., & Cherry, J. (2021). University-school partnerships: 10 lessons learned over the past 10 years. *Journal of Community Engagement and Scholarship*, 14(1), 3.
- Syed Kechik, S. Y., See, C. M., & Mohamed Ismail, S. A. M. (2014). Community engagement setting pathway to synergistic partnership. *International e-Journal of Community & Industry Engagement*, 1, 72–91.
- Teodos, K. (2004). Zera Yacob and traditional Ethiopian philosophy. In K. Wiredu (Ed.), *A companion to African philosophy* (pp. 183–190). Blackwell Publishing.
- Trencher, G., Yarime, M., McCormick, K. B., Doll, C. N., & Kraines, S. B. (2014). Beyond the third mission: Exploring the emerging university function of co-creation for sustainability. *Science and Public Policy*, 41, 151–179.
- Vogel, C., Zwolinsky, S., Griffiths, C., Hobbs, M., & Henderson, E., & Wilkins, E. (2019). A Delphi study to build consensus on the definition and use of bigdata in obesity research. *International Journal of Obesity*, 43, 2573–2586.
- Wiredu, K. (2004). Introduction: African philosophy in our time. In K. Wiredu (Ed.), *A companion to African philosophy* (pp. 1–27). Blackwell Publishing.
- Woodcock, T., Adeleke, Y., Goeschel, C., Pronovost, P., & Dixon-Woods, M. (2020). A modified Delphi study to identify the features of high-quality measurement plans for healthcare improvement. *Medical Research Methodology*, 20(8), 1–9.
- Zapp, M. (2020). The authority of science and the legitimacy of international organizations: OECD, UNESCO and World Bank in global education governance. *Compare: A Journal of Comparative and International Education*. <https://doi.org/10.1080/03057925.2019.1702503>
- Zomer, A., & Benneworth, P. (2011). The use of the university's third mission. In J. Enders, H. F. de Boer, & D. F. Westerheijden (Eds.), *Reform of higher education in Europe* (pp. 81–101). Sense Publishers.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.

Teklu Abate Bekele (PhD) is Associate Professor of International and Comparative Education at the Department of Educational Studies, School of Humanities and Social Sciences, The American University in Cairo. Employing international and comparative perspectives, Bekele studies higher education functions and missions with a focus on Africa. His current studies interrogate emerging university-society engagements as expressions of the societal relevance and significance of higher education.

Dr. Denis Thaddeus Ofoyuru is a higher education scholar focusing mainly on African higher education, basic education and child focused studies. He holds a Ph.D in Education Management from Makerere University. He is currently the Dean, Faculty of Education and Humanities Gulu University.

Emnet Tadesse Woldegiorgis is Associate Professor and Director at the Ali Mazrui Centre for Higher Education Studies, University of Johannesburg. He is an NRF rated researcher who has published several academic works on issues of higher education in Africa.

Authors and Affiliations

Teklu Abate Bekele¹  · **Denis Thaddeus Ofoyuru**² · **Emnet Tadesse Woldegiorgis**³

✉ Teklu Abate Bekele
teklu.abate@aucegypt.edu

- ¹ Department of Educational Studies, School of Humanities and Social Sciences, The American University in Cairo, New Cairo 11835, Egypt
- ² Department of Education Management and Administration, Gulu University, Gulu, Uganda
- ³ Ali Mazrui Center for Higher Education, University of Johannesburg, Johannesburg, South Africa