Developing capacities for meeting the SDGs: exploring the role of a public land-grant institution in the civic engagement of its African alumni

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Developing capacities for meeting the SDGs: exploring the role of a public land-grant institution in the civic engagement of its African alumni

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Abstract

Higher education institutions and lifelong learning opportunities offer important skills and knowledge for developing the complex, sustainable, and integrated solutions that the Sustainable Development Goals (SDGs) require. Utilizing interview data from a retrospective study of 14 African alumni of a US public land-grant institution, this research explores alumni's lived experiences to understand how their graduate education contributed to post-graduate civic engagement activities that are aligned with the SDGs. Each individual's social, civic, and political experiences are mapped along a spectrum of political and civic engagement to provide a foundation for drawing out the types of capacities developed. We contend that developing greater capacity for civic engagement may contribute to sustainable development as outlined in SDG 4.7. Findings indicate that while alumni experiences varied, the majority of alumni had greater engagement post-degree. Core capacities developed among alumni, which may have contributed to this engagement, include researchers' empowerment through development of hard and soft skills, expanded networks, and enhanced confidence for graduate students both intrinsically and because of the credential they achieved.

Keywords International development · Social and civic engagement · Scholarships · Alumni · Africa

Introduction

The UN's Sustainable Development Goal 4 (SDG 4) aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UN, 2018, p. 6). While SDG 4 builds on earlier global development and education strategies such as

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the Millennium Development Goals (MDGs) and Education for All (EFA), its focus on lifelong learning and tertiary education is new (Webb et al., 2017). This new orientation is important because it recognizes that higher education institutions and lifelong learning opportunities offer important skills for developing the complex, sustainable, and integrated solutions that the SDGs require.

While six of the seven sub-goals of SDG 4 focus on improving access to education for individuals, SDG 4.7 promotes knowledge for sustainable development, which includes a dual focus on training the individual and developing knowledge for the wider society. "The knowledge, skills, values, and attitudes required by citizens to lead productive lives, make informed decisions, and assume active roles locally and globally in facing and resolving global challenges can be acquired through education for social development and global citizenship education" (UNESCO, 2015, p. 49). Therefore, knowledge for sustainable development is not just about economic gains; it is also about people acquiring knowledge and skills that contribute to the common good, which are not always easily measured in economic terms, but will likely lead to progress on the other SDGs.

SDG 4.b lays aims to increase educational opportunities for individuals. It calls for scholarships for students, particularly from Africa, to pursue higher education and lifelong learning. The section states that by 2020, the goal is to "substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States, and African countries, for enrolment in higher education…" (UNESCO, 2015, p. 52).

This article argues that the development of capacities inherent in higher education and scholarship programming opens up opportunities for enhancing students' and alumni's civic engagement through research, community engagement, and/or activism. Higher education training programmes can bring together the dual purposes of education outlined in SDG 4: transforming lives of individual learners and contributing to sustainable development more broadly. We start with the concept of engagement (Boyer, 1996), which asserts that universities have the obligation to solve social problems for the greater good, to frame the connection between higher education and individual capacities. We then adapt and apply Eckman and Anma's (2012) conceptual framework of civic engagement and political participation which specifies definitions of engagement by mapping individuals' actions over the course of their lives. Using these trajectories as the foundation, we then analyze the skills and knowledge that alumni identified as making the greatest contribution to enhancing their capacity for and interest in civic engagement. This has implications for how graduate education programs might cultivate student capacities that could support progress toward the SDGs.

This study contributes to the understanding of how scholarships for international higher educational experiences can be designed to enhance skills and knowledge for civic engagement. Campbell and Mawer (2018) identify that 4.b focuses on improving educational opportunities; it does not focus on how students take up these opportunities, how they complete them, nor how they apply their learning from them. As more scholarships are developed for students from Africa, many of which will be international scholarships, past African alumni experiences with international higher education are important for understanding ways scholarships can support knowledge for sustainable development. We contend that engagement for sustainable development includes an assumption that educational opportunities support increased skills, knowledge, and motivations towards the common good.

To examine these linkages, this study explores the experiences of 14 African alumni of graduate programs at Michigan State University (MSU). These alumni responded to a

request to participate in a larger study examining the lives of African alumni from international universities (Marsh et al., 2016). For this study, we chose to narrow the focus on a specific institution (MSU), which has a mission to solve local and global problems, and to focus on graduate-level education to understand how complex skills and knowledge are acquired for developing solutions that the SDGs require.

Research questions

Two research questions drive this study:

1) What are the engagement trajectories of select African alumni from MSU?
2) What capacities were developed that supported greater civic engagement during and after the African alumni's graduate experiences that may contribute to developing the solutions the SDGs require?

The assumptions behind these questions is that if students are provided with a quality education, their knowledge and skills, networks, and opportunities will support them to have a greater impact on humanity.

Michigan State University context and background

Based on Nespor (2000) and Tuck and McKenzie's (2015) arguments highlighting the importance of naming places in qualitative research in order to interrogate assumptions and ensure that analysis is grounded in history and geography, we chose to name the institution in this study. MSU's heritage as a public land-grant institution can provide a relevant case to understand how its values as well as its location in the "global North" may impact the civic and social engagement trajectories of its alumni.

US public land-grant universities, established by the Morrill Act of 1862, were founded on the ideal service to community and nation (Kellogg Commission, 1999). Known for the "extension model," which makes knowledge produced through research available to the surrounding community, land-grant universities like MSU assert that knowledge should be not only theoretical but also applicable (Collins, 2012). This focus on societal impact and service aligns directly with Boyer's (1996) "scholarship of engagement" which emphasizes "connecting the rich resources of the university to our most pressing social, civic, and ethical problems" (p. 27).

MSU has a history of connecting research to solving global challenges, such as the SDGs, particularly in Africa (Cummings 1998). The university has played a role in international development and has made a specific investment in building partnerships in Africa, particularly on food security and agricultural development (Abaye et al, 2018, Collins, 2012, APLU Knowledge Center 2014, Jamison et al. 2017). Beginning in 1960, with MSU's role in founding Africa's first land-grant university, the University of Nigeria Nsukka, the university has maintained a strong institutional commitment to African engagement. MSU currently has over 250 faculty engaged in research, teaching, and development in nearly every African country and in nearly every academic discipline.

MSU, like many public land-grant universities, has enrolled large numbers of students from developing countries through scholarship programmes funded by the US government

or foundations like Rockefeller and Mastercard. Specific programmes include the USAID African Graduate Fellowship Program (AFGRAD) (1963–1997), the Mastercard Foundation Scholars Program (2012–2018), and USAID Borlaug Higher Education for Agriculture Research and Development Program (2012–present). As of 2016, MSU had approximately 1750 African alumni.[1]

We recognize that several dynamics may have shaped the study participants' engagement trajectories, such as global power structures, contextually bound understandings about social and civic engagement, and how MSU has engaged with African colleagues and partners. Therefore, MSU's location in the global North and the evolution of the relationships between US and African institutions are also important to critically consider.

During the early stages of USA-Africa engagement, technical assistance, coupled with large infrastructure projects, became the dominant aid model to African countries (Koch and Weingart, 2016). This model normalized the idea of a one-way flow of expertise, from the North to the South. In the 1980s, international financial agencies like the IMF and the World Bank imposed neoliberal policy reforms which formally consolidated a hierarchical model of "donorship" (Koch and Weingart, 2016). The 1990s saw critics' voices grow stronger globally in declaring that top-down, Northern-led technical assistance was a failing model. This sparked a shift in rhetoric to the language of "partnership," equity, and transparency in supporting local African institutions' capacity to address global challenges (Jamison et al. 2017) and signaled a desire to move to more equitable relationships that acknowledge the strengths of both partners but are led by local African priorities.

Institutions like MSU engaged vigorously in these debates. In 1993, MSU adopted guidelines for ethical USA-Africa cooperation (Jamison et al, 2017), and in 2016, they established the Alliance for African Partnership[2] focused on building equitable relationships among US and African institutions to address the global challenges highlighted by the SDGs.

Defining engagement: social involvement, civic engagement, and political participation

Enhancing opportunities and skills for greater engagement is at the heart of promoting knowledge for sustainable development and specifically addresses the goals outlined in SDG 4.7: cultivating the skills, knowledge, and values necessary to resolve global challenges. In his influential 1996 essay, Ernest Boyer, former president of the Carnegie Foundation for the Advancement of Teaching, championed a call for universities to return to a focus on global challenges. He advocated for a commitment to "a scholarship of engagement" which he defined as a re-orientation of universities back to being a "vigorous partner in the search for answers to our more pressing social, civic, economic, and moral problems"(Boyer, 1996, p. 11). This approach integrates service, which is often referred to as the "third pillar of the university" (Appe et al., 2017), into its other two missions, teaching and research. Boyer's scholarship of engagement draws on the ideals of the land-grant philosophy pioneered in the USA. It also aligns directly with the model of

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[1] This estimated number of MSU African alumni comes from a comprehensive tracking effort undertaken as part of a Mastercard Foundation-funded study (Marsh et al., 2016).

[2] See the African Studies Center website for its Ethics for Engagement with Africa: https://msu.edu/course/aec/874/Pages/African_Studies_Center.Ethics%20for%20Research%20in%20Africa.MSU.php.htm

Fig. 1 Overlap of social involvement, civic engagement, and political participation adapted from Ekman and Anma (2012)
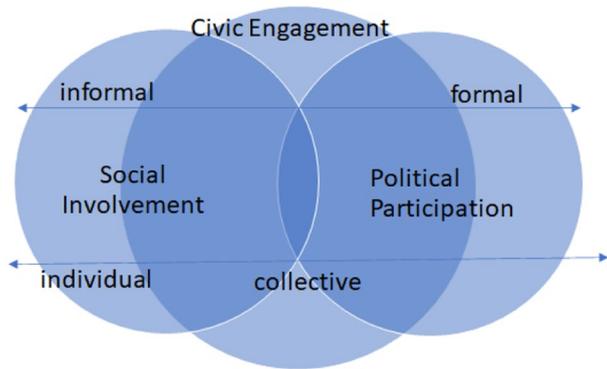
the developmental university or the "African university" that emerged across post-colonial Africa in the 1960s and 1970s, which put an emphasis on higher education serving local communities. This idea has recently re-emerged with current calls to decolonize the African university, which includes orienting the institution to serve African priorities and address societal challenges (Coleman, 1986; Yesufu, 1973; Mbembe, 2016).

Engagement as Boyer defines it is a broad concept which speaks to the orientation of an institution. Definitions of civic engagement, which are firmly embedded in the scholarship of engagement, home in more closely on the connection between higher education institutions and individual's actions and motivations. In his *Civic Responsibility and Higher Education* (2000), Ehrlich connects the role of the institution with the individual. He defines civic engagement as a person "working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community"(p. vi). Similarly, Adler and Goggin (2005) analyze the multitude of definitions of civic engagement and settle on a broad definition very much in line with Ehrlich's (2000): "how an active citizen participates in the life of a community in order to improve conditions for others or to help shape the community's future" (p. 241). While these definitions of civic engagement are useful to help understand individuals' actions and values, Ekman and Anma (2012) argue that in recent years "civic engagement has arguably become something of a catch-all concept, less than ideal for precise empirical analysis of the conditions for citizen's involvement in society" (p. 288). They, therefore, propose a typology which recognizes the "multidimensionality of civic engagement and political participation and asserts that we can better understand civic engagement by linking it to specific individual or collective actions" (p. 291). Ekman and Anma present civic engagement as an overarching concept that overlaps with aspects of both social involvement and political participation, as illustrated in Fig. 1.

The distinctions Ekman and Anma (2012) provide identify between private and public—or individual and collective activities—and/or informal and formal activities that lead to political participation. If considered on a spectrum, social involvement captures the private and individual forms of engagement, and, on the other end, there is political participation, which captures formal and collective forms of engagement. Social involvement is defined as an interest and curiosity about social and political processes. Social involvement is mostly at an individual level, yet there can be some collective forms. Collective forms of participation are mostly in relation to civic engagement and political participation. Political
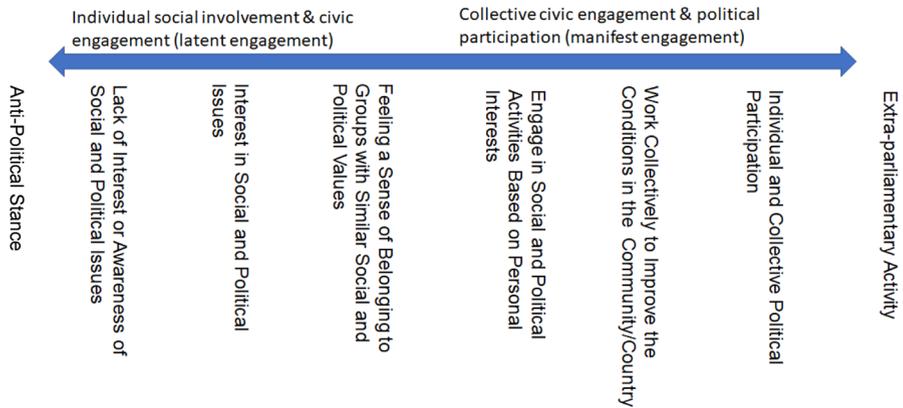
adapted from Ekman & Anma (2012)

Fig. 2 Types of civic engagement

participation is defined as "all actions directed towards influencing governmental decisions and political outcomes" (p. 289).

Ekman and Anma (2012) further articulate the differences between social involvement and political participation as two forms of civic engagement: manifest and latent forms. Latent forms of civic engagement are more informal and can be understood as social involvement. The importance of understanding this distinction between manifest and latent forms is that latent forms help us to "understand new forms of political behaviour and the prospects for political participation in different countries" (p. 283). An extreme form of latent engagement would be taking an anti-political stance, namely refusing to engage politically or socially. The manifest forms of civic engagement include political participation, such as voting or running for office. Extreme forms of manifest engagement can be activist or extra-parliamentary, such as joining a militia group or protesting the government.

Ekman and Anma developed this typology to understand new forms of "latent" social and civic engagement that may lead to greater political participation in the future. They identify these latent forms as "pre-political" or "potentially political," which implies a "potential willingness to take action" (p. 297). From this typology, we developed a spectrum (see Fig. 2) of civic engagement against which we could measure the nature of the engagement activities of the 14 alumni.

In order to chart how an individual's actions and motivations may have changed over time and the nuances inherent in the interrelated concepts like social involvement and political participation which overlap with civic engagement, we utilize an adapted version of Ekman and Anma's typology. The alumni interviews highlighted the need for specificity and gave insight into how participants interpreted these ideas related to social engagement that we then mapped onto the adapted framework. At this point, it is important to acknowledge that African contexts influence how ideas embedded within civic engagement may be defined differently than within the western framework articulated by Ekman and Anma. Thomson et al. (2011) assert that terms such as civic engagement, service, and community engagement remain contested, especially in non-western contexts. In their comparative analysis of the USA, South Africa, and the Democratic Republic of the Congo, they

contend that in the USA, the term "civic" is rooted in "the expected rights and responsibilities of citizens who hold their government accountable" (Thomson, et al. 2011, p. 222). It has a different meaning, however, in contexts where the democratic state is either still developing or non-existent. In this case, "community engagement" may be used instead as a broad term meaning work that engages and positively impacts society at large.

The definition of "service"—a term closely related to civic engagement and community engagement—is similarly dependent on context. Thomson et al. (2011) found that the colonial and racial histories of both the DRC and South Africa shape perceptions of service as aligned with "subordination, oppression, and injustice" (p. 224), while in the USA, it is often associated with charity work and civic virtue. As we developed the spectrum in Fig. 2, we were careful to include categories related to contextual definitions of social involvement, civic engagement, and political participation that emerged from the interviews and which were not captured in Ekman and Anma's original typology. In our adapted version, we have added "work collectively to improve conditions in the community/country," which includes seeking careers in public service. Work in public service was not identified by Ekman and Anma as a form of civic engagement.

These eight types of social, civic, and political engagement activities capture various levels of participation—either individually or collectively. Over the course of a person's life, one might move up and down this spectrum, depending on their life choices and demands. Some may start with no civic engagement or social involvement, but then move to an awareness of social issues, which perhaps then instigates individual action to be socially involved (e.g., vegetarianism or recycling). This social involvement may then spark individual action to be civically engaged, such as writing an opinion piece for the newspaper. This form of civic engagement might then move towards a more formal mode of civic engagement, which is collective in nature, such as working with organizations collectively to improve an aspect of society, such as eradicating poverty, or reducing water usage in water-deprived regions. Finally, civic participation includes engaging in the political process and lastly becoming politically active. On the spectrum above, extra-parliamentary activity is also noted as an extreme form of political participation in that there may be legal or illegal forms of political participation (namely as protest forms of participation). On the other end of the spectrum, someone may choose to take a non-participation and/or anti-political stance, which means that they are either not interested in political or civic engagement, or resist participating in politics, perhaps because they feel they do not have a voice or have become disenfranchised.

Methodology

The study utilizes life history interview data from a 2-year multi-university retrospective tracer study of African graduates of six universities (Marsh et al., 2016).[3] The 14 interviews included in our analysis were conducted with participants from nine African countries, Kenya ($n = 2$), Tanzania ($n = 2$), Rwanda ($n = 2$), Uganda ($n = 3$), Somalia ($n = 1$), Malawi ($n = 2$), and Senegal ($n = 2$), and were exclusively MSU alumni. For the larger study, 100 participants were interviewed in total. They were located in the USA and various regions of Africa.

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[3] The authors were part of the research team of the larger study.

This article focuses specifically on African graduates from MSU's graduate schools to gain a deeper insight into the role a university, with a long history of engagement with Africa, can play in enhancing an individual's social, civic, and political engagement. We chose MSU because of its long history of developing partnerships with African institutions, and its focus on equity and transparency to support individual and institutional capacity to address global challenges.

African alumni were identified through an extensive tracking effort and then recruited for interviews through a convenient sampling from select countries of residence based on regional diversity. We chose to examine alumni of graduate programs, rather than including undergraduate alumni, due to the differences of student development. The interviews produced life histories which are essentially spoken autobiographies that seek to understand the participants' lived experiences (Henige, 1982). Thirteen interviews were carried out in person, and one was on Skype. The interviewers asked open-ended questions, and the interview protocol was designed in such a way as to allow the participants to reconstruct a loose chronology of their lives. Interviews examined participants' retelling of their childhoods, early academic experiences, study at MSU, and their social, civic, and political engagement experiences throughout their lives. At the time of the interviews, 10 participants were living in their country of origin, one was living in another country in Africa, and three were living in the USA.

The interview protocol included a specific section on personal values and social and civic engagement. Within the initial multi-institutional study, social and civic engagement were broadly defined as contributing to social change and development either in their country of origin or in their educational host country (Marsh et al., 2016). Sample questions included: "Have you had opportunities to influence the development of institutions or organizations within your country/region of origin and/or host country?"; "Tell us about any of your other social engagement activities as a volunteer, leader, philanthropist, or activist."; "As you reflect on your social/civic engagement activities, how would you describe the influence, if any, of your international university education?" There were also questions in other sections of the interview that elicited responses about alumni's civic engagement actions and motivations. For example, at the end of the interview, we asked alumni for any advice they might give to future African students studying abroad, and several responded by recounting instances where they took actions falling under our definition of civic engagement. We also asked them about motivations for returning home or staying in their host country, and this led to significant data on their attitudes and actions related to civic engagement.

The data from 14 MSU alumni were examined again separately from the Marsh et al. (2016) study to dig deeply into the nature of their social, civic, and political engagement over the course of their lives. The findings presented in this study are different from the larger study by Marsh et al. (2016) because we are focused on different research questions and conceptual framework. Our method is also different from the larger study. In the larger study (Marsh et al., 2016), a codebook was used to code alumni civic and social engagement as well as other themes. For this study, the codes were initially used to map out the trajectories of alumni civic and social engagement during the three stages of their lives: (1) before studying at MSU, (2) during their studies at MSU, and (3) after completion of their studies. However, during this process, it became clear that nuances and other life experiences were not being captured by the a priori coding. Therefore, the 14 transcripts were read multiple times to determine where on the spectrum alumni were at each stage of our adapted typology during these three stages of their lives. We took the highest level of engagement they achieved within that time frame. We conducted a final reading of the

transcripts in their entirety using open coding to confirm findings and to determine if there were any patterns among the participants who had similar trajectories. To ensure trustworthiness of the data analysis, particularly the mapping of the life trajectories, an audit was conducted by an external researcher. Lastly, transcripts were read again to articulate the capacities that were emphasized through the self-identified experiences of alumni that were useful to their social, civic, and political engagement after they graduated from MSU.

Participants

The participants represented various decades of MSU's relationship with Africa. They were enrolled at MSU across various years and were not in the same scholarship and/or academic programme. While we are not protecting the identity of the institution in this study for geographical and historical reasons, we have taken steps to preserve the participants' stories while still protecting their identities. To that end, we have given each participant a pseudonym. Not surprisingly, given its land-grant roots, the majority of alumni came from the applied sciences ($n = 12$), specifically agricultural sciences ($n = 9$), veterinary medicine ($n = 1$), global public health ($n = 1$), and food sciences ($n = 1$). One studied history and another alumna pursued education.

As children, the majority of the participants came from low socio-economic backgrounds ($n = 10$). A majority of the participants obtained their Ph.D. degrees ($n = 10$) from MSU. For the four who completed their master's degrees at MSU, two participants went to Europe to pursue Ph.D. degrees, one stopped their education, and one completed their MSU degree online. All of the alumni who completed master's degrees at MSU have returned to their home countries. All four of the alumni who live outside their home countries achieved doctoral degrees at MSU. Three of these four also completed their master's degrees outside their country of origin. In the analysis, we did not find any patterns in the engagement trajectories of alumni who had previous international experiences.

Limitations

There are several limitations to this study. Very few women participated in it. This is not surprising as women make up less than 30% of MSU's African alumni. The findings also illustrate the life histories of a unique population of African alumni who mostly studied agricultural sciences at the doctoral level, which may not be representative of the larger population of African graduates from MSU. This study should not suggest that working towards a degree at MSU is a monolithic experience. Alumni came from various backgrounds and national contexts; however, they have a shared experience of graduate education at MSU. The intent of this study was not for the individual stories to be generalizable but to find patterns inherent in their shared international graduate education experience and to investigate whether the development of capacities inherent in higher education programming opens up opportunities for social, civic, and political engagement.

There are a few limitations to mapping social, civic, and political engagement in a linear fashion, since this can imply that one must go through each stage to reach the next. While this typology suggests political participation is the goal, the spectrum is intended to capture choices that participants made throughout their lives. These choices are fluid and depend on individual, family, and community needs. We found in the analysis that participants skipped stages and moved backwards and forwards, depending on the given time and their life priorities, such as choosing to step back from civic and social engagement activities to complete an

educational degree or to take care of family. In addition, we tried to mitigate the challenges inherent in applying a Western model for engagement activities to understand African lived experiences by adapting the typology model to include participants' contextual definitions of engagement.

Our assumption is that developing greater capacity for engagement increases opportunities for social change. The SDGs embed social change in their targets, such as ending poverty, reducing climate change, and improving opportunities for women. We contend that developing the necessary capacities for engagement through higher education programming can contribute to future opportunities for sustainable development. Additionally, we also assume those who are ranked higher on their scale have an increased disposition towards social development as outlined in SDG 4.7.

Findings

We begin this section with a description of the African alumni's engagement trajectories, followed by the findings that identify the capacities that supported the overall increase of engagement over the course of their lives. Each description of the three types of engagement trajectories illustrates alumni's values and life choices. The three main capacities we identified that supported their overall engagement highlight how they cultivated an enhanced sense of agency through the skills they developed and the networks they gained by being connected to MSU.

Social, civic, and political engagement trajectories of MSU alumni from Africa

In looking across all interviews, 10 participants voiced an interest in pursuing a career that helped others. When alumni shared their life decisions, pursuing a career in public service, such as becoming a university professor, veterinarian, or food scientist, often included a combination of individual interests in contributing to society (social involvement) and collectively engaging in a particular area of public service where they could contribute their expertise and talents collectively towards the advancement of social change (civic engagement). Those 10 who pursued a career in public service ranked higher along the spectrum in Fig. 2 above, which is an important finding to understanding social and civic engagement of these African alumni.

We found that there were three types of alumni profiles before starting MSU and three types following graduation. The three types of alumni profiles before starting MSU are (1) those who came to MSU with careers in public service ($n = 9$), (2) those who came to MSU civically engaged in the political process and/or participated in social change activities at home ($n = 4$), and (3) those who came to MSU only aware of social issues ($n = 1$). The three types following graduation include (1) those with an increase in their engagement since MSU ($n = 6$), (2) those with steady commitment to social and civic engagement throughout their lives ($n = 5$), and (3) those who had a decrease in engagement during their time at MSU ($n = 3$) with an increase in engagement from their pre-MSU lives.

Engagement trajectories increased since MSU: "I had a debt to this country….and especially the working class."

For those who increased their engagement trajectories after graduation from MSU, they stated that they wanted to help others through social improvement, including research,

Table 1 Increased engagement after attending MSU

Increased engagement after MSU	Before	During	After
Extra-parliamentary activity (extreme)			
Individual and collective political participation		x	xx
Work collectively to improve the conditions in the community/country	xx	x	xxxx
Engage in social and political activities based on personal interests	xx	xxx	
Feeling a sense of belonging to groups with similar social and political values	x	x	
Interest in social and political issues			
Lack of interest or awareness of social and political issues	x		
Anti-political stance (extreme)			

university administration, and other activities directed at improving the lives of others. Within this group of alumni, two participants started out with low social involvement (see Table 1) prior to MSU. The other four who started higher on the scale, in terms of the civic engagement activities they were already doing at home, used their MSU experience to enhance their capacity for engagement. After MSU, all six of these alumni worked collectively to improve the conditions in their community/country with the intent of helping others, as John's sentiment reflects: "I had a debt to this country….and especially the working class."

MSU provided opportunities to continue and increase civic engagement during their graduate studies. For example, most doctoral alumni selected research projects that benefited their home countries, even though they had opportunities to select research in the USA. Joshua explains "I could have done all my work within the U.S., no problem, but I didn't want to … To see whether some of the things that I was thinking could be applicable to Malawi."

During their studies at MSU, five of the alumni were engaged in civic and political activities based on their personal interests, as Table 1 illustrates. For example, while working on a Ph.D. in education, Sarah started volunteering for an orphanage back home through connections made at MSU's African Studies Center. She shares,

> the girls, they always lived in my mind…. They were looking for someone and I was also looking for an opportunity to do something. So I became very active in that group….When I was doing my research I always visited the orphanage, saw what was going on, interviewed people

After graduating from MSU, five of the alumni returned home to "work collectively to improve the conditions in the community/country," which moves them further on the spectrum towards greater civic engagement and political participation. For example, Margaret describes a new role she plays since returning home after completing her doctoral studies at MSU,

> I do science communication, science advocacy..... Especially like the GMOs, and-people want to debate, but you can't demonstrate because we don't have theinfra-structure, so I'm trying ... I do a lot of that, like communicate, trying to analyzethings and tell people how things happen.

Utilizing the capacities they honed and developed at MSU supported an increase in social civic and political engagement in their careers. Five of the six returned from MSU to work in higher education institutions. The educational experiences and opportunities at

MSU provided an enhanced set of knowledge and skills that allowed these six alumni to engage in work that improved the conditions of their community, country, or home higher educational institution.

Engagement trajectories steady throughout lives: "Because I'm the type who wants to help…who wants to solve problems."

For those whose engagement trajectories were steady throughout their whole lives, they shared that they felt a sense of duty to solve social problems through careers as university professors and experts who regularly consult with their governments. These five alumni shared some commonalities. Four of the five came from families with low socio-economic backgrounds. Prior to their studies at MSU, each of the participants felt a sense of duty to work in public service. For example, Esther captures this sentiment best: "I'm the type who wants to help…who wants to solve problems." They all shared a similar focus on using their studies at MSU to enhance their careers in public service. Ousmane explained "My original plan was to be a professor in Dakar. And there were no dramatic changes because going to Michigan State was still keeping with my plan of becoming a university professor." When reflecting on his time at MSU from his home country of Uganda, Joshua stated "I wanted to be relevant here [Uganda] in my knowledge."

During their studies at MSU, most of the participants ($n = 3$) maintained their public service positions through a type of sabbatical. Robert explained "in our contract we had to, to come back to Rwanda….I had a permanent position at the university because when we were starting there at MSU, we were paid half salary, yes to me I was interested to keep connection and collaboration…" In other words, attending MSU was often part of a staff development programme, which provided the opportunity to pursue an advanced degree for future career advancement upon return to their home country, while also cultivating collaboration and networking between the home university and MSU.

All the participants had direct ties to their home country during their studies at MSU, often going home to conduct research projects during summer breaks. These projects were typically paid through a research grant and were either part of a professor's research and/or related to their thesis or dissertation study, such as researching the history of the colonial prison system of Senegal or measuring food safety standards in the university cafeteria in order to develop new standards.

After graduating, most alumni returned to the positions they had prior to enrolling at MSU or obtained a similar position. Amos reported "at the university maybe I could say…I introduced the teaching of reproductive and endocrinology. My approach, the students I taught…they say I was from a different world." This desire to return home was often stronger than the opportunities presented in the USA. Bashiir reported that "Some of my relatives criticized me, 'Why didn't you go to Canada or to U.S.? You could help us from there.' Said, 'No, I belong here. I want to help the country and to help you, too.'" Ousmane stayed in the USA to work as a university professor, while being engaged in projects in his home country out of a sense of duty. He explains "I believe that people who are trained in the West have this sort of duty to give back to their home." While this group did not report increased political, civic, or social participation, as illustrated in Table 2, three of them reported taking on more leadership roles. Esther reported "Since I graduated, I think more than ten papers have been published in the newspapers. As major, major articles." Amos is the chairman of the national resource center dedicated to his field of study,

Table 2 Steady engagement throughout life

Steady engagement	Before	During	After
Extra-parliamentary activity (extreme)			
Individual and collective political participation			
Work collectively to improve the conditions in the community/country	xxxxx	xxxxx	xxxxx
Engage in social and political activities based on personal interests			
Feeling a sense of belonging to groups with similar social and political values			
Interest in social and political issues			
Lack of interest or awareness of social and political issues			
Anti-political stance (extreme)			

and Ousmane is starting educational programmes in Dakar with other Senegalese who are also living in the USA.

Engagement trajectories decreased while at MSU: "Go out there and live uncomfortable life to give back to the society"

For the three alumni whose engagement trajectories decreased while at MSU, they recognized that sacrifices were necessary to be able to contribute to society. Although they shared some commonalities, their decisions were mainly based on the political and social contexts of their times. Two of the three alumni had childhoods in families from low socio-economic backgrounds. These two came from farming families. Prior to their studies at MSU, all three of the alumni reported struggling to obtain their education. Wilson's reflection on the hardships he suffered as a child reflects a shared sentiment of these three. He shared his philosophy of his life choices by stating that one must "go out there and live [an] uncomfortable life to give back to the society."

Wilson struggled throughout his K-12 experience due to lack of family support and networks. George experienced tremendous political turmoil in his early student years, which impacted his ability to complete his bachelor's degree. Daniel struggled with his first semester at MSU due to a lack of technical skills. Their perseverance with their education showed a rearranging of priorities to make their studies the most important part of their lives. All three alumni reported being fiercely independent. George captured this sentiment when he reflected on his character "I've always kind of been an independent soul …I like to do without too much supervision or somebody looking over my shoulders."

Additionally, while at MSU, all three alumni had young children that needed care. During their studies at MSU, the three alumni reported focusing on their family and on developing and learning new skills. Most of their reflections were based on the types of lab work they were doing, the machines they were learning to use, and the projects they joined. During the fieldwork portion of George's research, he did not have access to a vehicle for transportation to his research sites and ended up building one himself. From that experience, after he graduated from MSU, he started a business at home selling automotive and other mechanical parts that were used for research and food production.

While they were not engaged in social, civic, and political activities while studying at MSU, they clearly demonstrated greater participation upon completion of their degree (see Table 3). After their studies at MSU, two of the alumni opened up businesses that focused on increasing local food production in their home countries. Similar to the alumni who had

Table 3 Engagement trajectories decreased while attending MSU

Decreased engagement at MSU	Before	During	After
Extra-parliamentary activity (extreme)	x		
Individual and collective political participation	x		x
Work collectively to improve the conditions in the community/country			xx
Engage in social and political activities based on personal interests		x	
Feeling a sense of belonging to groups with similar social and political values	x		
Interest in social and political issues		xx	
Lack of interest or awareness of social and political issues			
Anti-political stance (extreme)			

a steady commitment to civic and social engagement, these three alumni felt it was important to return home and share the skills they gained by engaging collectively in improving conditions in their countries through the careers they pursued post-graduation.

Interconnected skills and knowledge that enhanced capacities for social development

When asked how their post-graduation trajectories connected to their MSU experiences, alumni across all categories noted (1) a feeling of empowerment as a researcher gained by their studies ($n = 9$), (2) an expanded network of peers and collaborators at MSU ($n = 10$), and (3) an enhanced sense of confidence ($n = 10$). These skills and knowledge obtained during their MSU experience enhanced the alumni participants' capacities for contributing to the common good.

Empowered as researcher (hard and soft skills)

Since a majority of the alumni were doctoral students ($n = 12$), many identified skills and knowledge that enhanced their postgraduate social, civic, and political engagement as being relevant to applying rigorous research to the needs of their country ($n = 6$). Others reported soft skills such as science communication, directing a research project, and presenting at conferences ($n = 4$). Godfrey reports about his experience at MSU:

> People who could listen to your argument…logically follow your argument and say you are right in this. And not only that, realizing what type of student I was, I could get really even advice from my colleagues in the department…I read much more radical materials in the U.S. than I could ever read here [in Tanzania].

Upon completion of their studies, several could apply their research and teaching skills to addressing local/national problems. Lamine recognized that access to data and information at MSU was helpful for him and his colleagues from Senegal to address challenges and issues in Senegal:

> there was a centre where you could find a lot of things in terms of documentation andproject information… it was good for that to get together and work on a common projectapplied to concrete situations in your own country; that was very important for us.

While feeling empowered as a researcher has mostly benefits, Margaret also acknowledged that as a researcher, she has felt frustrated with the limitations on lab equipment she has faced since returning home "I got an education in expensive science. Even in developed countries, it's not like everyone can do it. I got the best science, but it's just expensive, very expensive."

Ability to utilize an expanded network of peers and collaborators

The expanded network of peers and collaborators came through in most interviews ($n = 8$). The alumni recognized that the well established networks they encountered at MSU enhanced sustained engagement over the course of their careers. During the interviews, several of the participants shared news about their other MSU colleagues and how they had connected with other MSU alumni ($n = 7$). Daniel shared, "I met friends from Turkey, from Italy, from Korea. Like when I go to Korea, I meet my former classmate, he's a professor there. So, it's changed a lot in my life." Godfrey explained that after he left MSU, "I kept on maintaining contacts a lot with Michigan State… I started in 85 until today. I mean in terms of what are you doing, can we do this together…can we publish this?".

The experience at MSU provided them with a broader network of peers and faculty with whom they later collaborated to conduct experiments or lead projects that contributed to the social good in their countries and/or region. Joshua acknowledged the connectedness of many MSU professors to Africa: "Yeah. In political science, in agricultural economics, in sociology, we had all these professors, like …who were African[ists], you know." The expanded network of peers and collaborators allowed alumni to join teams and projects that furthered their careers and made positive impacts on social change in their home countries. MSU's robust partner network supported African alumni's continued success and engagement trajectories.

Enhanced sense of confidence

Ten of the African alumni reported that their experiences at MSU built their confidence, both due to the credential they obtained ($n = 6$) and their general confidence as a scholar ($n = 4$), as illustrated in this comment by John:

When I came back here, I had read a lot of things…. and I could challenge anybody. …And I could quote texts, journals, articles….that nobody had read.

A similar sentiment from Daniel articulates the sense of self-reliance and confidence he developed: "…what I learned is you need to understand your stuff. Know it from anybody else. You need to understand what you do. And you need to do it well."

Having an enhanced sense of confidence also allowed them to pursue careers that were fulfilling and meaningful, as Sarah illustrates:

I think getting that education degree kind of confused me a little bit (laughter), but I stillfelt that, that I would get what I... want, you know? And right now where I am so happy,because this is the kind of place that I would really love to work, you know, working withkids from Africa and it makes me feel good.

The confidence in the credential is illustrated by Lamine who states "MSU is also a brand in agriculture."

We identify three capacities that provide a clearer picture of what components of the educational experience contributed to supporting and/or hindering civic engagement among alumni. These findings have implications on how sustainability of social impact could be built into scholarship programmes through long-term relationships, training of researchers for particular skills, and collaborative applied research initiatives.

Implications

The African alumni life trajectories show evidence of how engaged scholarships and higher education institutions have the potential to impact individuals and contribute to sustainable development. Empowering students as researchers, supporting expanded networks of peers and collaborators, and building students' confidence emerged as important roles for universities to contribute to developing sustainable solutions for low and low-middle-income countries, in other words, putting Boyer's (1996) scholarship of engagement into practice. These capacities are directly aligned with the knowledge, skills, values, and attitudes related to education for social development and global citizenship called for in SDG 4.7. They increase agency, which has the potential to lead to the individual and collective actions needed to make progress on the broader SDGs and to create social change. This study has implications in three realms. First, it provides insight on strategies for achieving the SDGs, specifically focused on SDG 4, but with relevance to the rest of the SDGs. Second, this research has implications for scholarship programmes seeking to address SDG 4.b. This work can provide guidance on how these programmes could be structured so as to enhance capacities for social and civic engagement. And finally, this study offers insights to higher education institutions seeking to engage in this space, both by hosting African scholarship recipients and also by designing programmes that contribute to international development and engagement globally. We focus on a public land-grant university in this study; however, there are potential implications for other higher education institutions, especially related to developing the capacities defined in the previous section linked to civic engagement.

The connection between higher education and sustainable global development is evident in these experiences and outcomes. For the majority of the MSU alumni participants, there was a focus on ensuring that their studies were relevant to the challenges faced in their home countries. This focus came out clearly in the interviews as a source of empowerment for African alumni as researchers and may have strengthened their confidence and supported the development of lifelong global networks that positively impacted their own social, civic, and political engagement. It also hints at the shift in MSU's approach to engage in equitable, knowledge sharing, and robust relationships led by African priorities (Jamison et al. 2017). Wilson illustrates this point when he explains that he and his wife applied to MSU because MSU was connected to an institute where he worked as a research assistant: "There's a major collaboration with MSU. …it's been a really nice collaboration of more than 20 years." Future research that examines closely how contextual factors (e.g., political and economic context in country of origin, gender, and socio-economic status) might impact individual civic and social engagement trajectories would strengthen our understanding of whether and how these factors should be considered when developing higher education scholarship programming.

Understanding the capacities that may lead to increased civic and social engagement can offer important insight to scholarship programmes developed to address SDG 4.b. For

example, since there is an indication that expanding peer networks can lead to more effective and engaged civic action, scholarship programmes might consider how they can build in avenues for peer learning, networking, and alumni engagement. They may also look at selecting host institutions that have robust partnership networks in scholarship students' home regions. This focus would increase the opportunities to formally connect students into those networks. Moreover, as we saw with MSU alumni, providing structured opportunities for students to engage with work in their home countries and to remain active in that space was also important to sustained trajectories for civic engagement. Provision of these opportunities could be built into the design and assessment of any programme. Finally, there are hints that students who come from low socio-economic backgrounds and/or are pursuing careers in public service may be more likely to sustain or increase their civic and social engagement post-degree. However, while this finding was significant among the alumni participating in this study, we do not currently have enough data to confirm this assertion more broadly. This area is one for future consideration and research.

Conclusion

Higher education institutions who seek to make a positive contribution to SDG implementation through educating their graduate students should consider intentionally focusing on cultivating teaching and research for empowerment and agency. As with scholarship programmes, these institutions can focus on building capacities identified in this study's findings, namely developing skills for engaged research, connecting to broader networks, and building self confidence.

This research moves beyond previous studies, which tend to apply a human capital framework, and focuses on how higher education institutions might develop individuals' capacities in order to catalyze progress toward social change. In this article, we focus on the SDGs as a way to ground this idea of social change. SDG 4, centered on education, is particularly relevant to this work. Changes seen in the education sector have the potential to impact the other SDGs, as Section 4.7 outlines (UNESCO 2015). The implications laid out here can contribute to shaping programmes moving forward both for scholarship funders and/or programme designers and for hosting higher education institutions.

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