

Entrepreneurship in Sub-Saharan Africa: Participants' Views of a Professional Development Program's Impact on Their Business Ventures Five Years Later

M. Cissé¹, M. Edwards², L. Cline³, J. Robinson⁴, C. Watters⁵, L. Martins⁶

Abstract

We assessed the impact of Oklahoma State University's 2018 MWFI on its participants, i.e., Fellows, approximately five years after they returned home. Twenty-five Fellows from 20 Sub-Saharan African (SSA) nations participated in a six-weeks-long training program sponsored by the U.S. Department of State. Our follow-up study sought to determine the Fellows' satisfaction regarding the training, the primary benefits and achievements attributed to it, and the training-related developments of the Fellows' businesses they selected to share. We collected quantitative and qualitative data to answer three questions, including a narrated photovoice request. Most Fellows indicated that they were satisfied with the training and would not have been equipped to improve their businesses without its contributions to their development. As such, results were supported conceptually by human capital theory. More planning by the funder who places Fellows and by the Institute's providers may better address some Fellows' specific learning needs and interests not fully met. Additional longitudinal studies, including economic analyses, are warranted.

Article History







Received: May 12, 2025

Accepted: To August 24, 2025

Published: September, 22 2025

Keywords

agribusiness; education; photovoice;
SDG 8: Decent Work & Economic
Growth

-
1. Mahamane S. Cissé, Educational Consultant, 1440 Hebron Church Road, Statham, GA 30666, msaliou@hotmail.com,  <https://orcid.org/0009-0007-1586-6105>
 2. M. Craig Edwards, Sarkeys Distinguished Professor of Agricultural Education, Oklahoma State University, 240 Agricultural Hall, Stillwater, OK 74078, craig.edwards@okstate.edu,  <https://orcid.org/0000-0002-4436-4450>
 3. Lauren L. Cline, Assistant Professor, Oklahoma State University, 242 Agricultural Hall, Stillwater, OK 74078, lauren.l.cline@okstate.edu,  <https://orcid.org/0000-0002-4187-8122>
 4. J. Shane Robinson, Professor & Head, Oklahoma State University, 225 Agricultural Hall, Stillwater, OK 74078, shane.robinson@okstate.edu,  <https://orcid.org/0000-0001-9506-5752>
 5. Craig E. Watters, Clinical Associate Professor of Professional Practice, Director of Institute for Global Social Entrepreneurship, Oklahoma State University, Stillwater, OK 74078, craig.watters@okstate.edu,  <https://orcid.org/0000-0002-4386-1818>
 6. Lydia M. Martins, PhD student, Oklahoma State University, 215J Agricultural Hall, Stillwater, OK 74078, lydia.martins@okstate.edu,  <https://orcid.org/0009-0001-5699-0096>

Introduction and Problem Statement

Naudé (2009) argued that most developing nations had neglected entrepreneurship in their economic growth models due to hosting economies mostly controlled by state-owned enterprises and multinational companies, especially in the case of Sub-Saharan African (SSA) nations. However, attitudes have shifted toward more entrepreneurial economies due to rampant youth unemployment (Gough, 2016; Mukembo et al., 2020, 2023; Smith et al., 2023) and corruption in many state-run entities (Collier, 2007). *Entrepreneurial ventures* are regarded as capable of creating jobs, reducing poverty, and spurring economic growth (Bruton et al., 2015). Although many entrepreneurs in SSA often lack basic business management skills (Mano et al., 2012), Ramachandran and Shah (1999) asserted that African entrepreneurs with secondary level education or higher have better managerial skills, suggesting that education improved their business acumen. Economists attribute the endemic poverty of many nations to the *conflict trap*, exacerbating social tensions, contributing to unemployment, destroying infrastructure, and deterring investment (Collier, 2007). Entrepreneurship has been used to catalyze economic and social change in nations recovering from conflicts, a condition plaguing many in SSA, by facilitating collaboration among ethnicities and reducing the distrust that often characterizes conflict-ridden regions. Oklahoma State University hosted a Mandela Washington Fellowship Institute (MWFI) for SSA entrepreneurs primarily in the agriculture and food sectors and for a few in STEM-related youth development ventures, i.e., social entrepreneurship. However, little data existed assessing the program's long-term impact. Filling this gap could provide useful feedback, expand the related literature, address a World Bank concern regarding the evaluation of development efforts (Rother, 2007), and better enable stakeholders to judge the value of MWFI.

Theoretical and Conceptual Framework

This study was guided conceptually by human capital theory (HCT) which also undergirded the planning and delivery of the project evaluated. Such provided a lens through which the impact of a training program could be assessed regarding participants' satisfaction, behaviors involving entrepreneurship, and business enterprise development over time. HCT posits that investments in education and training improve an individual's productivity and earning potential (Becker, 1962, 1964, 1994; Schultz, 1961, 1971). And those who engage in professional development are more competitive in the job market and more capable of occupational success. The Organization for Economic Co-operation and Development (2001) defined human capital as knowledge, skills, and experiences that enhance economic productivity.

In this case, we examined how MWFI participation contributed to Fellows' success as entrepreneurs, aligning with HCT's claim that education leads to improved job performance, increased incomes, and higher motivation. HCT (Becker, 1964, 1994; Schultz, 1961, 1971) offered an analytical lens regarding how the MWFI training had impacted the entrepreneurship of its participants who were creating, maintaining, and expanding their business ventures in SSA. This framework, therefore, assisted us in exploring a MWFI's long-term impact.

Purpose

Our purpose was to assess the impact of Oklahoma State University's 2018 MWF on its participants, i.e., Fellows, approximately five years after they returned home, especially regarding satisfaction with the training program and the development of their entrepreneurial ventures. We sought to answer three research questions: (a) How satisfied were the Fellows with selected aspects of the training? (b) What primary benefits and achievements did the Fellows attribute to the training experiences? (c) What training-related developments of the Fellows' businesses did they choose to visually document and narrate?

Methods

Our larger study (Cissé, 2023) was intended as a census, including all 25 Fellows who participated in the 2018 MWF, i.e., 15 males and 10 females from 20 SSA countries, ranging in age from their early 20s to mid-30s. Most held at least an undergraduate degree. At time of the follow-up portion of the study in 2023, one female participant was deceased, so 24 individuals remained. The MWF is the flagship program of the Young African Leaders Initiative. It aims to empower young leaders of SSA through academic coursework, leadership training, and networking (Cissé, 2023) and strives to include genders equally and Fellows with physical disabilities among its 700 annual participants (U.S. Department of State, n.d.). The supervising agency, International Research Exchange (IREX), as contracted with the U.S. Department of State, assigns 25 Fellows for six-weeks of training to each MWF.

Our MWF featured a *Leadership-in-Business* theme emphasizing entrepreneurship. An executive-style training program was implemented through interactive, engaging, and practical learning experiences to promote critical thinking, creativity, and problem solving skills while exploring coherent themes designed to bolster the Fellows' capacities primarily as agricultural and food entrepreneurs. Institute topics and learning exercises included business pitch presentations; climate change and sustainable agricultural and natural resources stewardship; corporate social responsibility; credit and financing models and approaches; customer service; emerging and innovative technologies; employee training, appraisal, and relations; gender equity; social entrepreneurship; volunteerism/community service; and youth development, employability, and engagement; among many others. In addition, learning opportunities to inform the Fellows' understanding and practice of strengths-based, transformational leadership that emphasized ethical behaviors were stressed throughout the MWF's programming.

Faculty members, guest presenters, and special topic facilitators were drawn from across the university, the local community, and the state to support achieving our Institute's objectives. In particular, faculty from the Colleges of Agriculture (CoA) and Business collaborated to plan and deliver the MWF, i.e., a multidisciplinary team. Enlisting assets from the CoA, such as experts in agribusiness, including from the Robert M. Kerr Food and Agricultural Products Center (FAPC), who regularly consult with agribusiness and food entrepreneurs in Oklahoma, enabled the Fellows to gain insights into solutions involving food product preserving and storing, packaging,

labeling, and marketing. Oklahoma Seed Stock Foundation, as affiliated with the Oklahoma State University's Department of Plant and Soil Sciences, focuses on improving grain seed quality and producing certified seed for U.S. grain farmers, hosted several Fellows for training. Seed quality assurance is a significant problem facing farmers in SSA and consistently threatens efforts to achieve food security in their nations.

Other resources – on our campus and in the community – employed to achieve our MWFI's goals included Oklahoma State University's Center for International Trade and Development (CITD), Meridian Technology Center's Business Development outreach unit, and the Stillwater/Payne County Chamber of Commerce, among other actors supporting business and entrepreneurship development in Oklahoma. CITD is a member of Oklahoma's Small Business Development Center (SBDC) network and assists the state's entrepreneurs with small- and medium-size enterprises to take advantage of domestic and international trade opportunities. The SBDC model has implications for regions such as SSA by supporting U.S.-Africa trade. Site visits and enterprise-shadowing opportunities also enhanced our programming as well as the Fellows' involvement with a Habitat for Humanity house building project and a local food pantry's work, both U.S. models of volunteerism and community service. In addition, the MWFI incorporated numerous cultural experiences highlighting Oklahoma's history and traditions, e.g., visiting a Native American heritage center, partaking in traditional 4th of July festivities, and touring a public school's agricultural education facilities to interact with teachers and students.

As part of our multi-method study, 21 Fellows (87.50%) completed a follow-up assessment via an online Qualtrics questionnaire regarding the MWFI experience that included levels of satisfaction with its training as well as opportunities to highlight business-related benefits and achievements they attributed to their participation. Using a 4-point, Likert-type scale (1 = *Not satisfied* to 4 = *Very satisfied*; $\alpha = 0.69$; Jayaratne, 2015), the Fellows responded to four items describing their levels of satisfaction for (a) professional interactions with U.S. participants, (b) relevance of the experience to their business needs, (c) usefulness of the learning experiences, and (d) the overall MWFI experience. These findings are represented with frequencies, percentages, and by an overall composite mean score. The Fellows were also asked to identify the most significant *benefits* gained by participating in the MWFI. In addition, the Fellows were asked to describe any *achievements* of their business enterprises attributed to participating in the MWFI. Nine (37.5%) also submitted photos of their businesses considered outgrowths either entirely or in part due to their participation in the MWFI and were accompanied by the Fellows' narrations.

Photovoice is a qualitative research method that allows individuals to share their lives, challenges, and achievements through photos. Participants, often from disadvantaged circumstances, use cameras to document their activities, emotions, and thoughts about various phenomena, share those images, and explain their reasons for photographing such. Photovoice, therefore, can give a voice to the marginalized by allowing them to express needs and attributes of their communities (Evans-Agnew & Rosemberg, 2016). Photovoice was our study's other data collection method that enabled the Fellows to express visual evidence of their

businesses' growth over time. These could have been new products; new packaging or branding; new programs, collaborations, or approaches; or use of new tools or machines they initiated after attending the MWFI.

Responses to open-ended questions regarding the Fellows' MWFI-related benefits and achievements as well as photovoice narrations of business enterprises are presented almost verbatim. Results distilled through content analysis (Gay et al., 2012; Leedy & Ormrod, 2005) were summarized as conclusions. Tracy's (2010) criteria of rich rigor, credibility, sincerity, resonance, and significant contribution guided our analytical and interpretive processes.

Reflexivity

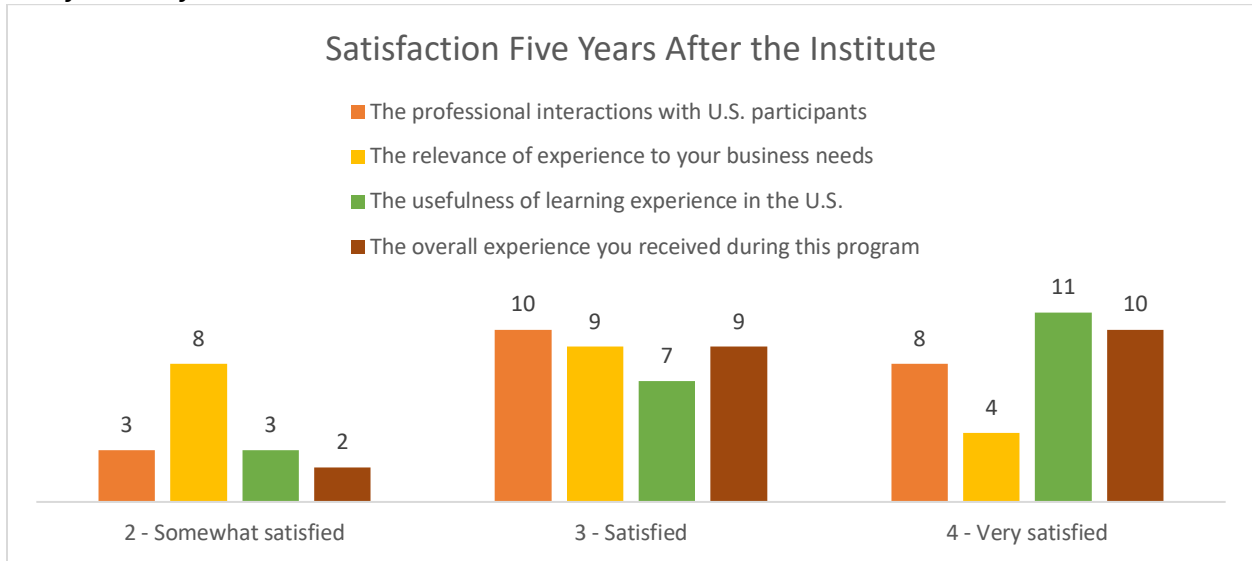
In studies involving qualitative methods, researchers' backgrounds and potential biases should be revealed. I, the lead researcher, am a native of Mali. I assume that young Africans are as capable as their Western counterparts if given similar opportunities. I earned bachelor's and master's degrees in the Soviet Union before returning to Mali in 1992. Living in the United States since 1996, I realize that the Soviet Union and the United States, despite variant economic systems, stressed agriculture's role in their development and prosperity and the need to develop the respective nations' human capital. This captured my interest. I assisted with the 2018 and 2019 Oklahoma State University's MWFIs as a project team member. Life experiences and interests, including that involvement, influenced me to research this topic. I sought to mitigate biases by bracketing such (Tufford & Newman, 2010). Other authors include faculty members at Oklahoma State University, three in agriculture and one in business, and one U.S. graduate student. Two led their institution's three MWFIs and traveled to SSA for development projects, and another provided the Fellows with leadership training. The student, studying international agriculture, assisted with manuscript preparation.

Findings

None of the 21 responding Fellows indicated dissatisfaction with their participation in the MWFI after five years had elapsed. Eighteen (85.71%) indicated that they were either *satisfied* or *very satisfied* regarding their professional interactions with U.S. participants (see Figure 1). However, fewer, 13 of 21 (61.90%), were as satisfied with the experience's relevance to their business needs. Eighteen (85.71%) also indicated that they were either *satisfied* or *very satisfied* with the usefulness of the training experience. And 19 (90.48%) rated the overall MWFI experience as either satisfying or very satisfying (see Figure 1). The overall composite mean score for the satisfaction construct was 3.20/4.00 which was slightly lower when measured at the conclusion of their MWFI (3.31/4.00; Cissé, 2023) five years earlier.

Figure 1

Satisfaction of the Fellows Five Years Later



Note. Numerals above the vertical bars were the number of participants who indicated that level of satisfaction with the corresponding color-coded response items.

Five years later, the Fellows were asked the most significant *benefits* they gained from participation in the 2018 MWFI. See Table 1 for their responses.

Table 1*Most Significant Benefits Fellows Reported Gaining from the 2018 MWFI*

Fellows	Responses
1	“I gained confidence in anything I aimed to do.”
2	“After the Fellowship, I reviewed my business model, and my sales significantly changed.”
3	“Networking, new skills, self-confidence”
4	“My network grew, and I was introduced to new concepts.”
5 ^a	“The most significant benefit was to be well-trained in business entrepreneurship and leadership.”
6 ^a	“The connections I have made are the most significant thing. Connecting with a U.S. counterpart was possible and easy because I was there physically and connecting with other African Fellows. It was empowering to know I have another Fellow pushing hard no matter what. Just that thought keeps me going.”
7 ^a	“Network, because I can tap into a rich network anytime.”
8	“Entrepreneurial acumen and networking”
9 ^a	“Social media marketing is one of the most significant benefits. I also benefited from the public speaking class we had.”
10	“Being able to know that I have great potential and think big.”
11 ^a	“Also, the session on leadership was very great. It helped me to discover my leadership style.”
12 ^a	“Improved leadership and communication skills” “Before the Fellowship, I was somewhat not confident in myself and was poor at communication.”
13	“The Fellowship has built my entrepreneurial capacity and allowed me to take bold action and co-found my own company.”
14	“I became a better version of myself. More open-minded and focused on contributing to the betterment of my society.”
15 ^a	“My business scaled up from 30% to 70%. My marketing skills improved.”
16	“Better knowledge, perception, and understanding of America.”
17	“The networks I built are the most valuable thing I gained for my career and personal growth.”
18 ^a	“Meeting Dr. [Name] [a MWFI project team member].”
19 ^a	“The networks I created while in the program are the most significant. Having friends from across Africa and the U.S. is the most important thing.”
20	“I learned a lot from cross-culture and networking with fellow Africans; I expanded my business and am currently employing directly over 500 farmers.”
21	“Confidence” “I gained self-confidence that makes me feel more capable of using my talents. In the workplace, especially in entrepreneurship, self-confidence is an important element of leadership. It’s an essential quality for any entrepreneur, and the program greatly helped me.”

Note. ^a Fellows’ entrepreneurial experiences, including for-profit and social, are further elaborated on through their quotes in the notes corresponding with their photovoice responses.

Five years later, the Fellows were asked to describe any *achievements* they attributed to their participation in the 2018 MWFI. See Table 2 for their responses.

Table 2*Achievements Fellows Attributed to their Participation in the 2018 MWF*

Fellows	Responses
1	“I was able to give training to 500 rural producers to extend my network. Because of this work, I was ‘Youth of the Month.’ We created forty-five (45) agricultural cooperatives after the MWF.”
2	“Social media marketing training and basic accounting training received have enhanced how we interact with our customers.”
3	“Networking, self-confidence, opportunity identification”
4	“The global outlook that we are planning. Up-scaling (massively); sourcing funding”
5 ^a	“Thanks to [the] Oklahoma State University MWF, I mastered pitching and business plan. I increase[d] my self-confidence and skills in business and entrepreneurship.”
6 ^a	“Through the Oklahoma State University MWF, I have made connections with the FabLab Tulsa, and we had . . . found . . . [a] grant for a STEM project in Togo.”
7 ^a	“Working with 4-H U.S. has given me the legitimacy to get more school partners in Congo upon completing the MWF.”
8	“Exports markets”
9 ^a	“During my stay at Oklahoma State University, we were taught about Facebook marketing in one of our sessions. It has helped my business. Since I got back, I have used Facebook all of the time, this has increased sales, and my business has gained recognition.”
10	“Networking skills”
11 ^a	“Improved my production quality by employing the best technology learned from FAPC. Improved my business and leadership skills, where I managed diversity effectively within my team and staff.”
12 ^a	“The Fellowship significantly improved my communication skills and entrepreneurial mindset.”
13	“I was able to effectively communicate, sell, focus, learn, and strategize.”
14	“[The] Oklahoma State University MWF improved my entrepreneurship skills and branding skills. The experience helped me network more and helped me maintain my networking relationships.”
15 ^a	“Business resilience”
16	“Visiting and working with a company outside of Mozambique.”
17	“Meeting Dr. [Name, faculty member at Oklahoma State University]”
18 ^a	“I got more information about grain amaranth through [Name] since he connected me with the Amaranth Institute in Mexico. I have been in close contact with grain amaranth experts . . . I also got good quality seeds from Mexico through connections in Mexico.”
19 ^a	“Exposure to the international level. [I] learned from networking.”
20	“It is difficult to attribute an achievement impact gained thanks to Oklahoma State University, but the MWF was a wonderful human experience where I learned much from my other Fellows. I came back with a desire to do entrepreneurship even more powerfully and with an even more convinced mindset that I could accomplish great things. Social entrepreneurship also means a lot to me today, thanks to that experience.”
21	“I could structure and formalize my business because of the knowledge acquired at Oklahoma State University.”

Note. ^a Fellows’ entrepreneurial experiences, including for-profit and social, are further elaborated on through their quotes in the notes corresponding with their photovoice responses.

Photovoice Data

Via Qualtrics survey platform, nine Fellows, three women and six men spanning SSA from Togo to Tanzania, provided cellphone quality photos of their businesses representing outgrowths or results attributed to participation in the MWF (see Figures 2-10). Photos signified changes in their business operations, opportunities, and ongoing development as entrepreneurs. The narrations were the Fellows' explanations of the photos and relationships with their MWF experiences.

Figure 2

Fellow 5, Mali



Note. “These are products of Agrowomen: sesame oil, sesame seeds, sesame snacks, and parboiled rice. Participating in the Fellowship helped me develop my business ideas and products. I bought a small sesame oil press with the stipend of the fellowship. Mr. [Name] put me in contact with a lady named [Name], who helped me buy my first oil press on Amazon. During the second trip to the 8th global forum of UNAOC, I brought my machine home.”

Figure 3*Fellow 6, Togo*

Note. “This picture shows a STEM workshop in a school. The board held by the kid is an electronic board we co-designed with the FabLab Tulsa on a MWF18 reciprocal exchange-funded project. I visited them during the MWF 2018 Fellowship, and we applied for a grant for the project. The project is about going to schools in Togo for hands-on soldering sessions so kids learn how to solder a LED light, a battery holder, and the power switch to the board. But this is not just about soldering; it is also about learning more about our country, Togo, its regions, and what can be valued or featured from every region and culture. The idea is to make them curious about science and technology and willing to learn from others. That also helps create cohesion in a country with such diverse cultures and makes them keener on accepting and working together. Business-wise, these kinds of boards cannot be produced here even if we design them, we will have to order them from abroad. But these kinds of activities are what we want to be doing more in school and show more of what STEM education is. But we need the funding and the required support. So, through the MWF 2018 reciprocal grant and networking with Fablab Tulsa, we can apply for grants and do fundraising for similar projects.”

Figure 4*Fellow 7, Republic of Congo*

Note. “That is the picture of the Luzabu Group Head office in [City], which we launched almost one year after completing the MWF 2018 at Oklahoma State University. It has increased our training capacity and branding, allowing our start-up to grow financially and in credibility. It relates to the training I received at Oklahoma State University in that the decision to launch it came from a poster pitch we designed with my team using the poster pitch techniques taught to us at Oklahoma State University. We pitched to investors using LUZABU GROUP Poster Pitch and convinced some of them to invest. Thus, Oklahoma State University has been a great catalyst for our current success.”

Figure 5*Fellow 9, Liberia*

Note. “In the photo, I feel accomplished after a hard day[’s] work, making sure all the products are well packaged and can compete locally and internationally. Skills learned from Oklahoma State University have everything to do with my business growth. As you see in the picture, the products are well displayed on the shelf due to some visits to some business centers during my stay at Oklahoma State University. The photo also indicates the working of a true African lady who has been inspired by lessons learned from MWF, always getting up early to get things done and striving to improve daily. Finally, the photo inspires girls and women to create their narratives. It means that girls and women are strong enough to make their own decisions, be free, and break the status quo that people set up for them.”

Figure 6*Fellow 11, Nigeria*

Note. “The scene is capacity building and development of over 300 smallholder potato farmers on reducing potato waste, processing, storage, food safety, and packaging/marketing. About 80% of women and youths attended the training funded by the African Development Bank (AfDB) and sponsored by the Potato Value Chain office in [Name] State, Nigeria. The training empowered the women to process potatoes locally into starch, creating a hygienic potato fries space using instant cook stands. The training was a capacity development initiative learned from the Robert M. Kerr Food and Agricultural Product[s] Center (FAPC) in Stillwater, Oklahoma, during the Mandela Washington Fellowship and the post-Fellowship networking activity with the staff of Oklahoma State University.”

Figure 7*Fellow 12, Ethiopia*

Note. “I have rebranded it [, i.e., my enterprise,] again to make it easier to remember and catchier. The name implies a local name that means medicine, the leaves indicate agriculture, and the yellow and green color of the fruits and vegetables suggests something to do with nature. The whole story and idea are derived after the Fellowship, including using powerful colors, which Oklahoma State University also uses orange as its identification. Please find the attached new brand name.”

Figure 8*Fellow 15, Tanzania*

Note. “The picture represents the improvement of our services, from good to Great! Partnering with other vendors to increase our revenue and access to more wedding events, we are serving ice cream and sweet snacks at this event!”

Figure 9*Fellow 18, Kenya*

Note. “The picture was taken on our farm in [Town], Kenya. The photo shows my mother, my friend’s kids from Mexico, and me. We have intercropped maize and grain amaranth on the farm for our consumption and as cash crops. My friend, [Name] from Mexico, had visited the farm to see how we grow our amaranth and offer advice as an expert in the field. [Name] and a team from Mexico, including [a MWFI co-coordinator, Name’s] mother, had invited me to the 1st World Amaranth Congress in Mexico shortly after the Oklahoma State University fellowship. In Mexico, I learned more about amaranth growing and value addition which I applied to our farm in Kenya. The fellowship helped me learn new techniques of marketing and managing the business. After the fellowship, I began the value addition of the grain amaranth, which grew the business revenues by over 50%.”

Figure 10*Fellow 19, Uganda*

Note. “. . . I had just reached my place of work. The boys were cleaning the garlic, sun drying it, and packaging it for shipment to Congo, Sudan, Kenya, etc., . . . I learned customer care, sustainability, and accountability of business [at the MWFI].”

The nine participants who provided narrated images described a variety of entrepreneurial endeavors ranging from production agriculture to food processing and purveying to youth development through STEM. Eight of the nine made direct linkages between the growth and success of their ventures to learning experiences that occurred during the 2018 MWFI at Oklahoma State University and some even thereafter stemming from relationships sparked

during the fellowship. For these entrepreneurs, the MWFI's impact had resonated during the five years that elapsed, and their narrations said as much.

Conclusions, Discussion, and Recommendations

We assessed long-term impacts of a 2018 MWFI on its participants from SSA. Other than the MWFI's providers, findings may be relevant to additional stakeholders, such as the U.S. Department of State and SSA governments, as they determine whether U.S. investments in international development yield meaningful outcomes regarding entrepreneurs and their ventures. The Fellows' overall level of satisfaction with their MWFI experiences remained mostly stable five years later, implying that their entrepreneurship training needs and interests were largely met. Regarding *benefits* associated with the MWFI, Fellows identified business networking opportunities and connections, growth in confidence as entrepreneurs, skills acquisition involving new approaches to marketing and leadership, and aspects of self-improvement.

As for highlighting *achievements* they credited to MWFI participation, Fellows further stressed better networking, including the use of social media; increased marketing channels; and improved confidence. Several Fellows also described exporting their products to international buyers, improving approaches to business planning and practices, and developing a more *entrepreneurial mindset* while seeking to scale-up their enterprises and find new opportunities for expansion. Although the training was a North-South initiative, of note, a Kenyan Fellow who farmed and processed amaranth engaged in a South-South collaboration involving producers and food scientists in Mexico arising from their MWFI experience. The Fellows' benefits and achievements were further confirmed and expanded on by the photos and related narratives they shared. Development of the Fellows' capacities as entrepreneurs were described in contextual ways but several also depicted developing the capacity of others, including youth and women, through the scope and reach of their enterprises. Our results, therefore, supported assertions of HCT (Becker, 1962, 1964, 1994; Schultz, 1961, 1971) and capacitating individuals for improved economic empowerment.

We recommend an improved placement process among the funder, the Fellows, and the hosting institutions. Agriculture and agribusinesses, as contexts for Fellows' learning experiences such as enterprise shadowing, site visits, and access to experts, are not the same throughout the United States, e.g., rice or sugar cane producing areas versus corn and egg production regions. Knowing more about the Fellows' entrepreneurial interests and matching them with such could lead to greater satisfaction among future MWF participants.

Longitudinal studies are often a rarity regarding the impact of training programs intended to build the capacities of international participants (Rother, 2007; Smith et al., 2023), as described here; this is usually due to a lack of donor funding to support such. Therefore, funders are urged to earmark a portion of the resources provided for these programs to support long-term evaluations, including on-site observations; interviews of local stakeholders, e.g., employees

and customers; and analyses of return-on-investment impacts. Failure rates among entrepreneurs worldwide vary but are relatively high (Sarasvathy et al., 2011). So, was lack of success why more than half the Fellows did not provide photos representative of their business achievements after returning home, or were other reasons at play? This lack of participation warrants additional inquiry.

We also acknowledge several limitations of our study: small sample size, reliance on self-reporting, potential for recall problems (Rogers, 2003) by the participants, as well as the absence of on-site observations and data collection. Further, our results were not immune to the Dunning-Kruger effect, i.e., the Fellows may have overestimated their abilities (van Hugten et al., 2023) when reporting benefits and achievements they attributed to participating in a MWFI.

Acknowledgments

Funding Information: This research study was funded in part by the Oklahoma Agricultural Experiment Station Hatch Project No. OKL03187, through the U.S. National Institute of Food and Agriculture.

Conflict of interest: No conflicts of interest exist regarding the study, or this related manuscript.

Previous Dissemination: Portions of this manuscript were derived from the lead author's doctoral dissertation study, as referenced: <https://openresearch.okstate.edu/entities/publication/a4eeb195-f103-4ab5-8f9d-4034301129e7>. Related oral presentations occurred at the 2025 conference of the Association for International Agricultural and Extension Education in Inverness, Scotland, and at the 2024 conference of the Comparative and International Education Society in Miami Beach, FL, USA, as part of a panel discussion.

Artificial Intelligence: No AI tools were used in the preparation of this manuscript.

Author Contribution Statement: **M. S. Cissé** – investigation, formal analysis, writing original draft; **M. C. Edwards** – editing and writing of original and subsequent drafts; **L. L. Cline** – review and editing of original draft; **J. S. Robinson** – review and editing of original draft; **C. E. Watters** – review and editing of original draft; **L. M. Martins** – review and editing of subsequent drafts.

References

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5), 9-49. <https://doi.org/10.1086/258724>

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis with special reference to education* (first edition). The University of Chicago Press.

<https://www.nber.org/books-and-chapters/human-capital-theoretical-and-empirical-analysis-special-reference-education-first-edition>

Becker, G. S. (1994). Human capital revisited. In G. Pyatt (Ed.), *Human capital: A theoretical and empirical analysis with special reference to education* (3rd ed., pp. 15-28). The University of Chicago Press. <http://www.nber.org/chapters/c11229.pdf>

Bruton, G., Ahlstrom, D., & Si, S. (2015). Entrepreneurship, poverty, and Asia: Moving beyond subsistence entrepreneurship. *Asia Pacific Journal of Management*, 32(1), 1-22. <https://doi.org/10.1007/s10490-014-9404-x>

Cissé, M. S. (2023). *Impact evaluation of a Mandela Washington fellowship, leadership-in-business institute with social network analysis of participants' before and after communication behaviors: A longitudinal study of African entrepreneurs*. (Doctoral dissertation, Oklahoma State University). Available from Open Research Oklahoma: <https://openresearch.okstate.edu/entities/publication/a4eeb195-f103-4ab5-8f9d-4034301129e7>

Collier, P. (2007). *The bottom billion: Why the poorest countries are failing and what can be done about it*. Oxford University Press.

Evans-Agnew, R. A., & Rosemberg, M.-A. S. (2016). Questioning photovoice research: Whose voice? *Qualitative Health Research*, 26(8), 1019–1030. <https://doi.org/10.1177/1049732315624223>

Gay, L. R., Mills, G. E., & Airasian, P. (2012). *Educational research: Competencies for analysis and applications* (10th ed.). Pearson.

Gough, K. V. (2016). *Young entrepreneurs in Sub-Saharan Africa*. Taylor and Francis. Routledge. <https://doi.org/10.4324/9781315730257>

Jayaratne, K. S. U. (Evaluator.) (2015). *Empowering aspiring entrepreneurs for economic success in Sub-Saharan Africa: A professional fellows program for Kenya, South Africa, and Uganda* (Grant No. S-ECAGD-13-GR-189 [CB]). (Evaluation report.) U.S. Department of State, Bureau of Educational & Cultural Affairs, Professional Fellows Program.

Leedy, P., & Ormrod, J. (2005). *Practice research. Planning and design* (8th ed.). Pearson.

Mano, Y., Iddrisu, A., Yoshino, Y., & Sonobe, T. (2012). How can micro and small enterprises in Sub-Saharan Africa become more productive? The impacts of experimental basic managerial training. *World Development*, 40(3), 458-468. <http://www.sciencedirect.com/science/article/pii/S0305750X1100235X>
<https://doi.org/10.1016/j.worlddev.2011.09.013>

- Mukembo, S. C., Edwards, M. C., & Robinson, J. S. (2023). Students' acquisition of agricultural and entrepreneurship (agripreneurship) knowledge and skills: Does instructional approach and their sex matter? *Journal of International Agricultural and Extension Education*, 30(3), 7-30. <https://doi.org/10.4148/2831-5960.1147>
- Mukembo, S. C., Edwards, M. C., & Watters, C. E. (2020). Development of livelihood skills through school-based, agripreneurship projects integrating youth-adult partnerships: The experiences of youth partners in Uganda. *Journal of International Agricultural and Extension Education*, 27(4), 111-127. <https://doi.org/10.5191/jiaee.2020.274111>
- Naudé, W. (2009). Entrepreneurship, developing countries, and development economics: New approaches and insights. *Small Business Economics*, 34(1), 1-12
<https://doi.org/10.1007/s11187-009-9198-2>
- Organization for Economic Co-operation and Development. (2001). *Glossary of statistical terms*. Author. <https://stats.oecd.org/glossary/detail.asp?ID=1264>
- Ramachandran, V., & Shah, M. K. (1999). Minority entrepreneurs and firm performance in Sub-Saharan Africa. *The Journal of Development Studies*, 36(2), 71-87.
<https://doi.org/10.1080/00220389908422621>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press, Simon & Schuster.
- Rother, F. (2007). *Interventions to support young workers in Sub-Saharan Africa*. World Bank.
<http://documents.worldbank.org/curated/en/693371468314689941>
- Sarasvathy, S. D., Menon, A. R., & Kuechle, G. (2011). Failing firms and successful entrepreneurs: Serial entrepreneurship as a temporal portfolio. *Small Business Economics*, 40(2013), 417–434. <https://doi.org/10.1007/s11187-011-9412-x>
- Schultz, T. W. (1961). Investment in human capital. *The American Economic Review*, 51(1), 1-17.
<http://www.jstor.org/stable/1818907>
- Schultz, T. W. (1971). *Investment in human capital: The role of education and of research*. The Free Press.
- Smith, A. J., Edwards, M. C., Watters, C. E., & Rutherford, M. W. (2023). Assessing impact of a Mandela Washington Fellowship Institute for African entrepreneurs. *Advancements in Agricultural Development*, 4(3), 54–65. <https://doi.org/10.37433/aad.v4i3.297>
- Tracy, S. J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837–851. <https://doi.org/10.1177/1077800410383121>

Tufford, L., & Newman, P. (2010). Bracketing in qualitative research. *Qualitative Social Work*, 11(1), 80-96. <https://doi.org/10.1177/1473325010368316>

U.S. Department of State. (n.d.). *Young African leaders initiative*. U.S. Department of State. <https://yali.state.gov/>

van Hugten, J., Coreynen, W., Vanderstraeten, J., & van Witteloostuijn, A. (2023). The Dunning-Kruger effect and entrepreneurial self-efficacy: How tenure and search distance jointly direct entrepreneurial self-efficacy. *Journal of Business Research*, 161. <https://doi.org/10.1016/j.jbusres.2023.113810>

© 2025 by authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).