

Evaluating the Impact of Video-Based Agricultural Extension on Women's Empowerment in Northern Uganda: A Mixed-Methods Study

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Abstract

In Uganda, the agricultural industry is essential to the economy and livelihood of many individuals. However, women farmers in Uganda face barriers to profitable agricultural production including access to quality inputs, appropriate infrastructure, land ownership, markets, extension services, and anti-women biases in the public and private sector. While agricultural extension has been present in Uganda since the late 1800s, it lacks effectiveness and has gender disparities, requiring innovative approaches. Information communication technologies have shown promise to supporting agricultural extension services. This study evaluates a program designed for women small-holder farmers in Uganda to receive agricultural extension services via video-based agricultural extension. Through a convergent mixed-methods approach, it examines how information communication technologies, specifically smartphones and video-based extension services, can support women empowerment in Northern Uganda. Key findings suggest video-based agricultural extension increased self-efficacy within the sample. Additionally, participants felt empowered and respected because of their increase in agricultural knowledge and access to technology. Recommendations for future programs include training and check-in components, incorporate a variety of video topics, increase the amount of time participants have access to video-based extension, and explore community-based approaches.

Article History

Received: May 12, 2026

Accepted: August 12, 2026

Published: August 24, 2026

Keywords

Evaluation; non-governmental organization; information communication technology; SDG 5: Gender Equality

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Introduction and Problem Statement

In Uganda, it is estimated 56% of the agricultural labor is completed by women (Palacios-Lopez et al., 2017). However, women farmers in Uganda face various challenges compared to their male counterparts (Muhanguzi et al., 2023). These challenges include barriers to access, such as access to quality inputs, appropriate infrastructure, land ownership, markets and extension services (Jost et al., 2015; Marimo et al., 2021; Muhanguzi et al., 2023). Research supports that including women in receiving agricultural information positively affects decision making, such as deciding on seeds and fertilizer, using recommended agricultural practices, and increasing agricultural yield (Lecoutere et al., 2019; Pan et al., 2018). When women are given access to information on improved methods, they can increase agricultural productivity even without expensive inputs such as machinery and infrastructure (Pan et al., 2018). Yet, there is a problem of gendered differences in access to and effectiveness of agricultural extension in Uganda (Benin et al., 2010; Okello et al., 2022; Turyasingura & Chavula, 2022).

Information Communication Technologies (ICTs) are one suggested way to support access to agricultural knowledge for women farmers (Subramanian et al., 2022). Digital extension services may reduce inequalities, such as access to information (Ledermann et al., 2024). Access to ICTs has been suggested to have positive effects on women's livelihoods (Lecoutere et al., 2019; Mpiima et al., 2019; Subramanian et al., 2022). Yet, increased capacity building is required to develop an equitable system of using ICTs for agricultural extension (Ledermann et al., 2024).

Theoretical and Conceptual Framework

The Project Level Women's Empowerment Agriculture Index (Pro-WEAI) supported the conceptual framework for this study. Kabeer (1999, 2005) describes empowerment as a process of change correlative between resources, agency, and achievements, with particular emphasis on assessing agency as the capacity to make strategic choices. The Pro-WEAI is organized into 12 indicators ingrained into three domains including intrinsic agency, instrumental agency, and collective agency (Malapit et al., 2019). Further, the Pro-WEAI is specific to agricultural projects. The measurement tool has been field-tested with projects specifically using mixed methods designs (Malapit et al., 2019). For these reasons, it served as an appropriate framework for this study to assist in measuring if and how the women who are smallholder farmers were empowered through participation in video-based agricultural extension services.

Within this study, the Pro-WEAI was modified, and specific indicators were chosen relevant to the study's research purpose and questions. The indicators included in the questionnaire were: (a) the general self-efficacy scale, (b) input in productive decisions, (c) ownership of land and other assets, (d) access to and decisions on financial services, (e) control over use of income, (f) work balance, (g) visiting important locations, (h) group membership, and (i) membership in influential groups (Malapit et al., 2019). Each of the indicators relates to the intrinsic, instrumental, and collective agency (Seymour et al., 2023). The indicators used can show the

number of participants who met adequacy and can suggest if they were or were not empowered in that specific indicator (Malapit et al., 2019).

Purpose

The primary purpose of this study was to examine if and how ICTs, specifically video-based agricultural extension, impacts Ugandan women farmers' empowerment and provide recommendations for agricultural extension practice and policy on using video-based agricultural extension approaches. The objective is to synthesize findings from the Pro-WEAI and describe the lived experience of women smallholder farmers.

Methods

In 2024, Her Mighty Hands, in partnership with Field of Hope, implemented the third cohort of women smallholder farmers to receive video-based agricultural extension services. In February, prior to the spring growing season, 30 participants from the Amolatar and Kwania districts in northern Uganda received a smartphone and solar-based charger. Participants were purposively selected to participate in the program by Field of Hope personnel as they know the women's group and could confirm participant safety (Benin et al., 2010; Okello et al., 2022). The videos were structured into three parts and recorded in the local language, Lango. The pre-season videos uploaded in February included planning, site selection, land preparation, seed and variety selection, planting, and visiting the garden such as gap filling and cleaning. The mid-season videos uploaded in May included weed management, pest and disease management, soil fertility management, and safe use of agrochemicals. Lastly, the end of season videos uploaded in July included harvest and post-harvest handling practices such as transportation, drying of grains, shelling or threshing, storing, cleaning, and marketing. The curriculum was derived from the Uganda Ministry of Agriculture extension. Field of Hope staff completed monthly check-ins from February through August, as outlined in an agreement between the organizations.

To evaluate the Her Mighty Hands program, a convergent (quan + qual) mixed-methods approach with a pragmatist paradigm supported this study (Creswell & Plano Clark, 2018; Shannon-Baker, 2016). The purpose of using a convergent (quan + qual) mixed methods approach included corroboration, as triangulating and integrating the quantitative and qualitative results increased the confidence of the findings. Further, this approach provided a more complete understanding of the lived experience of the same phenomena (Creswell & Plano Clark, 2018). This study was a part of a larger project examining other aspects of video-based extension including yield and income. The participants who received the videos served as the treatment group, while the control group had access to traditional extension, if they chose to participate. While there were 30 participants enrolled in each group, due to a variety of reasons, the study completed with 28 in the treatment and 26 in the control group.

Within the quantitative strand, a pre and post survey was conducted with the treatment and control group. The instrument included an adaptation of the Pro-WEAI projects instrument. The pretest occurred January through February 2024, prior to receiving the smartphone or being placed in the control group. The posttest occurred at the end of the growing season after harvest in August 2024. Within the qualitative strand, three qualitative focus groups took place with the treatment group, combined with prolonged engagement and observations. The qualitative focus groups occurred at the end of the growing season with observations occurring throughout June through August 2024 with comprehensive field notes while the researcher was in Uganda for three months. While all participants were present throughout the three months with community visits, a total of 19 participants from the treatment group were present on the focus group visits to the communities. The focus groups varied in size, with six participants in Focus Group One from Kwania, eight participants in Focus Group Two from Amolatar, and five participants in Focus Group Three from Amolatar. Kwania was specifically limited in size due to a funeral on the day of the focus group that nine of the 15 participants attended. The two missing Amolatar participants included one participant who had just given birth and another who was sick. Focus groups were audio recorded, as well as descriptive notes taken throughout each focus group regarding verbal and nonverbal communication (Denham & Onwuegbuzie, 2013). Each focus group lasted between 40-60 minutes. A translator who understood the social linguistic level of Lango and English, and who was trusted person by participants was used throughout each focus group (Ho et al., 2019; Squires, 2008).

Data analysis occurred concurrently and then the quantitative and qualitative strands were integrated. Within the quantitative strand, the Pro-WEAI framework outlines the process of meeting adequacy for each indicator. If they met adequacy, it is suggested they were empowered for that specific indicator (Malapit et al., 2019). One-tailed t-tests were conducted to indicate statistical significance between the control and treatment group, and between the treatment group pretest and posttest. The quantitative sample size limitation is acknowledged; however, the qualitative strand supports transferability to appropriate audiences (Lincoln & Guba, 1985).

To analyze the qualitative data, the data from the focus groups were first transcribed using the transcription software Otter. A qualitative software, NVivo (version 14), was used to code and thematically analyze the data. Thematic analysis includes the process of identifying themes or patterns, within qualitative data (Braun & Clarke, 2006). For this study, the thematic analysis was supported by the use of thematic networks (Attride-Stirling, 2001). Thematic networks include a similar process to Braun and Clarke's (2006) thematic analysis, but with the purpose to summarize particular themes to create larger, more unified themes and relate to the original research purpose and theoretical interests (Attride-Stirling, 2001). The first stage includes reducing and breaking down the text by coding the material, identifying themes, and constructing the thematic networks. This was done by breaking down the text into segments using a coding framework. Themes were identified from coded text segments and refined. Last, the thematic networks were constructed into basic, organizing and global themes. A basic theme is the most basic, lowest-order theme extracted from the textual data. Together, multiple basic themes describe an organizing theme. An organizing theme is the middle order

theme that organizes the basic themes into clusters. Then the concluding theme includes the global theme that groups the organizing themes together to present an argument, position, or assertion about a given issue (Attride-Stirling, 2001). The second stage explores the text by describing and exploring thematic networks, then summarizing. This was done by exploring and then describing the global themes within this article as the summary of the thematic networks. Lastly, the integration of the exploration stage includes interpreting patterns. This was completed by relating back to the original research purpose and theoretical interests (Attride-Stirling, 2011). Thematic networks were appropriate for this study because it systematized the qualitative data analysis process and provided an opportunity to explore the lived experience.

The quantitative and qualitative analyses supported the ability to integrate and expand understanding. The integration is demonstrated with joint displays, including the meta-inferences (Creswell & Plano Clark, 2018). Ultimately, the integration analysis showed to what extent the qualitative and quantitative strands converged and diverged regarding the phenomena of video-based agricultural extension impact on empowerment and supported the connection to the Pro-WEAI.

Validity

Within each strand and integration, reliability, validity, and trustworthiness were established. Reliability was established using the posttest data from the treatment and control groups with a Cronbach's alpha reported at $\alpha = .910$ (Tavakol & Dennick, 2011). Further, content- and construct-related validity was established (Fraenkel et al., 2019). Qualitative trustworthiness measures included Lincoln and Guba's (1985) trustworthiness measures. Methods included prolonged engagement, peer debriefing, triangulation, reflexive journaling, audio recordings with verbatim transcriptions, data saturation, and rich and thick descriptions (Lincoln & Guba, 1985). To mitigate the convergent mixed methods validity threats, the quantitative and qualitative data were collected regarding the same phenomena and included parallel questions. Additionally, the sample size was justified to collect relevant and in-depth data. A joint display compared the strand results side by side to integrate them. Lastly, any disconfirming results were resolved through reexamination (Creswell & Plano Clark, 2018).

Findings

The results include the quantitative strand, qualitative strand, and integrated findings. Key demographics include an age range from 20 to 60+ years old, with the majority having a primary level of education (78%) and being married (70%). Majority of the women (87%) had not had previous agricultural extension training, but they were a part of a women's group.

Quantitative Results

The quantitative strand investigated descriptive and inferential statistics based upon the Pro-WEAI, as well as descriptive information regarding participants' perceptions. For the descriptive information, within the pretest, excluding the self-efficacy indicator, all other indicators showed that all or more than half of participants met adequacy. Within the posttest, for the treatment

group, at least over half of the participants met adequacy for all indicators. Within the posttest for the control group, more than half of the participants did not meet adequate levels for self-efficacy.

Within the inferential analysis of the findings, the pretest and posttest of the treatment group suggested statistical significance in self-efficacy and visiting important locations. The specific results are included in Table 1. The treatment group increased the number of participants who met adequacy for self-efficacy within intrinsic agency between the two growing seasons. Further, the posttest had more participants meeting adequacy in visiting important locations within instrumental agency. Therefore, the treatment group statistically significantly increased the number of participants who were adequate in self-efficacy and visiting important locations from the pretest to the posttest.

Table 1

Results of T-test Analysis of Empowerment: Pretest Treatment vs. Posttest Treatment (n = 28)

	Pretest		Posttest		<i>p</i>	<i>T-value</i>
	Treatment <i>M</i>	<i>SD</i>	Treatment <i>M</i>	<i>SD</i>		
<i>Intrinsic Agency</i>						
Self-Efficacy	1.46	0.51	1.25	0.44	<.01*	2.71
<i>Instrumental Agency</i>						
Input into productive decisions	1	0	1.04	0.19	.16	-1
Ownership of land & other assets	1	0	1	0	-	-
Access to & decisions on financial services	1.04	0.19	1	0	.16	1
Control over use of income	1.11	0.32	1.11	0.32	.5	0
Work Balance	1.07	0.26	1.04	0.19	.29	0.57
Visiting important locations	1.14	0.36	1	0	.02*	2.12
<i>Collective Agency</i>						
Group membership	1	0	1	0	-	-
Membership in influential groups	1.04	0.19	1	0	.16	1

Note. * $p < 0.05$. 1 = yes, 2 = No.

Between the control and treatment group posttests, the only statistically significant indicator included self-efficacy. The specific results are included in Table 2. This suggests within the treatment group, there were statistically significantly more participants who had achieved self-efficacy within intrinsic agency compared to the control group. However, all other indicators in instrumental agency and collective agency were not statistically significantly different.

Table 2

Results of T-test Analysis of Empowerment: Posttest Control (n = 26) vs. Posttest Treatment (n = 28)

	Pretest Treatment		Posttest Treatment		<i>p</i>	<i>T-value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<i>Intrinsic Agency</i>						
Self-Efficacy	1.69	0.47	1.25	0.44	<.01*	3.56
<i>Instrumental Agency</i>						
Input into productive decisions	1.04	0.20	1.04	0.19	.48	0.52
Ownership of land & other assets	1	0	1	0	-	-
Access to & decisions on financial services	1	0	1	0	-	-
Control over use of income	1.15	0.37	1.11	0.32	.31	0.50
Work Balance	1	0	1.04	0.19	.16	-1
Visiting important locations	1.04	0.20	1	0	.16	1
<i>Collective Agency</i>						
Group membership	1	0	1	0	-	-
Membership in influential groups	1	0	1	0	-	-

Note. * $p < 0.05$. 1=yes, 2=No.

In summary, self-efficacy was the only indicator to have statistically significant difference within the treatment group and between the treatment group and control group. While visiting important locations within instrumental agency was statistically significant within the treatment group pretest and posttest, it was not between the treatment and control groups. However, when examining the descriptive statistics in the pretest, a majority of the participants were already reaching adequacy for empowerment indicators.

When investigating the perceptions of using a smartphone and videos for agricultural extension information, the descriptive quantitative findings suggest that overall, the videos and smartphones were easy to navigate after they were trained on how to use them. Participants did not know how to use them beforehand but used the videos and smartphone to increase their agricultural knowledge and grow their business. Participants felt encouraged to use the smartphone and learned just as well as attending in-person agricultural extension training.

Qualitative Results

Drawn from basic and organizing themes, three global themes provide an overview of the participants lived experiences. The three global themes supporting the empowered findings includes Impacted Personally, Recommended Adaptations, and Perceptions of Video-Based Agricultural Extension.

Impacted Personally

Participants described having increased challenges in the posttest growing season compared to the pretest growing season, including lack of rain and prolonged sunshine. Yet the participants felt more individually empowered and respected within the community because of the technology and information. Through this theme, participants indicated their general self-efficacy and ability to make decisions, similar to the Pro-WEAI (Malapit et al., 2019). Several participants described this theme, such as Agnes who said, “People even liked me because they wanted to befriend me so that they can also be able to access the information which is in the video.” Lydia added later on that, “The phones have empowered us. It has empowered us to do a lot of things, even our children are able to learn.” Participants felt having a smartphone also earned them respect within their community. Janet described,

The people around me were so impressed, and they were wondering because they have never seen a group that has given phones to farmers to use it for training. And so, they were wondering and they also wanted to become part of the group.

There was only one negative experience mentioned. Evaline described her negative experience, she said, “One time someone said, ‘Look at this person, she also now has a smartphone. The phone is so good, and yet she didn’t deserve to have such kind of a phone.’ I felt so bad.” However, most other people were simply curious about the smartphone and desired to have the same opportunity. Florence added, “The people, the neighbors, very much want to join the group because of the phone,” suggesting the participants’ appreciation for group membership (Malapit et al., 2019).

Participants also looked to the future and explained how they plan to retain the knowledge and make beneficial decisions in their subsequent agricultural production. Justina kept notes while watching the videos so she could retain the information. She added, “I will continue using the knowledge and if the rain is sufficient, I am going to get a good harvest.” However, when participants could not take notes, they could still rely on their family members who watched the videos with them. For example, Mary added, “I have it [the knowledge] in my head. And even the people at home who has been watching, they remember things, so when I’m forgetting, they will remind me.” These experiences indicate participants felt impacted through knowledge retention, relationships with their community, and feeling confident for the future.

Recommended Adaptations

A key aspect of the qualitative strand was to understand what participants liked and did not like about the program, including what they wanted to change about it. Participants appreciated the videos and the topics, and a frequent statement expressed included, “all of them were my favorite.” They also requested more video topics. Specifically, they wanted videos overviewing agricultural techniques for small-seeded crops, marketing, financial literacy, and animal production. While Carol requested marketing and financial literacy for video topics, Eunise added, “What I didn’t see there was how to plant the small-seeded crops, like simsim and millet.” Lydia, who was sitting across from Eunise, also nodded and verbally agreed to needing videos on small-seeded crops. By adding more content areas and increasing the number of

videos, the videos could better apply the Pro-WEAI indicators such as input in productive decisions, access and decisions on financial services, and control of income (Malapit et al., 2019).

The participants also requested more time with the smartphones to access the videos and to increase participant numbers. Judith was very matter of fact when she said, “At least if we had it for two seasons, that would be better.” In other conversations, participants built upon each other when requesting for increased time with the smartphone and videos. They also mentioned wanting more people to be involved and having access to video-based agricultural extension. Veronica explained, “The people that don’t have phones cannot do the same things that people have the phones are doing.”

Across the board, participants were grateful for being involved in video-based agricultural extension services. They hope a program will continue with increased video topics and involve more participants. Anna explained this by adding, “I just want to say thank you and say you should continue with such programs.”

Perceptions of Video-Based Agricultural Extension

When describing their lived experience of the program, participants indicated their perceptions of video-based agricultural extension. Participants were able to learn using a smartphone and felt comfortable to do so. Justina explained,

I have been farming for a long time, but because of the phone, I got at least something new, new knowledge. And, I used to hear people saying that you should buy phones for students for learning. But now I realized it is very, very easy to learn using a phone.

It was common for participants to watch the videos as soon as they were uploaded to the phone. As soon as the first participant had the new video uploaded, others were gathered around to watch. Further, participants’ families supported their use of the phone, including their husbands. Many participants shared the videos with their husbands because they also helped with the farmwork. Florence explained this by saying, “There has been no challenge [with the smartphone]. We would watch the video together, then we would go and do our garden work. We didn’t have challenges with our husbands.” While the program did not necessarily encourage participants to share their smartphone, it happened naturally and did not cause issues within the family or other unintended consequences, suggesting an opportunity to explore community-based approaches.

Overall, participants frequently used their smartphones and perceived them as “a good tool” like Evaline said, to learn agricultural knowledge. Participants, such as Phoebe, also described the training on the smartphone as “better than the in-person training.” They perceive video-based agricultural extension as good education, including Eunise who said,

The phone has been very helpful. For me, I didn’t go to school, but people who have gone to the university, when they come and they find me watching the video, they will think, I’ve gone to school. They think I’ve done training in agriculture, because when I go to the garden, I do the right thing. When they come to my garden, they find my crops in

line. They even respect me, because of that. That is the benefit I got from having the phone.

Participants appreciated they were able to watch the videos when it was convenient for them. They used the check-ins from Field of Hope as a time to meet with other women farmers, share what they had learned, ask questions, and empower each other.

Integration

When integrating, the quantitative results include within the treatment group pretest and posttest, and between control group and treatment group posttests. The qualitative results confirm or disconfirm the results. Table 3 includes the joint display indicating the quantitative results and the qualitative results that confirm or disconfirm the quantitative results.

Throughout both the treatment group pretest and posttests, and between the control and treatment groups posttests, there was little quantitative evidence to support the participants being empowered because of the video-based agricultural extension. The statistical significance within self-efficacy is validated through the qualitative findings of how participants felt more intrinsically empowered within their agricultural production. Additionally, participants felt they received better training than others and wanted them to be a part so they could also improve their agricultural production. However, the qualitative disconfirms the lack of statistical significance in other indicators as participants described how they felt empowered to impact their agricultural production and their families benefited due to video-based agricultural extension.

Within perceptions, participants indicated both qualitatively and quantitatively that the videos were useful for their agricultural production. Participants learned more about using technology and used it for their business. There were certain aspects that made the smartphone useful including the flexibility of time, ability to re-watch the videos, sharing knowledge with their family, and having support from the Field of Hope implementation team.

Table 3

Joint Display for Empowerment Integrated Findings

Group	Quantitative Finding	Qualitative Finding
Pretest and Posttest Treatment	Self-efficacy $p < .01$, where posttest had more met adequacy All other indicates $p > .05$	"The phones have empowered us. It has empowered us to do a lot of things, even our children are able to learn." -Lydia
Posttest Control and Posttest Treatment	Self-efficacy $p < .01$, where treatment had more met adequacy	"I wish that if everyone in the group could have the phone, then the group would do very well." - Agnes

Conclusions, Discussion, and Recommendations

Based upon the quantitative and qualitative results, a meta-inference can be concluded that participating in an ICT extension program impacted the self-efficacy and visiting important locations indicators of empowerment from the Pro-WEAI, while all other indicators were already adequately met. However, due to the integration of qualitative and quantitative findings, it is concluded the use of ICTs in extension still has potential to support women's empowerment in this study, as shown in Table 4. It is also concluded there were no negative effects for participants because they were involved with video-based agricultural extension. Further suggesting, there may be possibilities for future video-based agricultural extension programs to support and further research to investigate instrumental and collective agency, but in this study, the participants were already empowered within the domains.

Table 4

Joint Display for Meta-Inference

Significance	Quantitative Finding	Qualitative Finding
Statistically Significant for Treatment Group	Posttest treatment statistically significantly more participants adequate in self-efficacy indicator than pretest treatment and posttest control, both $p < .01$	"I was trained, so I know how to use the phone. I know how to get whatever I want from the phone and because of it, I would go and check my garden to see how it was doing. But before that, I would just plant my crops and then sit and wait." -Nancy
Statistically Significant for Pretest Treatment or Control Group	No quantitative results were statistically significant for control or pretest	"I wish that if everyone in the group could have the phone, then the group would do very well." - Agnes
Not Significant	All indicators outside of intrinsic agency and visiting important locations had previous adequacy	"The phones have empowered us. It has empowered us to do a lot of things, even our children are able to learn." -Lydia
Meta-Inference	Empowerment only changed in one overall indicator; others were already adequate, yet participants still indicated they felt empowered.	

Various aspects of the partnership between Her Mighty Hands and Field of Hope helped the program succeed and provide recommendations for future ICT programs and research. Her Mighty Hands and Field of Hope developed a training on how to use a smartphone and monthly

check-ins by the Field of Hope implementation team. Participants indicated quantitatively and mentioned qualitatively the trainings and check-ins were necessary and useful. It is recommended future practice continue to include the training and check-in components to ensure participants are comfortable using a new technology and ensure unintended consequences are limited. Building on this recommendation, future research should evaluate the smartphone training to determine best practices.

Participants had access to video topics on crop planning, planting, management, and harvest and post-harvest. However, participants frequently mentioned a need for small-seeded crop information such as simsim and millet, marketing, financial literacy, and livestock production. Therefore, future video-based agricultural extension should include a variety of topics including more information on crop production and additional aforementioned topics. Budgets should include the cost of video production to understand whether it is feasible. Additionally, as participants qualitatively compared video-based to in person extension, further research could provide a more in-depth comparison between traditional extension versus video extension.

Participants had access to the videos and a smartphone for one growing season, from February to August 2024. However, because participants explained the growing seasons are becoming increasingly different, it is recommended participants should have access to the videos for two growing seasons. While this decreases the quantity of smallholder farmers reached, future research should examine how increasing time impacts effectiveness and knowledge retention.

Every participant mentioned they watched the videos with family and friends. Therefore, future programs should explore how a single smartphone could be strategically used within a network of people. More research is required to determine which model would be most appropriate for a community-based approach. Yet ultimately, a community-based approach could assist with funding constraints by increasing reach without drastically increasing cost.

This study supports previous research that suggests when including ICTs in extension services, extension professionals and policy decision-makers should continue to support strategies involving both men and women, and support and invest in women smallholder farmers becoming socially, educationally, economically, politically, and psychologically empowered (Acosta et al., 2019; Anderson, 2022; Leon-Himmelstine et al., 2021; Quisumbing et al., 2023). When practice and policies are gender-blind or neutral, they put women at risk of increasing vulnerability and disempowerment (Kovaleva et al., 2022). The Her Mighty Hands program supports the notion that the participants in this study are determined to succeed in their agricultural production, and using ICTs in agricultural extension services could be a viable way to support them in achieving that objective (Ledermann et al., 2024).

Acknowledgments

Funding Information: The research was self-funded.

Conflict of interest: There are no conflicts of interest.

Previous Dissemination: A portion of this article was previously included in a dissertation: Dado, M. (2025). *A mixed methods investigation of the impact of information communication technology on agricultural extension services for women smallholder farmers in Uganda* [Texas A&M University]. Information from this article was presented at the Association for International Agricultural and Extension Education 2026 annual conference.

Artificial Intelligence: No AI was used in the development of this manuscript.

Author Contribution Statement: **M. Dado** – conceptualization, methodology, instrument development, validation, project administration, investigation, formal analysis, writing-original draft, and editing; **J. Elliot** – conceptualization, validation, supervision, resources, and editing; **R. Landaverde** – methodology, validation, and editing; **K. Dooley** – methodology, validation, and editing; **G. D. Flint** – validation and editing; **J. Apea** – conceptualization and investigation; **O. Murphy-Sweet** – supervision.

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