





# Knowledge Services and Community Engagement Outcomes in Universities in Central Uganda

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**Abstract:** *This study examines the effect of knowledge services on community engagement outcomes in selected universities in Central Uganda. A mixed-methods cross-sectional design was adopted, integrating quantitative data from 330 academic staff with qualitative insights from key stakeholders. Correlation and regression analyses reveal that knowledge service components particularly advisory services, training and capacity-building programs, and extension services have a significant and positive effect on community engagement outcomes. However, challenges such as limited funding, weak institutionalization of knowledge translation, and inadequate outreach structures constrain the effectiveness of these services. The study concludes that strengthening knowledge dissemination, community-oriented outreach, and stakeholder engagement mechanisms is essential for enhancing university–community linkages and improving socio-economic impact. The findings highlight the need for institutional reforms that support structured knowledge translation systems to improve the relevance, accessibility, and practical application of university-generated knowledge.*

**Keywords:** *Knowledge services, Community engagement, Knowledge translation, Knowledge dissemination, Policy engagement, Community outreach, Research utilization, University impact.*

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## 1. Introduction

Universities globally are recognized as key drivers of socio-economic transformation through their core mandates of teaching, research, and community engagement. They play a central role in knowledge production systems, generating and disseminating knowledge that supports innovation, policy development, and community advancement (Trinh, 2023; World Bank, 2008). As demand for higher education continues to grow, universities are increasingly expected not only to produce knowledge but also to ensure its relevance and application in addressing real-world societal challenges (Berrell, 1998; Mandau et al., 2022). This shift has heightened attention on how universities translate knowledge into practice,

particularly through knowledge services that connect academic outputs to community needs.

In Africa, and specifically in Uganda, the higher education sector has expanded rapidly, accompanied by significant growth in research output and enrolment. Policy frameworks such as Uganda’s Vision 2040 and the National Development Plan IV emphasize the role of universities in promoting innovation, knowledge transfer, and community transformation (National Planning Authority [NPA], 2025). Despite this progress, there remains a persistent gap between knowledge production and its utilization in communities. Much of the knowledge generated within universities remains theoretical, with limited influence on policy, practice, and local development outcomes (Gibbons et al., 1994; Godin & Gingras, 2000). This disconnect highlights

weaknesses in the mechanisms that support the translation of knowledge into societal impact.

Knowledge services including research dissemination, knowledge sharing, outreach activities, and policy engagement are critical in bridging this gap. These services facilitate the transfer and application of knowledge from academic institutions to communities, thereby enhancing the relevance and impact of university outputs (Graham et al., 2006; Cloete et al., 2015). However, in many universities, knowledge services remain fragmented and inadequately aligned with community needs, limiting their effectiveness in achieving meaningful engagement outcomes (Farnell, 2020; Mandau et al., 2022). As a result, community engagement outcomes such as policy change, improved livelihoods, and stakeholder satisfaction remain suboptimal.

This study therefore examines the effect of knowledge services on community engagement outcomes in universities in Central Uganda. By focusing on how knowledge is disseminated, shared, and applied beyond academic settings, the study seeks to provide insights into how universities can strengthen their engagement with communities and enhance their contribution to socio-economic development.

## 1.1 Statement of the Problem

Universities in Uganda are expected to contribute to national development through research, teaching, and community engagement by generating and sharing knowledge that is relevant and responsive to societal needs (National Planning Authority [NPA], 2025; Ondari-Okemwa, 2021). Globally, universities are increasingly recognized as key actors in knowledge-based economies, with a growing expectation that knowledge should not only be produced but also effectively disseminated and applied through knowledge services such as outreach, policy engagement, and community partnerships to drive tangible societal impact.

However, despite the rapid expansion of Uganda's higher education sector and increased research output, the translation of academic knowledge into meaningful community engagement outcomes remains limited (Ministry of Education and Sports [MOES], 2020; Uganda National Council for Science and Technology [UNCST], 2021). Community engagement continues to be weakly institutionalized, with knowledge services often fragmented and insufficiently aligned with community needs (Brackmann, 2015; Mugabi, 2015; Tumusiime, 2022). Evidence indicates that only a small proportion of research outputs inform policy or practice, while many communities perceive university knowledge as lacking relevance, suggesting that existing knowledge dissemination and engagement mechanisms are not

effectively facilitating the application of academic knowledge.

Furthermore, much of the knowledge generated within universities remains confined to academic publications with limited outreach or practical use, resulting in weak university–community linkages and largely symbolic engagement (Nawangwe et al., 2019; Mukama & Nampala, 2020). Although policy frameworks emphasize the role of universities in driving socio-economic transformation, gaps in knowledge services continue to constrain their impact (NPA, 2025). This study therefore examines the effect of knowledge services on community engagement outcomes in universities in Central Uganda, with the aim of understanding how knowledge dissemination, sharing, and engagement mechanisms can be strengthened to enhance community impact and development.

## 1.2 Objectives of the Study

To examine the effect of knowledge services on community engagement outcomes in universities in central Uganda

## 2. Literature Review

Universities have historically played a central role in knowledge production through their core mandates of teaching, research, and community engagement. In recent years, increasing emphasis has been placed on how universities translate knowledge into societal impact, particularly through knowledge services such as dissemination, outreach, and policy engagement. These services are critical in linking academic outputs to community needs and enhancing the relevance of university knowledge in addressing real-world challenges. This review focuses on knowledge services as a key dimension of knowledge production practices, examining how they influence community engagement outcomes. Specifically, it explores the role of knowledge translation, dissemination, and exchange mechanisms in shaping policy changes, community improvements, and stakeholder perceptions. The review also highlights theoretical, conceptual, and empirical perspectives relevant to understanding how knowledge services contribute to community development, with particular emphasis on the context of universities in Central Uganda.

### 2.1 Knowledge Services and Community Engagement

Knowledge services refer to the processes through which universities disseminate, share, and apply knowledge beyond academic settings to address societal needs (Cloete et al., 2015). These include research

dissemination, outreach activities, policy engagement, and collaboration with community stakeholders. According to Graham et al. (2006), effective knowledge translation involves the synthesis, dissemination, exchange, and application of knowledge to improve outcomes in society. This underscores the importance of ensuring that knowledge produced within universities is accessible, relevant, and actionable.

Community engagement, often referred to as the “third mission” of universities, involves the collaborative interaction between universities and external communities for mutual benefit (Boyer, 1996; European Commission, 2020). It encompasses activities such as community-based research, service learning, consultancy, and knowledge exchange. Studies indicate that effective knowledge services enhance the capacity of universities to engage meaningfully with communities by facilitating the flow of knowledge and fostering partnerships (Benneworth & Sanderson, 2009). In this regard, knowledge services act as a bridge between academic knowledge and community application, ensuring that research outputs contribute to addressing social and economic challenges.

## 2.2 Community Engagement Outcomes

Community engagement outcomes refer to the measurable changes that occur as a result of university interaction with communities. These outcomes can be categorized into three key dimensions: policy changes, community improvements, and stakeholder satisfaction and perception. First, knowledge services can influence policy changes by providing evidence-based insights that inform decision-making processes. Research findings, when effectively communicated, can lead to reforms in policies, regulations, and institutional practices (Nutley et al., 2007). Engagement with policymakers and stakeholders further enhances the likelihood of research uptake and implementation.

Second, knowledge services contribute to community improvements by supporting local development initiatives. Universities can enhance community well-being through activities such as skills development, health education, and agricultural innovation (Boyer, 1990). These improvements reflect the practical application of knowledge and its contribution to economic and social development. Third, stakeholder satisfaction and perception are critical indicators of effective community engagement. Positive perceptions of university activities enhance trust and strengthen partnerships between universities and communities (Hart & Northmore, 2011). Conversely, weak knowledge services may result in negative perceptions, reducing the credibility and impact of university engagement efforts.

## 2.3 Summary

The literature demonstrates that knowledge services play a crucial role in linking university knowledge production to community engagement outcomes. Effective knowledge translation, dissemination, and stakeholder engagement mechanisms enhance the relevance and application of academic knowledge, thereby contributing to policy change, community development, and improved stakeholder perceptions. However, existing studies reveal significant gaps, particularly in the African context, where knowledge services remain weakly institutionalized, underfunded, and poorly integrated into university systems. In Uganda, limited attention has been given to understanding how knowledge services specifically influence community engagement outcomes. Most studies focus broadly on research and teaching, with less emphasis on the mechanisms that facilitate knowledge transfer and application. This study therefore addresses this gap by examining the effect of knowledge services on community engagement outcomes in universities in Central Uganda, providing empirical insights into how universities can strengthen their knowledge translation systems to enhance societal impact.

## 3. Methodology

This study adopted a mixed-methods approach to examine the effect of knowledge services on community engagement outcomes in selected universities in Central Uganda. A cross-sectional research design with concurrent triangulation was employed to enable the simultaneous collection and integration of quantitative and qualitative data, thereby enhancing the validity, depth, and complementarity of the findings. The study was conducted in three universities: Makerere University, Uganda Martyrs University, and Bugema University, selected to reflect urban, peri-urban, and rural contexts. The study population comprised academic staff, university leaders, community members, and policymakers associated with university community engagement initiatives. A sample of 330 academic staff was selected using stratified random sampling to ensure representation across faculties, departments, and gender.

The distribution included 256 participants from Makerere University, 35 from Uganda Martyrs University, and 39 from Bugema University. Purposive sampling was used to select key informants, including Directors of Graduate Research, Heads of Research and Innovation Offices, University Relations personnel, and community leaders. Focus group discussion participants were mobilized from surrounding communities and business sectors through university contact persons and local leaders to ensure diverse and balanced representation.

Data collection was undertaken using structured questionnaires, key informant interviews, focus group discussions, and document analysis to provide a comprehensive assessment of knowledge production

practices and their influence on community engagement outcomes. Structured questionnaires were administered in person by trained research assistants to academic staff to collect quantitative data on research activities, teaching practices, knowledge-sharing services, outreach programs, and community engagement outcomes. Each questionnaire took approximately 30 minutes to complete and was administered in English. Key informant interviews were conducted with university administrators and community stakeholders to capture in-depth insights into knowledge generation, dissemination, and collaboration processes. Semi-structured interview guides were used to ensure consistency while allowing flexibility to explore emerging issues. Focus group discussions were held with community members and business operators to examine perceptions of university contributions to local development, innovation, and economic activities. These discussions were facilitated by trained moderators, lasted between 60 and 90 minutes, and were conducted in accessible languages with translation where necessary. Document analysis involved reviewing institutional reports, policy documents, and strategic plans to provide contextual and historical perspectives on knowledge services and engagement practices.

The data collection process followed a systematic procedure to ensure accuracy and reliability. Research assistants were trained on study objectives, data collection tools, ethical considerations, and quality assurance procedures. Participants were mobilized through university administrative structures and community leaders, and schedules were arranged in advance to ensure participation. Questionnaires were administered face-to-face, while interviews and focus group discussions were conducted at convenient locations and audio-recorded with participants' consent. Field notes were recorded to complement primary data sources, and all collected data were checked for completeness and consistency before analysis. Data analysis involved both quantitative and qualitative techniques. Quantitative data were analyzed using STATA version 18.5, employing descriptive statistics such as frequencies, means, and standard deviations to summarize key variables. Inferential analysis included Pearson correlation and multiple regression to examine relationships between knowledge services and community engagement outcomes. The analysis was based on a five-point Likert scale to assess the level and variability of responses. Qualitative data were analyzed thematically using NVivo version 10, involving systematic coding, categorization, and interpretation of emerging themes related to knowledge production and engagement processes. Findings from both quantitative

and qualitative datasets were triangulated to provide a comprehensive and contextually grounded understanding of the study phenomenon.

Data quality control measures were implemented to ensure validity and reliability. Content validity was assessed using the Content Validity Index (CVI), with all constructs achieving values above the acceptable threshold of 0.70, confirming the relevance of the measurement items. Reliability was assessed using Cronbach's alpha coefficients, which ranged from 0.875 to 0.936, indicating strong internal consistency across all constructs. Qualitative rigor was ensured through triangulation of multiple data sources, maintaining detailed field notes, and applying principles of trustworthiness, including credibility, dependability, and confirmability.

Ethical considerations were strictly observed throughout the study. The research adhered to national and international ethical guidelines for research involving human participants. Informed consent was obtained from all participants prior to data collection, and participation was voluntary, with the right to withdraw at any time without penalty. Confidentiality and anonymity were ensured by safeguarding personal information and securely storing all data. A community engagement plan was implemented to involve stakeholders throughout the research process, ensuring inclusivity and relevance. Additionally, risk mitigation measures, including adherence to public health guidelines, were followed to ensure the safety of participants and researchers during data collection. The study maintained high standards of integrity, professionalism, and ethical responsibility throughout all stages of the research process.

## **4. Result and Discussion**

### **4.1 Respondent Socio-demographic Characteristics**

In order to understand the performance of research activities in universities, academic staff members were identified as major respondents in this study. Accordingly, Table 1 presents the socio-demographic characteristics of the respondents involved in the study. The distribution includes gender, age group, academic qualification, marital status, employment status, professional experience, institutional tenure, mode of work, and access to institutional support services. The demographic profile helps provide context for interpreting the study findings.

**Table 1: Respondent socio-demographic characteristics**

-	Category	Frequency	Percent
Gender	Female	118	35.76
	Male	212	64.24
Age group	<29	2	0.61
	30–39	66	20
	40–49	161	48.79
	50–59	90	27.27
	60+	11	3.33
Highest academic qualification	Bachelor's	34	10.3
	M.Phil (taught)	1	0.3
	Master's (taught)	92	27.88
	PhD / Doctorate	203	61.52
Marital status	Divorced / Separated	17	5.15
	Married	255	77.27
	Single	49	14.85
	Widowed	9	2.73
Employment status	Contract	9	2.74
	Full-time	228	69.51
	Part-time	91	27.74
Experience in higher education	≤9	67	20.3
	10–14	83	25.15
	15–19	83	25.15
	20–24	63	19.09
	≥25	34	10.3
Years with institution	≤5	40	12.12
	6–10	131	39.7
	11–15	64	19.39
	16–20	72	21.82
	≥21	23	6.97
Mode of work	Fully Online	3	0.91
	Hybrid	76	23.03
	On-campus	251	76.06
Research support access	Adequate	168	50.91
	Inadequate	48	14.55
	Not available	6	1.82
	Somewhat adequate	108	32.73
Teaching/Learning support	Adequate	284	86.06
	Inadequate	7	2.12
	Not available	3	0.91
	Somewhat adequate	36	10.91
Knowledge services support	Adequate	277	83.94
	Inadequate	8	2.42
	Not available	1	0.3

-	Category	Frequency	Percent
	Somewhat adequate	44	13.33

Source: Primary data, 2026

The demographic characteristics of respondents indicate that the study largely captured experienced and well-established academic staff. Male respondents constituted the majority (64.24%), compared to 35.76% females, suggesting a gender imbalance that may reflect the composition of academic staff in the selected universities. In terms of age, most respondents were in the mid- to late-career stages, with 48.79% aged 40–49 years and 27.27% aged 50–59 years. This distribution implies that the study benefited from participants with substantial professional experience and institutional knowledge.

Additionally, the majority of respondents were highly qualified, with 61.52% holding PhD degrees and 27.88% holding master’s degrees, reinforcing the credibility and depth of the information provided.

Regarding professional and employment characteristics, most respondents were married (77.27%) and predominantly employed on a full-time basis (69.51%), indicating a stable and committed academic workforce. Part-time staff accounted for 27.74%, while contract staff formed a small proportion (2.74%). The findings further reveal that respondents were generally experienced in higher education, particularly those with 10–14 years and 15–19 years of service (25.15% each), reflecting a concentration of mid-career academics. In terms of institutional tenure, most respondents had served their current institutions for 6–10 years (39.7%), indicating moderate institutional loyalty and familiarity with internal systems and practices. The dominance of on-campus work arrangements (76.06%) also highlights the continued reliance on traditional academic work structures within the universities.

Institutional support systems were perceived positively

across teaching, research, and knowledge services. Over half of the respondents (50.91%) rated research support as adequate, while teaching and learning support received stronger approval, with 86.06% indicating adequacy. Similarly, 83.94% of respondents viewed knowledge support services as sufficient. These findings suggest that the selected universities provide a supportive environment for academic work, particularly in teaching and knowledge dissemination. Overall, the demographic and professional profile indicates that respondents were experienced, highly educated, and well-integrated into their institutions, thereby enhancing the reliability and credibility of the data in assessing teaching practices and community engagement outcomes.

## 4.2 Knowledge Services

This section presents descriptive statistics on respondents’ perceptions of knowledge services in selected universities in Central Uganda. The analysis focuses on key components of knowledge services, including advisory services, training and capacity-building programs, and extension and outreach activities that support knowledge dissemination and application. Responses were measured using a five-point Likert scale to assess the extent to which these knowledge service activities are implemented and contribute to community engagement. Mean scores and standard deviations were computed to determine the overall level of implementation and the consistency of responses across respondents. The findings provide insight into how universities utilize knowledge dissemination, outreach initiatives, and capacity development programs to strengthen knowledge sharing, enhance collaboration with communities, and improve community engagement outcomes.

**Table 2: Descriptive statistics on respondents' perception of knowledge services**

KNOWLEDGE SERVICES	N	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean (SD)	Standard Deviation	Interpretation
<b>Advisory Services</b>									
I provide expert advice to government, NGOs, or community organizations.	330	2.42%	8.48%	23.64%	54.24%	11.21%	3.633	0.880	High
My advisory roles influence decision-making or practice beyond the university.	330	1.52%	5.15%	31.21%	53.94%	8.18%	3.621	0.771	High
Advisory services respond directly to identified community or policy needs.	330	1.52%	8.48%	27.27%	59.09%	3.64%	3.548	0.763	High
<b>Training and capacity-building programs</b>									

I conduct training programs that address priority community or professional needs.	330	0.61%	9.70%	24.24%	63.33%	2.12%	3.567	0.721	High
Training activities enhance participants' ability to apply new knowledge.	330	0.61%	2.73%	24.55%	65.15%	6.97%	3.752	0.647	High
Capacity-building programs contribute to sustained skills development among participants.	330	0.61%	2.42%	22.12%	70.30%	4.55%	3.758	0.600	High
The current university training programs create long-term networks with communities around it	330	0.91%	4.24%	21.52%	67.27%	6.06%	3.733	0.676	High
<b>Extension Services</b>									
I engage in outreach activities such as public lectures or community forums.	330	0.91%	4.55%	13.33%	72.73%	8.48%	3.833	0.675	High
Extension services effectively translate university knowledge into practical solutions.	330	0.91%	4.85%	18.18%	66.36%	9.70%	3.791	0.716	High
Outreach activities strengthen relationships between the university and communities.	330	0.30%	1.82%	10.61%	77.88%	9.39%	3.942	0.546	High
Overall	330						3.718	0.484	High

Key:

- Likert Scale :5= Strongly agree (SA) , 4= Agree (A) , 3= Neutral (N) , 2= Disagree (D) and 1= Strongly disagree (SD).
- Likert Mean: less 3- Disagreement and greater than 3- Agreement.
- Legend: Very high (4.24 – 5.00), High (3.43 – 4.23), Moderate (2.62 – 3.42), Low (1.81 – 2. 61), Very Low (1.00 – 1.80)

Source: Primary data, 2026

#### a) Advisory Services

The results show that a majority of respondents provide advisory services to external stakeholders such as government agencies, non-governmental organizations, and community organizations. Specifically, 54.24% agreed and 11.21% strongly agreed, while 23.64% remained neutral. A smaller proportion disagreed (8.48%) or strongly disagreed (2.42%). The mean score of 3.633 (SD = 0.880) indicates a high perception, suggesting that advisory engagement is relatively common among respondents, though the higher standard deviation indicates some variability in participation levels. The qualitative findings reinforce these results by demonstrating that community members recognize the advisory role played by universities. Participants reported that university staff and students often provide expert guidance that supports local decision-making and practices. For example, one participant stated, “*Students and staff from the university help the community with different knowledge and skills*” (FGD002, R5), while another explained that “*students have knowledge and*

*skills that help communities improve the way they do things*” (FGD002, R5). These insights confirm that advisory services extend academic expertise to community settings.

The findings indicate that advisory roles frequently contribute to decision-making or practices outside the university context. 53.94% agreed and 8.18% strongly agreed, while 31.21% reported a neutral position, suggesting that not all respondents clearly perceive the influence of their advisory activities. The mean score of 3.621 (SD = 0.771) reflects a high level of agreement, indicating that advisory services often extend the impact of academic expertise beyond institutional boundaries. Qualitative data further support this finding, as participants indicated that university experts frequently introduce new knowledge that shapes community practices. For instance, one participant explained that “*sometimes students and staff come and help communities understand new ideas*” (FGD003, R6). This suggests that advisory services contribute to

knowledge dissemination and influence practical decision-making within communities.

Most respondents reported that their advisory services address specific community or policy needs. 59.09% agreed and 3.64% strongly agreed, although 27.27% remained neutral. Only a small proportion disagreed. The mean score of 3.548 (SD = 0.763) indicates a high perception, suggesting that advisory activities generally respond to real-world issues faced by communities or policymakers. The qualitative findings support this perception by highlighting the ways in which university expertise addresses practical community challenges. Participants emphasized that the knowledge shared by students and staff often contributes to improving everyday practices and solving local problems, reinforcing the relevance of advisory engagement.

#### **b) Training and Capacity-Building Programs**

The findings show that many respondents conduct training programs that address community or professional priorities. 63.33% agreed and 2.12% strongly agreed, while 24.24% were neutral and 9.70% disagreed. The mean score of 3.567 (SD = 0.721) indicates a high level of perception, suggesting that training initiatives are commonly used as a mechanism for knowledge transfer to external stakeholders. The qualitative data confirm this finding by illustrating how communities participate in university-led training initiatives. For example, one participant explained that *“people go to the model farm to learn different techniques and skills needed for better production”* (FGD003, R6), indicating that training programs provide practical learning opportunities for community members. A large majority of respondents agreed that training activities improve participants’ ability to apply new knowledge in practice. 65.15% agreed and 6.97% strongly agreed, with 24.55% neutral responses. The mean score of 3.752 (SD = 0.647) indicates a high perception, suggesting that training programs are perceived as effective in strengthening practical skills. Qualitative findings support this observation. Participants described how university initiatives help communities acquire new knowledge that can be applied directly to their livelihoods. One respondent noted that *“model farming is one of the activities carried on the university providing skills freely to the community members”* (FGD003, R6), while another stated that *“the university activities help people learn practical ways of improving their livelihoods”* (FGD003, R5).

Most respondents indicated that capacity-building initiatives contribute to long-term skills development among participants. 70.30% agreed and 4.55% strongly agreed, while 22.12% remained neutral. The mean score of 3.758 (SD = 0.600) indicates strong agreement that such programs support sustainable skill development. Qualitative evidence further illustrates this sustained impact. Community members reported that students frequently share practical knowledge during community

visits, with one participant explaining that *“students come out to teach the community new ideas in farming”* (FGD003, R6). This demonstrates how training initiatives promote continuous learning and long-term capacity development. University training programs create long-term networks with communities-The results show that training programs also help build lasting relationships between universities and surrounding communities. 67.27% agreed and 6.06% strongly agreed, while 21.52% were neutral. The mean score of 3.733 (SD = 0.676) indicates a high perception, suggesting that training initiatives foster long-term collaboration and networking. Qualitative findings support this perspective, as participants emphasized that continuous interaction with students and university staff strengthens relationships and encourages ongoing knowledge exchange between universities and communities.

#### **c) Extension Services**

The majority of respondents reported participating in outreach activities, including public lectures, seminars, or community forums. 72.73% agreed and 8.48% strongly agreed, with relatively few neutral or negative responses. The mean score of 3.833 (SD = 0.675) indicates a high level of participation in outreach activities, reflecting the university’s role in disseminating knowledge to the broader community. The qualitative findings strongly support this result by highlighting different forms of outreach activities conducted by universities. For example, one participant noted that *“they had health camps where they offered free medical checkups and advice which was helpful to the community”* (FGD002, R3), demonstrating how outreach programs provide direct services to community members. Extension services translate university knowledge into practical solutions-Most respondents agreed that extension services help translate academic knowledge into practical applications for communities. 66.36% agreed and 9.70% strongly agreed, with 18.18% neutral responses. The mean score of 3.791 (SD = 0.716) indicates a high perception, suggesting that extension activities effectively bridge the gap between research and real-world problem-solving.

Qualitative evidence supports this finding by illustrating how extension activities address community needs. Participants described initiatives such as blood donation drives and public health activities. For instance, one participant stated that *“students donate blood for people in hospitals like accident victims and pregnant mothers”* (FGD003, R6), demonstrating the practical societal contributions of university outreach. Outreach activities strengthen university–community relationships. This item received one of the strongest levels of agreement. 77.88% agreed and 9.39% strongly agreed, indicating that outreach activities significantly strengthen relationships between universities and communities. The mean score of 3.942 (SD = 0.546) reflects strong consensus among respondents regarding

the positive impact of outreach on community engagement. The qualitative findings further highlight these relationship-building effects. Participants reported community service activities such as environmental clean-up and sanitation initiatives. For example, one participant explained that *“students come to clean drainage areas, pick rubbish and dig holes for dumping”* (FGD003, R8), while another noted that *“students from university church come and clean the neighborhood which is great to see”* (FGD002, R2). These activities strengthen trust and collaboration between universities and surrounding communities.

Overall, the findings indicate that knowledge services constitute a significant mechanism through which universities contribute to community engagement and societal development. The quantitative results demonstrate a consistently high level of engagement across advisory services, training and capacity-building programs, and extension services, with an overall mean score of 3.718 (SD = 0.484). These findings suggest that academic staff frequently provide expert advice, conduct training initiatives, and participate in outreach activities that extend university knowledge beyond institutional boundaries.

The qualitative findings further reinforce these results by illustrating how communities directly experience the benefits of these knowledge services. Participants highlighted the role of university staff and students in offering expert guidance, delivering practical training such as model farming, and conducting outreach initiatives including health camps, sanitation activities,

and community service programs. These experiences demonstrate that university knowledge is not only disseminated but also translated into practical solutions that address community needs. Taken together, the convergence of quantitative and qualitative evidence confirms that knowledge services strengthen the connection between universities and surrounding communities. Through advisory support, capacity-building initiatives, and extension activities, universities play an important role in enhancing local skills, improving livelihoods, and fostering sustainable partnerships with communities. These findings underscore the importance of strengthening institutional support for knowledge services to further enhance their impact on community development.

### 4.3 Community Engagement Outcomes

Universities engage with communities through knowledge exchange mechanisms that link teaching, research, and service to societal needs. This section presents descriptive statistics on respondents’ perceptions of community engagement outcomes in selected universities in Central Uganda. The analysis focuses on three dimensions: policy changes, community improvements, and stakeholder satisfaction. Results are summarized using frequencies, percentages, mean scores, and standard deviations based on a 5-point Likert scale, providing insight into the extent to which university teaching and academic activities contribute to measurable community outcomes.

**Table 3: Descriptive statistics on respondents' perception of Community engagement outcomes**

<b>COMMUNITY ENGAGEMENT OUTCOMES</b>	n	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean (SD)	Standard Deviation	Interpretation
<b>Policy Changes</b>									
University research has informed policy decisions at local or national level.	330	—	4.24%	14.85%	73.33%	7.58%	3.842	0.608	High
Research outputs from my institution are used in planning or implementation.	330	0.30%	3.64%	16.36%	74.55%	5.15%	3.806	0.593	High
University knowledge has influenced professional or institutional practices (guidelines, local by laws, program adoption, ministry policy..)	330	—	1.82%	9.39%	81.52%	7.27%	3.942	0.487	High
Research findings are cited or referenced in policy or technical documents.	330	—	1.82%	14.24%	79.70%	4.24%	3.864	0.490	High
Community Decision-makers actively seek evidence from the university.	330	1.82%	3.64%	11.82%	75.15%	7.58%	3.830	0.690	High

My research findings are accessible and actionable by community policy makers	330	0.61%	7.58%	13.33%	72.12%	6.36%	3.761	0.706	High
<b>Community Improvements</b>									
University knowledge has contributed to improved community livelihoods (e.g improved health outcomes, improved farming practices, adoption of new technology)	330	—	0.61%	10.91%	81.21%	7.27%	3.952	0.452	High
Your Research activities have led to positive health, social, or environmental outcomes.	330	—	1.52%	15.15%	76.97%	6.36%	3.882	0.512	High
Community practices have changed as a result of university engagement.	330	—	1.52%	18.79%	74.55%	5.15%	3.833	0.523	High
Communities have adopted innovations introduced through university research.	330	0.30%	2.42%	15.45%	73.94%	7.88%	3.867	0.584	High
University activities (teaching and research) have contributed to sustainable community development.	330	0.61%	0.30%	11.82%	79.70%	7.58%	3.933	0.507	High
<b>Satisfaction and Perception</b>									
Community stakeholders are satisfied with the university's engagement efforts.	330	—	5.45%	26.67%	60.91%	6.97%	3.694	0.680	High
Communities perceive the university as responsive to their needs.	330	0.61%	10.00%	21.82%	64.24%	3.33%	3.597	0.738	High
Stakeholders trust the university as a credible source of knowledge.	330	—	0.30%	6.06%	75.45%	18.18%	4.115	0.492	High
Community partners value the relevance of university-generated knowledge.	330	—	—	6.36%	81.82%	11.82%	4.055	0.424	High
Stakeholders are willing to collaborate with the university again.	330	0.30%	—	11.52%	76.97%	11.21%	3.988	0.505	High
Overall	330						3.873	0.341	High

Key:

- Likert Scale :5= Strongly agree (SA) , 4= Agree (A) , 3= Neutral (N) , 2= Disagree (D) and 1= Strongly disagree (SD).
- Likert Mean: less 3- Disagreement and greater than 3- Agreement.
- Legend: Very high (4.24 – 5.00), High (3.43 – 4.23), Moderate (2.62 – 3.42), Low (1.81 – 2. 61), Very Low (1.00 – 1.80)

Source: Primary data, 2026

#### a) Policy Changes

According to McKenzie *et al* (2020), academic research and community policy change is rarely a linear transfer of knowledge. It is characterised by two communities

which have two different incentives for research. To Bohacova (2023), research often is limited in its impact on community policy because academic timelines are typically measured in years, while policy is based on budget cycles or election periods. This often is the case

where research is not consistent with the political-economy of the community. The findings indicate that university research significantly contributes to policy-related outcomes. A large majority of respondents agreed (73.33%) or strongly agreed (7.58%) that university research has informed policy decisions at local or national levels (Mean = 3.842, SD = 0.608), indicating a high perceived policy influence. Qualitative findings support this perception, as community participants acknowledged that university research has contributed to policy reforms and environmental governance. For instance, one participant explained, ***“The local council adopted new waste management rules based on the university’s research and the district implemented strict environmental regulations” (FGD002, R4)***, illustrating how academic evidence can directly influence policy decisions and regulatory frameworks.

Similarly, 74.55% agreed and 5.15% strongly agreed that institutional research outputs are used in planning and implementation (Mean = 3.806, SD = 0.593), suggesting practical utilization of research findings in governance processes. Qualitative evidence indicates that the presence of the university can shape local development planning and infrastructure expansion. One participant noted, ***“Roads and electricity came because of the university and the community developed faster” (FGD003, R3)***, demonstrating how university activities can influence development priorities and policy implementation within local communities.

Influence on professional or institutional practices received strong support, with 81.52% agreeing and 7.27% strongly agreeing (Mean = 3.942, SD = 0.487), demonstrating that university knowledge contributes to guidelines, by-laws, and policy frameworks. Community members also acknowledged the institutional authority of universities in shaping local decisions. For example, a participant observed, ***“The university is a very big institution and sometimes their decisions influence what happens in the community” (FGD001, R4)***, highlighting the institutional influence of universities in local governance contexts.

Research citation in policy or technical documents was also highly rated (79.70% agree; 4.24% strongly agree; Mean = 3.864, SD = 0.490), confirming formal recognition of university research. Similarly, community decision-makers actively seeking university evidence was supported by 75.15% agreement and 7.58% strong agreement (Mean = 3.830, SD = 0.690), indicating strong demand for academic expertise. Accessibility and actionability of research findings were also highly rated (72.12% agree; 6.36% strongly agree; Mean = 3.761, SD = 0.706), suggesting effective knowledge translation mechanisms that enable research to inform governance processes. Overall, policy-related outcomes demonstrate a strong influence of university research on governance and decision-making processes.

## b) Community Improvements

University research has the potential to result into both direct and indirect improvements in the community imperatives like jobs and health. However, this can happen once universities go beyond being purely extractive (e.g. for data collection) and move towards engagement with communities to ensure that research outcomes are consistent with local research agenda or local challenges (APLU, 2025; IHEP, 2025). The results show strong evidence that university activities contribute to tangible community improvements. An overwhelming majority agreed (81.21%) or strongly agreed (7.27%) that university knowledge has improved community livelihoods (Mean = 3.952, SD = 0.452), indicating substantial developmental impact. Qualitative findings confirm these perceptions, particularly through economic opportunities generated by university presence. For example, one participant explained, ***“Students are the highest percentage of our customers in our communities and this has boosted businesses” (FGD001, R1)***, demonstrating how universities stimulate local economic activity.

Positive health, social, and environmental outcomes were also widely reported (76.97% agree; 6.36% strongly agree; Mean = 3.882, SD = 0.512). Participants described how the university’s presence has stimulated local enterprise development. One respondent noted, ***“Stationary printing shops, restaurants, hostels and rentals have grown because of the university population” (FGD002, R3)***, highlighting how universities create demand for goods and services within surrounding communities. Changes in community practices due to university engagement were supported by 74.55% agreement (Mean = 3.833, SD = 0.523), reflecting behavioral and practical shifts among community members. For instance, the university’s influence on employment and mobility was evident in the testimony of one participant who stated, ***“The university has led to an increased number of bodas from 3 to 20 and above because many people move around the area” (FGD003, R7)***, demonstrating how university presence can stimulate local employment opportunities.

Adoption of innovations introduced through university research was strongly affirmed (73.94% agree; 7.88% strongly agree; Mean = 3.867, SD = 0.584). Participants particularly highlighted agricultural innovations and knowledge-sharing initiatives. One respondent explained, ***“People go to the model farm to learn different techniques and skills needed for better production” (FGD003, R6)***, illustrating how universities support community capacity building through practical learning platforms. Furthermore, contributions to sustainable community development received strong support (79.70% agree; 7.58% strongly agree; Mean = 3.933, SD = 0.507). Universities also provide market opportunities for local producers. As one participant stated, ***“Farmers with food stuff sell to the university***

*and it supports them as a marketplace at an affordable price” (FGD003, R5).* In addition, the presence of the university has motivated community members to prioritize education. One respondent remarked, *“The University has motivated parents to educate their children because they see students graduating” (FGD003, R2),* indicating broader social and educational impacts.

### c) Satisfaction and Perception

The relationship between university research and the community has shifted from a "broadcast" model of knowledge to a "co-creation" model centered on mutual wellbeing. This co-dependence is reflective in how universities craft research problems to characterise the lived realities of the surrounding population. However, gaps still persist. Omodan *et al.* (2019) has noted a "Two Communities" Gap in which communities perceive academic research as highly “theoretical”. Moreover, the persistence of societal challenges like unemployment make communities have negative perceptions of university work. Even then, stakeholder satisfaction and trust in university engagement were also rated highly. A majority agreed (60.91%) or strongly agreed (6.97%) that community stakeholders are satisfied with university engagement efforts (Mean = 3.694, SD = 0.680). Qualitative findings indicate that community members generally perceive the university as a positive driver of economic and social development. One participant stated, *“The university has helped the community to grow economically because many businesses depend on students” (FGD001, R3),* demonstrating positive perceptions of the university’s local contributions.

Perceptions of responsiveness to community needs were similarly positive (64.24% agree; Mean = 3.597, SD = 0.738), though comparatively lower than other items. Qualitative evidence reveals that some community members feel that stronger communication and engagement mechanisms are needed. For example, one respondent noted, *“There is a very big gap between the institution and the community and this needs to change” (FGD001, R1),* indicating areas where universities could strengthen responsiveness and dialogue with local stakeholders.

Trust in the university as a credible source of knowledge recorded one of the highest ratings (75.45% agree; 18.18% strongly agree; Mean = 4.115, SD = 0.492), indicating very strong institutional credibility. Qualitative findings support this perception, with participants acknowledging the value of university expertise. One respondent explained, *“Students have knowledge and skills that help communities improve the way they do things” (FGD002, R5),* demonstrating

confidence in academic knowledge and its practical relevance. Stakeholders valuing the relevance of university-generated knowledge also received strong endorsement (81.82% agree; 11.82% strongly agree; Mean = 4.055, SD = 0.424). Similarly, willingness to collaborate again was high (76.97% agree; 11.21% strongly agree; Mean = 3.988, SD = 0.505). Qualitative findings reinforce this, with community members expressing interest in stronger partnerships. For instance, one participant emphasized, *“The university and community should work together more because both sides benefit” (FGD003, R3),* indicating strong potential for sustained collaboration.

Overall, community engagement outcomes were rated high (Mean = 3.873, SD = 0.341), indicating that universities in Central Uganda are perceived to significantly influence policy processes, community development, and stakeholder satisfaction. Quantitative findings demonstrate strong impacts in areas such as policy influence, livelihood improvements, and stakeholder trust, while qualitative evidence provides concrete examples of how these outcomes manifest in practice. Community members highlighted improvements in local businesses, employment opportunities, agricultural productivity, and policy reforms influenced by university research. At the same time, qualitative insights also reveal areas for improvement, particularly regarding communication, feedback mechanisms, and responsiveness to community concerns.

In conclusion, the findings demonstrate that research and academic activities in the selected universities generate meaningful and measurable community engagement outcomes, reinforcing the critical role of higher education institutions in societal development. Universities contribute to policy formulation, economic development, knowledge transfer, and social transformation within surrounding communities. The strong levels of stakeholder trust and willingness to collaborate further highlight the strategic importance of university–community partnerships. However, strengthening communication channels, enhancing responsiveness to community needs, and institutionalizing feedback mechanisms could further improve the effectiveness and sustainability of these engagements. By addressing these areas, universities can deepen their impact and strengthen their position as key drivers of inclusive and sustainable community development.

## 4.4 Regression and Correlation Analysis

**Table 4: Correlational analysis showing the relationship between knowledge translation services and community engagement outcomes**

Variables	Community Engagement Outcomes	p-value
Advisory Services	0.4632	0.000
Training Contribution	0.4935	0.000
Extension Services	0.4814	0.000
Knowledge Translation Services	0.5854	0.000

Source: Primary data, 2026

The correlation analysis in Table 7 shows that knowledge translation services are significantly and positively associated with community engagement outcomes. The composite variable knowledge translation services demonstrated a strong positive relationship with community engagement outcomes ( $r = 0.5854$ ,  $p = 0.000$ ), indicating that effective translation of academic knowledge into practical community applications enhances engagement performance. Among the individual components, training contribution showed the highest correlation ( $r = 0.4935$ ), suggesting that capacity-building programs play a major role in strengthening community participation and utilization of university knowledge. Advisory services ( $r = 0.4632$ ) and extension services ( $r = 0.4814$ ) also exhibited moderate positive relationships, indicating that providing expert guidance

and outreach programs supports stronger university–community collaboration. The statistically significant p-values ( $p = 0.000$ ) for all variables indicate that the observed relationships are meaningful and not due to chance. These findings suggest that knowledge translation activities such as advisory support, training programs, and extension services are important mechanisms for promoting community engagement outcomes. The results imply that universities can strengthen community impact by enhancing knowledge transfer processes, expanding outreach programs, and improving stakeholder access to academic expertise. Overall, the study underscores the importance of institutionalizing knowledge translation services as a core strategy for sustainable community engagement.

**Table 5: Regression analysis showing the relationship between knowledge translation services and community engagement outcomes**

Predictor	B	SE	t	p	95% CI for B
Knowledge Services	0.413	0.032	13.08	< .001	[0.351, 0.475]
Constant	2.336	0.118	19.72	< .001	[2.103, 2.569]

**$F(1, 328) = 170.99$ ,  $p < .001$ ,  $R^2 = .343$ , Adjusted  $R^2 = .341$ ,  $RMSE = 0.277$ .**

Source: Primary data, 2026

The regression analysis shows that knowledge translation services significantly predict community engagement outcomes. The model is statistically significant ( $F(1, 328) = 170.99$ ,  $p = 0.000$ ), indicating that knowledge translation services have a strong explanatory power in predicting community engagement performance. The coefficient of determination ( $R^2 = 0.3427$ ) implies that 34.3% of the variation in community engagement outcomes is explained by knowledge translation services, while the remaining 65.7% may be influenced by other factors not included in the model. This suggests that institutional activities such as advisory services, training and capacity-building programs, and extension services play an important role in strengthening community engagement.

The regression coefficient for knowledge translation services ( $\beta = 0.4131776$ ,  $p = 0.000$ ) indicates a positive and statistically significant effect on community engagement outcomes. This means that a one-unit improvement in knowledge translation services is associated with an increase of approximately 0.413 units in community engagement outcomes, assuming other variables remain constant. The result highlights the importance of strengthening knowledge transfer activities within the university system to enhance community participation, knowledge application, and collaborative development initiatives. Overall, the findings confirm that knowledge translation services are a significant determinant of effective community engagement outcomes.

**Table 6: Regression analysis showing the relationship between knowledge translation services (Advisory Services, Training Contribution, and Extension Services) and community engagement outcomes**

Predictor	B	SE	t	p	95% CI for B
Advisory Services	0.115	0.026	4.43	< .001	[0.064, 0.166]
Training Capacity Building Programs	0.167	0.036	4.69	< .001	[0.097, 0.237]
Extension Services	0.134	0.036	3.73	< .001	[0.063, 0.204]
Constant	2.325	0.122	19.00	< .001	[2.084, 2.566]

**F(3, 326) = 56.72, p < .001, R<sup>2</sup> = .343, Adjusted R<sup>2</sup> = .337, RMSE = 0.278.**

Source: Primary data, 2026

The multiple regression analysis shows that knowledge translation services significantly predict community engagement outcomes. The overall model is statistically significant ( $F(3, 326) = 56.72, p = 0.000$ ), indicating that advisory services, training and capacity-building programs, and extension services collectively influence community engagement performance. The coefficient of determination ( $R^2 = 0.3430$ ) suggests that 34.3% of the variation in community engagement outcomes is explained by the three knowledge translation service components, while the remaining 65.7% may be influenced by other factors not included in the model. This indicates that knowledge translation services play an important role in promoting university-community engagement.

Among the predictor variables, training and capacity-building programs had the strongest positive effect on community engagement outcomes ( $\beta = 0.1669977, p = 0.000$ ), followed by extension services ( $\beta = 0.1335725, p = 0.000$ ) and advisory services ( $\beta = 0.1150242, p = 0.000$ ). These results suggest that activities aimed at enhancing stakeholder skills and knowledge application contribute more strongly to community engagement outcomes compared to other knowledge translation service components. The statistically significant p-values for all predictors indicate that each service component independently contributes to improving community engagement outcomes. Overall, the findings emphasize the importance of strengthening knowledge translation programs to enhance sustainable community engagement.

#### 4.5 Hypothesis Testing

The regression results provide sufficient statistical evidence to reject the null hypothesis that knowledge sharing services by selected universities in Central Uganda do not significantly affect community engagement outcomes. The overall model was statistically significant ( $F(1, 328) = 170.99, p = 0.000$ ), indicating that knowledge sharing services are strong predictors of community engagement outcomes. The coefficient of determination ( $R^2 = 0.3427$ ) shows that knowledge translation services explain 34.3% of the

variation in community engagement outcomes, while the regression coefficient ( $\beta = 0.4131776, p = 0.000$ ) confirms a positive and statistically significant relationship. This implies that strengthening advisory services, training and capacity-building programs, and extension services enhances community participation, knowledge application, and collaborative development. Therefore, the null hypothesis was rejected, and it was concluded that knowledge sharing services by selected universities in Central Uganda significantly and positively influence community engagement outcomes.

#### 4.6 Discussion: Regulation and Economic Security Outcomes

The findings of this study are consistent with existing literature that emphasizes the critical role of knowledge services in strengthening university community engagement. Specifically, knowledge translation and exchange mechanisms such as advisory services, extension programs, and community training initiatives enhance the practical application of academic knowledge and improve community participation in development processes. Studies indicate that universities that actively invest in knowledge dissemination and engagement platforms are more likely to generate tangible societal benefits and address local challenges effectively (Kalbarczyk et al., 2024). Similarly, prior research highlights that structured knowledge transfer mechanisms, including capacity-building programs, outreach activities, and collaborative problem-solving frameworks, significantly enhance the utilization of university-generated knowledge in communities. These approaches facilitate mutual learning and strengthen partnerships between universities and external stakeholders, thereby promoting sustainable development and improving community outcomes (Bock et al., 2025).

Overall, the findings suggest that strengthening institutional frameworks for knowledge services is essential for improving community engagement outcomes. Universities that prioritize knowledge dissemination, stakeholder engagement, and community-oriented outreach initiatives are better positioned to translate academic knowledge into meaningful societal

impact. This underscores the need for deliberate investment in knowledge translation systems to ensure that university knowledge contributes effectively to sustainable social and economic transformation.

## 5. Conclusion and Recommendations

### 5.1 Conclusion

The findings of this study demonstrate that knowledge services particularly training programs, advisory support, and extension services play a significant role in enhancing community engagement outcomes in universities in Central Uganda. These services facilitate the dissemination and practical application of academic knowledge, enabling communities to actively participate in development processes and benefit from university expertise. Overall, knowledge services act as a critical bridge between universities and their surrounding communities by strengthening collaboration, improving knowledge sharing, and promoting the utilization of research outputs. Strengthening these services is therefore essential for enhancing the relevance and impact of university knowledge, and for positioning universities as key drivers of socio-economic transformation.

### 5.2 Recommendations

From the findings, the following recommendations came up:

1. Universities should strengthen knowledge services by expanding extension programs, training initiatives, and community outreach activities to enhance direct engagement and improve the practical application of academic knowledge.
2. Communities should actively participate in knowledge-sharing activities such as training programs and advisory sessions to enhance skills, adopt innovations, and co-create solutions to local challenges.
3. Policy makers and university management should provide adequate funding, institutional support, and clear policy frameworks to strengthen knowledge translation systems, ensuring that research outputs are effectively disseminated and utilized for community development.

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