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THE EFFICACY OF KNOWLEDGE SHARING STRATEGIES USED AT EGERTON UNIVERSITY AS PERCEIVED BY LIVESTOCK VALUE CHAIN ACTORS

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A B S T R A C T

Agricultural universities invest substantial resources in postgraduate research that generate knowledge products. These are aimed at providing solutions to practical constraints impeding increased productivity in the agricultural sector, which plays a vital role in Kenya's economic development. Using a case study of Egerton University, this study aimed to determine the strategies most frequently used to share the generated knowledge products, and to find out their preferences of the knowledge sharing strategies in use. The actors' perception of the relevance and accessibility of the knowledge products generated at the University was also examined. The study was conducted through desktop study which reviewed the Masters and Doctorate Theses that targeted livestock value chain actors generated between January 2005 and December 2011. A survey was conducted using structured questionnaires to collect data from a sample size of 198 actors. The findings indicated that the knowledge products were 25 to 29 times more likely ($P<0.001$) to be disseminated through the library than any other sharing strategy examined. The sampled actors in livestock value chain perceived media briefs to be the most accessible with a mean of 4.26. The Masters Theses were perceived as more relevant to their needs with a mean of 4.07. The findings indicate that the livestock value chain actors were not fully utilizing the knowledge sharing strategies used to reach them. The study concluded that the defined primary beneficiaries of knowledge products from the university were not effectively reached.

Keywords: Knowledge sharing; Research communication; Agricultural Knowledge management; GDP

INTRODUCTION

The agricultural sector plays a major role in Kenya's economy by directly contributing to 29.3 percent of the GDP annually with 40 percent of this contributed by the livestock sub-sector (EARC, 2014). The agricultural practices used to enhance productivity have become increasingly knowledge intensive with knowledge products being continually generated by research institutions and universities for the advancement of agriculture. The research findings generated are often empirical evidence based solutions to constraints which primary beneficiaries in the agricultural sector face. However, the knowledge products must be accessible, reliable, timely, and contain relevant information to answer felt needs of the targeted population. This can be achieved through the use of appropriate knowledge sharing strategies that close the gap between knowledge generated and the desired impacts on productivity and value (Hamel, 2005). In the context of knowledge generation and sharing among livestock value chain actors, there is the possible support ranging from informing producers about risks and opportunities associated within the value chain, to assisting actors entering these chains. Such support can be achieved through specific policy instruments that enable the upgrading processes within and across the production networks (Kaplinsky, 2000). Researchers, policymakers, service providers and other actors all have something to gain from knowledge sharing, but differences in their interests and backgrounds result in diverse challenges.

Garforth *et al.* (2004) noted that knowledge sharing success goes beyond creating awareness about the knowledge products. It includes subjective elements

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such as perceptions, beliefs, attitudes, values and practical use. The interventions in the area of agricultural knowledge sharing are primarily through improving the general flow of agricultural research information and ensuring it is accessed equitably and utilized effectively by all the utilization of the knowledge products by the value chain actors can be enhanced through effective knowledge sharing strategies (CTA, 2009). This explains why Universities use diverse knowledge sharing strategies to disseminate their research findings in order to increase visibility in reaching more value chain actors as the uptake of those knowledge products can enhance productivity, and in essence a pathway to closing the gap between research outputs and uptake.

As a reputed Agricultural University, Egerton University has continued to invest a lot of resources in research activities that target livestock value chain actors. However, the research output remains underutilized by the primary beneficiaries and the desired impacts on increased productivity and value of production are not fully realized. There is a possibility that either the knowledge generated does not meet the information needs of the target beneficiaries, or the knowledge sharing strategies used have limited reach and access to target beneficiaries. To inform design of effective management of agricultural information and communication at the university, there is need to characterize the strategies for knowledge sharing used and the perception of the target beneficiaries' of the knowledge products generated. Over the years, it has emerged that different channels of communication play key roles at different points in the adoption process. The channel that can reach many people at the same time tends to play key roles in bringing about initial awareness and knowledge of new ideas and practices, as opposed to interpersonal sources (Abbot, 1999). According to Rogers (1995), diffusion is concerned with the spread of ideas from originating sources to ultimate users. The adoption process tracked through the diffusion curve is a decision-making process in which an individual passes from the initial knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject it, then to its implementation and the use of the new idea, and finally to confirmation of this decision. However, for researchers the main concern is how fast the target audiences become aware of the innovation and the factors that facilitate or impede its spread. There is need to improve the dissemination of research outputs and to strengthen communication of research findings generated through agricultural postgraduate research projects as they are formulated to solve constraints in the value chains. The outputs of these research activities can contribute to closing the gap between generated knowledge and the target audience. More emphasis is continually put on communication between peers who operate in networks to spread new ideas (Robinson, 2009).

Table 1 depicts the value chain in the Kenya context. In the livestock value chain, knowledge is shared by the different actors using different channels at different levels. The operators rely on enablers like input suppliers who are the primary actors to enable them to carry out their activities in a competitive environment. The enablers like extension workers and veterinarians provide the livestock producers with technical assistance which in turn improves the affluence for borrowers. The credit providers on the other hand help the operators to maximize profit and minimize losses. The NGOs contribute unique skills, innovative methods and capacities that enable them to work well with various actors and other stakeholders to carry out participatory educational activities empower the actors and provide local or customized solutions to the value chain. The enablers in the value chain rely on the supporters to be able to accomplish their obligations to the operators. Since the supporters develop policies and frameworks that govern the enablers, government policies may have positive or negative impact on the value chain. (Anandajayasekeram *et al.,* 2008).

Table 1. Livestock Value Chain in Kenya.

Value Chain Operators	Value chain supporters	Value chain enablers
• Producers	• Extension service providers	• Kenya Dairy Board
• Processors	• Credit facility providers	• Kenya Bureau of Standards
• Transporters	• Veterinary and A.I service providers	• National Environmental Management Authority
• Retailers	• Researchers	• Department of Veterinary Services
• Consumers	• NGOs	• Kenya Revenue Authority

The broad objective of the study was to contribute to increased uptake of research outputs for enhanced productivity and value of livestock enterprises, while the specific objectives were to:

- Identify the most frequently used knowledge sharing strategies for disseminating knowledge products generated at Egerton University.
- Determine the perceptions that actors have about the relevance and accessibility of the knowledge products and sharing strategies at Egerton University.

The actors in the livestock value chain have different information needs that they use to help them operate effectively. The information needs have led to an increased prominence in the generation, sharing and utilization of livestock knowledge products worldwide. Information professionals play a vital role in developing tools to facilitate and enhance the knowledge sharing strategies. These include the Internet, manuals, technical reports, extension materials, scientific publications, conference proceedings, seminars presentations, handbooks, multi-media, expositions, exhibitions, library, newsletters, demonstrations, radio, television, briefs, newsletters, magazines and newspapers (Harmsworth & Turpin, 2000; Momodu, 2006).

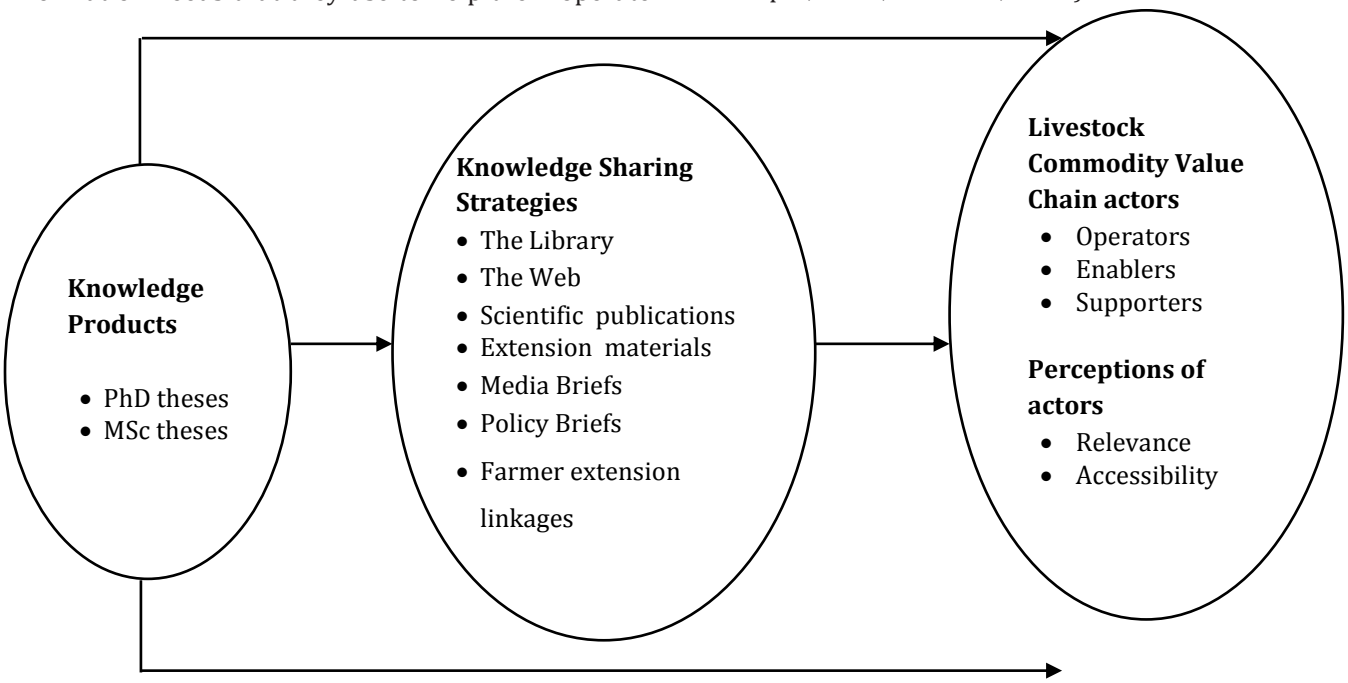

Figure 1. Conceptual framework by the authors.

Figure 1 presents how the knowledge products generated may be shared using different strategies through which actors in the livestock value chain may access the knowledge products. These actors are the primary target beneficiaries who are likely to use knowledge products in their enterprises and institutions to increase productivity and value. Through their experiences and exposure, they express perceptions about the relevance and accessibility of the generated knowledge products and the sharing strategies used. This concept was applied to study the success of knowledge sharing strategies at Egerton University.

MATERIALS AND METHODS

The Theses defended between January 2005 and December 2011 were selected because the period had a marked large number of students graduating. The Theses which are obtainable from the library were examined to identify the problem addressed within the livestock value chain and to identify the primary targeted actors. Search was conducted in the library catalogue and in the web electronically to identify knowledge sharing strategies used to disseminate the knowledge generated. The theses were identified from seven selected departments that had knowledge products of relevance to the livestock value chain actors. The departments included Dairy and Food Science and Technology; Animal Sciences; Agricultural Economics and Agribusiness; Environmental Science; Agricultural Education and Extension; Biochemistry, and Food Nutrition. The identified group of primary target

beneficiaries specified in the theses was then followed in the cross sectional survey of the actors in the livestock commodity value chains stratified into operators, supporters and enablers. The operators included livestock producers, traders, butchers and consumers. The supporters are providers of extension service, credit, research and include the non-governmental organizations. The enablers are the policy and regulating bodies charged with policy formulation and enforcement of standards. The study was implemented in two stages. The second stage was a stratified random cross sectional survey sampling of actors in the livestock value chains within Nakuru town and Njoro district. These areas were selected because of the presence of rural, peri-urban and urban livestock enterprises. Their proximity to Egerton University also increases the possibility of high level interactions with the knowledge generated and disseminated by the institution.

Data collection was guided by checklist in the library and by keywords in the web in the desktop analysis and questionnaire in the sampling survey. Before use, these instruments were validated for high reliability of response. The questionnaire had a mixture of closed and open ended questions. The use of check list focused on collecting data on the knowledge products, the actors in the livestock commodity value chain who were targeted. The preferences and perceptions of actors were ordinal Likert scale measures on a scale of 1 (low) to 5 (high).

Data Analysis Techniques: The use of knowledge sharing strategies and the actors were count data measures. The chi square test statistics and generalized logit model were fitted in SPSS version 17.1 software to identify the most frequently used knowledge sharing strategy. This data was subjected to non-parametric statistical procedures of Mann-Whitney and Kruskal-Wallis test statistics to detect rating differences among knowledge products and sharing strategies for the actors. The dependent variables were rating for accessibility and relevance, while independent variables were knowledge product and knowledge sharing strategies.

RESULTS AND DISCUSSION

The Knowledge Sharing Strategies Used: Egerton University uses several knowledge sharing strategies to disseminate knowledge products emanating from postgraduate research. The results of this study indicated that knowledge products were mostly disseminated through the library, about 25 to 29 times more ($p<0.001$) than any other knowledge sharing strategies examined.

Table 2: Knowledge Sharing Strategies.

Sharing strategies	Estimate	Standard error	Significance
Intercept	26.94	0.33	<0.0001
Web	-25.27	0.56	<0.0001
Proceedings	-26.73	0.46	<0.0001
Extension manual	-29.02	0.63	<0.0001
Journal	-27.37	0.37	<0.0001
Library	Ref		

Sharing strategy effect : DF=4; chi square value = 93.65 0.0001 Log likelihood -80.75

Source: Survey Data 2013

The library and the web were used by all categories of actors in all locations. The use of the library could be attributed to the fact that it has traditionally been relied on to disseminate research findings more than any other knowledge sharing strategy, and it is also more visible to majority of the actors. However, the use of the library may be affected by factors like literacy levels, restricted access and poor library marketing strategies. The use of the web on the other hand could be attributed to the growth of digital technologies that have opened the door to an additional and broader range of dissemination possibilities. With the emergence of new technology and globalization, the Web provides major advantages for knowledge sharing and learning by providing opportunities for actors to access information from anywhere without the constraints of time and space. However, they have to be information literate and be able to connect to the Internet. This could also be affected by social and economic factors (Tsui, 2006).

The findings of this study indicate that the use of knowledge strategies vary greatly and this could depend on convenience, social and economic factors, proximity to the users, the content of the knowledge being shared, the level of personal preference and familiarity with the knowledge sharing strategies, literacy levels and the extent that one can read and digest information (Age,

2012). The findings further imply that the level of literacy and modalities of accessibility are likely to affect the extent the actors use the knowledge sharing strategies. It is therefore upon the University to remain proactive in ensuring dissemination of the knowledge product it generates and overcome strategies that restrict access.

The Perception of the Actors Towards Relevance and Accessibility of the Knowledge Products: Hypothesis was tested whether there were differences in the nature of preferences and perceptions that actors had about the relevance and accessibility of the knowledge products and sharing strategies in use at Egerton University. The relevance and accessibility of M.Sc. Theses was ranked higher than the PhD Theses (Table 2). The high ranking of the accessibility and relevance of MSc theses on the other hand could be attributed to the fact that the MSc theses highly outnumber the PhD theses, while at the same time the content of PhD theses are considered to be more technical.

Table 3. Perception of the Relevance and Accessibility of the Knowledge Products.

	Relevance		Accessibility	
	Mean	Std. Dev.	Mean	Std. Dev.
MSc Theses	4.07	2.07	4.04	2.05
PhD Theses	3.82	2.18	3.81	2.05

Source: Desktop Study and Survey Data, 2013.

These findings are in agreement those of Aguolu (2002) who reported that the availability of information sources or knowledge sharing strategies does not necessarily imply its accessibility because of various impeding factors like lack of knowledge of their existence by the users, users who cannot clearly articulate and other physical administrative barriers. Users of information products use sources that require least efforts to access and are less complex. The decision to adopt a new technology is related to the amount of knowledge one has regarding how to use that technology properly.

The perception of the actors towards Accessibility of the Knowledge Sharing Strategies: Mean ranking

Table 4: Perception of the Accessibility of the Knowledge Sharing strategies.

Accessibility	Mean	Std. Dev.
Library	4.14	1.95
Extension materials	4.07	2.05
Media briefs	4.26	1.87
Policy briefs	3.91	2.11
Scientific publications	3.70	2.20
Web	4.13	1.96

Source: Survey Data 2013.

The findings indicate that though the actors in livestock value chain perceived media briefs to be the most accessible and scientific publications the least accessible, the University uses the library as the main channel to disseminate the findings in the Theses. Consequently, the generated knowledge is having limited impact on providing solutions to challenges faced by the livestock value chain actors. These results imply that the defined primary beneficiaries of knowledge products from the indicate that media briefs was ranked as the most accessible, while scientific publications was ranked as the least accessible. This could be attributed to the fact that most actors could access information shared in the media briefs through radio programmes which use vernacular languages and the fact that the radios reach bigger masses within a short period. Scientific publications on the other hand are mainly used by researchers to share knowledge among them, and they often use technical language to present the content. This limits access to audiences without research backgrounds, as well as those who are unable to pay for the high journal subscription fees.

university are actually not reached because the knowledge sharing strategies used do not target the primary beneficiaries. The findings conform to (Brown, 2012) who posits that though scientific publications are 'traditionally' a strategy most conspicuously used by academics to communicate their research findings, they are the knowledge adoption strategy least favored by policy-makers and other stakeholders who do not consider these types of outputs accessible. The findings further infer that the perceptions of the actors on the knowledge sharing strategies and the knowledge products generated largely rests on the steps taken to make research results easily accessible, comprehensible and the awareness by the users. The knowledge products generated make up important knowledge base that should be accessible to the actors through sources whose features are acceptable to them. Thus, identification of the different sources of information by the users is needed to bring out their relevance as well

as the preference given to the different types of sources (Opara, 2008).

CONCLUSION AND RECOMMENDATIONS

The knowledge generated at the University is having limited impact on providing solutions to challenges faced by actors mainly because the knowledge sharing used are not so effective. However, this provides an opportunity for universities to take greater participation roles in extension and outreach programmes to directly transfer their knowledge products to primary beneficiaries. The study recommends that Universities have to invest in diverse knowledge sharing strategies for disseminating their knowledge products to reach the actors at the grass root levels. Such strategies may include use of mass media, audio visual materials, posters and field demonstrations as well as research link agents to ensure dissemination and utilization of research outputs. The research link agents may comprise of faculty members, information communication experts and agriculture extension experts

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