Scientific Evidence for Policy Making: a Missing Link inHigher Learning institutions in Tanzania

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Abstract

Higher learning institutions are well known for their capacity to produce scientific evidence that can guide development initiatives in developing countries. Despite this acknowledgment, transferring research findings into policy and practice has remained to be a long-time challenge in Tanzania. An action research was conducted to assess the use of research findings generated from higher learning institutions in decision making. Specifically, the study aimed at establishing the level of awareness on the concept of scientific evidence for decision making among researchers; assessing the capacity of researchers in disseminating research findings to policymakers and examining the coordination of higher learning institutions in contributing to evidence informed decision making (EIDM). A survey was conducted on a total of 29 researchers from 9 higher learning institutions and 7 key informants from selected ministries and regulatory authorities. Descriptive statistics and content analysis were used for data analysis. Findings indicate that higher learning institutions are academic oriented as such the research findings generated are not synthesized, and not repackaged and presented in a user-friendly language for easy uptake by policymakers and implementers. Limited awareness of EIDM among researchers; and weak coordinated efforts for evidence generated from higher learning institutions to influence policy change were also reported. The study suggests capacity building among researchers on research findings synthesis and dissemination for EIDM. This will be coupled with the establishment of a research findings synthesis unit to facilitate the contribution of higher learning institutions in EIDM for the country's socio-economic transformation.

Keywords: Evidence informed policy making, synthesis unit, higher learning institutions, Tanzania

Introduction

The use of evidence in policy-making is an issue of concern to both policymakers and researchers in bringing developmental changes and improving the world (Sanderson, 2003). Evidence informed decision making is a cornerstone for relevant solutions to societal problems because the quality of the decision made depends on quality information and evidence (Sanderson, 2003; HakemZadeh, 2013; Head, 2015; Aryeetey *et al.,* 2017; Stewart *et al.,* 2018). To attain the desired development, African countries have put in place various policies and development strategies however, the efforts have registered very limited success.

Among other factors, the limited linkages between research findings and decision making for policy formulation constrains achievement of the intended developmental objectives (Aryeetey *et al.,* 2017). Generally, evidence derived from research is expected to help in framing and understanding problems that demand policy interventions, and in evaluating the ultimate impact of any measures put into effect.

Taking an example of Tanzania, its development path is guided by Tanzania Development Vision (TDV) 2025 that is customized in the country's Five-Year Development Plans (FYDP). The ending FYDP

(2016/17 – 2020/21) which feeds into TDV 2025 and the sustainable development goals as well focused on nurturing industrialization for economic transformation and human development to attain the middle-income status and to move into higher levels of income status in the future. Therefore, linking the agriculture sector and industrial sector has been given priority. To achieve this, embracing Evidence Informed Decision Making (EIDM) in formulating the strategies is inevitable.

Higher learning institutions for a long time have been among the active actors in evidence generation across the World (Jessani *et al.,* 2017). However, the level of uptake of the evidence generated into decisions making differs across the regions. These institutions are placed in a better position to contribute to the process because they have the facilities and manpower to generate evidence. Constantly, these institutions undertake various researches that generate a lot of scientific evidence that can be used to solve various societal problems. Nonetheless, this important opportunity is not well utilized by the decision/policymakers hence, the limited contribution of the higher learning institutions into policy making process (Aryeetey *et al.,* 2017; Stewart *et al.,* 2018). Tanzania has more than 50 universities and university colleges and other higher learning institutions (HLIs) operating under the Ministry of Education and Vocational Training (MoEVT). The above-mentioned HLIs are involved in researching scientific disciplines agriculture and industrial technologies included in order to generate information to inform the policymakers for proper development propositions. Despite the appreciable efforts to increase the number of qualified researchers in the country, Tanzania like many other developing countries suffers a weak link between Academia, Research and Policy making.

Furthermore, literature (Head, 2015; Cairney and Oliver, 2017; Stewart *et al.,* 2018) shows that policymakers do not gather and consider all evidence relevant to policy problems. And that government official and political leaders are often motivated by socio-political factors other than research evidence. Instead, they prioritize certain sources of information and draw on emotions, gut feelings, beliefs, and habits to make decisions quickly (Head, 2015; Cairney and Oliver, 2017; Stewart *et al.,* 2018). On the one hand, the scientists' weak link to decision/policy making is influenced by factors such as lack of time, support, resources, and incentives to engage in dissemination. Therefore, scientific evidence is often not presented at the correct time and scientists are unable to anticipate a demand for information to solve a very specific problem quickly. On the other hand, policymakers lack the research skills to understand/generate scientific evidence. Moreover, policy makers are faced with uncertainties about "what works for whom" and under what conditions. This situation forces them to use the "best available" evidence rather than waiting for the rigorous findings from research (Head, 2015). Therefore, the study on which the paper is based assessed the existing state on the use of research findings generated from HLIs in decision making. Specifically, the study aimed to establish the level of awareness on the concept of scientific evidence for decision making among researchers; assess the capacity of researchers in disseminating research findings to policy makers and examined the coordination of HLIs in contributing to evidence informed decision making (EIDM).

Methodology
Study approach

This study was conducted in Tanzania using the action research approach whereby 29 researchers from 9 public universities and 7 key informants from selected ministries were involved in the study. Two days' meetings were conducted. The first day meeting in form of a training workshop on awareness creation on EIDM was conducted with researchers only. The meeting aimed at allowing researchers to reflect and comment on their perceived position in the policy making process. The second day meeting in form of a policy dialogue on the evidence-policy interface was conducted with a mix of researchers and key informants from the selected ministries to find solutions to the missing link on EIDM and higher learning institutions. The study's methodology was also used by Stewart *et al.* (2018) in their study on building capacity for evidence-informed

decision making in South Africa. Stewart *et al.* involved the identified stakeholders in evidence informed decision making so as to come up with appropriate capacity building approaches for better linkages between researchers and policymakers.

Study respondents

The study involved 29 researchers who were purposively selected. They comprised the universities' directors of research and publications, principal investigators of research projects, and PhD students. These were considered as generators of research findings as well as the potential actors for synthesizing research findings for evidence informed decision making (supply-side). The study also involved 7 key informants from selected ministries in the department of policy and planning who were considered as potential users of research findings in informing their decision/policy making processes.

Data collection and analysis

Data from the above-mentioned 29 respondents were collected using a questionnaire prior to the meeting to establish the level of their awareness of EIDM. During the meeting, data was collected through visual recordings of the event; two sets of researcher transcriptions and notes; a flipchart and poster records of the group activities, and consensus-building exercises. Thereafter, quantitative data was analyzed using SPSS to determine descriptive statistics and thematic analysis was used for the qualitative data.

Results
Level of awareness on the concept of scientific evidence for decision making among researchers

Assessment of the generation and use of evidence in making decisions in the respondents' institutions indicated mixed findings. The findings revealed the use of less scientific ways of generating evidence for decision making coupled with limited awareness of the concept itself. The most cited ways of generating information that can support various decisions at various levels within their institutions to

ensure evidence in decision making revealed the use of task forces, research, situational, and stakeholders' analyses. However, when asked further on the sources of evidence used in decision making, 58% of the respondents indicated online publications/journal articles.

The findings on the sources of evidence justify the limited understanding of the EIDM concept and the source of evidence. The major sources of evidence mentioned are also justified by the background of the respondents because most of the workshop participants (86%) were from university/academic institutions. The key responsibilities of academia include teaching, consultancy, and research. Since respondents indicated using evidence from scientific publications to inform their work while the focus of EIDM is on how the findings generated from research works can inform policy/decision making processes the findings justify limited understanding of the concept of EIDM among researchers.

After awareness creation on EIDM, researchers' indicated a need for awareness creation among all stakeholders in the EIDM chain for its uptake in Tanzania. Awareness creation on EIDM should extend to policy makers as well. EIDM need a close working relationship between policy makers and researchers. A common understanding between the two communities is highly needed as contended by one of the workshop participants

"...this needs a long-time discussion rather than a single day workshop...we need to think as researchers on how to create a database especially for our local context. Where and how to get research done in other universities…we need to synchronize that type of information as such we need a longer time to get this. Policy makers should also be included as participants to get a common understanding and set a common goal towards improving the situation for the development of our country" (A Female Senior Lecturer, SUA, 4th September 2020).

Capacity of researchers in disseminating research findings to policy makers

Results from the in-depth interviews with key informants suggest limited capacity among researchers in relation to how to communicate

their research findings to policy makers/ stakeholders as pointed out by some of the respondents

"…Policy making process in the country is a big issue,…research findings are not translated into practices" (A Male PhD Student from SUA, 4th September 2020).

"… We are not considering EIDM in our research projects,… Academicians undertake research for their academic career there is limited capacity to translate research findings into a more understandable language to policy makers…" (A Female Senior Lecturer, SUA, 4th September 2020).

"…we are doing a lot of research, however, .repackaging our research findings to inform the government's policy making process is still a big challenge" (A Male Senior Lecturer, Mzumbe University, Tanzania, 4th September 2020).

Generally, researchers acknowledged the need to inform the policy making process with quality evidence from researches however, a low priority is given by researchers on translating the findings into usable evidence. Also, limited capacity to synthesis the findings affect the goodwill to do so. Results during small group discussions revealed limited capacity on how to synthesize research findings. These include skills to sort, synthesize and repackage the findings for policy makers. EIDM cannot be realized without synthesizing the research findings from various sources. Results further revealed limited skills by researchers in communicating science to inform decision/ policy making. Similar findings were also reported by Head (2016) that, the language used by researchers in scientific publications is different from the language used by policy makers. Researchers have low capacity to locate, interpret and systematically review evidence in the process of policy development (URT, 2008). The study further revealed presence of structures and mechanisms supporting research communication, research use, and overall EIDM practices in various academic institutions. Only 11.1% of the respondents reported availability of evidence synthesis centers or units charged with synthesizing the research done by the institution for ease of uptake by policy makers (Table 1). Most of the structures and mechanisms identified by respondents do not directly involve synthesis of research findings into evidence

Table 1: Structures and mechanisms for supporting EIDM practices in the HLIs

EIDM structure present in institutions	Responses	Percent
A communications department/Unit charged with translating and communicating research to non-technical audiences	15	55.6
An evidence synthesis centre or unit charged with synthesizing the research done by the institution for ease of uptake by policymakers	3	11.1
A requirement that all research proposals developed by the institution include a budget for research communication, dissemination and policy engagement	13	48.2
Require your active participation in government decision-making platforms such as technical working groups, taskforces, etc.	9	33.3
A training programme to build your skills in research communications (e.g. writing policy briefs) and policy engagement	11	40.7
A training programme to build your skills in systematic reviews and/ or rapid reviews of the evidence	7	25.9
A formal requirement for your career progression (promotion) on research translation and engagement with policymakers to facilitate the use of your research	6	22.2
Total	**64**	**100.0**

Results are based on multiple responses   ***Source:*** Research data, 2021

to be used in policy making. For example, 55.6% of respondents indicated the presence of communications department/unit charged with translating and communicating research to non-technical audience. This kind of structure may support the use of translated evidence in policy making only if the efforts will be done to reach the target group. Likewise, 48.2% of the respondents identified a requirement that all research proposals developed by the institution include a budget for research communication, dissemination, and policy engagement. While the inclusion in the proposal serves as a good starting point to share the evidence for decision making, the practice might be different during the actual implementation of the project.

Apart from the capacity of researchers in synthesis the evidence and presence of supporting structures and centers within the institutions; the lack of a common platform to share findings was also reported. Universities work in isolation as such there is limited networking among researchers from various institutions. Research findings from various universities have limited opportunities of being pooled together, synthesized, and used as evidence for decision making. This connotes poor coordination among researchers in academic and research institutions in Tanzania.

Furthermore, limited funding was also reported to be among the factors limiting the dissemination of research findings to policymakers. For a long time, research funds from the government have been decreasing leaving the role of supporting research activities to donors. Generally, observations from group discussions showed that the government's allocation of research funds to universities is very limited. Therefore, most research projects done by universities are donor funded with limited budget allocations on findings dissemination. Findings by Aryeetey *et al.* (2017) also indicated that much of the existing research in Africa is supported by ad hoc funding and collaborations with non-African researchers and donors. Once the research is supported by donors in most cases it does not address the pressing need of the respective national government hence, the evidence generated might not support the ongoing policy decisions.

Additionally, dependence on donor support to the research affects the systematic establishment of the evidence on pressing policy problems of the respective country. While EIDM requires systematic evidence, researchers' responses to the call for research from donors do not guarantee the possibility to continue with the same research idea for a long time.

Coordination of higher learning institutions in contributing to evidence informed decision making

Strengthening Institutions for Evidence Use: Generally, results from the survey suggest a lack of adequate structures that could be used to facilitate EIDM practices. When respondents were asked on the availability of structures and mechanisms to support access and use of evidence at the universities; 61.5% indicated access to online research databases and reliable internet connection that facilitated ease access to research and other information. The databases in universities are mainly on journal articles and other scholarly publications that are mostly used for the search of reference materials in research works rather than synthesized research findings for decision making. It was further revealed that 34.6% of respondents mentioned the availability of research agenda that outlines the priority research. Furthermore, 11.5% reported the annual funding/budget for commissioning research and/or systematic reviews needed to inform the institution's decision-making processes. The availability of an evidence synthesis ercenter or unit charged with synthesizing existing research to inform the decisions of their institutions was reported by 7.7% (Table 2).

Generation of official statistics: Results from the key informants involved in the study revealed an increased need for evidence informed policy making than it was before. The National Bureau of Statistics (NBS) as the nation overall in charge of the country's statistics collects limited information to inform policy/decision making. Traditionally, the three sources of data which are surveys; censuses, and administrative sources generate data of limited use. Surveys are done after every 5 years whereas censuses are done after 10 years. Administrative

Table 2: Structure and Mechanism to support access and use of evidence in the institutions

Structure present	Responses	Percent
Access to online research databases that enable ease access to evidence in decision making	16	61.5
An evidence synthesis centre or unit charged with synthesizing existing research to inform the decisions making	2	7.7
A training programme to build skills of staff in evidence-informed decision-making (EIDM)	7	26.9
Active technical working groups that prioritize regular presentation and discussion of research to inform the decisions the institution makes	6	23.1
Reliable internet connectivity that facilitates ease access of research materials and other information	16	61.5
A guidelines document that promotes and supports research use by staff	7	26.9
Annual funding/budget for commissioning research and/or systematic reviews needed to inform the institution's decision-making processes	3	11.5
A research agenda that outlines the priority research that the institution needs to make decisions in its priority areas	11	42.3
Total	**68**	**100.0**

Results are based on multiple responses   ***Source:*** *Research data, 2021*

data are produced by NBS in collaboration with other institutions to generate evidence to inform decision making in between the surveys and census. It was further reported that some of the development indicators are not captured in the traditional sources of data. NBS is therefore looking at how it can use the statistics generated by agencies (including universities) to fill the gap to enhance EIDM.

The study also found that generation of official statistics is guided by the National Statistics Act Cap 351 of 2019 (URT, 2019). The statistics (research findings) produced by agencies need to meet criteria and standards set by NBS for the same to be recognized as official statistics. It was further revealed that every person has the right to produce and disseminate statistical information provided that it meets international and national standards. The study results indicate a dilemma on whether Universities generate official statistics or not. However, it was reported that policy decisions are time sensitive, policy makers do not get timely research findings from higher learning institutions to inform decision making.

Research from higher learning institutions lack continuity, moreover, one time research might not be desirable to inform policy that has a longtime impact.

Linking Evidence to Policy: Results from key informants indicated three pertinent questions to be considered before undertaking any research: Who wants it? Who is going to use it? Who is going to pay for it? However, results from the research participants indicated that stakeholders are invited during research findings dissemination which has been of little or no impact in influencing decision/ policy making processes. It was reported that decision makers who are going to use the results need to be involved from the conception of research; once the decision makers are aware of the research problem, they are more likely to use its findings. In addition, results indicate limited communication between policy makers and researchers during policy formulation and research designing. Limited well-defined fora that can bringing together researchers and policy makers was also identified as a challenge. Moreover, many institutions (agencies) that

generate research findings are also not well coordinated, and sometimes there is a lot of duplication of efforts due to limited sharing of research findings among the agencies.

Pushing the Universities Research for Policy and Development: Assessment on how the existing policy environment support universities to undertake research for policy development indicated the presence of institutions aimed at strengthening Science, Technology and Innovation. The key informant from MoEVT pointed out the drawbacks to the achievements as limited coordination on the formulation and implementation of policies on Science, Technology and Innovation; limited contribution of stakeholders (Parliament, Academia and Civil Societies) and regulations to guide the Science, Technology and Innovation do not meet requirements. The existing policy environment also does not stipulate the use of research findings from universities in EIDM. Researches done in the universities are meant for academic purposes such as career advancement and not in decision/policy making. Additionally, lack of a comprehensive and integrated system of national priorities and long-term technology for sighting; limited government funding on research; limited use of research findings were also mentioned. However, universities were pointed out to play important role in Science, Technology and Innovation for social and economic change. Aryeetey *et al.* (2017) also highlighted the role of academia in championing evidence for decision making due to their capacity in undertaking various research programs.

Discussion

The findings have indicated limited use of empirical evidence in decision/policy making. Moreover, researchers and policymakers are viewed as two separate communities with their systems and language. In addition, the two communities have different priorities, time scales, goals and challenges in the use of research findings generated in HLIs in policy making (Lugo-Gil *et al.,* 2019). Researchers particularly those in universities undertake research projects for academic purposes such as writing publications for career advancement.

The publications are written in a scientific language not easily understood by policymakers (Aryeetey *et al.,* 2017). On the other hand, policymakers expect researchers to translate the research findings into simple language for easy uptake (Jessani, *et al.,* 2019), a task which researchers think to be out of their mandate. This indicates an institutional divide that needs a bridge for research findings from universities to be useful in EIDM in Tanzania.

Research institutions are working in isolation with decision making organs and the gap between researchers and policymakers is anticipated to increase due to limited government funding into research and development. Although there are representations of researchers or professionals in various technical working groups, this is not enough for the research findings generated from the research institutions to be used in various decision-making processes. Research findings by Howard and Hugh (2012) indicated the importance of a forum for interpreting/ systematic reviewing and channeling existing and future research findings that have an impact on the large population. The forum helps in providing relevant and reliable information to communicate to policy-makers. Nevertheless, the forum for research findings synthesis cannot be effective if researchers' capacity to undertake the synthesis is still limited. The study findings indicated the uptake of EIDM to be hindered by limited skills in synthesizing and repackaging information for policy makers. Deliberate integrated efforts for EIDM awareness and capacity building for both researchers and policymakers are needed for the formulation of relevant development strategies.

Findings also show that many researches undertaken are supply driven rather than demand driven. Researches conducted do not consider policy requirements during research formulation as such the research findings generated are not in the policy priority areas. It is high time for researchers to consider the national research priorities so that the findings can be used to inform decision/policy making (Stewart *et al.,* 2018). If stakeholders are not well informed on the research hence the uptake of the research findings for decision making will be limited. Nevertheless, the current focus of

donors on the influence of research on national policies provides a good opportunity for research findings from donor funded research projects to also inform policy decisions more than it was before. Therefore, the contribution of research findings from higher learning institutions in EIDM will no longer be affected much by who pays for the research projects.

Conclusions and recommendations

The findings have indicated limited awareness amongf researchers on the concept of scientific evidence for decision making. The researcher's understanding of the concept reflected their key responsibilities of the academia which are teaching, consultancy, and research with little or no contribution to EIDM. The Limited understanding of the concept among researchers is coupled withinglimited capacity to communicate science to policymakers due to limited capacity for systematic reviewing, translating, and repackaging evidence for policymakers. Although researchers can contribute to EIDM, thispercieved to be an additional work to researchers with limited incentive hence making a task to be less priority among researchers. Despite the generation of scientific evidence in higher learning institutions, there is a lack of coordinated efforts to tap its use for informing the policymaking process.

The study concludes that limited use of research findings from higher learning institutions in EIDM in Tanzania is caused by several factors ranging from the enabling policy environment, research agenda, funding and evidence synthesis capacity of researchers. The policy environment does not stipulate the use of research findings from universities in decision and policy making. The research activities done in the universities are meant for academic purposes such as career advancement. Policy makers need research findings that are communicated in a way different from the way academia need. However, the call by NBS on the involvement of other agencies in generating evidence for decision making provides the higher learning institutions (universities) a better chance to be involved in the process. This will be realized if the following recommendations are considered:

- The government and other development partners should raise awareness of EIDM among researchers and policymakers. This should also go together with capacity building on how to synthesize, pack and disseminate research findings.

- Establishment of a research findings synthesis unit which will serve as a one stop center to access scientific evidence packaged in a simple language. The unit will be responsible for the collection of research findings from different actors and improving interaction between policy makers and researchers by bringing the actors together. The unit should bring in people with different skills and expertise in the research findings synthesis process.. The synthesis unit will make use of various experts from various institutions and government departments.

- Academicians in higher learning institutions should take the proactive role to push for use of the empirical evidence they generate by policy makers through debates, dialogues, and conferences for enhancing the interaction between policy makers and researchers.

- EIDM should be institutionalized from the university level to the national level. Rules and regulations should be in place at the university level that demand the research projects to have findings dissemination plan. At the national level, a policy should be in place that needs all decisions to be evidence based.

- The government funding for research should be increased to reduce donor dependency. The government will invest funds in areas that need research findings to inform decision/policy making. By so doing, research findings will be demand driven hence sound decisions will be made.

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