RESEARCH UTILISATION AT THE UNIVERSITY OF RWANDA: COLLEGE OF SCIENCE & TECHNOLOGY

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What was the purpose of the study?

(i) To identify levels of research uptake (RU) at the College of Science and Technology (CST);

(ii) To examine how academic staff communicated research findings to users; and

(iii) To identify barriers to RU and strategies that may enable RU.

Why are findings of this study useful?

(i) They highlight the need to communicate research findings to users and funders of research.

(ii) They show that tools such as databases are needed to measure and monitor the research produced in Rwanda.

(iii) They emphasise the continued importance of conferences and workshops.

(iv) They show that policymakers in various sectors need to be sensitised to the role of research in their decision-making processes, and that they need to find ways to work with researchers to ensure informed decision-making. This will improve RU and could serve as motivation to lobby for increased research funding.

(v) They suggest that closer research collaboration between the producers and users of knowledge is a key driver of RU.

(vi) They revealed evidence of some practical applications of research:

   a. A research project in biotechnology has contributed to the production of biodiesel, a safe and environmentally friendly car fuel.

   b. A drainage master plan designed in an environmental sciences project is being used to control surface water pollution.

   c. Research in the agricultural sector has informed the introduction of new bean varieties.

   d. Research has contributed to increased community awareness of socio-economic issues related to the management of wetlands.

INTRODUCTION

Knowledge is so central to contemporary society that countries have come to be known as 'knowledge societies' in which development increasingly depends on the use of research results. With the growing need for RU globally, the field has caught a fair share of attention from researchers, mostly in the Western world, and mostly under the broad nomenclature of knowledge 'diffusion', 'transfer', 'translation' and 'utilisation'.

This study was conducted to establish the extent to which research produced at the University of Rwanda's College of Science and Technology (CST) was utilised. It focused on research projects carried out between 1998 and 2013 (15 years) and was conducted between March 2014 and August 2015.

The assignment surveyed researchers at the CST in an attempt to determine whether and how they believed the findings of their research projects were utilised, and to explore the characteristics of research projects that could potentially relate to RU.

KEY RESEARCH QUESTIONS

(i) What are the key characteristics of the research projects, namely areas of research; sources of funding, triggers for undertaking the research, and collaboration;

(ii) What strategies were used to disseminate results?

(iii) Who were the research beneficiaries?

(iv) What levels of RU were achieved?

LITERATURE REVIEW

The literature distinguishes between different forms of RU[1], the most established distinction being between the conceptual, instrumental and symbolic use of research. Instrumental RU is the concrete implementation of research findings in practice; conceptual RU concerns cognitive and conceptual dimensions; and symbolic RU involves the use of research as a persuasive or political tool to legitimatise a position or practice[2].

RU can be further be either direct and immediate, or indirect and mediated. In direct and immediate use, a direct link exists between the dissemination of the research findings and resulting decisions or applications. Indirect and mediated use implies that the research is disseminated in various ways, but the research results are not taken up immediately and may remain unused until much later.

[1] The two concepts 'research utilisation' and 'knowledge utilisation' are used interchangeably in this text.

[2] Estabrooks, 1999

No single conceptual model has yet been unanimously agreed on by knowledge utilisation experts. At best, approaches to RU can be described as based on five models[3,4]: the science-push, demand-pull, organisational interests, dissemination, and interaction models. Each model acknowledges the importance of research results in policymaking.

One of the supply-side factors that influences RU is the nature in which research findings are communicated. Researchers produce complex, sophisticated findings for users who want clear, easily understood information. Another factor is the role of the research institution. The type of organisation conducting the research influences levels of impact.

Demand-side factors include the question of whether end users consider a given piece of research relevant or not and whether the research coincides with their needs[5].

This study concurs with the literature that institutional receptiveness is important in the success or otherwise of RU. Institutional rigidity, inaccessible policy arrangements and bureaucratic structures tend to inhibit researchers from disseminating their results, while the adoptive capacity of end users is often limited, especially in developing countries. A policy environment that is receptive to research outputs could overcome such bottlenecks.

The value policymakers and practitioners place on research evidence, and their level of skills to interpret and apply research knowledge would further influence RU. Funding agencies may also enable or inhibit RU, with strategic goals influencing the level of RU and outcomes achieved[6].

An increase in administrative support, the availability of time and research reports, a solid research knowledge base, support from colleagues, and an improvement in the understandability of research reports can all enhance RU.

Strong communication networks, links between researchers and practitioners, and mechanisms such as collaborative approaches will also improve research outcomes[7].

METHODOLOGY

The study was done in two phases between March 2014 and August 2015, comprising an online survey of academic staff, followed by semi-structured interviews with three survey respondents.

The survey data was collected by means of an questionnaire administered between March and May 2014 via e-mail. Sixty-two (18%) members of the 346 academic staff completed the questionnaire.

Three researchers, selected on the strength of their survey responses about levels of RU, were interviewed and their interviews recorded, transcribed and analysed.

LIMITATIONS

The study registered a low response rate, which may affect the generalisability of the findings beyond the group of respondents.

[3] Weiss (1979)
[4] Landry (1990)
[5] Cherney et al., 2013
[6] International Development Research Centre (IDRC), 2004
[7] Hemsley-Brown & Sharp, 2003

RESULTS

Results from the online survey showed that 31% of the respondents were motivated by supervisors in their postgraduate programmes to carry out research projects. Other factors that triggered research were researchers' own curiosity (23%) and earlier research (24%).

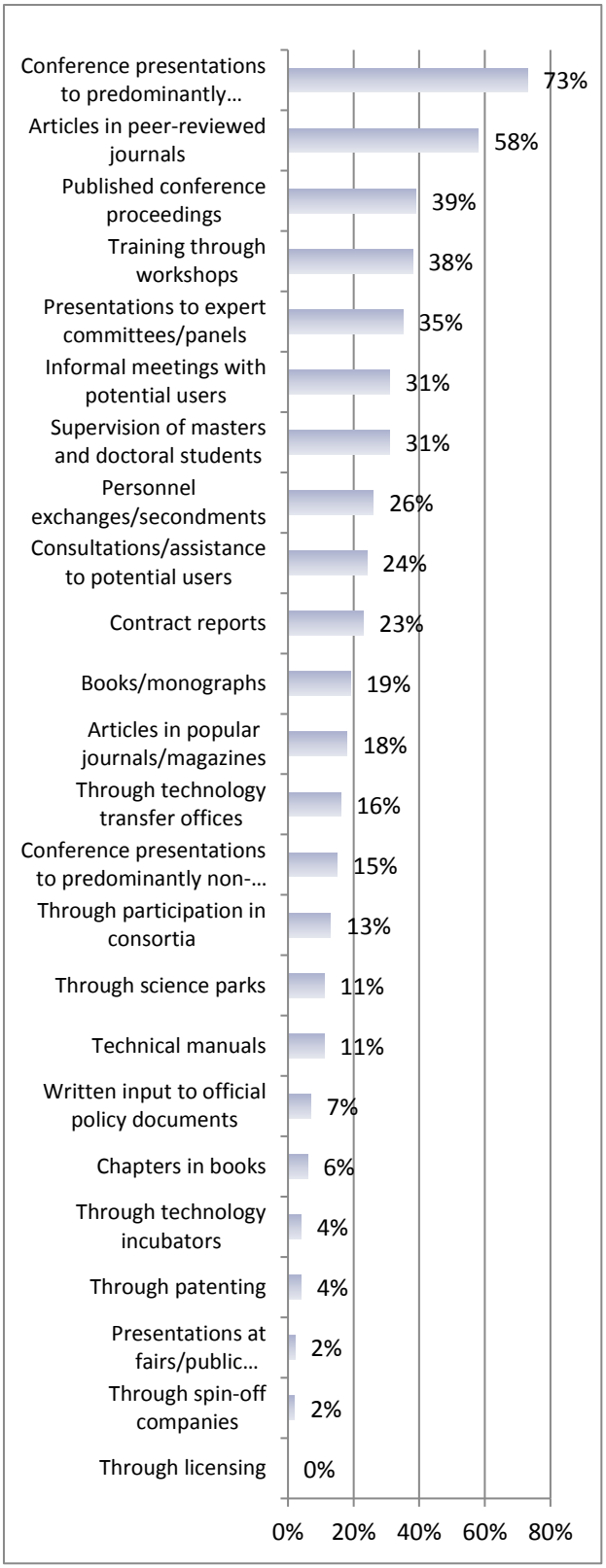
Funding came mainly from international funding agencies (37%), while 19% relied on their own funds. The college had not been able to attract much funding from the private sector (only 1.6%).

Most of the researchers (81%) had collaborated during the course of their research. International collaboration with other researchers dominated (63%), while local collaboration accounted for 54% of the responses. Little collaboration was found with government, industry or other intended users.

The three main expected outcomes were the advancement of knowledge (42%), solving immediate technical problems (21%), and solving theoretical problems (20%). The practical application of research was low—for example, the development of new technology accounted for 6% of responses.

The researchers communicated their results mostly through conference presentations to predominantly academic audiences (73%), followed by published articles in peer-reviewed journals (58%). Communication channels targeting non-academic audiences were less reported.

CHANNELS OF RESEARCH COMMUNICATION (N=57)



Results also showed that training through workshops constituted a relatively high proportion of research communication (38%). In addition, supervision of Master's and Doctoral students and informal meetings with potential users were also used to transmit the research results (31% each).

CONCLUSION AND RECOMMENDATIONS

This study investigated the levels of research utilisation as perceived by academic staff at the CST. Findings revealed that research was produced mainly for the advancement of knowledge, since most beneficiaries were colleagues from the same discipline and only some research produced at the CST was utilised by non-academic audiences such as government (in policymaking), the community or general public, and practitioners.

Researchers tended to collaborate with fellow researchers internationally or locally, and little evidence was found on collaboration with government, industry and the community, since most of the funding for research was obtained from international and university sources. Research was disseminated through conferences and conference proceedings to mainly academic audiences and through peer-reviewed journals.

Findings from three qualitative interviews revealed that both funding and research infrastructure was inadequate to promote knowledge production and utilisation.

The study recommends, inter alia, that the communication of research targeting users and funders be improved; that policymakers be sensitised on the role of research in policy decision-making; and that collaboration be promoted between the producers of knowledge (researchers, funders) and users of knowledge (policymakers, practitioners such as professional bodies, industries and communities).

AUTHOR'S REFLECTIONS

The survey highlights a need to scan existing databases to document possible effects of research. Google Scholar, Scopus and other databases could be used to assess the work of Rwandan researchers. These all pertain to the academic uptake of research.

To address non-academic uptake, publication in local media should be promoted and prioritised. Since society in general stands to benefit most from the university's research, findings need to be made available at local level. It would also be helpful to have discussions with government stakeholders about the dissemination of research findings.