Utilisation of South African Research on Higher Education

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EDITORS

Acronyms

AAIR	Australasian Association for Institutional Research
AEHE	Assessment and Evaluation in Higher Education
AIR	Association for Institutional Research
AJPHERD	African Journal for Physical, Health Education, Recreation and Dance
AJPHEs	African Journal for Physical Activity and Health Sciences
AOSIS	African Online Scientific Information Systems
ASAUDIT	Association of South African University Directors of Information Technology
ASSAf	The Academy of Science of South Africa
BRICS	Brazil, Russia, India, China, South Africa
CAGR	Compound Annual Growth Rate
CAMPROSA	Campus Protection Society South Africa
CHE	Council on Higher Education
CHELSA	Committee for Directors of Higher Education Libraries in South Africa
CIRPA	Canadian Institutional Research and Planning Association
China AIR	China Association for Institutional Research
CPUT	Cape Peninsula University of Technology
CREST	Centre for Research on Evaluation, Science and Technology
COP	Community of Practice
CSI	Corporate Social Investment
CUT	Central University of Technology
DfID	Department for International Development
DHET	Department of Higher Education and Training
DHSS	British Department of Health and Social Security
DIA	Department for Institutional Advancement
DoE	Department of Education
DoL	Department of Labour
DSI	Department of Science and Innovation
DST	Department of Science and Technology
DUT	Durban University of Technology
DVC	Deputy Vice-Chancellor
EACEA	European Education and Culture Executive Agency
EAIR	European Association for Institutional Research
ECHEA	Eastern Cape Higher Education Association
EU	European Union
HE	Higher Education
HEDA	Higher Education Data Analytics
HEDSA	Higher and Further Education Disability Services Association
HEIR	UK & Ireland Higher Education Institutional Research Network
HEIs	Higher Education Institutions
HELTASA	Higher Education Learning and Teaching Association of Southern Africa
HEMIS	Higher Education Management Information System
HEMP	Higher Education Management & Policy

HEP	Higher Education Policy
HER	Higher Education Research
HERD	Higher Education Research & Development
HERDSA	Higher Education Research and Development Society of Australasia
HESA	Higher Education South Africa
HEQ	Higher Education Quarterly
HEQC	Higher Education Quality Committee
HEQF	Higher Education Qualifications Framework
HOD	Head of Department
ICCT	Information Communication and Computer Technology
ICT	Information and Communications Technology
IEASA	International Education Association of South Africa
IHE	Innovative Higher Education
IJAD	International Journal for Academic Development
IBSS	International Bibliography of the Social Sciences
IPMS	Institutional Planning and Management Support
IPU	Intellectual Property Unit
IR	Institutional Research
JCSD	Journal of College Student Development
JES	Journal of Educational Studies
JHE	Journal of Higher Education
JHEPM	Journal of Higher Education Policy and Management
KPIs	Key Performance Indicators
LA	Learning Analytics
LDA	Latent Dirichlet Allocation
LDP	Leadership Development Programme
LSSE	Lecturer Evaluation of Student Engagement
M&E	Monitoring and Evaluation
MENA-AIR	Middle East and North Africa Association for Institutional Research
MIS	Management Information Support
MoU	Memorandum of Understanding
MTSF	Medium-Term Strategic Framework
NCHE	National Commission for Higher Education
NDP	National Development Plan
nGAP	New Generation of Academic Personnel
NGO	Non-Governmental Organisation
NMU	Nelson Mandela University
Norw	Norwegian Register for Scientific Journals, Series and Publishers
NPHE	National Plan on Higher Education
NPM	New Public Management
NPPSET	National Plan for Post-School Education and Training
NRF	National Research Foundation
NSC	National Senior Certificate
NSFAS	National Student Financial Aid Scheme
NSI	National System of Innovation
NUFFIC	Netherlands Universities Foundation for International Cooperation

NWU	Northwest University
MEC	Management Executive Committee
MTA	Material Transfer Agreement
MUT	Mangosuthu University of Technology
OECD	Organisation for Economic Cooperation and Development
ODL	Open Distance Learning
ORD	Office of Research and Development
PSET	Post School Education and Training
QA	Quality Assurance
QAA	Quality Assurance and Accreditation
QEP	Quality Enhancement Project
ResHE	Research in Higher Education
RevHE	Review of Higher Education
RHE	Research on Higher Education
RSA	Republic of South Africa
RU	Rhodes University
SAAIR	Southern African Association for Institutional Research
SAACDHE	Southern African Association for Counselling and Development in Higher Education
SAACHS	South African Association of Campus Health Services
SAASSAP	South African Association of Senior Student Affairs Professionals
SABINET	Southern African Bibliographic Information Network
SADC	Southern African Development Community
SAFMA	South African Facilities Management Association
SAHECEF	South African Higher Education Community Engagement Forum
SAIA	South African Institute for Advancement
SAJHE	South African Journal of Higher Education
SAK	South African Knowledgebase
SAMJ	South African Medical Journal
SAPSE	South African Post-Secondary Education
SARHE	South African Research on Higher Education
SARIMA	Southern African Research and Innovation Management Association
SASSE	South African Survey of Student Engagement
SAQA	South African Qualifications Authority
SciELO	Scientific Electronic Library Online
SciSTIP	DSI/NRF Centre of Excellence in Scientometrics and Science, Technology and Innovation Policy
SDGs	Sustainable Development Goals
SEAAIR	Southeast Asian Association for Institutional Research
SHE	Studies in Higher Education
SIAMPI	Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions
SMU	Sefako Makgatho Health Sciences University
SPU	Sol Plaatje University
SSS	Student Support Services
SU	Stellenbosch University

TAIR	Taiwan Association for Institutional Research
TEAM	Tertiary Education and Management
THE	Teaching in Higher Education
TLAD	Teaching, Learning and Academic Development
TUT	Tshwane University of Technology
UB	University of Botswana
UCDG	University Capacity Development Grants
UKZN	University of Kwazulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organization
Unisa	University of South Africa
UCT	University of Cape Town
UFH	University of Fort Hare
UFS	University of the Free State
UJ	University of Johannesburg
UL	University of Limpopo
UMP	University of Mpumalanga
UoT	University of Technology
UN	United Nations
UniVen	University of Venda
UniZulu	University of Zululand
UP	University of Pretoria
USAf	Universities South Africa
USSA	University Sport South Africa
UWC	University of the Western Cape
VC	Vice-Chancellor
VUT	Vaal University of Technology
Wits	University of the Witwatersrand
WoS	Web of Science
WPPSET	White Paper for Post-School Education and Training
WSU	Walter Sisulu University

Evidence-based decision-making on the improvement of student success: A study of the uptake of institutional research at two universities in Gauteng

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1 Introduction

This chapter originates from the need to investigate the uptake of institutional research (IR) on student success in the South African higher education sector. Evidence-based decision-making has become one of the strategic focuses for many of the higher education institutions (HEIs) globally and in South Africa (Dhunpath & Subbayya, 2018). Given the fact that HEIs have an existing body of research and wealth of student data which regularly must be reported to internal and external stakeholders, this information should ideally be used by decision- and policy-makers to positively impact on the student experience and to improve the quality, effectiveness and efficiency of institutions (Prinsloo & Slade, 2017). We argue that a shift in the culture and practice of IR is needed to optimise the use of evidence by higher education leaders and managers when they make decisions. Therefore, creating a culture of utilising IR outputs (i.e. presentations, data, dashboards, and technical reports) should ideally be the norm to ensure that the evidence leads to impact. The collaboration of both researchers and decision-makers is necessary to enhance research utilisation (Ion, Stîngu & Marin, 2019).

Many practitioners located in IR units generate research-based outputs (or, as we will refer to that in this chapter, “IR outputs”). These IR outputs are taken up and used in varying degrees by end-users such as students, higher education leaders, managers, academics and support staff, government officials and other stakeholders (Prinsloo & Slade, 2017). However, IR outputs are not always used or implemented optimally by decision-makers in all systems and at all levels (Moosa & Murray, 2016). Therefore, it is not enough for IR practitioners to only produce reports of their research, they also have a role to play in facilitating the processes that underpin research uptake, research use and research impact (Morton, 2015a, 2015b).

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This chapter focuses on the use and impact of IR outputs aimed at enhancing student success. Our investigation was guided by this question: Are IR outputs (i.e. presentations, data, dashboards, technical reports) on student success optimally used by the faculties and student support departments at two HEIs in the Gauteng province of South Africa, and if so, how are they used?

2 Analytical framework

In this chapter, we use Grobbelaar's (2013:4) adaptation of Ellen et al.'s (2011) theoretical model for "linking research efforts to action". This model highlights specific areas for building capacity for knowledge utilisation (or research utilisation) at institutional and systems levels. The model focuses on the enhancement of knowledge utilisation beyond an explanation for under-utilisation of knowledge (e.g. Havelock, 1969; Landry, Amara & Lamari, 2001) or its quantification (e.g. Spaapen & Van Drooge, 2011). Grobbelaar (2013) identifies five areas for attention when knowledge utilisation is to be enhanced: a) creating a climate for research uptake, b) enabling push factors, c) exchange mechanisms, d) enabling pull factors, and e) monitoring & evaluation. Below we briefly discuss these five areas.

2.1 *CLIMATE FOR RESEARCH UPTAKE*

The importance of an institutional climate receptive to evidence-informed decisions stands out as a theme in knowledge utilisation scholarship (e.g. Ellen et al., 2011; Ellen, Léon, Bouchard, Lavis, Ouimet & Grimshaw, 2013; Lavis, Lomas, Hamid & Sewankambo, 2006). Indeed, the right climate for research uptake is usually the foundation for the implementation of other initiatives promoting the use of evidence in decision-making (Ellen et al., 2013). A 'culture of evidence' can be defined as an outcome of a deliberate strategy to make decisions based on the analysis of data (Tracey, 2008:1). Such a 'culture of evidence' implies a routine practice of using data to inform decision-making in a continuous cycle of improvement. Similarly, Chaplot, Booth and Johnstone (2013) refer to a 'culture of inquiry', which entails the exploring and scrutinising of data and information to understand its meaning and implications for practice. Grobbelaar (2013) suggests that in an institution with a favourable culture for research utilisation, senior management would drive research uptake activities and enable, encourage and reward research-based decision-making. Ellen et al. (2013:6) maintain that

People will copy the leader and if the leader is pushing a type of behaviour, then that will be pushed in the organization. So if the leader values research and that's shown by either putting money toward it or by asking people to justify their choice of action based on data, then that will propagate through the organization.

2.2 *ENABLING PUSH FACTORS*

Push factors are activities undertaken by researchers to translate and disseminate their research findings (Ellen et al., 2011; Grobbelaar, 2013). Prominent enablers of push factors include sufficient staff capacity to conduct research, skilled researchers or intermediaries to manage the dissemination of research findings to potential end-users, funding to support

research activities and appropriate infrastructure and procedures for identifying and pushing promising research findings into the external environment (that is, beyond the environment where the research outputs were created) (Ellen et al., 2011; Grobbelaar, 2013; Grobbelaar & Harber, 2016).

Push factors that can enhance research utilisation include dissemination sources, relevant content or messages, the dissemination medium, and user characteristics (National Center for the Dissemination of Disability Research, 1996; Schafer, 2015). Firstly, end-users need to *perceive* the researchers (i.e. the dissemination source) as competent, knowledgeable of their concerns, and well-connected within the end user's professional circle (Schafer, 2015). Secondly, and perhaps most importantly, the findings presented need to be perceived as relevant to the decision-makers. However, the connection between available research findings and policy issues is often not obvious (Newman, Cherney, & Head, 2016). Hence, the information should be presented in a way that is easy to read and understand, provides clear conclusions and recommendations which address the needs of the decision-makers (Cherney et al., 2012) and ideally should also provide evidence of having addressed their needs in the past (Schafer, 2015). Thirdly, the way that the information is transmitted to the end-user (i.e. the dissemination medium) should provide easy and timely access to relevant research findings while being cognisant of information overload with which most individuals and organisations deal with today (Shafer, 2015). Lastly, researchers need to be mindful of their end-users' capacity to use the provided information – their skills, resources, institutional support, and the type of information needed (Shafer, 2015). Time and effort must be invested in research staff to acquire the expertise and the knowledge to enhance the uptake of their research findings through meaningful engagement with practitioners and policy-makers (Cherney & McGee, 2011). As Grobbelaar (2013) suggests, an institution that is successful at 'pushing' research findings to its end-users will have staff who can effectively and appropriately identify, categorise and engage stakeholders.

2.3 EXCHANGE MECHANISMS

Pursuing push activities is impossible without "platforms for engagement and access points into the university" (Grobbelaar, 2013:9) that allow researchers to reach out to stakeholders. This includes "frequent interaction through meetings, networks and partnerships and the use of knowledge brokers, to mediate between the two worlds, making research known, understandable and usable by those who need it" (Gray, Sharland, Heinsch & Schubert, 2015:9). Exchange mechanisms tend to focus on establishing and maintaining two-way relationships between researchers and stakeholders (Ellen et al., 2011; Grobbelaar, 2013). To enable such activities, Grobbelaar (2013) proposes that a set of exchange mechanisms needs to be established. Grobbelaar (2013) suggests the use of knowledge diffusion platforms (i.e. social media, websites, media outlets, fairs, databases and libraries); the establishment of points of access to the university allowing staff to engage with stakeholders and vice versa; and access to external networks, research funders as well as informal connections between researchers and decision-makers. Key to these exchange mechanisms (as well as push and pull activities), is the idea of encouraging linkages between university staff and their stakeholders (Ellen et al., 2011; Grobbelaar, 2013). Communication platforms such as workshops, conferences, forums, strategic meetings, common research projects and personal contact are important links between researchers and decision-makers that improve research impact (Hemsley-Brown, 2004; Hemsley-Brown & Sharp, 2003; Moore et al., 2011).

2.4 *ENABLING PULL FACTORS*

Enabling pull factors requires “the stimulation of demand for knowledge products” (Grobelaar, 2013:5). Schafer (2015) highlights some important steps to enable pull factors. These include identifying the decision-makers to whom the findings can be sent, forging relationships between the researcher and the decision-makers, presenting information clearly within the context of the decision-makers’ perspectives, monitoring the development, implementation and impact of policy and research findings and creating awareness of the research. Ellen et al. (2011) highlight that pull factors include mechanisms and structures that forge relationships with external environments, such as databases of external contacts and potential research users, regular interaction with the media, incentives to develop external linkages, open access into networks and environments, marketing and promotional activities aimed at decision-makers in the private and public sector, tools and mechanisms that assess the capacity to find and use research evidence in decision-making, and the creation of platforms for university staff, such as forums, workshops and meetings to engage and discuss issues.

2.5 *MONITORING AND EVALUATION*

Monitoring and evaluation (M&E) activities aim to measure the progress of research processes, as well as the uptake and impact of research findings (Ellen et al., 2011). M&E capacities are especially important given the increased emphasis on university accountability by donor organisations and governments (Grobelaar, 2013). Therefore, the institutions are responsible and accountable for research impact by improving capacity to manage and enable research uptake, to effectively illustrate the impact of research and to ensure that, as a consequence of the M&E findings, sufficient funding for the research will be made available.

3 **Methodology**

We used an ethnographic case-study design. Our study focuses on two higher education institutions in the Gauteng province of South Africa. Both universities are known to work together closely and have similar departmental structures. However, the two institutions are different in their nature: one is a research-intensive university and the other a university of technology. The similarities between the two institutions make it easier to compare findings across the two institutions, while their differences provide varying contexts to learn from.

The two universities have various support service units that are responsible for institutional research. Our interviewees came from the departments of Institutional Planning and Management Support (IPMS), Teaching, Learning and Academic Development (TLAD) (both institutions have departments using these names), as well as the department of Student Support Services (SSS) in Institution 1, and the department of Quality Assurance and Accreditation (QAA) in Institution 2. These structures are outlined in more detail in Figures 7.1 and 7.2.

Figure 7.1 Organogram for Institution 1

Figure 7.2 Organogram for Institution 2

Potential participants were approached based on a referral, their work designations and the HEI unit which they worked in. The participants' titles ranged from senior managers to practitioners. Hence, we strove to engage those creating IR and those who have the potential to use it, i.e. the decision-makers. A summary of the interviewees and their positions is provided in Table 7.1.

We collected the data using semi-structured interviews. We used Atlas.ti (version 7.0) to analyse the interview data. We analysed the data using the six steps of thematic analysis proposed by Braun and Clarke (2006). Firstly, we familiarised ourselves with the dataset. We read and re-read the data while generating initial ideas. Secondly, we started generating initial codes focusing on the parts of the dataset that spoke to the five areas of "linking research efforts with action" (Grobelaar, 2013:4). Thirdly, we started investigating our generated codes and collating them into potential sub-themes that would then fall under broader themes of Grobelaar's (2013) five areas. Following this step, we met to compare, review and refine our identified potential subthemes. During this process, we evaluated the sub-themes for the correctness of understanding and identified and corrected gaps in consistency in the labelling of the themes and subthemes in relation to the coded abstracts before proceeding with further analysis. This was used as a method of triangulation to improve the trustworthiness and validity of the findings. As a fifth step, we further reviewed the sub-themes and finalised their titles as well as their belonging to the overarching five areas proposed by Grobelaar (2013). Lastly, we focused on selecting "vivid [and] compelling extract examples" (Braun & Clarke, 2006:87) to illustrate our themes and subthemes, as well as to write up our findings.

Table 7.1 *Institutional locations and titles of interviewees*

Interviews	Institution 1			Institution 2		
	IPMS	SSS	TLAD	IPMS	QAA	TLAD
Executive Director						1
Director	1	1	1	1	1	
Deputy Director			1			
Manager (Student Support)		1				
Institutional Researcher (Institutional and Market Research)	1			1		
Researcher (Student surveys)					1	
Total Sample	2	2	2	2	2	1

Permissions to interview these staff members were granted by both institutions. Institutions and participants are anonymised as far as possible in this report.

4 Findings

4.1 CREATING A CLIMATE CONDUCIVE TO RESEARCH UPTAKE

The importance of creating a climate conducive to research uptake and the role of the executive management of institutions to create and enhance such a climate by providing the strategic directives for the institutional research to be undertaken, emerged as one of the most important themes in our dataset. This theme was discussed by interviewees regarding sub-themes such as ‘a culture of evidence’, ‘mandate’ and ‘limitations’. According to the Directors of IPMS at both institutions, most of their research is pre-approved for uptake, implementation and feedback. On the other hand, the directors of TLAD at both institutions – in both cases these units conduct mostly research on higher education (RHE) that is broader than only IR – indicated that the utilisation of their research outputs depends on the applicability of their findings. Furthermore, the research findings of the TLAD departments tend to influence the strategic initiatives, decisions and planning of the institutions, mostly related to teaching and learning and academic development of students. The IR findings on student success interventions, which are mostly performed at TLAD at Institution 1 (Deputy-Director of TLAD), tend to feed back into student success initiatives, which are used, in some instances, to improve these interventions.

4.1.1 A CULTURE OF EVIDENCE

According to the Directors of IPMS and TLAD at Institutions 1 and 2, there is an appetite for evidence among the two institutions’ executive management members. The Director of IPMS at Institution 1 explained that the executive management pre-approves the uptake and implementation of most of the research conducted at IPMS.

[...] we do decision support analysis in the sense that before certain decisions are made we kind of provide intelligence that feeds into that decision-making process. Our new plan for the next five years talks about developing a data/evidence-driven culture. So, it’s in that context that we must do that.

The Director of TLAD at Institution 1 reported that the institution has a data analytics committee, consisting of the directors of support service departments and deputy deans for teaching and learning. The data-informed nature of the work of this committee, for example, led to changes in the credit load of programmes based on the findings from an IR report, as evidenced by a Senior Institutional Researcher from IPMS at Institution 1:

[...] and they took it further and then they had huge curriculum changes that they were making to help the students, to help the whole curriculum.

Multiple interviewees from Institution 2 reported that the institution is strongly in favour of evidence-based decision-making and that this message is conveyed throughout the university by the Director of IPMS. This has led to more and more units within Institution 2 requiring the services of IPMS. A researcher at the Institutional Survey Research unit at QAA refers to the excitement over evidence-based practices at Institution 2:

[...] there was much talk about evidence-based practice, e.g. more and more surveys, and the executive is proposing the office enlarge because there is only a single survey researcher.

This Survey Researcher highlighted that research reports based on empirical evidence are preferred by management and this facilitates buy-in and use. They also mentioned that because of the quality of their research reports, they are inundated with more requests. They provide information that seems to be of value and their recommendations are deemed useful.

4.1.2 *MANDATE*

There are different units in Institutions 1 and 2 researching student success (as explained in the organograms above, Figures 7.1 and 7.2). Several participants in these units reported that they are required to conduct research in terms of their unit's mandate, which is usually clearly specified. These mandates sometimes even indicate the approach and focus of the required research, for example, data analytics *versus* learning analytics.

Something that became clear from our interviews is that a department or unit requires a mandate to do institutional research, since those not having such a mandate tend not to do institutional research, as evidenced by a Survey Researcher at QAA at Institution 2:

What we do is we are a support office. We gather information for them. We gather intelligence. We give it to them. It will be nice to know what they do about it, but it's not really on my job card, on my job description, to follow up that it has been done.

However, having a mandate to perform institutional research does not automatically imply that research will be used, as there are certain conditions for uptake and use, which will become evident in the next section. As suggested by a Director of IPMS from Institution 1:

What we've come to discover is there's better uptake of what we call demand-driven research ...

4.1.3 *LIMITATIONS*

While the findings on the utilisation of the HER and IR outputs reported above are encouraging, it was clear that there are still limitations to establishing a climate for the uptake of this type of research. Interviewees reported that the departments that are responsible for teaching and learning, student affairs or academic development generally do not have clear mandates to perform research themselves. They are mostly the users of research done by other units (such as the IR unit) who are required to package research outputs in a format that is actionable to the needs of these departments. If research is not a part of the staff member's job description or performance agreement, time (in terms of KPIs) tends not to be allocated for research and writing and doing research becomes an additional task (Executive Director at TLAD at Institution 2).

The Director of TLAD at Institution 1 suggested that RHE conducted by lecturers who want to improve their practice, for example, the Scholarship of Teaching and Learning (SoTL), is not widely taken up because it was not mandated or commissioned, nor is it readily published. Although such results may be implemented in a module or a course (for example, interventions to improve teaching using study guides or changes in teaching practice), it is mostly used by individual lecturers only and not taken up widely in the institution or beyond.

4.2 *ENABLING PUSH FACTORS*

Push factors are the processes of pushing knowledge into the university's institutional and external environments (Ellen et al., 2011).

Our data showed that the greatest enablers of push factors in the two institutions were the availability of sufficient research capacity, the availability of funding for 'push' initiatives, and access to technology that can be used for data analysis and the reporting of findings. The reported limitations focused on instances when the areas of capacity, funding and technology failed to work effectively.

4.2.1 *CAPACITY*

Our data showed that the availability of sufficient numbers of research staff members and the continuous development of their knowledge and skills appears to be vital to push knowledge production and usage within institutions. In the words of a Director of IPMS (Institution 1):

So, you focus as strongly as you can on upskilling and building the capacity of your staff in terms of doing research, creating opportunities for uptake of the research in your department.

Building capacity of staff on data analytics and reporting seems to contribute to an environment conducive to research uptake:

The outputs [in terms of capacity building] of the university would be greater data analytics capacity amongst staff. Because if you've got to struggle to understand something you're not going to implement it. You won't understand what you need to implement from the start. (Director of TLAD, Institution 1)

Furthermore, it was noted that institutional researchers also require a broader understanding of the higher education landscape to provide an improved understanding of the findings and how they relate to the broader context. The Director of IPMS at Institution 1 suggested that institutional researchers

[...] require a certain kind of awareness [...] to be able to make sense of what is happening in the broader context of our education globally, nationally, so that the research agenda is informed as well by some of these trends.

Unfortunately, as the same interviewee later observed, IR staff are mostly inward-facing on the institutional objectives and tend to neglect the broader context and the impact on the institution:

I don't have that capacity to be able to do that kind of sense-making at that level.
(Director of IPMS, Institution 1)

4.2.2 FUNDING

Incentives and grants appeared to be important push factors needed by the departments to facilitate the process of pushing knowledge production and usage across the institutions and other external environments. Both institutions fund their research units from their operational budget as stipulated in the mandates of the units (Directors of IPMS at Institution 1 and 2, Director of TLAD at Institution 1, and Survey Researcher at QAA at Institution 2).

Look, the nature of the work that we do is such that foundations are not quite enthusiastic about funding it because they see it as something that should be part of the core of what we do as an institution. Once or twice, we have been able to get funding... The one that I would say has been funded is the student success.
(Director of IPMS at Institution 1)

The departments and units at both institutions where additional grant funding has become available, such as TLAD, QAA and IPMS, have shown an increase in output in terms of research reports (Directors of IPMS at Institution 1 and 2, Director of TLAD at Institution 1, Senior Director of TLAD at Institution 2 and Survey Researcher at QAA at Institution 2). These reports are specific to the issues they are experiencing with a purpose to improve their practice and, to some extent, led to an increase in data analysis and reporting capacity within the departments. Some of the units have only one staff member and in this case, additional resources are created through contractual appointments, which are also funded by the institution (Survey Researcher at QAA, Institution 2).

The Senior Institutional Researcher of IPMS at Institution 1 noted that international grant funding was used to contract a research intern to perform advanced statistical analysis on student success models as well as consult with the statistical services provided by the Department of Statistics. The additional benefit of using the Department of Statistics and the research intern with funding from the international grant also led to capacity development within IPMS's institutional researchers. The Educational Research Unit has also benefitted from an international grant fund, according to the Deputy-Director of TLAD at Institution 1. The Educational Research Unit commissioned a statistical analysis of student academic performance data and contracted a research assistant to support with analytics in the unit. The funding from the international grant also led to capacity development within the Educational Research Unit at TLAD.

The Department of Higher Education and Training (DHET) funds student support initiatives, such as tutors and mentoring, through the university capacity development grant (UCDP). However, the funding of these initiatives is only sustainable over the short-term and they are limited in what can be funded which implies that new initiatives cannot be funded through these grants (Director of TLAD at Institution 1). There is a view that funding by external funders or donors is not sustainable in the long-term (Senior Director of TLAD at Institution 2). To overcome this conundrum, interviewees maintained that external funding should be allocated to selected innovative research projects that can have a larger impact on student success with low impact research ideally being discontinued or automated. The

core message that came out from our dataset is that donor funding should be regarded as seed funding to establish good data-informed practices that are sustainable when the funding has ceased.

4.2.3 *TECHNOLOGY*

Technology emerged as another key facilitator to push information to stakeholders. This includes learning management systems, student information systems, reporting solutions and integrated database/warehouse and analytics systems. Both institutions utilise various forms of these technologies to perform their analytic and reporting functions, which have aided research uptake. In the case of reporting KPIs, the Senior Researcher of IPMS at Institution 1 mentioned that they use the Higher Education Data Analyser (PowerHEDA) for on-demand reporting, consisting of aggregated data of various institutional KPIs (referred to also by the Survey Researcher at QAA at Institution 2). To support student success initiatives and to improve teaching and learning, the information of individual students are needed. According to the Director of TLAD at Institution 1, the staff responsible for the learning management system have access to individual student data, which may be used to improve module success rates. HER also has access to individual student data to be used for various student success interventions. The Survey Researcher at QAA at Institution 2 reported that they use Microsoft Excel and PowerPivot, as well as PowerHEDA provided by the private company IDSC. They also have a learning management system and a student early warning and monitoring system that was developed by staff from Institution 2 to identify students at risk of failure or attrition. These resources are used directly to support student success initiatives through evidence-based interventions.

However, there is a continuous need for training because the technology constantly develops and new dashboards are created to support the information needs of the users. It is also important that the information presented on the technologies is interpreted correctly and for this reason, training is also needed. At Institution 1, training of deputy-deans and other users on this technology was managed through the data-analytics committee (Director of TLAD at Institution 1). The Director of IPMS at Institution 2 mentioned that they have also seen the need for more people to be trained on the use of such business intelligence tools:

So if we want to look at the individual students of a course in the Learning Management System, they're there as individual names per module, but a lot of stuff, even the cluster analysis, we can pull the data, we can do it on our own.

4.2.4 *LIMITATIONS*

Limitations related to push factors reported by our interviewees were limited staff capabilities, insufficient staff capacity and limited and/or inadequate support by the Department of Information Technology.

Firstly, staff may have limited knowledge and skills in data analytics and the use of state-of-the-art technology. The Survey Researcher at QAA at Institution 2 mentioned that training is required for new institutional researchers on how to identify themes for research, how to produce a report using secondary data, and how to use surveys. This finding indicates not only the resource limitations of some of the departments but also the need for continuous

training and professional development of staff, especially for new researchers. TLAD at Institution 2 and SSS at Institution 1, which support student success through various interventions, indicated that some of the research outputs are at times of no value or irrelevant to enhancing student success initiatives. This suggests that when the research information does not speak to the needs of the intended users, the uptake of the research to inform student success practices will be limited (Cherney et al., 2012).

Both TLAD and IPMS at Institution 1 (the Directors) mentioned that there is a drive from the institution to use the opportunities of the Fourth Industrial Revolution and therefore they are investigating the use of machine learning principles and artificial intelligence. However, the departments seem to have neither the capacity nor the skill to really venture into this yet.

The second limitation, staff capacity, reported at both institutions, results in limited research output and uptake in both institutions. The Survey Researcher at QAA at Institution 2 indicated that the Institutional Research and Surveys unit has one staff member. The interviewee reported that the unit uses postgraduate research assistants who are often inexperienced. The Survey Researcher further mentioned that the function of IR and student surveys is regarded as an “add-on unit by academic departments” (Survey Researcher at QAA, Institution 2). Often this view of IR has reduced the need for other (possibly more advanced) research activities, except that which the QAA unit is mandated to do (Director at QAA, Institution 2).

Thirdly, technological solutions often do not seem to meet the particular needs of the institution. There may be multiple reasons for this. The Director of IPMS at Institution 2 reported that the format wherein data is stored from academic departments is problematic, for example, the student records coming from faculties are inconsistent and uploading it to a single database would be very difficult. The institution also uses three or four different types of systems, each with its own data structure, namely: the LMS, ITS Integrator systems, and their ‘inhouse’ institutional systems. This implies that the integration of the data into a single data warehouse where the data can be analysed and reported on is a major challenge. According to the Director of IPMS at Institution 2, IPMS have expressed their need to the Department of Information Technology for an ‘in-house’ system to be able to advance institutional research, but this has not been developed.

ITS [Integrator System] costs the university quite a bit and they’re fully invested into it, you know, historical data, legacy data that’s been archived and so on, so it’s not likely that they will change. (Director of IPMS, Institution 2)

Much of the reason for not moving to a new data and administrative system is the cost. However, according to the Director of IPMS there is also a reluctance to change. Due to the cost factor of a student information systems (e.g. Oracle People Soft or ITS Integrator System), there is a limit to the reports and the data that one can produce and, therefore, a limit to the influence that one can have in terms of driving the business forward and optimising business practices. In addition, legacy systems are very rigid whereas a custom-built system can be customised each year to suit institutional needs (Director of IPMS, Institution 2).

Lastly, in the cases where IPMS provides access to business intelligence tools, the support services departments, such as TLAD, do not make much use of the information.

We have been saying that we need to go to these people and ask them if there is anything we can do for them, but they do not have many requests for data to be displayed (Director of IPMS, Institution 2).

4.3 EXCHANGE MECHANISMS

Exchange mechanisms focus on the fostering of communication channels between researchers and users to create partnerships for research uptake and use (Ellen et al., 2011). In following sections we will discuss the two major themes that emerged from our data in relation to exchange mechanisms: communication and collaboration. Our interviewees spoke of the communication channels within the two institutions (i.e. meetings, communities of practices or conferences where stakeholders have a voice and input into the research process and where research findings can be discussed) and collaboration (between the executive management, teaching and learning committees, faculties and departments within the institutions), both of which emerged as important exchange mechanisms.

4.3.1 COMMUNICATION CHANNELS FOR RESEARCH UPTAKE AND USE

As mentioned earlier, the key to exchange mechanisms is the idea of open communication channels between stakeholders (Ellen et al., 2011; Grobbelaar, 2013). In most cases at the institutions under investigation, various management committees are used as a communication platform for the dissemination of research findings leading to research uptake. According to the Institutional Researcher in IPMS at Institution 2, they table their reports at executive forums, which are generally used by management. According to the Director of IPMS at Institution 2, their reporting is mainly to the various executive directors to enable them to make presentations to the University Council. According to the Senior Institutional Researcher and Director of IPMS at Institution 1, their stakeholders are firstly the executive managers of the institution, such as DVCs, Deans and Directors. The Deputy-Director of TLAD at Institution 1 also mentioned that their reports are generally disseminated through various committees. This is mainly done via the Directors' Forum, because HER is not an academic department and because it also deals with student success, the research outputs are also presented to the Senate Sub-committee for Teaching and Learning.

Furthermore, the Director of TLAD at Institution 1 indicated that their institution created a strategic committee where key stakeholders are brought together to discuss data about issues that affect student success. The Senior Institutional Researcher from IPMS confirmed that this committee consists of deputy-deans from the faculty and staff from various support departments. This committee highlights the importance of connecting researchers and decision-makers to foster research uptake.

The Director of IPMS at Institution 2 mentioned that IPMS has regular meetings with their stakeholders who require research and reports that address their needs:

[...] we have regular meetings with them and we keep refining these reports based on their extended needs.

In other instances, research reports are distributed directly to the stakeholders and to the relevant committees. The topics or themes of some of the research projects are suggested by the Director of IPMS based on the issues that are communicated at various forums of which the Director is a member (Senior Institutional Researcher, IPMS at Institution 1). This highlights the need to establish various points of access and engagement with the stakeholders and users of the information.

Other forms of exchange mechanisms were also mentioned. The Director of TLAD at Institution 1 indicated that they started a community of practice (COP) on Learning Analytics (LA), which introduced the concept to the institution but also to the higher education sector. Institution 1 has transferred this COP to a Southern African Association for Institutional Research (SAAIR) workstream on LA. This COP further provided the platform for research and good practice shared within and among institutions and it incorporated learning analytics as a mainstream practice to improve student success.

An example of the use of “knowledge diffusion platforms” (Grobelaar, 2013) was mentioned by the Institutional Researcher of IPMS at Institution 2. Institution 2 implemented an electronic reporting system that is open to the entire university. Staff are given access based on their needs, so that they can generate a report. This frees up resources in the IR unit. The standard reports are available on a shared institutional database. This places important information in the hands of users, which facilitates the uptake of research findings and institutional data for decision-making.

Furthermore, the research results are presented in various formats to stimulate exchange, such as PowerPoint slides at the various committees (Director of TLAD at Institution 1), infographics (Survey Researcher at QAA at Institution 2) and sometimes it is published in scientific journals and presented at annual conferences such as SAAIR, HELTASA and Siyaphumelela (Director of SSS at Institution 1; Survey Researcher at QAA at Institution 2; Director of TLAD at Institution 1). The findings are also reported to students, because they are important stakeholders. Students get feedback through social media, university social media, student newsletters and any other media outlets used by students (Senior Director at QAA, Institution 2).

4.3.2 COLLABORATION

Collaboration activities create the points of access that allow researchers and stakeholders to engage with each other (Grobelaar, 2013) and our respondents shared many examples of meaningful collaboration.

Firstly, collaboration among researchers from different support departments within an institution functions as an important exchange mechanism. At Institution 1, IPMS collaborates with the HER unit at TLAD providing statistical analyses to identify the academic achievements of first-year students after the first semester of their studies (Director and Senior Researcher of IPMS). The Institutional Researcher of IPMS at Institution 2 reported that they collaborate mostly on institutional research projects with the Institutional Survey researcher at QAA, specifically where data from the Management Information System (MIS) and survey data is required. The Survey Researcher at QAA at Institution 2 reported that the Institutional Research and Surveys unit maintains a strategic collaboration with

the Institutional Researcher in IPMS. The Institutional Research and Surveys unit also collaborates with TLAD, where they have appointed an institutional researcher for student academic development.

The Director of IPMS at Institution 1 mentioned that in cases where “sensitive” matters are researched (matters that are strategic in nature), there is a collaborative effort between the main stakeholders and the executive management (who have to provide the stamp of approval). Executive management often uses these research findings for strategic decision-making purposes. However, it takes a concerted effort to get stakeholders together to implement research findings:

Yet quite a number of those interventions require that almost all the key players come on board and there is a coherent coordinated approach. (Director of IPMS, Institution 1)

Secondly, a collaboration between the IR and academic departments was shown to be important. At QAA at Institution 2, a Survey Researcher we interviewed pointed out that initial reports are forwarded to faculties or departments, where value is added to the conclusions and/or recommendations and these ‘final’ reports are subsequently presented to Council (further confirmed by the Director at QAA, Institution 2).

This led to staff from other departments commenting on the articles and they were also coming up with suggestions for the recommendations, so we have a wider view of what it is that people within the university think. The process is to present individual reports, faculty or environment reports, to the specific entity and once collated they produce a consolidated report that is presented to Senate. (Survey Researcher at QAA, Institution 2)

Another example from the Survey Researcher at QAA at Institution 2 referred to faculties and departments invited to provide QAA with questions that they could use in student surveys. In this way, faculties and departments are informed about the type of surveys that are administered to students at any given time. Hence, QAA collaborates in this way to find out if there are additional questions that stakeholders would like to include that will be of value to them or could facilitate planning or decision-making purposes:

This survey is coming up. If you have any contributions or objections or whatever the case may be, contact this office before such and such a time (Survey Researcher at QAA, Institution 2).

Thirdly, collaboration happened with external stakeholders or networks. The Institutional Researcher of IPMS at Institution 2 also collaborated on an external Umalusi project on the predictive value of specific National Senior Certificate subjects. The Director of TLAD at Institution 1 and the Senior Director of TLAD at Institution 2 also mentioned that they collaborate with another university on student engagement work, which includes the Lecturer Evaluation of Student Engagement (LSSE) and the South African Survey of Student Engagement (SASSE) to provide qualitative survey data on student engagement. The Educational Research unit has also collaborated on various research projects with various South African universities, as well as the National Senior Certificate project at Umalusi. The

Director of TLAD at Institution 1, as well as the Senior Director of TLAD at Institution 2, reported on the Quality Enhancement Project (QEP), which was a project of the Council on Higher Education (CHE) to improve the quality of student success initiatives at universities. According to them, the QEP required most of the departments and faculties to work together because it was an institutional research project.

So, it's not just the kind of silo effect, (the) orientation (section) stands on its own, the next section stands on its own, but rather the holistic student experience that we're trying to bring in. (Director of TLAD, Institution 1)

This was the first time there was a multidisciplinary approach that consisted of support service departments and academic departments. This was, however, a rare occasion and otherwise, the departments function in silos. (Senior Director of TLAD, Institution 2)

Collaboration between institutional networks, such as Institutional Research Units, HER, Student Development, faculties and executive management, creates a platform for relevant institutional research themes, engagement on findings and implementation. The collaboration between departments and units encourages knowledge-sharing, engagements between stakeholders, enables networks and increases research capacity (Stevens et al., 2005). The finding also indicates that collaboration does not only take place internally but also with external networks. The collaboration with Umalusi, the CHE, the Department of Higher Education (DHET) and HEIs support and encourage Institutional Research staff to engage with external stakeholders, build networks, stimulate research funding, as well as provide a neutral environment for knowledge sharing, production and use. These collaborations then lead to an increase in research uptake across the institution because of the collaborative efforts of several institutions in partnership with external networks.

4.3.3 LIMITATIONS

However, interviewees also mentioned a number of setbacks in establishing and maintaining effective exchange mechanisms. Among such setbacks was the fact that although IR practitioners were members of executive forums, this did not always lead to research uptake within the institution (Director and the Senior Institutional Researcher of IPMS, Institution 1). Furthermore, the Director of IPMS at Institution 2 reported that not all management members are represented in the forums and because of that, the director might not be in tune with everyone's data needs. The interviewee also suggested that certain campuses have more access to information than satellite campuses, due to the lack of system integration, such as the student tracking system.

Very rarely has a Head of Department from the satellite campuses requested the use of the mentioned student tracking system. (Director of IPMS, Institution 2)

Lastly, while collaboration with stakeholders helps to create an informed report, there are still time limitations that seem to hamper the potential for uptake and utilisation because the report might only be available later (Survey Researcher at QAA, Institution 2).

4.4 ENABLING PULL FACTORS

Pull factors refer to any activity that increases the demand for knowledge production, use and implementation (Grobelaar, 2013). Our data suggest that in the two institutions investigated, the most prominent pull factors were the relevance of the IR outputs for the needs of the users and the effective dissemination of IR outputs. These two factors are discussed below.

4.4.1 PURPOSE OF THE RESEARCH AND NATURE OF THE REPORTS

The findings from the interviews show that the reports requested by executive management on topics such as institutional development and improvement, intervention evaluation, student selection, student development, student transformation and infrastructure developments are pull factors that stimulate knowledge production, usage and implementation. The fact that there is a demand for research on these topics and a direct need for the findings supports its uptake and use by executive management for planning and decision-making purposes. The Institutional Researcher of IPMS at Institution 2 noted that when IPMS identifies annual priority areas for research, these findings are less likely to be utilised by the university compared to those that have a sense of currency and urgency for executive members. In this respect, the Institutional Researcher suggested that it would be better if research topics are continuously suggested by the executive members.

According to the Deputy-Director of TLAD at Institution 1, research with a strong focus on operational issues and with recommendations that can be actioned by a dedicated unit, is usually destined for implementation, albeit in a constricted area. For instance, units with student success functions use these research findings to improve the operational processes of the various programmes. The findings of research performed on student success and the associated recommendations for interventions are used for departmental planning for the following year. Research on issues where there are no direct operational needs, such as the SASSE and LSSE (Director of TLAD, Institution 1), the Graduation Destination Survey (Director of IPMS, Institution 1), and the Residence survey (Institutional Researcher of IPMS, Institution 2) may not be utilised by the institution. Demand-driven research is meant to gain information on a particular challenge that executive management is experiencing and this results in findings being used by the institution (Director of IPMS, Institution 1).

In the cases where student success initiatives are funded externally (such as the Peer Mentoring Programme of the DHET, targeting first-year students), a report on the success of the project is usually required (Academic Manager at SSS, Institution 1). The Academic Manager at SSS at Institution 1 produces annual reports that are submitted to the executive management. These reports are seen as “peer type of documents” (Academic Manager at SSS, Institution 1), which means that they are mainly used for internal use. The Director of SSS also sees the annual reports as an opportunity to raise funds from international donors, although the Director and Manager of SSS at Institution 1 believe that the uptake for these reports is mainly related to the performance evaluation of the department. It is also used for planning and improvement for the following year.

4.4.2 *EFFECTIVE DISSEMINATION OF IR OUTPUTS*

According to the interviewees, the findings of the research conducted by their units are generally disseminated through presentations and reports to the Senate sub-committees, deputy deans and deans. Research findings are also disseminated through national conferences, government offices and collaboration between institutions. IR outputs in various forms, such as reports and presentations, are used to stimulate conversations about the problem at hand and this often leads to additional data analyses and as such, stimulate a research demand.

Among the effective dissemination channels mentioned by the interviewees in the two institutions were meetings of executive management committees, strategic management meetings (such as Academic Planning and Budgeting Committee meetings), the data analytics committee, Faculty Board meetings, and the Senate committees for Teaching and Learning and student success. The Director of IPMS at Institution 1 also mentioned that their department has the function of reporting data from the Higher Education Management Information System (HEMIS) to the DHET.

An important factor contributing to successful research dissemination via these channels was how effective communication of the findings was and whether it was designed with its audience in mind. For example, the findings and recommendations produced by the Survey Researcher at QAA at Institution 2 are categorised according to the different executive portfolios. The reports then serve at the various Senate and Faculty board meetings and the recommendations from the reports are created with the department or faculty.

The Survey Researcher at QAA at Institution 2 facilitates “handover sessions” or workshops to communicate their results. In the communication during these sessions, it is emphasised that the findings are not merely intended to criticise existing practice and this can aid to reduce possible resistance of people when they receive these reports. This approach had a positive outcome, which could be seen in that some managers start approaching the office to seek guidance on how they can deal with recommendations from the QAA department. Timely delivery of reports proved to be another important pull factor. For example, the Institutional Survey Research unit implemented an incremental reporting strategy, which implies that once a campus or section of the students has completed the survey, they start producing a report. In the past, stakeholders had to wait until all students completed a survey before reporting could be started, but it took too long, which defeated the purpose of informing planning, policy formation and decision-making. This, in turn, decreased stakeholder willingness to rely on the unit for information.

4.4.3 *LIMITATIONS*

Interviewees also mentioned limitations to enabling pull factors. For example, the Director of IPMS at Institution 1 mentioned that some of the recommendations from the disseminated research findings imply a larger problem that requires many of the departments, including faculty, to collaborate but that the results were not disaggregated to indicate which department should provide which service or intervention:

Some of the things require that multiple entities work together but where this information comes out it's not kind of treated in that coherent fashion or manner where its then parcelled out as in Participant D this is yours, Participant E these would be yours, Participant G these would be yours, and ABCD, you know. So because it requires multiple entities to come in, a number of things fall through the cracks.

Furthermore, the Director of TLAD at Institution 1 shared that some research reports, even when disaggregated to the faculty level, are not utilised by the academic staff or the faculties. Uptake is usually facilitated when the report is distributed to the support service departments, where uptake and utilisation do follow. According to this interviewee, one of the main reasons for the lack of utilisation of the data by academic staff is their priority for their own research and publishing. Teaching and learning seem not to be valued and rewarded at the same level as research, therefore the research findings and recommendations to support student success is deemed to be of lesser value. While student support departments have the mandate to support students at various levels and interfaces, these initiatives remain supplementary to the teaching and learning agenda of many lecturers. Furthermore, according to the Director of TLAD at Institution 1, many of the lecturers do not know how to interpret and use the data; hence, it becomes important to communicate data with a story that is understandable to the academics and the support departments. This highlights how important it is to consider all five areas for knowledge utilisation promotion suggested by Grobbelaar (2013) as a coherent whole. In this particular example, it is evident how even with good dissemination practices, IR practitioners may still not achieve uptake if there is no climate for IR uptake or no sufficient push factors (i.e. capacity to understand IR findings).

4.5 MONITORING AND EVALUATION

Monitoring and evaluation has the potential to increase the accountability of all stakeholders to support research output and research uptake and utilisation (Ellen et al., 2011). Our findings suggest that effective monitoring and evaluation of IR outputs are indispensable in maintaining and enhancing a culture of evidence where evidence is regularly used in interventions to improve student success. Furthermore, it is important to have a detailed plan for monitoring progress toward the stated objectives through measuring the achievement of outputs, outcomes, and impacts, as well as feeding these findings back to the COP. Nevertheless, our findings show that this function cannot be left to all and sundry to perform; there should be a dedicated mandate given to a unit or department to ensure that this function is performed.

4.5.1 MONITORING AND EVALUATING RESEARCH OUTCOMES AND UPTAKE

According to the Director of IPMS at Institution 1, their research is generally used for decision support when IPMS provides information that feeds into the decision-making process. The consumers are primarily members of the Executive Management, Deans and Directors. According to the Senior Institutional Researcher of IPMS at Institution 1, the Director of IPMS regularly discusses the KPIs of the institution with the DVC: Institutional Planning. The DVC subsequently discusses the KPIs with the Deans and they jointly set targets for the following years. These targets are evaluated the following year to determine whether they

were reached. The Deans have to be accountable to meet these targets and have to provide reasons when the targets are not met. The Director of IPMS at Institution 1 also mentioned that the department undertakes what they call “monitoring and evaluation”. In this instance, IPMS evaluated the implementation of a particular policy. The evaluation led to changes in the practices of the Department of Residence relating to the selection and placement of students in residences.

The Senior Director at QAA at Institution 2 mentioned that their department predominantly performs survey research, although one of their activities is to perform “impact studies” in collaboration with IPMS. The impact studies consist of programme satisfaction surveys as part of academic reviews. The research reports are tabled at various executive management meetings and they serve at the meetings of Senate and academic committees. According to the Senior Director at QAA the findings and recommendations of their reports are frequently disaggregated in terms of the different executive portfolios. Based on the recommendations, the executives from the various departments are requested to produce a quality improvement plan, in conjunction with their KPIs, to meet short-term or long-term targets. Some of these recommendations are also included in the institutional strategic plan as institutional objectives.

And in that way, the university is then able to plan for it, and to be able to execute, and later even raise their performance against those problematic areas that IR would have raised with the executive. (Senior Director at QAA, Institution 2)

According to the Director of TLAD at Institution 1, the national Siyaphumelela project, which supports institutions to gain knowledge and experience with data-driven decision-making through the Siyaphumelela conference and some institutions with grants, was a catalyst for research uptake and utilisation by helping to coordinate and consolidate resources to support decision-making at Institution 1.

So, we’re getting money from the outside and we must show what we’ve done with it. If it’s an evaluation, then one would expect that the people who ran the programme would use the evaluation to improve whatever they’re running. (Deputy-Director of TLAD, Institution 1)

According to the Director and Deputy-Director of TLAD at Institution 1, the HER unit monitors and evaluates the interventions of specific programmes, mainly those that support student success at the institution. The evaluation consists of monitoring the uptake, the satisfaction with the services and to some extent (where data is available) student success data to measure the outcomes and impact. The results from HER evaluations mainly influence the strategic planning of student success initiatives and the impact of advising.

So, if there was something that was said about the orientation programme last year, when planning this year’s programme it will be considered, so it’s, you get more on the grass-roots level than the creation of a new policy or something like that. (Deputy-Director of TLAD, Institution 1)

Interviewees noted that it is important to plan for monitoring and evaluation activities within the research cycle. The monitoring and evaluation of student success matters and of IR projects and outputs designed to enhance student success should be part and parcel of the ongoing responsibilities of IR practitioners. Ideally, IR practitioners should track the uptake and impact of the interventions recommended in their reports.

4.5.2 LIMITATIONS

Multiple limitations to the effective monitoring and evaluation processes were also mentioned. According to the Survey Researcher at QAA and the Senior Director of TLAD at Institution 2, there is no tracking of the actual uptake and use of research findings. The Senior Director at QAA at Institution 2 mentioned that not all recommendations are used by all stakeholders in the institution due to all kinds of complex reasons. The Director of IPMS at Institution 1 attributes this to the “inherently de-coupled nature of universities”. According to this Director, the implementation of research findings requires that multiple entities work together but in the end the information does not provide disaggregated findings to support uptake and use.

According to the Survey Researcher at QAA at Institution 2, QAA and specifically the Institutional Survey Research unit do not have the mandate to monitor that the recommendations are used and their impact evaluated. According to the Director of TLAD at Institution 1, there is also no designation at the institution that monitors and evaluates the uptake of research reports.

No, it's never been considered and we are certainly not going to get more staff to do it (Director of TLAD, Institution 1).

The Survey Researcher at QAA at Institution 2 regarded the monitoring and evaluation function as an add-on to the survey research role that should be located in another unit. There was, however, no discussion about where such a function should reside and who should take ownership. From the perspective of the Senior Institutional Researcher of IPMS at Institution 1 they do not monitor the uptake and do not evaluate the implementation of a report after it went to the Executive.

Sometimes you hear in a meeting because I am also on the student success committee of the University, in every third week we have a meeting for an hour and sometimes you hear this is what has happened. (Senior Institutional Researcher of IPMS, Institution 1)

According to the Senior Director of TLAD at Institution 2, the Institutional Survey Research unit collects data, does research and the information is presented at Senate, disaggregated by faculty, but then it is not filtered down to staff within the faculties. There is also no deeper engagement into what the sources of these issues are, especially if the student success rate increases. The Senior Director did not mention the details of a successful framework (logic model) nor whether any theory was applied to determine possible reasons for the change. The Senior Director is also of the opinion that research has not affected student success practices nor teaching and learning improvements at the institution.

Fantastic research is being done but it's not taken forward. (Senior Director of TLAD, Institution 2)

The finding, therefore, indicates that the information should, as a standard practice, be fed back to the COP for further attention as may be needed. Closing the loop in this manner can stimulate a culture of evidence and evidence-based decision-making.

5 Discussion

In this chapter, we reported the results of our investigation into the uptake and use of IR outputs on student success by the faculties and student support departments of two higher education institutions in the Gauteng province of South Africa. The discussion presented here is based on the findings of our analysis of the interviews conducted at these two institutions. In this final section, we summarise our conclusions in terms of the five elements of the theoretical model for the enhancement of knowledge utilisation proposed by Grobbelaar (2013) namely, a climate conducive to research uptake, the availability of enabling push factors, exchange mechanisms, enabling pull factors, and effective monitoring and evaluation.

5.1 CLIMATE FOR RESEARCH UPTAKE

The necessity of having a culture of evidence as a condition for the utilisation of IR outputs emerged as our main finding. According to Tracey (2008), the intentional strategy to take evidence-based decisions creates the culture of evidence, while Ellen et al. (2011, 2013) and Lavis et al. (2006) further confirm that an institutional environment that is favourable to evidence-informed decisions fosters knowledge usage. Our findings have shown that executive management plays a crucial role in creating such a culture. Therefore, IR outputs aimed at the provision of evidence in support of decision-making should be aligned with the strategic directives of the institution. Additionally, the outputs should be actionable for them to be used in policy, practice or processes. Although not all IR outputs are necessarily actionable, it is important that the outputs derive from the intention to make a positive impact on student success initiatives and that they have the potential to add value. Interviewees emphasised that it is important to create forums for knowledge sharing. Through these forums, networks or avenues can be created through which the IR outputs can be actioned. These forums foster feedback loops where the research and interventions can be monitored and evaluated. Moreover, these forums should ideally have representatives from all stakeholders involved in the enhancement of student success. As an example from our findings, the national Siyaphumelela project, funded by the Kresge Foundation, seemed to have provided a stimulus for institutions to focus on a culture of evidence regarding their interventions aimed at the enhancement of student success, although it appears that how the institutions positioned themselves in the Siyaphumelela project was different and based largely on their own institutional culture and needs.

Another important finding was that if the units producing IR outputs have a formal research mandate (that is, that their job descriptions specify that they must do institutional research), the prospects are better for their research being used. However, not all the departments or units involved in the enhancement of student success conduct institutional research on

student success. Yet our findings suggest that departments tasked with the implementation of IR outputs on the enhancement of student success should participate in the conceptualisation of IR projects to ensure that the findings are actionable. Furthermore, not all the research of the IR units in the two institutions is necessarily used or implemented by management or other stakeholders. Their research is almost exclusively focused on the institution itself. Their research findings and recommendations are presented to the Senate committee for teaching and learning, and this committee may or may not disseminate these findings to the faculties where it may or may not be used. Finally, we found that the institutional planning department can play a role in enhancing a culture of evidence in an institution, but a formal mandate is necessary to perform IR focused on student success.

5.2 *ENABLING PUSH FACTORS*

Our findings showed that the institution must facilitate the process of producing and pushing knowledge to various role players in the institution and to the external environment. Push factors tend to be facilitated by researchers to propagate research findings for contexts outside of the academic community (Ellen et al., 2011; Grobbelaar, 2013). Push factors are, however, dependent on an embedded culture of evidence that creates a need for knowledgeable staff, relevant technologies, shareable or integrated data (including processes and standards for data governance), credible research processes and quality reports. Our investigation demonstrated that the staff capacity of a research unit limits its research output and its ability to monitor and evaluate the use of their research findings. Gray et al. (2015) explain that research uptake is further enabled through sustained engagement between knowledge producers and users. Interviewees indicated that technology (e.g. dashboards and other means) can be used effectively to push information to end-users. The optimal use of technology requires that the researchers be trained to use these tools. If they use it correctly, it enhances the credibility and quality of their outputs. Equally so, the end-users must be trained in the technology. If they are trained, the analytical work can be decentralised and there are more human resources available to provide the increasing need for data on student success and to answer pertinent questions on student performance and interventions aimed at enhancing student success. Moreover, such a broad base of analytical capacity can save costs due to institutions having limited financial resources to appoint more dedicated institutional researchers. However, interviewees indicated that the use of technology to push IR outputs and to enhance their utilisation are not without their challenges. The technologies must be integrated, data governance needs to be effective, the technological solutions must be customised for the needs of the environment and a thorough cost-benefit analysis must be conducted when new technology is introduced. Therefore, in line with previous conclusions (Cherney & McGee, 2011), we found that time and effort have to be invested in research staff to help them to acquire the expertise and knowledge to enable the uptake of research findings through meaningful engagement with practitioners and policy-makers.

Both institutions investigated in our study suggested that external funding provided them with resources to improve the knowledge and skills of the IR staff to conduct targeted research aimed at the improvement of student success. However, when the funding ended, the IR departments were not able to sustain the research outputs although they were still

required. Hence, it was suggested that external funds should be focused selectively on innovative research with a large impact on student success and low impact research be discontinued or automated.

It is necessary to locate IR projects within the broader context of higher education in South Africa and beyond and not only within the narrow institution-specific needs. Specific efforts are vital to raising the awareness of IR practitioners in the broader higher education context. Such awareness can improve the quality of the research outputs, help benchmark the recommended solutions and enhance the utilisation of research outputs.

5.3 *EXCHANGE MECHANISMS*

Establishing, maintaining and sustaining a two-way relationship between researchers and stakeholders is vital to promote and encourage knowledge production and utilisation. Ellen et al. (2011) and Grobbelaar (2013) suggest that exchange mechanisms focus on setting up and sustaining such a two-way relationship between researchers and stakeholders. Therefore, a set of exchange mechanisms were proposed by our interviewees to ensure and enhance the linkages between IR practitioners and other researchers and their stakeholders. Exchange mechanisms are the 'vessels' through which information is shared among staff. These COPs are often forums, task teams or committees where data are communicated, knowledge and skills are developed, and actions are planned. Conferences, collaborations on research projects, forums, strategic meetings, one-on-one meetings and workshops are the essential communication platforms between researchers and decision-makers that enhance research impact (Hemsley-Brown, 2004; Hemsley-Brown & Sharp, 2003; Moore et al., 2011). These COPs must consist of researchers and end-users who have the interest to enhance student success through the utilisation of actionable IR outputs. Various interviewees emphasised the need for collaboration and to break down the silos which are the Achilles' heel of the effective utilisation of IR outputs. Superficial collaboration is often not helpful. Interviewees argued for a network that provides a conducive environment for knowledge sharing and enabling the pooling of resources between departments. Equally important was the necessity to understand the needs of the knowledge users and to include them in the conceptualisation and planning of IR projects at the initial phases and throughout the research cycle.

5.4 *ENABLING PULL FACTORS*

The pull factors required to enhance the utilisation of IR outputs are the ways and structures that forge relationships between researchers and the external environments (that is, both within the institution but external to the unit where the IR products are generated as well as external to the institution). According to Schafer (2015), the researchers have to build a relationship with the decision-makers to whom the findings can be sent, present these findings clearly within the context of the decision-makers' perspectives, and subsequently monitor the utilisation, implementation and impact of policy. These pull factors support and encourage the demand for knowledge production and enhance the utilisation of the research. According to Ellen et al. (2011), pull factors can be understood as initiatives to market and raise awareness of IR projects and outputs, the availability and use of a database of contacts of potential end-users, and incentives for IR practitioners to develop and maintain relationships between them and their end-users. The COPs where IR outputs are presented

can play a role to translate the information according to the needs of the end-users. These and other 'hand-over' sessions seem to work well within the two institutions studied for this chapter and have facilitated the use of the findings and recommendations of IR outputs.

How research findings are disseminated can also stimulate pull factors. According to interviewees from both institutions, the research findings were generally disseminated through presentations and reports to the strategic management and reports to institutional leaders. When the IR findings and recommendations were categorised according to the different executive portfolios and outputs were created with the department or faculty in mind, such customisation played a role in enhancing research utilisation. Hence, having a broad range of dissemination channels coupled with stakeholder-centred customisation of recommendations proved to aid research utilisation.

Lastly, an important pull factor materialises when the executive management requests (or commissions) research on specific issues such as institutional development and improvement, intervention evaluation, student selection, student development, student transformation and infrastructure development. Research outputs tied to operational mandates are usually implemented. The fact that the executive management requests research on an issue means that, in a sense, the report on such research is pre-approved for utilisation. However, the findings should be framed to show their possible value to enhance student success and should tie in with the KPIs of the relevant departments and institutions.

5.5 MONITORING AND EVALUATION

The interviewees emphasised the importance of effective monitoring and evaluation of IR projects or student success interventions. Monitoring and evaluation should be the constituent of the ongoing responsibilities of IR practitioners and higher education researchers. Ideally, IR practitioners should follow the uptake and impact of the interventions recommended in their reports. This information should as a standard practice be fed back to the COP for further attention as required. Closing the loop in this manner can stimulate a culture of evidence and evidence-based decision-making. In the words of Barnett and Gregorowski (2013:9) any monitoring and evaluation effort

[...] needs to be accompanied by a commitment to continually revisit and review [...] – and this requires addressing the incentives for staff (and stakeholders) to regularly collect evidence and reflect upon the research-policy interface in their particular context.

The interviewees, however, noted that this is not generally a standard practice at their institutions and that there is not a dedicated unit or department tasked with the monitoring and evaluation of IR outputs. This is clearly an area of development. A dedicated unit or department should be in a position to have an oversight function and be in the position to monitor and evaluate the IR projects and the implementation of the findings institutionally.

6 Conclusion

It is not enough for IR practitioners to produce reports of their research only; they also have a role to play in facilitating and enhancing the uptake and use of their outputs. This chapter focused on the use and impact of IR outputs aimed at enhancing student success. Our investigation was guided by the following question: Are IR outputs on student success optimally used by the faculties and student support departments at two HEIs in the Gauteng province of South Africa, and if so, how are they used?

In conclusion, and in line with other literature, our findings have shown that creating an institutional culture by using an evidence-based approach, sharing of information, exchanging findings, and involving all the role players promotes the uptake of research. Research producers must adopt an organisational culture that supports research and its translation to implementation.

The decision- and policy-makers should be involved or work with researchers in formulating the research questions, therefore, increasing the probability that the research findings will be used. Through such collaborations, the consumption of IR outputs, the utilisation of IR findings and their potential impact could be enhanced if there is better communication between the key role players.

Lastly, for research to be taken up by institutions there should be sufficient individual capacity at organisational level (i.e. staff knowledge and skills, sound research practices and production of actionable findings) and an institutional environment that is favourable to action the findings (i.e. an alignment to strategic goals, buy-in from the executive and integrated or interconnected support services).

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