

# Utilisation of South African Research on Higher Education

---

Jan Botha  
Gabriele Vilyte

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

# Historical perspectives on research on higher education, institutional research and research utilisation

# 1

*Jan Botha, Rudo Hwami and Gabriele Vilyte<sup>1</sup>*

## 1 Introduction

Knowledge plays such a central role in contemporary society that the term ‘knowledge society’ is used (roughly since the 1960s) to characterise it (Stehr, 1994). Higher education institutions, as primary sources for knowledge production and providers of human capital through education and training, occupy an important place in the knowledge society (Hazelkorn, 2015:3). Given that knowledge plays such a critical role, it can be assumed that knowledge *about higher education* is necessary for enhancing our understanding of the phenomenon of higher education, and that this knowledge is used to find solutions for the challenges facing higher education. Scholars affiliated with South African public higher education institutions have created a substantial body of knowledge on higher education (see Chapter 2 of this book). However, it is not sufficient to simply *know that* such a body of knowledge exists. It is necessary to ask a further question, a *know how* question: How is South African research on higher education (including its subset, known as ‘institutional research’) used? In this chapter we present a historical overview of recent developments in research on higher education (RHE), institutional research (IR) and research utilisation and we propose a framework in terms of which the relationships between RHE and IR and their utilisation can be seen.

## 2 Research on higher education

What is presented in this section is an overview of the development of *research* on higher education, not of the phenomenon of higher education itself (its institutions, systems, people and activities). This is an important distinction to keep in mind. Of course, the research taking the phenomenon of higher education as its object of investigation cannot be separated from the phenomenon itself. However, there is a difference in perspective, aim and scope. So, for example, a history of higher education as a phenomenon would typically

---

<sup>1</sup> To cite this chapter: Botha, J., Hwami, R. & Vilyte, G. (2021). ‘Historical perspectives on research on higher education, institutional research and research utilisation’. In: J. Botha & G. Vilyte (eds.), *Utilisation of South African Research on Higher Education*. Stellenbosch: African Sun Media. pp.11-42.

begin with the history of the earliest institutions and tell the story of their development down through the centuries (see, for example, Evans, 2010; Hunt, 2008). On the other hand, scholarly research (in the modern understanding of the notion of ‘research’ as a systematic scholarly endeavour) focusing on the understanding of this societal phenomenon at a meta-level, began at a much later stage.

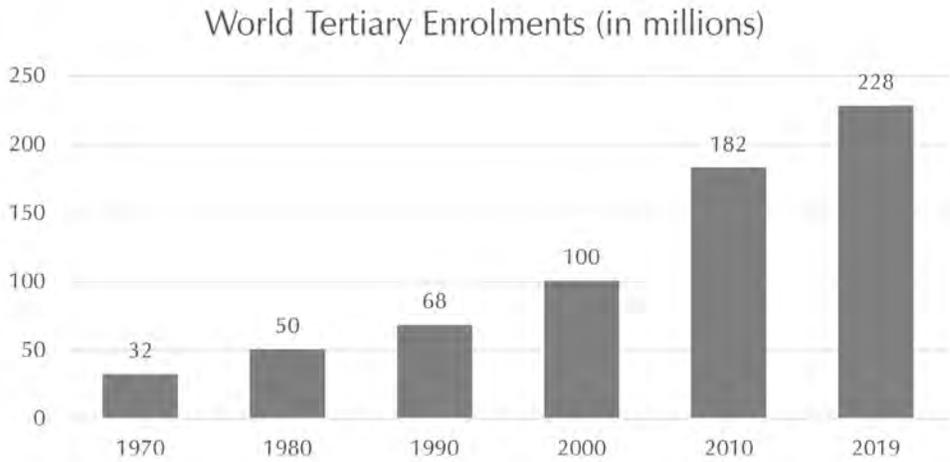
## 2.1 MASSIFICATION PROMPTING RESEARCH ON HIGHER EDUCATION

According to Rumbley et al. (2014), research on higher education emerged as a field of study in the USA during the 1950s and somewhat later in Europe. Since the 1980s there has been a growth in interest in studies taking higher education as the object of research, as evidenced by the establishment of higher education research centres in many countries. In their worldwide inventory of research centres, academic programmes, journals and publications in higher education, Rumbley et al. (2014) reported that, in 2013, there were at least 6 000 researchers based in academic units focusing on higher education as their object of research. They estimated that there were also at least another 6 000 institutional researchers employed by university administrations.

A landmark and defining moment in the development of higher education as an academic field of study was the publication of the five volumes of *The Encyclopedia of Higher Education* in 1992, edited by Burton Clark and Guy Neave. This encyclopedia provides a review of the higher education systems of 137 countries but it is also an attempt to systemise the research themes and analytical perspectives that could be useful for the development of a deeper understanding of the phenomenon of higher education (Karseth & Nerland, 2016).

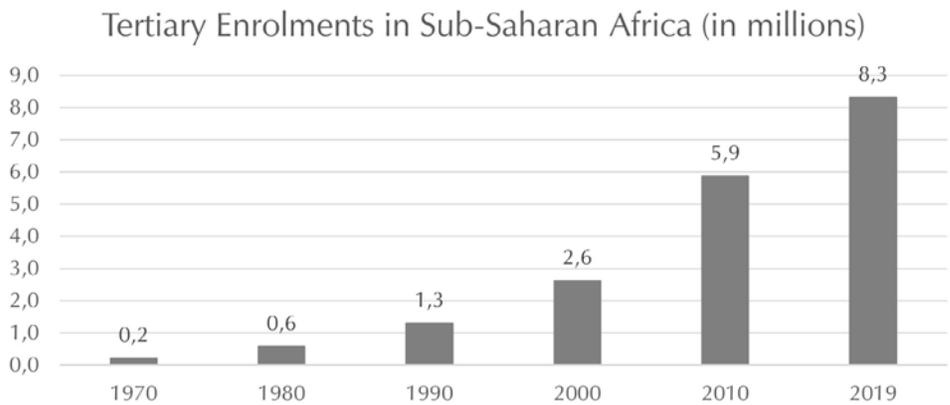
Scott (1998) maintains that the emergence of higher education as an interdisciplinary field of scholarship was partly due to the massification of higher education. The term ‘massification’ was coined by Trow (1974), in its government and administration; in its recruitment and selection of students; in its curriculum and forms of instruction; in its recruitment, training, and socialisation of staff growth and has its impact on every form of activity and manifestation of higher education. This essay argues that the problems facing higher education can be better understood as different manifestations of a related cluster of problems, and that they arise out of the transition from one phase to another in a broad pattern of development of higher education, a transition from elite to mass higher education, and subsequently to universal access. Underlying this pattern of development are growth and expansion manifested in the transition from an elite to a mass system of higher education which took place since the middle of the 20th century in the USA and later also in Europe, Japan and other countries

Compared to 1970, the size of the world’s higher education system (expressed as the total number of enrolments) was more than seven times bigger by 2019 (Figure 1.1) (UNESCO Institute for Statistics, 2021). In Sub-Saharan Africa, the tertiary education system was almost 40 times bigger by 2019, albeit from a low base of 211 000 in 1970 (Figure 1.2).



Source: UNESCO Institute for Statistics

**Figure 1.1** *World tertiary enrolments 1970-2019*



Source: UNESCO Institute for Statistic

**Figure 1.2** *Sub-Saharan Africa tertiary enrolments 1970-2019*

Over the same period, tertiary enrolments in South Africa increased from 82 697 in 1970 to 1 074 912 in 2019, resulting in a system almost 13 times as big as in 1970 (UNESCO Institute for Statistics, 2021).

This increase in the size of higher education, and the concomitant increase in the public and private expenditure on higher education, necessitated much more sophisticated management and accountability systems and procedures, calling for much more detailed information to be generated through research on higher education.

While there has been a rapid growth in student enrolments almost everywhere in the world over the last 50 years or so, not all countries have yet achieved mass higher education. In low- and middle-income countries the participation rates are still nowhere near mass levels. In South Africa, for example, the gross enrolment rate in tertiary education (i.e. the total headcount enrolment over the national population of 20-24 years old, calculated as a percentage) was only 22% in 2018 (CHE, 2020).

However, as illustrated in Figures 1.1 and 1.2, the process of massification is under way everywhere, making universities large and complex institutions requiring data gathering, investigation, interpretation and specialised knowledge for management and governance (Altbach, 2014; Blitzer & Wilkinson, 2009; Strydom, 2002; Varghese, 2017).

## *2.2 CHANGING VIEWS OF THE FUNCTION(S) OF HIGHER EDUCATION INSTITUTIONS AND ITS IMPACT ON THE DEVELOPMENT OF HIGHER EDUCATION AS OBJECT OF RESEARCH*

The four major functions of universities suggested by Castells (2001:206-211) can serve as a framework to understand some of the changes in the research on higher education in recent times. Despite the popular ideology of a value-free role for universities, Castells (2001) holds that universities function firstly as an ideological apparatus and as producers of values and social legitimation. In order to do this, universities “use future-orientated narratives to construct a new basis for social belonging and citizenship” (Cloete & Maassen, 2015:3). Secondly, universities play a key role in the selection of the dominant elite through the formation of networks and the establishment of the codes that distinguish between the elite and the rest of society. As a result of massification, the notion of ‘elite’ is changing from the selection of students from a political and social elite class to an academic elite, that is, those with the highest academic talents. Thirdly, universities are responsible for the higher levels of education and for the training of the labour force. More recently, universities have become institutions where students ‘learn to learn’. The functions of universities are reaching beyond the reproduction and transmission of knowledge. Fourthly, in the most recent phase in its development (going back to the German research university and the American land-grant universities of the 19th century), universities are expected to produce scientific knowledge and to support society in the application of knowledge for the sake of socio-economic development and the general well-being of humanity and (more recently) the environment. There has been an increase in the value of higher education as driver of economic growth and innovation (Kehm, 2015). Altbach (2014) argues that the dramatic increase in post-secondary education enrolments to meet the expectations of the knowledge economy has

in an unprecedented way, made higher education policy an area of broad societal and political interest – and debate and controversy, as well. Issues such as access, public support, levels of tuition charges, the role of the private sector, and many other themes are topics of sharp debate. Institutions themselves, as they have become larger and more diverse, also debate policies regarding financing, orientation toward research, and many other issues. The internal governance and management of academic institutions often require intense policy debate (Altbach, 2014:1308).

These factors, with others, have significantly contributed to the emergence of higher education as a field of research. The ‘field’ metaphor is a geographical and spatial metaphor for categorising and classifying knowledge, like ‘terrain’, ‘domain’ and ‘kingdom’ (Burke, 2000; Chen & Hu, 2012). This metaphor is adopted here because higher education is an interdisciplinary field. It has not developed as a coherent singular discipline. According to Macfarlane and Grant (2012), the incoherence in the field is due to bifurcation – with scholars specialising either in policy-based studies or in learning and teaching, with little to no communication between the two groups. However, it is not only within the field of research on higher education that such a gap exists. A gap with arguably even less communication exists between those who occupy themselves with academic research on higher education and those who occupy themselves with practice-oriented or institutional research on higher education – as we will explain later in this chapter (see Figure 1.8).

Being a ‘field’ or ‘area of interest’ and not an (academic) ‘discipline’, has the implication that higher education studies are developed by a community of researchers who are “primarily responsible for advancing and developing extensions of new theoretical and empirical advances” in this field (Teixeira, 2013:1308).

In South Africa, research on higher education has been characterised as “an active, but confused field, lacking many of the attributes of scholarly work that you find in well-recognised disciplines or fields of study with their learning programmes” (Strydom, 2002:95). According to Blitzer and Wilkinson (2009:371), “the lack of scholars with expertise, lack of an independent disciplinary base, widely accepted and well-articulated theoretical framework and methodology suitable for addressing the diverse South African scene, little collaboration among HE research units and individuals and an unreliable funding base” weakened the higher education research community in South Africa. Yet, despite these reservations and lacunae, it is clear from a detailed bibliometric study of South African research on higher education (see Chapter 2 of this book) that there is a growing interest and a high level of activity in research on higher education, with a vibrant community of scholars and practitioners.

## 2.3 CHARACTERISTICS OF HIGHER EDUCATION AS FIELD OF STUDIES AND RESEARCH

### 2.3.1 THEMES IN RESEARCH ON HIGHER EDUCATION

Over time, various classifications of research on higher education have been proposed. For example, an early proposal by Teichler (1996) suggests four major thematic areas:

1. Quantitative-structural aspects
2. Knowledge aspects
3. Teaching/learning and research and related person aspects
4. Organisational aspects

Tight (2004) holds that while researchers focusing on higher education do sometimes engage with theoretical perspectives, this engagement often remains implicit since many of these researchers (and more so, institutional research practitioners) seem to not feel the need to engage in an elaborate theoretical debate. Tight (2004:409) refers to it as an “a-theoretical community of practice”.

Based on his analysis of the articles in 17 specialist higher education journals published in English outside of North America, Tight proposed a set of eight themes in the field of research on higher education (Tight, 2004:402, supported also by Blitzer & Wilkinson 2009:387-388):

1. Teaching and learning – including approaches to studying, learning styles and pedagogical styles.
2. Course design – including assessment, competencies, the higher education curriculum, learning technologies, portfolios, reflection, writing and postgraduate study.
3. The student experience – including access, counselling, motivation, diversity, success and non-completion, employment and evaluation.
4. Quality – including course evaluation, grading and outcomes, national monitoring practices and system standards.
5. System policy – including economics of scale, funding, national policies, policy studies, globalisation, massification and return on investment.
6. Institutional management – including institutional autonomy, departments, institutional leadership and governance, institutional history and development, institutional structure, mergers, marketisation and the relationships between higher education, industry and community.
7. Academic work – including academic careers, induction, mobility, professionalism, academic roles, academic development, training, writing and gender issues.
8. Knowledge – including the nature of research, disciplinarity, forms of knowledge, research, and the nature of the university.

More recently, Daenekindt and Huisman (2020) proposed a classification of topics in global research on higher education based on a topic modelling of the abstracts of 16 928 articles in 28 English language journals specialising in higher education. They proposed a classification consisting of 31 topics, grouped in four clusters, namely:

1. Student health (4 topics), including substance abuse and health, stress and anxiety, sexual activity and health, mental health.
2. Sub-groups of students (3 topics), including internationally mobile students, racial and ethnic minorities, diversity and campus climate.
3. Pedagogy (5 topics), including feedback on assessment, cognitive styles, educational technology, skills, training and development.
4. Academia (4 topics), including academic careers and mentoring, changing academic careers, teaching practices, and doctoral students and supervision.

Blitzer and Wilkinson (2009:394) observe that although such categorisations are international and therefore relatable to different contexts, they are not universal since each context is unique. The validity of their observation is borne out of the topic model of the most popular themes in South African research on higher education, presented in Chapter 3 of this book, in which a topic specifically pertinent in this context has been identified, namely, transformation.

### 2.3.2 *INSTITUTIONAL SETTINGS OF HIGHER EDUCATION STUDIES AND RESEARCH ON HIGHER EDUCATION*

The nature of research on higher education means that it does not have one clearly defined academic home. Altbach (2014) identified four different institutional settings for the research on higher education:

- Traditionally, research on higher education has been housed mainly in education faculties where it is regarded as being on the periphery (compared to the dominant focus on primary and secondary education in those faculties) and further still marginalised as the education faculty is often regarded as the least prestigious unit in the humanities and social sciences.
- Secondly, there are non-degree leadership programmes aimed at equipping academic leaders and professionals with the fundamentals of university management. These programmes are often based in faculties or schools of management sciences.
- Thirdly, much research on higher education is concentrated within research institutes or centres which could be based within universities, or in independent organisations, or in government departments, or in semi-statutory bodies.
- Fourthly, the field of higher education has built up, over a half century, “a nexus of associations devoted to many aspects of postsecondary education. These organisations are essential for the field, as they create a community of researchers and practitioners, are hubs of communication, and often sponsor journals, books, research, and other reports. Most hold periodic conferences that bring together their members and often others, with related interests” (Altbach, 2014:1313).

This variety of institutional settings illustrates how disparate research on higher education is.

### 2.3.3 *TYPES OF SCHOLARS ENGAGED IN HIGHER EDUCATION STUDIES AND RESEARCH ON HIGHER EDUCATION*

A variety of scholars engage in research on higher education. Kehm (2015:63-64), building on earlier work of Teichler (2005:19-21), suggests a classification of five types of higher education experts:

1. discipline-based researchers, for example, economists or political scientists or sociologists, who would, on occasion, devote part of their work to themes in the field of higher education;
2. researchers in a discipline devoted to higher education (educationalists) based in a university who focus their research on a continuous basis on higher education;
3. researchers, often externally funded, based in a research unit or institute;
4. applied higher education researchers – often referred to as institutional researchers or IR professionals – who are often also responsible for data collection, management and interpretation and whose work is determined by its usefulness for institutional decision making;
5. reflective practitioners, for example, executive and senior academic managers of universities, or politicians or civil servants with a specific interest in higher education.

Pertinent to our focus on the uptake, use and impact of research on higher education in this book, is the observation that category 4 experts (the IR professionals) seldom move in their work beyond the production of 'grey literature' (e.g. reports to higher education managers and governing bodies, or minutes of institutional committees, or references to national policy documents) to the production of peer-reviewed, public, scholarly outputs. Altbach (2014) even holds that by far the majority of knowledge outputs in the field of higher education studies is in the form of grey literature. Yet these 'grey literature' outputs are, arguably, more directly taken up and used in institutional (and national) policy-making and other forms of decision-making with much greater impact than (pure) scholarly publications. So, for example, Moosa and Murray (2016:137) maintain that:

Professional/support staff and academic staff do not always consider each other's work with as much thoroughness as perhaps they should. On the one hand, a university reported that documents produced by institutional researchers and academic planners 'are rarely interrogated and tend to be accepted uncritically' by academic structures. On the other hand, only a few institutional researchers mentioned that they consult academic publications as sources of information for IR.

Given the many challenges continuously facing higher education, this lack of synergy, cooperation and communication between different types of researchers on higher education is not the optimal situation in a context desperately in need of research-informed solutions. Arguably, both RHE and IR stand to benefit from improved cooperation and communication between these groups of scholars and professionals.

Research on higher education has developed over the last half-century or so into an academic and professional endeavour with thousands of active and productive scholars and practitioners working within a variety of settings and fulfilling various roles, covering a research area with quite a wide scope. In the next section we provide a short overview of the development of IR as a field of practice and specialised form of research on higher education.

### **3 Institutional research**

#### *3.1 DEVELOPMENT OF INSTITUTIONAL RESEARCH AS A FIELD OF PRACTICE AND RESEARCH*

Pre-dating the modern university, before institutional research became an intrinsic part of higher education institutions, the nature of work associated with institutional research (e.g. gathering information and keeping track of enrolment numbers, courses offered, etc.) was already part of the universities (Webber & Calderon, 2015). However, as higher education institutions evolved over time into complex knowledge networks, it became necessary to make high stakes strategic decisions (Chirikov, 2013:457). This called for rigorous and systematic research on institutions themselves. Although no institutional research offices existed before World War II and the term 'institutional research' was not yet used in higher education, the decisions associated with the development and growth of higher education institutions in earlier times would have required some factual evidence to garner legitimacy and to be used in decisions on funding.

After World War II, institutional research offices were established across the USA. In the late 1950s, 15 research universities in the USA convened the first IR seminars (Lasher, 2011). Since then, IR has gained increased recognition and has established itself as an independent field of practice, initially in the USA but later also elsewhere in the world, as is evidenced by the establishment of professional associations for IR practitioners (Table 1.1).

**Table 1.1** *Associations for institutional research in different regions and countries in the world*

Name of Association	Abbreviation	Established
Association for Institutional Research	AIR	1966
European Association for Institutional Research	EAIR	1979
Australasian Association for Institutional Research	AAIR	1988
Southern African Association for Institutional Research	SAAIR	1994
Canadian Institutional Research and Planning Association	CIRPA	1994
Southeast Asian Association for Institutional Research	SEAAIR	2001
China Association for Institutional Research	China AIR	2003
Middle East and North Africa Association for Institutional Research	MENA-AIR	2007
British and Ireland Association for Institutional Research (established in the late 1990s) evolved into the UK & Ireland Higher Education Institutional Research Network	HEIR	2008
Taiwan Association for Institutional Research	TAIR	2016

Source: Botha, 2018

In the USA, several notable academic scholars during the 1940s, 1950s and 1960s, including Burton Clark, Clark Kerr, C. Robert Pace, Kenneth Feldman, and Alexander Astin were instrumental in the development of IR as a professional practice in that country (Borden & Webber, 2015). More recent studies illustrated the influence of the American developments on IR in other parts of the world (Chirikov, 2013), for example, in Ireland (Woodfield, 2015) and Southern Africa (Visser & Barnes, 2016). Pioneering work has been done since the 1970s and 1980s in Europe to develop and promote evidence-based studies of higher education systems and institutions by scholars such as Ulrich Teichler, Peter Maassen, Frans van Vught, and Guy Neave (Chirikov, 2013; Pausits, 2018).

Initially, institutional researchers in the USA were tasked with providing descriptive and factual statistics to institutional leaders and stakeholders such as State officials. Most of the strategic planning and funding was done at State level (Chirikov, 2013). The industrialisation era brought with it restructuring, which led to the transformation of the relationship between State, higher education and society, and accordingly, the current roles and functions of IR have evolved. Based on a comprehensive survey of IR offices in the USA, the Association for Institutional Research (AIR) proposed the following typology of IR functions in the USA (Coughlin et al., 2016):

1. Identify information needs.
2. Collect, analyse, interpret, and report data and information.

3. Plan and evaluate.
4. Serve as stewards of data and information.
5. Educate information producers, users, and consumers.

The functions and implementation of IR offices are contextual as they are affected by historical contexts, government policies, funding bodies, student characteristics and university structure.

In Africa, higher education institutions have shown a strong commitment to developing IR capacity. According to Lange, Saavedra and Romano (2013), the same factors that necessitated the development of institutional capacity for institutional research in other parts of the world, as identified by Neave (1998), also led to the establishment of IR offices at African higher education institutions, including the rise of the evaluative state, the adoption of the principles of New Public Management (NPM) that sought to apply market-oriented private sector approaches to the state administration, and the creation of specialised agencies of control that operate at arm's length from the State.

These factors led to the need for greater accountability and more focused and informed strategic planning by higher education institutions. In South Africa an output-based higher education funding framework was introduced in 2004 (Steyn & De Villiers, 2007). IR offices were established in most higher education institutions to collect and report the information on the institution's outputs (e.g. student enrolments and graduations) to the national Department of Higher Education and Training. In many institutions the IR offices (or similar offices with different names, such as Planning Office, or Office for Institutional Effectiveness or Quality Assurance Office) also assumed responsibility for the support of quality assurance activities (such as institutional audits and programme accreditation) through the provision of institutional data for quality assurance purposes (Muller, Langa & Dlamini, 2016). Against the back-drop of globalisation and global standardisation of higher education, higher education institutions do not only have to meet the national excellence and quality assurance requirements, they also have to meet, where applicable, the requirements of global accrediting agencies (Webber & Calderon, 2015). However, the implementation of IR remains at large a national and local phenomenon. In South Africa, for example, the historical context of apartheid made the transformation of the higher education system and higher education institutions a key priority (Botha, Muller & Webber, 2016), necessitating effective and timeous institutional research work.

### 3.2 *NATURE AND SCOPE OF INSTITUTIONAL RESEARCH*

The meaning of the term 'institutional research' has been widely debated and there is no generally accepted definition. According to Saupe (1990:1), "[i]nstitutional [r]esearch is research conducted within an institution of higher education to provide information which supports institutional planning, policy formation and decision-making". Teichler (2005:457) sees IR as

higher education policy research or information units established by, or more or less permanently linked to supra-institutional agencies, notably governments. The aim of this branch of research is to enrich policy processes through information, policy-driven interpretations, policy scenarios on higher education.

While the aim of research on higher education is the generation of knowledge about higher education (any aspect of it), institutional research used to be mainly concerned with “the assembling of the quantitative and qualitative information for use in periodic or *ad hoc* reviews of programs or organisational units” (Saupe, 1990:1), although this data analysis can contribute to wider knowledge about higher education.

The scope and functions of an IR office are influenced by the identity of the higher education institution (e.g. whether it is a research intensive institution or an institution with another mission) and whether the institution is publicly funded, private or for profit (Webber & Calderon, 2015). The functions and roles of IR are intrinsic to ensuring relevance and service delivery. However, the role of IR remains its “fundamental contribution to support institutional decision-making and to orient senior institution leaders to exercise sound, diligent and well-informed judgement in the decision-making process”, and IR typically provides information on the following stakeholders, activities and functions of universities (Webber & Calderon, 2015:12):

- Students (e.g. recruitment; enrolment trends; throughput and success rates; student engagement; student satisfaction levels; employment and career tracer studies; institutional culture; etc.).
- Staff (e.g. capacity; capabilities; demography; satisfaction levels; institutional culture; etc.).
- Academic programmes and the nature and scope of the academic offering (e.g. the modules/courses of programmes; the focus areas of programmes; the rules of progression; etc.).
- Facilities (e.g. space capacity; suitability; maintenance; optimisation of use; needs for new facilities; etc.).
- Finance (e.g. subsidy; student fees; third-stream income; information for budgeting purposes; financial reports; etc.).
- Research (e.g. funding and incentives; research indicators such as publication outputs and citations; focus areas; rated researchers; etc.).
- Engagement (e.g. service learning; civic engagement; experiential education; public scholarship; participatory action research; community-based research; etc.).

### 3.3 INSTITUTIONAL RESEARCH IN SOUTH AFRICA

As indicated above, the roles and functions of an IR office are determined by the context of a particular institution. Although IR (in a more formalised form) is only about three decades old in South Africa (the SAAIR was established in 1994), it has developed as an intrinsic part of higher education institutions in the country.

In the context of transformation in South Africa since 1994, it has been increasingly expected of IR to move beyond data management and reporting aimed at supporting decision-making. IR is also expected to be able to negotiate and accommodate the complexities of the historical context of the discrimination under apartheid (the era before 1994) and the need for transformation during the democracy dispensation. In a study conducted during 2015, the association of vice-chancellors of universities, called *Universities South Africa* (USAf, 2015), identified five priority areas for the transformation of South African higher education at the time. This study was conducted shortly before the South African student protests (related to symbols, fees, and institutional culture) of 2015 and 2016 (Booyesen, 2016).

The five priority areas are:

- the lack of transformation in the cultures of governance and leadership, where these have “simply morphed into the new era, with its essential features, symbols and practices left more or less unbroken” (USAf, 2015:7).
- the “lack of growth, low participation, high attrition, low completion and variable quality” (USAf, 2015:10) relating to equity of access and success.
- the challenges related to staffing at universities are perhaps “the most glaring collective failure of the sector to date” (USAf, 2015:11). While student enrolment has seen a significant change in participation by former marginalised groups, the profile of staff, and of academics in particular, remains largely unchanged, particularly at historically white institutions.
- the cultural and social environments (institutional culture) of universities have not transformed sufficiently.
- institutional equity and transformation are dimensions of higher education that relate, on the one hand, to the challenges faced by some institutions from being chronically underfunded for years, and, on the other hand, the government’s inability to move these institutions towards more sustainable operations (USAf, 2015:19).

With respect to all the transformation-related matters, IR has an important and indispensable contribution to make towards a better understanding and the efficient management of higher education in South Africa.

More recently, the onset of the Covid-19 pandemic in 2020 confronted higher education worldwide with a set of unprecedented challenges (Salmi, 2020), for example:

- Campus closures and transition to online education, leading to the urgent need to increase connectivity for higher education institutions and students, and the need for institutions to build their capacity to deliver online education effectively, but also “a great opportunity to scale up innovations that enable many active, interactive, and experiential modes of education delivery” (Salmi, 2020:7).
- Disruption of students’ lives with less privileged students being hit especially hard economically, emotionally, and in terms of digital deprivation – calling for new models of financial support.
- Decisions had to be made about assessment, examinations, and graduation due to the transition to online education.
- Diminished learning and increased student failure, as Salmi (2020:4) put it:

[I]t is safe to assume that many students all over the world will have had an incomplete learning experience in the 2019-20 academic year, either for lack of technology, inadequate internet access, or insufficient training for online education. In addition to degradation of the educational experience during COVID-19, students are also suffering more mental health problems, and there is evidence that female students in developing countries are more likely than males to suffer from the crisis.

- Research activities are expected to lag in many countries. Due to lab closures and travel restrictions, researchers in many disciplines cannot conduct their experiments or field work. Women academics seem to be affected more seriously than men, reflecting the skewed division of labour within households, calling for equity-focused responses by institutions.

- Challenges for institutions and higher education leaders: reduced resources (the pandemic has undoubtedly increased expenses and cut revenues), shifting demand, closures, restructuring, testing the leadership skills of vice-chancellors and other leaders in an unprecedented way, “forcing them to make quick and vital decisions to protect the health of the academic community and maintain business continuity under taxing and uncertain conditions” (Salmi, 2020:8).

A history of higher education tells a story of ongoing challenges and changes. Who knows what the future may hold for higher education? Ongoing new challenges necessitate focused and solution-driven IR and evidence-based decisions.

Perhaps the best and most succinct formulation of the nature of IR was provided by Borden and Webber (2015:10): “[i]nstitutional research is research *about* the institution *for* the institution”. However, it is important to keep in mind that not all countries use the term institutional research in the same manner. In the UK, for example, IR activities are not (always) considered to be ‘research’ because of its focus on an institution or on policy versus a focus on the development of higher education studies as an academic field (Woodfield, 2015). In Southern Africa, IR is characterised by a hybrid of the American, European and UK traditions, with significant inputs from IR work in national policy development processes as well as detailed institution-specific work (Chetty & Muller, 2018).

## 4 Research uptake, use and impact

This overview is largely based on the work of Nelius Boshoff, associate professor of Science and Technology Studies at Stellenbosch University. Over time he and his collaborators and postgraduate students have published widely on the topic of research utilisation. Research has emanated from Stellenbosch University (Boshoff, 2014; Boshoff & De Jong, 2020; Boshoff & Esterhuysen, 2016; Boshoff et al., 2018) and the University of Nairobi, Kenya (Boshoff & Sefatsa, 2019; Ngwenya & Boshoff, 2018). At the Conceptualisation Workshop of the authors of this book, he presented a paper, ‘Reflections on research uptake and utilisation (and impact)’ (Boshoff, 2017). The overview of the history of research utilisation as a field of studies presented in this section (par 4.1-4.6) is largely based on that paper.

### 4.1 TERMINOLOGY RELATED TO ‘KNOWLEDGE UTILISATION’

While the general theme of knowledge utilisation research remains ‘knowledge as the answer to societal problems’ (Estabrooks et al., 2008), the terminology for knowledge utilisation often intersects and can result in a confusion of meaning. Terms and concepts commonly associated with this discourse include ‘knowledge utilisation’, ‘evidence-based knowledge’, ‘knowledge exchange’, ‘knowledge transfer’, ‘research uptake’, ‘research use/utilisation’, ‘the social impact of research’ or the ‘societal impact of research’. Levin (2008:12) also mentions the terms ‘knowledge mobilisation’, ‘knowledge brokering’, ‘knowledge exchange’, ‘knowledge management’, ‘knowledge translation’, ‘knowledge to action’, and ‘dissemination’.

In this book we largely work with the terminology proposed by Morton (2015) in her description of the different dimensions of knowledge utilisation, beginning with a conceptual use of research and moving towards an instrumental use of research. Morton (2015:37) calls the first dimension on this spectrum ‘research uptake’, indicating that users have *engaged*

with research by reading a policy briefing or article, attending a conference, being involved in a research project or via any other activity which makes them aware that the research exists. Morton (2015) calls the second dimension 'research use', indicating that stakeholders have *acted upon* research by discussing or sharing it, adapting it to their context, using it to inform policy or practice or putting it to more practical use in some other way. Morton (2015) calls the third dimension of knowledge utilisation 'research impact'. At this point in the spectrum, it is possible to pinpoint a *demonstrable contribution* of research outside of the academic system such as an effect on or benefit to the economy, society, policy or services, as well as specific changes in "awareness, knowledge and understanding, ideas, attitudes and perceptions" (Morton, 2015:37).

Although we work with Morton's (2015) conceptualisation of knowledge utilisation in this book (the 'uptake, use and impact of research'), this conceptualisation is by no means the only one there is. The field of knowledge utilisation consists of numerous and often contradicting perceptions of the concepts, stakeholders and processes involved, as is explained in the next section.

#### 4.2 DEVELOPMENT OF KNOWLEDGE UTILISATION AS A FIELD OF STUDIES

How to put knowledge to use is a universal human problem (Estabrooks et al., 2008). In the modern university, ideas of 'new knowledge' and 'innovation' have become the dominant motif and subsequently the questions regarding the use of knowledge as well.

During the past six decades or so knowledge utilisation has been described in many ways, for example, as a theory-practice gap, as a failure to adopt evidence-based practices, as a delay between discovery and uptake, or as an inability to bring technological innovations to the market (Estabrooks et al., 2008). The issues reflected in these characterisations have eventually led to the establishment of 'knowledge utilisation' as a field of study. Over time, this field took on various guises such as 'innovation diffusion', 'knowledge translation', 'research utilisation', 'knowledge mobilisation', 'technology transfer' and 'evidence-based practice'. In their detailed bibliometric study of more than 5 000 articles published between 1945 and 2004, Estabrookes et al. (2008) traced the historical development of knowledge utilisation as a field of research. In the rest of this section we summarise their findings.

The early decades (1945-1965) saw two prominent writers in the field, H.W. Seinwerth, an industrial relations manager writing on animal husbandry, and Eugene Wilkening, a rural sociologist writing on improved farm practices. However, Everett Rogers is considered as the true originator of the field with his seminal book *Diffusion of Innovations*, first published in 1962 (Rogers, 2003). During the decade of 1965-1974, a number of authors from various academic disciplines published works on the conditions related to the use and application of scientific knowledge in practice. The decade 1975-1984 saw the emergence of 'knowledge utilisation' and 'technology transfer' as discrete areas of research. This period also saw the establishment of two journals: *Journal of Technology Transfer* (in 1975) and *Knowledge: Creation, Diffusion, Utilization* (in 1979) (later renamed to *Science Communication*). Publications on 'innovation diffusion' remained prominent until about 1994. The period of 1995-2004 saw the emergence of evidence-based medicine (EBM) as a prominent area of

research, drawing on the field of innovation diffusion. EBM continues to grow and provided the groundwork for study areas such as evidence-based practice, evidence-based decision-making, and evidence-informed decision-making.

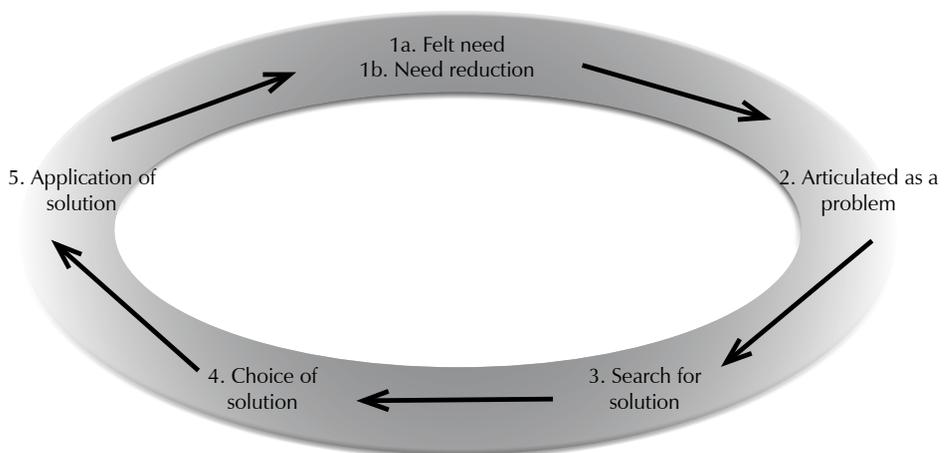
Against this background, we now proceed to discuss in more depth a number of conceptions of knowledge utilisation as it has developed over time, namely Havelock's framework for understanding the processes of knowledge dissemination and utilisation, Weiss' seven principal interpretations of the concept 'knowledge utilisation', three broader types of 'knowledge use' generally accepted in more recent times, namely the instrumental, conceptual and symbolic uses of research, and the transition from internalist to externalist theories of science and how this relates to views of knowledge utilisation.

### 4.3 CONCEPTIONS OF KNOWLEDGE UTILISATION

#### 4.3.1 HAVELOCK: A FRAMEWORK FOR UNDERSTANDING THE PROCESSES OF DISSEMINATION AND UTILISATION

An influential force during the early study of knowledge utilisation, Ronald G. Havelock conducted a review of the state of research utilisation and he identified three models of knowledge dissemination and utilisation (Havelock, 1969): the Problem Solver Model, the Research, Development and Diffusion Model, and the Social Interaction Model.

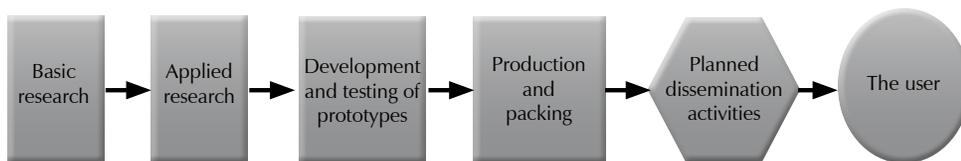
The knowledge user is at the centre of the *Problem Solver Model*. The model follows a cycle of need identification, problem articulation, the search for a solution (i.e. conducting research), making a choice from the available solutions (i.e. aggregating and analysing the findings to choose the most appropriate solutions), application of the chosen solution and ultimately, the reduction of the initial need.



Source: Havelock, 1969, adapted by Boshoff, 2017

Figure 1.3 *Problem Solver Model*

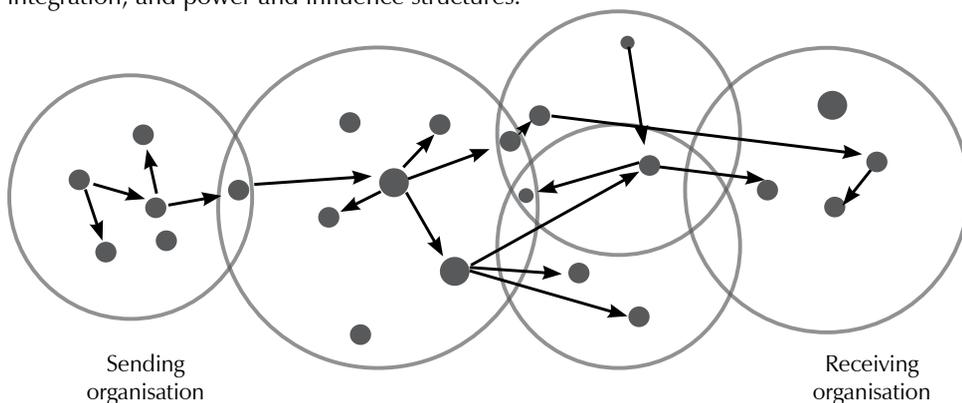
In the *Research, Development and Diffusion Model* the researcher is driving the process. The research product serves as the starting point. In this model the process is linear, starting with basic research, which can then progress to applied research, potentially resulting in the development and testing of prototypes, the production and packaging of applications, proceeding with the planned dissemination activities and eventually resulting in the user receiving the end-product.



Source: Havelock, 1969, adapted by Boshoff, 2017

**Figure 1.4** *Research, Development and Diffusion Model*

The *Social Interaction Model* centralises the movement of information and innovations between people and systems (the diffusion aspect) and emphasises that it is a non-linear, non-cyclical process which is dependent on personal interaction, opinion leaders, social integration, and power and influence structures.



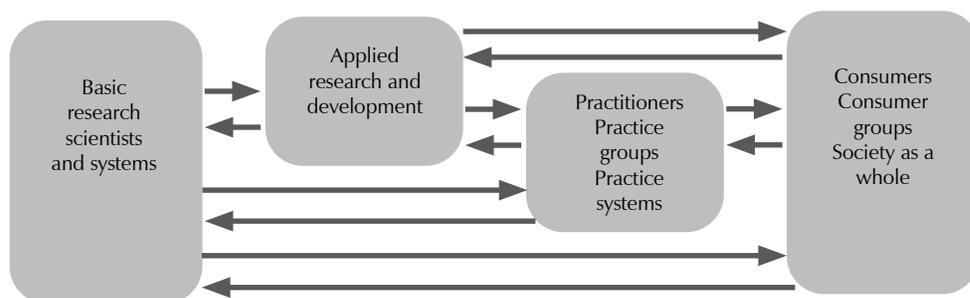
Source: Havelock, 1969, adapted by Boshoff, 2017

**Figure 1.5** *Social Interaction Model*

Building on these three models, Havelock (1969) eventually proposed a *Linkage Model* or *Knowledge Flow System* where user systems are connected with various resource systems (the basic research system, the applied research system and the practitioner system) through a series of two-way interaction processes.

The arrows pointing in both directions indicate the bi-directional flow of the ‘solution messages’ and the flow of the feedback between researchers, practitioners and consumer groups.

## Knowledge Flow System



Source: Havelock, 1969, adapted by Boshoff, 2017

**Figure 1.6 Havelock's Knowledge Flow System**

Information is seen to move within a complex social structure of various groups, associations and organisations made up of many senders and receivers clustered together based on shared values, collective communication channels, proximity, etc. These different nodes within the knowledge flow system are in a constant loop of back-and-forth 'solution and feedback messages' (Havelock, 1969). The Linkage Model also integrates elements of a knowledge transfer process, which refers to the interaction between knowledge providers (e.g. the researchers) and potential users (e.g. policy-makers). According to Havelock (1969), this process consists of six elements: (1) who says (2) what (3) to whom (4) via what channel (5) to what effect and (6) for what purpose? Applied to the type of research discussed in this book, the process can consist of an IR professional (who?) reporting on undergraduate enrolment numbers (what?) to a vice-dean (to whom?) via an online dashboard (via what channel?) to ensure that the enrolment targets are met (for what purpose?) and this way ensure that those students receive their education and the university receives its fees and subsidy (to what effect?)

### 4.3.2 CAROL WEISS: THE MANY MEANINGS OF RESEARCH UTILISATION

During the decade of 1975-1984, Carol Weiss emerged as an influential voice in the field of knowledge utilisation (Estabrooks et al., 2008). Her work should be seen against the background of the paradox in policy research in the USA at the time "when more and more social scientists are becoming concerned about making their research useful for public policy-makers, and policy-makers are displaying spurts of well publicised concern about the usefulness of the social science research that government funds" (Weiss, 1979:426). She argued that the biggest difficulty in discussing knowledge utilisation is the conceptual confusion arising from the multiple and different definitions of the concept. To address this problem, she identified six interpretations or models of 'knowledge utilisation', which she called the Knowledge-Driven, Problem-Solving, Interactive, Political, Tactical, and Enlightenment Models, summarised here (based on Weiss, 1979).

The *Knowledge-Driven Model* assumes the following process of knowledge utilisation: basic research efforts uncover information that may be useful for public policy. This is then followed up by applied research to test the practical applications of these findings. If the applied research proves a success, new technologies are developed to apply the discoveries which then results in application. However, knowledge utilisation rarely unfolds via such a linear process in policy-making.

While the *Problem-Solving Model* is also a linear one, it takes as its starting point that research is commissioned by policy-makers and sought after with the explicit purpose of direct application to a policy issue. However, even in such cases, research only occasionally has a direct impact on policy-making.

Unlike the previous two models, *The Interactive Model* assumes a non-linear understanding of the knowledge utilisation process. According to this model, policy-makers interact not only with scientists but also with practitioners, administrators, colleagues and anyone else who might provide them with relevant information. This is a back-and-forth consultation process where everyone's skills, beliefs and knowledge are pooled into making sense of the issue at hand.

In the *Political Model* of knowledge utilisation, research findings tend to be used by policy-makers to advocate a certain opinion rather than to reflect the consolidated knowledge gained from research findings. In other words, here policy-makers have already made their decision and are merely looking for ways to convince or validate it to others by purportedly scientifically substantiating it, or, as Weiss (1979:429) put it: "Partisans flourish the evidence in attempts to neutralise opponents, convince waverers, and bolster supporters. Even if conclusions need to be ripped out of context [...] research becomes grist to the mill".

In a manner somewhat reminiscent of the Political Model, in the *Tactical Model* research serves as a tactic in bureaucratic politics and represents an example of the symbolic use of research. Pointing to the fact that research has been commissioned allows the government to claim that they are 'doing something about it' and in that way criticism about inaction is deflected. Similarly, research findings may be blamed as the cause for unfavourable policy outcomes.

Lastly, in the *Enlightenment Model*, policy-makers often cannot identify a single piece of research that has shaped their decisions, although they have a clear sense that research has provided them with an underlying set of ideas on which they base decisions and actions. Weiss describes this as the "diffused, undirected seepage of social research into the policy sphere"(1979:534).

#### 4.3.3 CONTEMPORARY CONCEPTIONS OF KNOWLEDGE UTILISATION

What is clear from the discussion above is that the understanding of the concept of 'knowledge utilisation' and the process of knowledge utilisation is far from uniform across the field. Building on the fundamental work of the earlier thinkers such as Havelock (1969) and Weiss (1979), many scholars in the field tend to subscribe to three broader types of knowledge utilisation, namely, an instrumental, conceptual or symbolic use of research (e.g.

Boshoff et al., 2018; Cherney & McGee, 2011; Estabrooks, 1999). These three types of knowledge utilisation are explained as follows:

- In the *instrumental* use of knowledge, there is a concrete, direct and noticeable application of research findings to a specific issue or practice. In terms of Weiss' categorisation, the knowledge-driven, problem-solving and interactive models could be considered as examples of the instrumental use of knowledge.
- The *conceptual* use of knowledge refers to the long-term way in which research leads to cognitive shifts in the understanding of practitioners or policy-makers and would correspond to Weiss' enlightenment model.
- The *symbolic* use of knowledge alludes to research being used to provide support and legitimise a pre-existing policy stance or decisions already taken in the same manner as Weiss' political and tactical models of knowledge utilisation.

#### 4.3.4 *TRANSITION FROM INTERNALIST TO EXTERNALIST THEORIES OF SCIENCE AND ITS BEARING ON CONCEPTIONS OF KNOWLEDGE UTILISATION*

The development of views of knowledge utilisation over time (since about the 1940s) can also be considered against the background of theories of science (i.e. how knowledge is produced) and its bearing on views of knowledge utilisation. The overview presented here is based on the discussion of Kogan, Henkel and Hanney with reference to "debates about how far science can or should be open to external influence, negotiation or control" (2006:23).

These debates relate to a shift from *internalist* to *externalist* theories of science. In terms of internalist theories of science, science is seen as "a unified, secretive, self-regulated, unequivocally authoritative system of thought and as a social organisation impermeable by external norms and influences" (Kogan et al., 2006:36). However, the boundaries between science and other institutions became blurred as externalist theories of science were accepted, that is, theories where science is "depicted as heterogeneous in its modes and stages of development, in the relationships between the cognitive and organisational structures of its disciplines, and in the norms and motivations by which its practitioners are influenced" (Kogan et al., 2006:36). Some users of science and knowledge, such as governments, became more interventionist and they sought to 'steer' applied science. Kogan et al. (2006) relate the story of how the transition from internalist to externalist theories of science played out during 1968-1988 in the case of the then British Department of Health and Social Security (DHSS) (following the Rothchild Report of 1971 on how government could become, in the words of the report, "a customer for research contracted from the Research Councils and other sources") and how this case underlined "the heterogeneity of the science which it attempted to harness, and the complexities of its relationships with policy" (quoted by Kogan et al., 2006:37).

Kogan et al. (2006:34-35) review the considerable body of work on the understanding of the use and impacts of research since the early 1990s and highlight the following developments:

- The concept of impact received a lot of attention, as well as the development of alternatives to "direct" the use of research.
- Impact was reconceptualised in terms of processes, "diffusion channels", "routes towards impact" and more generally in terms of different forms of "knowledge transfer".

- The identification of the importance of personal relations in research utilisation and the burgeoning use of the concept of “network” in the science and technology policy field.
- The notion of “brokerage” was found to have a significant influence on views of the role of research in policy-making.

A more recent development is an interest in how expertise can improve the epistemic quality of decision-making (Holst & Molander, 2019) and the role of experts as mediators or brokers between the production of knowledge and its application to policy (Christensen, 2020:5).

Moving now beyond a reflection on concepts and classifications of research utilisation, three additional issues are briefly considered in the next three sections, namely, how research utilisation can be measured, how impact could be measured (or determined) and how impact could be enhanced. We will again use a broad historical approach to introduce some of the approaches suggested in the literature in response to these three questions.

#### 4.4 MEASURING KNOWLEDGE UTILISATION

As demonstrated above (4.1-4.3), “in measuring utilisation, one is not examining a single, discrete event at one point in time” (Rich, 1979:20). Acknowledging this complexity, Knott and Wildavsky (1980) proposed one of the early stage approaches to the measurement of knowledge utilisation which they called “Seven standards of utilisation” (see Table 1.2). They envision knowledge utilisation as a chain in which each of the stages forms a link in the process (see Table 1.2). Hence, levels of knowledge utilisation can be evaluated based on which standard (or stage) of utilisation research outputs manage to achieve.

**Table 1.2** *Seven standards of knowledge utilisation*

Standard	Description
<b>Reception</b>	Utilisation takes place when the user has received the policy-relevant information
<b>Cognition</b>	Utilisation takes place when the user has read, digested and understood the information
<b>Reference</b>	Utilisation takes place when the information has altered the frame of reference of the user (that is, the way the user sees things)
<b>Effort</b>	Utilisation takes place when an effort is made to adopt the information
<b>Adoption</b>	Utilisation takes place when the information is adopted as part of policy
<b>Implementation</b>	Utilisation takes place when the adopted policy becomes practice, i.e. when it is implemented
<b>Impact</b>	Utilisation takes place when the policy yields tangible benefits to citizens

Source: Knott & Wildavsky (1980), adapted by Boshoff, 2017

Later on, Landry, Amara and Lamari (2001) proposed a modified version of the Knott and Wildavsky (1980) model with six stages of knowledge utilisation which they called the “Ladder of Knowledge Utilisation” (Table 1.3), combining the stages of adoption and implementation into ‘application’.

**Table 1.3 Ladder of knowledge utilisation**

Step	Description
<b>Transmission</b>	I transmitted my research to the practitioners and professionals concerned
<b>Cognition</b>	My research reports were read and understood by the practitioners and professionals concerned
<b>Reference</b>	My work has been cited as a reference in the reports, studies, and strategies of action elaborated by practitioners and professionals
<b>Effort</b>	Efforts were made by practitioners and professionals to adopt the results of my research
<b>Influence</b>	My research results gave rise to applications and extension by the practitioners and professionals
<b>Application</b>	My research results gave rise to applications and extension by the practitioners and professionals concerned

Source: Landry, Amara & Lamari (2001), adapted by Boshoff, 2017

Using Landry, Amara and Lamari’s (2001) framework, Cherney et al. (2012) conducted a survey of 693 academics in Australia representing different social sciences, asking them to evaluate the level of utilisation of their respective research outputs. The findings were as follows (Table 1.4).

**Table 1.4 Proportion of academics who pass each stage of the research utilisation stages across disciplines**

Stage	Education (156)	Economics (102)	Sociology (90)	Political Science (78)	Psychology (110)
Percentage who passed each stage (independent of the other stages)					
<b>Transmission</b>	96%	82%	91%	83%	75%
<b>Cognition</b>	95%	85%	89%	87%	75%
<b>Reference</b>	87%	77%	87%	83%	66%
<b>Effort</b>	82%	75%	72%	60%	68%
<b>Influence</b>	85%	69%	73%	68%	66%
<b>Application</b>	86%	74%	73%	60%	68%
Percentage who passed all six stages					
	75%	59%	68%	54%	55%

Source: Cherney et al. (2013), adapted by Boshoff, 2017

What these stages in approaches to the measuring of knowledge utilisation illustrated is that there are not only differences in the perceived utilisation across disciplines but also across the different stages of utilisation. This is to be expected when we are trying to make sense of such a complex process as knowledge utilisation. Given these differences, the next question that arises is: when does utilisation work well? Or in other words, how can impact be measured?

#### 4.5 WHEN KNOWLEDGE UTILISATION WORKS WELL: MEASURING IMPACT

Research impact can largely be understood as a demonstrable effect, a change or a contribution to areas outside of the academic system such as the economy, society, culture, public policy, and services (Banzi et al., 2011; Morgan Jones & Grant, 2013; Penfield et al., 2014).

While it is undoubtedly important to understand the benefit of research to broader society, it is hard to pinpoint and measure such an impact (Spaapen & Van Drooge, 2011). A number of frameworks for understanding research impact have emerged over time. We will briefly discuss two such frameworks, the “Payback Framework” and the “Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions between science and society” (SIAMPI) framework.

The Payback Framework proposed by Hanney et al. (2004) originated from the realm of health research. It proposes that the ‘benefits’ or ‘paybacks’ of research can be understood to materialise in one of the following five categories: (1) knowledge production; (2) research targeting, capacity building and absorption; (3) informing policy and product development; (4) health benefits; and (5) broader economic benefits. These categories fit into the broader logic model of the Payback Framework which provides for knowledge production and research targeting, capacity building and absorption as the primary outputs of research (stage 3 in Figure 1.7); informing policy and product development (stage 4 in Figure 1.7); and health benefits and broader economic benefits as the final outcomes (stage 6 in Figure 1.7) of health research. In Figure 1.7 the various possible stages in which ‘payback’ can materialise are illustrated:

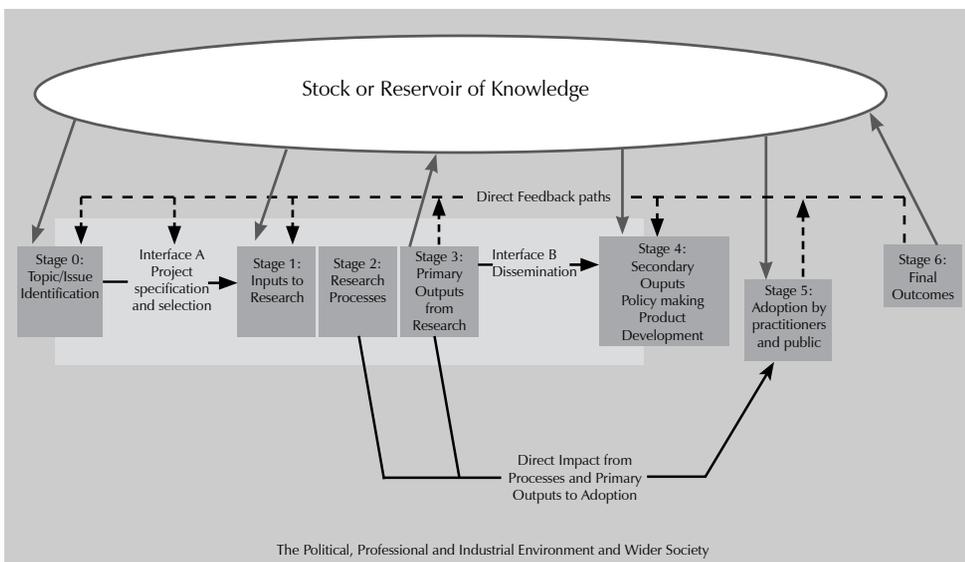


Figure 1.7 *The Payback Framework by Hanney et al. (2004)*

Another approach to research impact measurement is proposed by Van Drooge et al. (2013) who suggest that the process from research conceptualisation to the utilisation of research findings can be explained by using the broad concept of ‘valorisation’. They define valorisation as “the process of creating value from knowledge by making knowledge suitable and/or available for economic and/or societal use and translating that knowledge into competitive products, services, processes and entrepreneurial activity” (Van Drooge et al., 2013:8). In other words, valorisation refers to all the activities and processes that denote or strive to increase research uptake, use and impact.

Van Drooge and colleagues (Van Drooge & Vandenberg, 2013; Van Drooge et al., 2013) argue that valorisation can be measured via a framework of four dimensions each with their responsibilities and indicators for the valorisation process, namely: (1) actors (i.e. knowledge producers, users and intermediaries); (2) different levels of aggregation (i.e. institutional, faculty, department, programme, project, or researcher level); (3) scientific discipline; and (4) different indicators at each stage of research (i.e. formulation of mission, agenda setting, execution, dissemination, utilisation of research and people).

Spaapen and Van Drooge (2011) maintain that some of the biggest challenges in measuring impact come from the often long time lag between research production and utilisation and the difficulty of attributing specific research to a particular impact. In order to address this gap, Spaapen and Van Drooge (2011), together with a team of international scholars, developed the SIAMPI framework: “Social Impact Assessment Methods for research and funding instruments through the study of Productive Interactions between science and society”. According to these authors, SIAMPI is not meant to ‘judge’ but rather make the relationship between research and impact more transparent (Spaapen & Van Drooge, 2011). In order to make this process more visible they propose three indicator categories of ‘productive interactions’, namely: direct, indirect and financial interactions (Spaapen & Van Drooge, 2011). They explain productive interactions as “the mechanisms through which research activities lead to a socially relevant application” (Spaapen & Van Drooge, 2011:2). The SIAMPI approach distinguishes between three types of interactions:

- Direct interactions, which denote personal contact ranging from meetings to research collaborations;
- Indirect interactions, which happen through carriers, such as texts, products or visual media; and
- Financial interactions, which happen via funding or support mechanisms.

Each of these types of interactions can become productive “when it leads to efforts by stakeholders to apply research results to social goals, i.e. when it induces behavioural change” (Spaapen & Van Drooge, 2011:2). SIAMPI is a framework largely based on the Interaction model of knowledge utilisation (e.g. Havelock, 1969; Weiss, 1979) and strives to move away from focusing on the research entity itself towards the processes of interaction (Spaapen & Van Drooge, 2011).

Since Spaapen and Van Drooge’s introduction of the concept of ‘productive interactions’ in 2011, the SIAMPI model has been gaining traction as an effective way in dealing with the problem of attributing research impact to identifiable research outputs (e.g. Boshoff & Esterhuysen, 2016; Boshoff & Sefatsa, 2019; De Jong et al., 2014; Molas-Gallart & Tang,

2011). For example, in Chapter 10 of this book the SIAMPI approach is used to demonstrate how productive interactions emanated from the work of researchers on higher education and institutional researchers.

#### 4.6 *WHEN KNOWLEDGE UTILISATION COULD WORK BETTER: ENHANCEMENT APPROACHES*

From the discussion thus far it is clear that research utilisation is the outcome of complex, interactive and non-linear processes (Lundvall & Borrás, 1998). Given this complexity, the final aspect of the development of research utilisation as a field of studies discussed in this overview is the question of how the uptake, use and impact of research can possibly be enhanced. The insights and suggestions discussed in the rest of this section illustrate in various ways that an understanding of organisational culture is pivotal to the understanding of the receptivity of research users (Ibidunni et al., 2013).

As early as 1979, Nathan Caplan argued that a cultural gap exists between, on the one hand, the researchers and, on the other hand, the users of research including policy-makers and practitioners (Caplan, 1979). This gap needs to be bridged via interactive processes. One possible process that can be considered is the staged approach of the valorisation mentioned above (Van Drooge & Vandeberg, 2013; Van Drooge et al., 2013).

However, a more action-based approach to enhancing research utilisation was proposed by the Department for International Development (DfID) of the United Kingdom. The DfID has a development partnership with the Global South and they fund various research efforts around the world to achieve poverty reduction (DfID, 2016). The DfID defines research uptake as “all the activities that facilitate and contribute to the use of research evidence by policy-makers, practitioners and other development actors” (DfID, 2016:1). According to DfID, research uptake activities should aim to create research that is relevant by engaging with potential users, communicating research effectively beyond publishing in academic journals, presenting research findings in a manner tailored to specific audiences and “build[ing] capacity and commitment of research users to access, evaluate, synthesise and use research evidence” (DfID, 2016:1).

Shaxson (2010) identified a number of channels to achieve these aims and to link research to policy:

1. Dissemination of research findings, via publications, mass media, websites, knowledge intermediaries and research-based guidance among others.
2. Capacity development, via educational materials, staff development and training, expert support and institutional strengthening among others.
3. Social influence, via endorsement, lobbying and advocacy.
4. Collaboration between researchers and users, via user involvement in research planning, implementation and governance, collaboration with industry, building networks for information exchange and research-in-practice.
5. Research incentives and positive reinforcement.
6. Creating an enabling environment, via conducive organisational structures, systems, processes and policy arrangements, as well as funding for research and investment in communication and uptake infrastructure.
7. Research on research uptake and use, via monitoring and evaluation and impact studies, as well as research on barriers and enablers of research uptake.

In a similar fashion, Grobbelaar (2013) proposed a framework for “linking research efforts to action” (adapted from Ellen et al., 2011). Grobbelaar (2013) suggests five focus areas for strengthening research uptake capacity, namely:

1. Creating a climate for research uptake
2. Enabling push factors
3. Exchange mechanisms
4. Enabling pull factors
5. Monitoring and evaluation

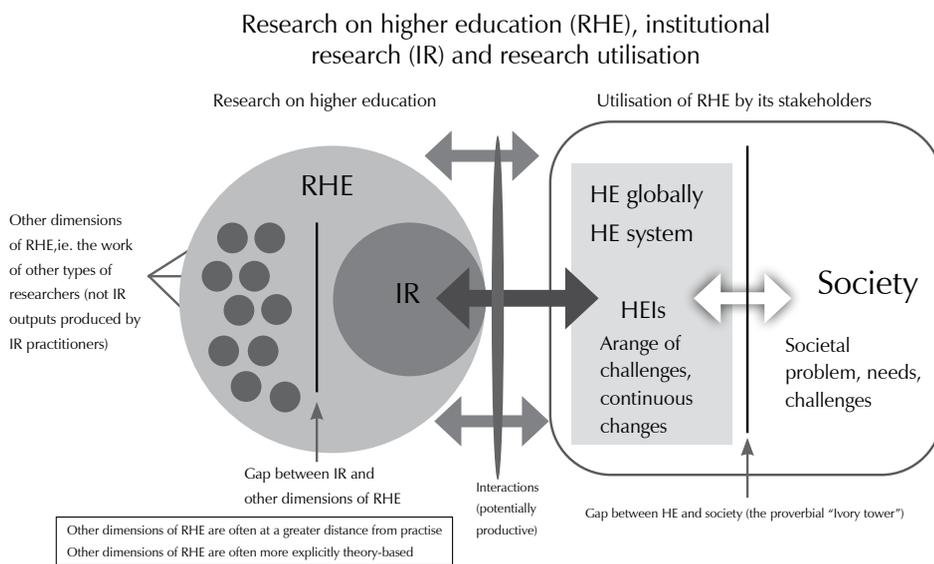
A university with a climate conducive to research uptake is envisioned as an institution where research uptake is embedded within its mission, vision, strategy and plans and where career advancement is dependent on the uptake of research outputs (Grobbelaar, 2013).

Another realm of research uptake facilitation is the enablement of push factors (activities that ‘push’ knowledge outside of the university environment), which can be achieved by hiring staff who specialise in research uptake promotion (Grobbelaar, 2013). This needs to be counter-balanced with the promotion of pull factors, or, in other words, stimulating the demand for knowledge outputs by forging relationships with influential stakeholders (Grobbelaar, 2013). Due to the usually complex and non-linear nature of the researcher-user relationship, Grobbelaar (2013) further emphasises the need for exchange mechanisms for knowledge sharing (e.g. via websites, the media, databases) via the establishment of access points to the university for stakeholders and via effective networking between researchers and stakeholders. Lastly, Grobbelaar and Harber (2016) highlight the importance of monitoring and evaluating the effectiveness of all such research uptake efforts on an institutional level. Grobbelaar’s (2013) research uptake framework is discussed in more detail and applied in a case study of two South African higher education institutions in Chapter 7 of this book.

To conclude this historical and conceptual overview of the study of the uptake, use and impact of research, it must be noted that we have touched on the work of only a few of the leading figures and influential models or concepts used to make sense of these phenomena. Hence, this overview provides a broad background and orientation for the overarching question addressed in this book: *What do we know of the uptake, use and impact of South African research on higher education?*

## **5 A framework: Research on higher education, institutional research and the uptake, use and impact of research**

Against the background of the preceding discussion, how can we visualise the relationship between research on higher education and its stakeholders (its potential users), and the relationship between various sub-dimensions of RHE (in particular, institutional research vis-à-vis other subdimensions of RHE)? In Figure 1.8 we propose a framework in terms of which these relationships can be visualised.



**Figure 1.8 A framework – research on higher education, institutional research, and the utilisation of research**

The research utilisation models, conceptualisations, stages and frameworks discussed above indicate that the relationship between research and its potential users (i.e. stakeholders) is a complex and multifaceted phenomenon. In Figure 1.8 the vertical line intersected by bi-directional arrows between the circle of research on higher education and the rounded square of stakeholders (or the possible users of this research) represents a complex set of (potentially productive) interactions. Such a representation would be only one of many possible conceptualisations of the dynamics of research uptake, use and impact.

A second important relationship represented in this framework is between the different types of researchers involved in higher education, in particular between *institutional researchers* and *other types of researchers focusing on higher education* (as explained in 2.3.3), namely (a) discipline-based researchers who would, on occasion, devote part of their work to higher education (e.g. economists or sociologists), (b) researchers in a discipline devoted to higher education (e.g. educationalists) based in a university, (c) externally funded researchers based in a research unit or institute; and (d) reflective practitioners (for example, executive and senior academic managers of universities, or politicians or civil servants with a specific interest in higher education). The volume of the output of the IR practitioners is probably much larger than that of the other dimensions of RHE, in particular if grey literature is included. To emphasise that IR must be seen as a sub-dimension of RHE, we have included the IR circle within the RHE circle to represent the totality of research taking the phenomenon of higher education as its object of research.

The line in the middle of the RHE circle depicts the lack of communication and collaboration often noted between ‘RHE scholars’ and ‘IR practitioners’ (Moosa & Murray, 2016). This relationship is complicated in a number of respects, as explained by Borden and Webber

(2015). The work of RHE scholars is typically stronger on theory and these scholars are prone to be much more explicit about the theories informing their work. But for that same reason, their work can be experienced as too abstract or too theoretical to be of immediate use for the stakeholders (e.g. the decision-makers and policy-makers in institutions and in higher education systems). On the other hand, the work of IR practitioners is sometimes presented as ‘theory-free’ while, in fact, it is not a matter of being free of theory, it is often a matter of being less explicit about (or perhaps less aware of) the theoretical underpinnings of their work. The work of IR practitioners is much closer to and in immediate and direct interaction with the needs of its core stakeholders (after all, IR practitioners are hired to serve their stakeholders with information and research results).

The stakeholders or potential users of RHE (including IR) are diverse. Higher education institutions and the higher education system (globally, regionally and nationally) is represented in Figure 1.8 as in closest proximity to the circle of research. Represented in Figure 1.8 as a step further removed from the circle of research (and mediated through the higher education system and its institutions) is society at large in all its manifestations as a stakeholder of research on higher education. To keep the visualisation simple, we did not break down the stakeholders of higher education into more specific manifestations (e.g. the world of work, government, industry, funders, alumni, and the other stakeholder groups). The line between the higher education systems and its institutions, on the one hand, and society (in all its manifestations) on the other hand, points to the gap sometimes experienced between higher education and ‘the world’.

## 6 Conclusion

In this chapter we have provided a short overview of the development of the three key phenomena addressed in this book, namely, (a) research on higher education, (b) institutional research and (c) the uptake, use and impact of research. These are complex and multi-faceted phenomena and various conceptualisations and models have been proposed for each of them. The purpose of the chapter was to provide a high-level historical overview with the focus on some of the most influential thinkers and events.

## References

- Altbach, P.G. (2014). ‘The Emergence of a Field: Research and Training in Higher Education’. *Studies in Higher Education*, 39(8):1306-1320. <https://doi.org/10.1080/03075079.2014.949541>.
- Banzi, R. et al. (2011). ‘Conceptual Frameworks and Empirical Approaches Used to Assess the Impact of Health Research: An Overview of Reviews’. *Health Research Policy and Systems*, 9:1-10. <https://doi.org/10.1186/1478-4505-9-26>
- Blitzer, E. & Wilkinson, A. (2009). Higher Education as a Field of Study and Research. In: E. Bitzer (ed.), *Higher Education in South Africa: A Scholarly Look behind the Scenes*. Stellenbosch: African Sun Media. 369-408. <https://doi.org/10.18820/9781920338183/17>
- Booyesen, S. (2016). *Fees Must Fall: Student Revolt, Decolonisation and Governance in South Africa*. Johannesburg: Wits University Press. <https://doi.org/10.18772/22016109858>

- Borden, V.M.H. & Webber, K.L. (2015). Institutional and Educational Research in Higher Education. Common Origins, Diverging Practices. In: K.L. Webber & A. J. Calderon (eds.), *Institutional Research and Planning in Higher Education: Global Context and Themes*. New York, NY: Routledge. pp. 16-27.
- Boshoff, N. (2014). 'Article Use of Scientific Research by South African Winemakers'. *Journal of Science Communication*, 13(1):1-18. <https://doi.org/10.22323/2.13010201>
- Boshoff, N. (2017). *Reflections on Research Uptake and Use (and Impact)*. Paper presented at the Conceptualisation Workshop of the SAIR/SciSTIP project on the utilisation of research on higher education. Stellenbosch: Stellenbosch University.
- Boshoff, N. et al. (2018). 'Academics at Three African Universities on the Perceived Utilisation of Their Research'. *South African Journal of Higher Education*, 32(5):19-38. <https://doi.org/10.20853/32-5-2605>
- Boshoff, N. & De Jong, S.P. (2020). 'Conceptualizing the Societal Impact of Research in terms of Elements of Logic Models: A Survey of Researchers in Sub-Saharan Africa'. *Research Evaluation*, 29(1):48-65. <https://doi.org/10.1093/reseval/rvz020>
- Boshoff, N. & Esterhuysen, H.W. (2016). "Productive Interactions" for Societal Impact: Developing a Research Information System for Agriculture (RIS-Agric), Stellenbosch University, South Africa. Proceedings of the 21st International Conference on Science and Technology Indicators València, Spain. 14-16 September. pp. 325-331.
- Boshoff, N. & Sefatsa, M. (2019). 'Creating Research Impact Through the Productive Interactions of an Individual: An Example from South African Research on Maritime Piracy'. *Research Evaluation*, 28(2):1-13. <https://doi.org/10.1093/reseval/rvz001>
- Botha, J. (2018). The Impact of Global Forces in Higher Education on the Development of Institutional Research. In: K.L. Webber (ed.), *Building Capacity in Institutional Research and Decision Support in Higher Education*. Cham: Springer International Publishing. pp. 19-36. [https://doi.org/10.1007/978-3-319-71162-1\\_2](https://doi.org/10.1007/978-3-319-71162-1_2)
- Botha, J., Muller, N. & Webber, K. (2016). Institutional Research in South African Higher Education: Framing the Contexts and Practices. In: J. Botha & N.J. Muller (eds.), *Institutional Research in South African Higher Education: Intersecting Contexts and Practices*. Stellenbosch: African Sun Media. pp. 1-22. <https://doi.org/10.18820/9781928357186>
- Burke, P. (2000). *A Social History of Knowledge: From Gutenberg to Diderot*. Cambridge: Polity.
- Caplan, N. (1979). 'The Two-Communities Theory and Knowledge Utilization'. *The American Behavioral Scientist*, 22(3):459-470. <https://doi.org/10.1177/000276427902200308>
- Castells. (2001). Globalisation. In: J. Muller, N. Cloete & S. Badat (eds.), *Challenges of Globalisation: South African Debates with Manuel Castells*. Johannesburg.
- CHE (Council on Higher Education). (2020). *VitalStats. Public Higher Education 2018*. Pretoria: Council on Higher Education.
- Chen, S.-Y. & Hu, L.-F. (2012). 'Higher Education Research as a Field in China: Its Formation and Current Landscape'. *Higher Education Research & Development*, 31(5):655-666. <https://doi.org/10.1080/07294360.2012.692116>
- Cherney, A. et al. (2012). 'What Influences the Utilisation of Educational Research by Policy-makers and Practitioners?: The Perspectives of Academic Educational Researchers'. *International Journal of Educational Research*, 56:23-34. <https://doi.org/10.1016/j.ijer.2012.08.001>
- Cherney, A. & McGee, T.R. (2011). 'Utilization of Social Science Research: Results of a Pilot Study Among Australian Sociologists and Criminologists'. *Journal of Sociology*, 47(2):144-162. <https://doi.org/10.1177/1440783310386831>
- Chetty, Y. & Muller, N. (2018). Building Capacity in Institutional Research in South Africa. In: *Building Capacity in Institutional Research and Decision Support in Higher Education*. Cham: Springer International Publishing. pp. 201-221. [https://doi.org/10.1007/978-3-319-71162-1\\_13](https://doi.org/10.1007/978-3-319-71162-1_13)

- Chirikov, I. (2013). 'Research Universities as Knowledge Networks: The Role of Institutional Research'. *Studies in Higher Education*, 38(3):456-469. <https://doi.org/10.1080/03075079.2013.773778>
- Christensen, J. (2020). 'Expert Knowledge and Policymaking: A Multi-disciplinary Research Agenda'. *Policy & Politics*, pp. 1-17. <https://doi.org/10.1332/030557320X15898190680037>
- Cloete, N. & Maassen, P. (2015). Roles of Universities and the African Context. In: N. Cloete, P. Maassen & T. Baily (eds.). *Knowledge Production and Contradictory Functions in African Higher Education*. Cape Town: African Minds. pp. 1-31. <https://doi.org/10.47622/978-1-920677-85-5>
- Coughlin, M.A. et al. (2016). *Duties and Functions of Institutional Research*. Retrieved from <https://bit.ly/3y0Aq1U> (Accessed 6 March 2017).
- Daenekindt, S. & Huisman, J. (2020). 'Mapping the Scattered Field of Research on Higher Education. A Correlated Topic Model of 17,000 Articles, 1991-2018'. *Higher Education*, 80:571-587. <https://doi.org/10.1007/s10734-020-00500-x>
- De Jong, S. et al. (2014). 'Understanding Societal Impact Through Productive Interactions: ICT Research as a Case'. *Research Evaluation*, 23(2):89-102. <https://doi.org/10.1093/reseval/rvu001>
- DfID (Department for International Development). (2016). *Research uptake. A guide for DfID-funded research programmes*. Retrieved from <https://bit.ly/2XHfwZd> (Accessed 30 July 2021).
- Ellen, M., Lavis, J.N., Ouime, M., Grimshaw, J. & Bedard, P. (2011). Determining research knowledge infrastructure for healthcare systems: a qualitative study. *Implementation Science*, 6:60.
- Estabrooks, C.A. (1999). 'The Conceptual Structure of Research Utilization'. *Research in Nursing and Health*, 22(3):203-216. [https://doi.org/10.1002/\(SICI\)1098-240X\(199906\)22:3%3C203::AID-NUR3%3E3.0.CO;2-9](https://doi.org/10.1002/(SICI)1098-240X(199906)22:3%3C203::AID-NUR3%3E3.0.CO;2-9)
- Estabrooks, C.A. et al. (2008). 'The Intellectual Structure and Substance of the Knowledge Utilization Field: A Longitudinal Author Co-citation Analysis, 1945 to 2004'. *Implementation Science*, 3(1):1-22. <https://doi.org/10.1186/1748-5908-3-49>
- Evans, G.R. (2010). *The University of Oxford. A New History*. London: I.B. Taurus. <https://doi.org/10.5040/9780755621422>
- Grobbelaar, S.S. (2013). *Building Institutional Capacity for Research Uptake. Development Research Uptake in Sub-Saharan Africa*. Retrieved from <https://bit.ly/3gfnia6> (Accessed 30 July 2021).
- Grobbelaar & Harber. (2016). Towards the Institutionalization of Research Uptake Management in Sub-Saharan African Universities. *Journal of Higher Education in Africa/Revue de l'enseignement supérieur en Afrique*, 14(1):155-181.
- Hanney, S.R. et al. (2004). 'Proposed Methods for Reviewing the Outcomes of Health Research: The Impact of Funding by the UK's "Arthritis Research Campaign"'. *Health Research Policy and Systems*, 2(4). <https://doi.org/10.1186/1478-4505-2-4>
- Havelock, R. (1969). *Planning for Innovation Through the Dissemination and Utilization of Scientific Knowledge*. Ann Arbor, MI: CRUSK, Institute for Social Research.
- Hazelkorn, E. (2015). *Rankings and the Reshaping of Higher Education. The Battle for World Class Excellence*. New York, NY: Palgrave Macmillan. <https://doi.org/10.1057/9781137446671>
- Holst, C. & Molander, A. (2019). 'Epistemic Democracy and the Role of Experts'. *Contemporary Political Theory*, 18:541-561. <https://doi.org/10.1057/s41296-018-00299-4>.
- Hunt, J. (2008). *The University in Medieval Life, 1179-1499*. Jefferson, NC: McFarland.
- Ibidunni et al. (2013). 'Organizational Culture : Creating, Changing, Measuring and Consolidating for Performance'. *European Journal of Business and Management*, 5(32):177-187.

- Karseth, B. & Nerland, M. (2016). Building the Academic Fields of Higher Education: New Times - Enduring Challenges? In: N. Cloete, L. Goedegebuure, Å. Gornitzka, J. Jungblut & B. Stensaker (eds.), *Pathways Through Higher Education Research. A Festschrift in Honor of Peter Maassen*. Oslo: University of Oslo, Department of Education. pp. 122-126.
- Kehm, B.M. (2015). 'Higher Education as a Field of Study and Research in Europe'. *European Journal of Education*, 50(1):60-74. <https://doi.org/10.1111/ejed.12100>
- Knott, J. & Wildavsky, A. (1980). 'If Dissemination is the Solution, What is the Problem?' *Knowledge, Creation, Diffusion, Utilization*, 1(4):537-578. <https://doi.org/10.1177/107554708000100404>
- Kogan, M., Henkel, M. & Hanney, S. (2006). *Government and Research: Thirty Years of Evolution*. Berlin: Springer. <https://doi.org/10.1007/1-4020-4446-1>
- Landry, R., Amara, N. & Lamari, M. (2001). 'Utilization of Social Science Research Knowledge in Canada'. *Research Policy*, 30(2):333-349. [https://doi.org/10.1016/S0048-7333\(00\)00081-0](https://doi.org/10.1016/S0048-7333(00)00081-0)
- Lange, L., Saavedra, F.M. & Romano, J. (2013). 'Institutional Research in Emerging Countries of Southern Africa, Latin America, and the Middle East and North Africa: Global Frameworks and Local Practices'. *New Directions for Institutional Research*, 2013(157):23-37. <https://doi.org/10.1002/ir.20037>
- Lasher, W.F. (2011). The History of Institutional Research and Its Role in American Higher Education Over the Past 50 Years. In: M. A. Coughlin & R. Howard (eds.), *The Association for Institutional Research: The First 50 Years*. Tallahassee, FL: Association for Institutional Research. pp. 9-52.
- Levin, B. (2008). Thinking About Knowledge Mobilization. A discussion paper prepared at the request of the Canadian Council on Learning and the Social Sciences and Humanities Research Council.
- Lundvall, B. & Borrás, S. (1998). *The Globalising Learning Economy: Implications for Innovation Policy*. European Commission. Retrieved from <https://bit.ly/37YWuzf>
- Macfarlane, B. & Grant, B. (2012). 'The Growth of Higher Education Studies: From Forerunners to Pathtakers'. *Higher Education Research and Development*, 31(5):621-624. <https://doi.org/10.1080/07294360.2012.719283>
- Molas-Gallart, J. & Tang, P. (2011). 'Tracing "Productive Interactions" to Identify Social Impacts: An Example from the Social Sciences'. *Research Evaluation*, 20(3):219-226. <https://doi.org/10.3152/095820211X12941371876706>
- Moosa, R. & Murray, L. (2016). Institutional Research and Academic Planning in the Context of Higher Education Steering Instruments. In: J. Botha & N.J. Muller (eds.), *Institutional Research in South African Higher Education. Intersecting Contexts and Practices*. Stellenbosch: African Sun Media. pp. 117-141. <https://doi.org/10.18820/9781928357186/07>
- Morgan Jones, M. & Grant, J. (2013). *Making the Grade: Methodologies for Assessing and Evidencing Research Impact*. 7 Essays on Impact. DESCRIBE Project Report.
- Morton, S. (2015). 'Creating Research Impact: The Roles of Research Users in Interactive Research Mobilisation'. *Evidence & Policy: A Journal of Research, Debate and Practice*, 11(1):35-55. <https://doi.org/10.1332/174426514X13976529631798>
- Muller, N., Langa, S. & Dlamini, P. (2016). Institutional Research Units in Higher Education Institutions in South Africa. In: J. Botha & N.J. Muller (eds.), *Institutional Research in South African Higher Education. Intersecting Contexts and Practices*. Stellenbosch: African Sun Media. pp. 57-73. <https://doi.org/10.18820/9781928357186/04>
- Neave, G. (1998). 'The Evaluative State Reconsidered'. *European Journal of Education*, 33(3):265-284.
- Ngwenya, S. & Boshoff, N. (2018). 'Valorisation: The Case of the Faculty of Applied Sciences at the National University of Science and Technology, Zimbabwe'. *South African Journal of Higher Education*, 32(2):215-236. <https://doi.org/10.20853/32-2-2468>
- Pausits, A. (2018). 'EAIR: The European Higher Education Society'. *Encyclopedia of International Higher Education Systems and Institutions*. Dordrecht: Springer Netherlands. pp. 1-7. [https://doi.org/10.1007/978-94-017-9553-1\\_205-1](https://doi.org/10.1007/978-94-017-9553-1_205-1)

- Penfield, T. et al. (2014). 'Assessment, Evaluations, and Definitions of Research Impact: A Review'. *Research Evaluation*, 23(1):21-32. <https://doi.org/10.1093/reseval/rvt021>
- Rich, R.R. (1979). The pursuit of knowledge. *Knowledge: Creation, Diffusion, Utilization*, 1: 6-30.
- Rogers, E.M. (2003). *Diffusion of Innovations*. 5th Edition. New York, NY: Free Press.
- Rumbley, L.E. et al. (2014). *Higher Education: Worldwide Inventory of Research Centres, Academic Programmes, Journals and Publications*. 3rd Edition. Bonn: Lemmens.
- Salmi, J. (2020). *COVID's Lessons for Global Higher Education. Coping with the Present while Building a More Equitable Future*. Indianapolis, IN: Lumina Foundation.
- Saupe, J.L. (1990). *The Functions of Institutional Research*. 2nd Edition. Tallahassee, FL: Association for Institutional Research. <http://eric.ed.gov/?id=ED207443>
- Scott, P. (1998). Massification, Globalization and Internationalization. In: P. Scott (ed.), *The Globalization of Higher Education*. Buckingham: Society for Research into Higher Education & Open University Press. pp. 108-143.
- Shaxson, L. (2010). *Improving the Impact of Development Research Through Better Research Communications and Uptake*. Report of the AusAID, DFID and UKCDS funded workshop: London.
- Spaapen, J. & van Drooge, L. (2011). 'Introducing "Productive Interactions" in Social Impact Assessment'. *Research Evaluation*, 20(3):211-218. <https://doi.org/10.3152/095820211X12941371876742>
- Stehr, N. (1994). *Knowledge Societies*. London: Sage.
- Steyn, A.G.W. & De Villiers, A.P. (2007). Public Funding of Higher Education in South Africa by Means of Formulae. In: L. Lange & T. Luescher (eds.), *Review of Higher Education in South Africa. Selected Themes*. Pretoria: Council on Higher Education. pp. 11-52.
- Strydom, A. (2002). 'Globalisation and Higher Education Studies in South Africa'. *South African Journal of Higher Education*, 16(1):91-98. <https://doi.org/10.4314/sajhe.v16i1.25279>
- Teichler, U. (1996). 'Comparative Higher Education: Potentials and Limits'. *Higher Education*, 32(4):431-465. <https://doi.org/10.1007/BF00133257>
- Teichler, U. (2005). 'Research on Higher Education in Europe'. *European Journal of Education*, 40(4):447-469. <https://doi.org/10.1080/0379772830080113>
- Teixeira, P.N. (2013). Reflecting About Current Trends in Higher Education Research: A View from the Journals. In: B.M. Kehm & C. Musselin (eds.), *The Development of Higher Education Research in Europe*. Rotterdam: Sense Publishers. pp. 103-122. [https://doi.org/10.1007/978-94-6209-401-7\\_9](https://doi.org/10.1007/978-94-6209-401-7_9)
- Tight, M. (2004). 'Research into Higher Education: An A-theoretical Community of Practice?'. *Higher Education Research & Development*, 23(4):395-411. <https://doi.org/10.1080/0729436042000276431>
- Trow, M. (1974). 'Problems in the Transition from Elite to Mass Higher Education'. *International Review of Education*, 18:61-82.
- Trow, M. (1999). 'From Mass Higher Education to Universal Access: The American Advantage'. *Minerva*, 37(4):303-328. <https://doi.org/10.1023/A:1004708520977>
- UNESCO Institute for Statistics. (2021). *Global Flow of Tertiary-level Students*. Retrieved from <http://uis.unesco.org/en/uis-student-flow> (Accessed 3 April 2021).
- USAf (Universities South Africa). (2015). *Reflections on Higher Education: briefing paper prepared for the Second National Higher Education Transformation Summit*. Pretoria: USAf
- Van Drooge, L. et al. (2013). *Valuable Indicators for Valorisation*. The Hague and Utrecht: Rathenau Institute and Technology Foundation STW.
- Van Drooge, L. & Vandeberg, R. (2013). *Valuable – Understanding Valorisation*. 2013 Eu-SPRI forum conference, April.
- Varghese, N.V. (2017). Education Research and Emergence of Higher Education as a Field of Study in India. In: J. Jung, H. Horta & A. Yonezawa (eds.), *Researching Higher Education in Asia: History, Development and Future*. Singapore: Springer International Publishing. pp. 299-313. [https://doi.org/10.1007/978-981-10-4989-7\\_17](https://doi.org/10.1007/978-981-10-4989-7_17)

- Visser, H. & Barnes, G. (2016). Professional Development for Institutional Research. In: J. Botha & N.J. Muller (eds.), *Institutional Research in South African Higher Education. Intersecting Contexts and Practices*. Stellenbosch: African Sun Media. pp. 75-96. <https://doi.org/10.18820/9781928357186/05>
- Webber, K.L. & Calderon, A.J. (2015). Institutional Research in Context. In: J. Huisman, H. de Boer, D.D. Dill & M. Souto-Otero (eds.), *The Palgrave International Handbook of Higher Education Policy and Governance*. London: Palgrave Macmillan. pp. 192-208.
- Weiss, C.H. (1977). 'Research for Policy's Sake: The Enlightenment Function of Social Research'. *Policy Analysis*, 3(4):531-545.
- Weiss, C.H. (1979). 'The Many Meanings of Research Utilization'. *Public Administration Review*, 3(5):426-431. <https://doi.org/10.2307/3109916>
- Woodfield, S. (2015). Institutional Research in the UK and Ireland. In: K.L. Webber & A. J. Calderon (eds.), *Institutional Research and Planning in Higher Education. Global Contexts and Themes*. New York, NY: Routledge. pp. 86-100.