THE IMPLEMENTATION OF THE RESEARCH OUTPUT POLICY WITH REFERENCE TO THE UNIVERSITY OF PRETORIA AND THE UNIVERSITY OF VENDA

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DEDICATION

This study is humbly dedicated to my Heavenly Father, who works all things after the counsel of his own will ~Ephesians 1:11. Thank You Father for your amazing love, blessings, support and wisdom, not only during the writing of this dissertation, but for all time. While I might stumble, You remain faithful.

KE A LEBOGA MODIMO WA THABA SIONE!!!

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ABSTRACT

In South Africa, writing and publishing scientific articles is an important activity of academic life. It not only enhances the academic status and profile of the author and his or her institution, but also contributes towards the subsidy transfers of the Department of Higher Education and Training to universities. Furthermore, academic promotion is increasingly subject to a strong track record of research publications. Most importantly, academic publishing is the primary vehicle for the advancement of scientific knowledge required to enhance the quality of life of the society and also to strengthen the economy. Therefore, the government introduced the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, as a tool to sustain and encourage research productivity in order to increase research output. However, despite the compelling advantages of academic publishing, research outputs of South African universities are very low and are largely contributed by a small number of academics.

This dissertation set out to critically examine the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Pretoria and the University of Venda. The purpose of this study is to investigate the policy implementation challenges that exist in both universities in the effort to effectively implement the research output policy. The qualitative research methodology was adopted towards the realisation of the aims and objectives of the study. The study employs the 5-C Protocol Model of Policy Implementation as a critical apparatus for analysing data acquired through case studies, field interviews and textual analysis of relevant books and documents. This will provide the researcher with critical aspects of the policy that are important for the implementation process. Furthermore, the study recommends possible solutions and strategies for addressing the implementation challenges that were identified in the analysis.

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LIST OF APPREVIATIONS AND ACRONYMS

ANC	AFRICAN NATIONAL CONGRESS
ASSAF	ACADEMY OF SCIENCE OF SOUTH AFRICA
CHE	COUNCIL OF HIGHER EDUCATION
DoE	DEPARTMENT OF EDUCATION
DHET	DEPARTMENT OF HIGHER EDUCATION AND TRAINING
DRS	DEPARTMENT OF RESEARCH SUPPORT
DVC	DEPUTY VICE CHANCELLOR
FET	FULL-TIME EQUIVALENCE FUNDS
GDP	GROSS DOMESTIC PRODUCT
HEIs	HIGHER EDUCATION INSTITUTIONS
HBU	HISTORICALLY BLACK UNIVERSITY
HWU	HISTORICALLY WHITE UNIVERSITY
IBSS	INTERNATIONAL BIBLIOGRAPHY OF SOCIAL SCIENCES
ISBN	INTERNATIONAL STANDARD BOOK NUMBER
ISI	INSTITUTE OF SCIENCE INFORMATION
ISSN	INTERNATIONAL STANDARD SERIAL NUMBER
NCHE	NATIONAL COMMISSION OF HIGHER EDUCATION
NFF	NEW FUNDING FRAMEWORK
NRF	NATIONAL RESEARCH FUND
NPHE	NATIONAL PLAN FOR HIGHER EDUCATION
RIS	RESEARCH INFORMATION SYSTEM
RIMS	RESEARCH INFORMATION MANAGEMENT SYTEM
SAPSE	SOUTH AFRICAN POST SECONDARY EDUCATION
SCI	SCIENCE CITATION INDEX
UP	UNIVERSITY OF PRETORIA
UV	UNIVERSITY OF VENDA

CHAPTER ONE

INTRODUCTION AND RESEARCH METHODOLOGY

1.1. INTRODUTION

In South Africa, every government institution exists because it is tasked with implementing a specific part of government policy, and these policies are captured in terms of legislatively approved statutory prescripts. Through the relevant policy documents approved by government since 1994, it is clearly indicated that Higher Education Institutions (HEIs) bear a profound moral responsibility to, amongst others, obtain and sustain a high level of economic growth; improve the living standards of the people; develop a new base of knowledge and initiate socio-economic change and development; and to allow South Africans to compete internationally in the quest for excellence (Kuye 2007: 2). Research is one of the primary vehicles through which all these can be achieved. As such, it is important that a research culture be promoted and encouraged in all higher education institutions.

It has been estimated that advances in knowledge account for about one-third of the increases in the Gross Domestic Product (GDP) of a country (Vaughan 2008: 91). Since the research function of academia remains a prime source of that knowledge, governments across the world saw a need to put measures and strategies in place to stimulate research in their countries; hence the development of the Policy and Procedures for Measurement of Research Output of Public Higher Education Institutions, 2003, in South Africa. The development of this research output policy was driven by the imperatives for transformation of the higher education system contained in the White Paper 3, a Programme for the Transformation of Higher Education (1997) and the National Plan for Higher Education (2001). As one of the objectives intended by the National Plan for Higher Education (2001) this policy aims to sustain current research strength and to promote research and other research outputs required to meet national development needs by rewarding quality research output at public higher education institutions (DHET 2003:4).

Like many developing countries, South Africa faces the challenge of translating the objectives of public policies into measurable outputs. Government policies are very logical on paper but some might fail to achieve the desired results. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is no exception in this regard. Rogan and Grayson (2001: 2) argue that all too often policy makers and politicians are focused on the desired outcomes but neglect the contextual factors that influence implementation. The literature has repeatedly proven that many cases of policy failure can be attributed to poor implementation. Therefore public policy implementation is a topic that needs serious attention in South Africa.

In South Africa, writing and publishing scientific articles is an important activity of academic life. It not only enhances the academic status and profile of the author and his or her institution, but also contributes towards the subsidy transfers of the Department of Higher Education and Training (DHET) to universities. Furthermore, academic promotion is increasingly subject to a strong track record of research publications. Most importantly, academic publishing is the primary vehicle for the advancement of scientific knowledge. Despite the compelling advantages of academic publishing, research outputs of South African universities are very low and are largely contributed by a small number of academics (Ligthelm and Koekemoer 2009: 29). Therefore, the government uses the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, as a tool to sustain and encourage research productivity in order to increase research output. However, considering the state of research productivity of higher education institutions, it is clear that the policy faces the serious challenge of failing to achieve the intended outcomes. One of the main causes of this challenge is attributed to the inability of higher education institutions to effectively carry out the implementation process. This study is therefore rooted in investigating the policy implementation challenges that exist, in both the University of Pretoria and the University of Venda, in the effort to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

This study evaluates the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Pretoria and the University of Venda. The study also investigates

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whether there are monitoring and evaluation mechanisms set in place to oversee the proper implementation of this policy, and how effective and efficient these mechanisms are in practice.

1.2. BACKGROUND AND LITERATURE REVIEW

According to Taylor and Procter (2008: 1) a literature review is an account of what has been published on a specific topic by accredited scholars and researchers. In any research, it is necessary to establish what is already known about the topic at hand. It was crucial to evaluate the empirical claims of other scholars and researchers so as to identify the weaknesses or the gap that exists in this published knowledge, which served as a justification for the particular focus of this study. However, it must be highlighted that the point was not to find all published material that is somehow related to the research topic, but to avoid missing a relevant publication that lies outside the main scope, thus ensuring that the habitual channels of communication will not bias the results obtained by the study.

For the purpose of this study, it is important to bring clarity to the meaning of research output in the South African context. According to the Department of Higher Education and Training's Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, research output is defined as textual output where research is understood as original, systematic investigation, undertaken in order to gain new knowledge. This can be in the form of the university's original research papers, research letters, review articles which appear in approved journals, and also books for the specialist and patents. However, for the purpose of the Department of Higher Education and Training subsidy, recognised research output comprises only journals, books and proceedings that meet the criteria listed in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

Scholars such as Madue (2007: 35) have criticised this definition of recognised research output by arguing that textbooks and monographs are also important transmitters of knowledge and they should be considered by the policy for subsidy. Madue (2007: 35) concluded that the Department of Higher Education and Training listing is intended to be indicative rather than comprehensive; it is designed to

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compare relative output between higher education institutions, across a selective sample of publications that meet prescribed criteria, thus excluding other important research outputs. Okafor (2011: 181) also argues that research output is a means by which academics contribute their own knowledge to the existing body of knowledge, and other output such as technical reports, chapters in books, patents, supervision and training of students should not be ignored. However, Ashworth and Harvey (1994: 110) compliment this policy and assert that publications which have clear evidence of research activity are usually taken to include, in order of their importance, publications in academic journals, professional journals, books, reports, edited works and proceedings. It is clear that the meaning of research output is highly contested amongst scholars and many criticise the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, for only recognising journals, books and proceedings as being eligible for subsidy.

The measuring of research output is not a new phenomenon. Scientists have communicated and codified their findings in a relatively orderly well defined way since the 17th century (Van Raan 2005: 2). The most commonly used approach to measuring research output within a given discipline is biometrics. According to Moed, Glanzel and Schmosh (2004: 26), biometrics has been used from as early as 1917 but it gained popularity after the introduction of the Science Citation Index (SCI) in 1961. The measurements of individual or institutional research output are often based at least in part on the number of publications produced over a specific period of time. According to Madue (2007: 2), many early authors such as Narin (1976), Prize (1978), Prize (1980b), Braun **et al.** (1988) and many others made a significant contribution to the topic of measuring research performance.

South Africa has a long history of measuring research output. According to Steyn and Villers (2007: 253), the South African research subsidy formula has been used by the state for almost 20 years. Since 1951 and until the New Funding Framework (NFF) for Public Higher Education was introduced in 2004/05, four formulae have been used as a basis for funding universities. These include the Holloway formula which was introduced in 1953 and was used as a state funding instrument until the early 1970s. The discontinuance of the Holloway formula followed an interim recommendation by the Van Wyk de Vries Commission of Enquiry into Universities. This formula was implemented in 1977, and after its termination the South African

Post-Secondary Education Information System (SAPSE) subsidy formula was implemented until 2003/04, when the National Research Fund (NRF) came into effect (Steyn and de Villers 2007: 13).

However, it is important to mention that the need to develop a new funding framework for the measurement of research output was first clearly articulated in the 1996 report of the National Commission on Higher Education (NCHE). The National Plan for Higher Education (NPHE) in South Africa quoted limitations of policies which were previously used for measuring research output. This led to the establishment of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, based on Section 3(1) and 3(2) of the Higher Education Act, 1997 (Act 101 of 1997) and in consultation with the Commission on Higher Education. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, has been in operation since January 2005 (considering the 2004 output). This policy was intended to replace the Information Survey Manuals, that is, research output of the binary system of universities and technikons. This initiative was driven by the imperatives for transformation contained in the White Paper 3, a Programme for the Transformation of Higher Education (1997) and the National Plan for Higher Education (2001) (DHET formerly DoE 2001).

According to Onyancha (2010: 86), publications count, patents count and citation count and impact are the commonly applied measures in measuring the performance of individuals, journals, institutions and countries in research. It is argued that such counts provide a general view of the production activity in a field or institution as well as highlighting an individual's performance. In South Africa, the Department of Higher Education and Training through the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, expects every academic to publish at least 1.25 articles annually in journals the Department has accredited. Institutions receive financial rewards for meeting this target and are penalised for failing to meet it (Schulze 2008: 644). Therefore, the most commonly used method to measure research productivity and output of higher education institutions is the counting of publications in accredited journals, books and conference papers (Fox 1992; Creamer 1998; Dundar and Lewis 1998; Menges 2000, and Porter and Umbach 2001; Onyancha 2010).

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Scholars have criticised this method of equating the measuring of research output with journal publications. Moed **et al.** (2004: 26) argue that journals are not equivalent elements in the scientific process, as they differ widely in importance, and they are challenged as the 'gold standard' by new types of publication behaviour, particularly electronic publishing. Ashworth and Harvey (1994: 110) base their criticism on the fact that patents and licences are also relevant, particularly in departments in which a significant portion of the work is practical and applied. They argue that groups of academic staff that are involved in this form of innovative research activity are disadvantaged if only publications in journals are used as the main criterion in judging research productivity. Vaughan (2008: 91) mentions that instead of an emphasis on the number of publications, the focus should rather be on a subsidy system that inspires institutions to aim for a level of scholarship that is able to withstand the scrutiny of an international audience. Vaughan (2008: 92) states that the country should consider using the National Research Foundation's rating system instead of the publication count. The policy should emphasise quality rather than quantity, as publication count does not provide any indication as to the quality of the research carried out.

Previous studies on research output, particularly in the context of South Africa, focused on the importance of publishing in scientific journals (Glanzel and Moed 2001; Le Grance 2003; and Pouris 2004; Ligthelm and Koekemoer 2009; Onyacha 2010). Madue (2007) investigated the extent to which the new policy on the measurement of research output can increase the quality and quantity of research output of faculties. Pienaar, Schirge and Von Groenewald (2000) focused on South Africa's system of evaluating and rating individual researchers. Masipa (2010) also reviewed the diverse forms of higher education research evaluation in South Africa to establish whether or not these efforts are sufficient in achieving the aims of an integrated research evaluation system for higher education in the country. None of the previously conducted studies evaluated the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It is evident that the implementation of this policy by higher education institutions has not received a thorough academic evaluation. Therefore this study represents the first attempt to methodically study the ability of universities to implement the national policy on the measurement of research output of public

higher education institutions, however paying specific attention to the University of Pretoria and the University of Venda.

1.3. MOTIVATION FOR THE RESEARCH

The motivation to engage in this study was derived from a number of issues. Firstly, there is an existing gap between externally mandated policies and practices in South Africa. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, was established to sustain and encourage research productivity in order to increase output. However, taking the state of research productivity of higher education institutions into account, it is clear that the policy faces the serious challenge of failing to achieve the intended outcomes. This challenge can be attributed to poor implementation. Research output of higher education institutions has declined since 1994, thus compromising the research development agenda of the country. The inability of higher education institutions to effectively implement the research output policy is a matter that requires urgent attention. Failure to address the problem will compromise the country's growth and sustainable development. Investigating the challenges compromising the effective and efficient implantation of the research output policy and suggesting solutions can play an important role in achieving improvements in the performance of the higher education sector in South Africa.

Secondly, with increased competition for students globally, the efficiency of higher education institutions in the production of research output is an international rankings concern. Part of the motivation to engage in this study is the recognition that higher education research is of the utmost importance to future national and international needs and it must be promoted. Therefore, it is important to ensure proper implementation of the Policy and Procedures for the Measurement Research Output of Higher Education Institutions, 2003, in order to promote research productivity in South Africa.

Lastly, this study was also stimulated by Brynard's (2007: 358) view that in South Africa more needs to be done to investigate and produce seminal work about policy implementation cases at hand. This study was started from this perspective of recognising the need to investigate and solve the policy implementation challenges

faced by South Africa. Hence the study investigates the challenges faced by higher education institutions when implementing the Policy and Procedures for the Measurement of research Output of Higher Education Institutions, 2003.

1.4. PROBLEM STATEMENT

The nature of public policy, its development and subsequent implementation in real time, is one of the most important features of defining democratic societies and, more specifically, of those in transition (Manganyi 2001: 27). Public policies contain broad guidelines, procedures and recommendations to encourage concerted efforts toward the attainment of stated government goals. South Africa as a developmental state relies on public policies to address problems in the country and bring about change in the status quo. However, for public policies to be successful in achieving the intended outcomes, there is a need for proper implementation of these policies. Public policy implementation is a crucial process and its success relies on the capacity of all the respective role players to execute their responsibilities effectively, efficiency and economically.

The main problem that encouraged this study was the recognition of a gap between the intentions of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and what is evident in practice. When the government introduced the national policy on the measurement of research output in 2003, the aim was to sustain current research strength and to promote research and other knowledge outputs required to meet national development needs (DHET formerly DoE 2003: 4). The aforementioned aims would be achieved through the encouragement of research productivity, marked by rewarding quality research output, enhancing productivity by recognising the major types of research output and by using proxies to determine the quality of such research output. Higher education institutions are tasked with the responsibility to effectively implement this policy and to ensure increased research capacity and productivity in order to improve research output. However, the policy does not seem to be effectively achieving this goal. The policy has been in place for eight years but research outputs of higher education institutions are very low at about 0.4 research outputs per researcher per year. South Africa spends 0,92% of GDP on research and is still struggling to reach the elusive

1% spend, which is the government's strategic aim (International Education Association of South Africa 2011: 16).

According to the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, academic staff are expected to publish at least 1.25 articles annually in journals the Department of Higher Education and Training has accredited. The policy further sets out all the rules, procedures and criteria for recognised research output. However, only a relatively small number of South African scholarly journals and books are recognised by the Department as meeting the minimum requirements for state subsidy as outlined in the policy. A small percentage of these journals appear on the ISI Citation Index (9.0%) and the international Bibliography of Social sciences (5.5%) (Ligthelm and Koekemoer 2009: 28). An important reason for this low research output by higher education institutions is closely related to the fact that a high proportion of research publications are contributed by a small number of academics; and also because of the high rejection rate by the Department of Higher Education and Training of research publications submitted by researchers of higher education institutions due to not meeting the requirements of the policy. The 2011 Report on the Evaluation of the Institutional Research Publications Output highlighted that a large number of submitted outputs were not recognised based on non-compliance with the policy, for example, 67% of these books were not scholarly (DHET 2011: 26). It is clear that the acceptance rate of good scholarly research outputs is typically quite low, so the chances of rejection are always relatively high.

It is evident that the policy faces the serious challenge of failing to achieve the intended outcomes, and the main cause of this challenge is attributed to the inability of higher education institutions to effectively carry out the implementation process. The unsuccessful implementation of the research output policy could be due to the universities' incapacity (institutional, human, financial), owing to a number of factors, however this is to be investigated.

1.5. SIGNIFICANCE OF THE STUDY

The study reveals factors of concern which negatively impact the process of effectively implementing the Policy and Procedures for the Measurement of

Research Output of Public Higher Education Institutions, 2003, and will also recommend solutions and measures necessary to combat the challenges of policy implementation. Since the research study will not be a duplication on any previous research studies, the findings of the study will therefore add value and contribute to the discipline of Public Administration, mainly to the existing body of knowledge on public policy implementation.

An investigation of the factors that negatively affect the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and recommending options for overcoming these factors will be valuable not only from the researcher's point of view, but the knowledge gathered will also be useful for practitioners involved in the implementation of this policy. Identifying major gaps in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, can provide the impetus for institutions to fundamentally rethink how they do things. The findings of this study will also be relevant to other higher education institutions that wish to compare and contrast their implementation approaches with those of the University of Pretoria and the University of Venda. Most importantly, this study will address a major problem which, if left unaddressed, could compromise the country's competitiveness, growth and sustainable development, which are gained through research.

1.6. RESEARCH QUESTIONS

Policies fail either because the policy could not be implemented as designed or the policy was run as designed but did not produce the desired outcomes. There are many variables that could lead to the policy not being implemented as designed. This study is intended to investigate the variables that cause the policy at hand to produce the intended outcomes. It cannot be assumed that policies are carried out as designed as sometimes instructions could go astray or be misinterpreted. When policies delivered by government fail to achieve the intended outcomes, officials must take steps to guarantee that policies are properly implemented. These actions include ensuring that the policy is unambiguously stated, that instructions for administration are clearly and consistently communicated, that there are sufficient

resources committed to the programme, that trained and informed staff are available and have the authority and incentive to execute the policy, and that staff actions are reviewed (Patton and Sawicki 1993: 365).

As highlighted in the problem statement, the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, which was designed to sustain and encourage research productivity and research quality at higher education institutions, in order to increase research output, is failing to achieve the intended outcomes. Therefore the empirical questions that need to be asked in this regard are:

- What are the possible hindrances to the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?
- Why are some higher education institutions more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Learning Institutions, 2003?

1.7. RESEARCH OBJECTIVES

According to De Vos (2002: 18), the researcher must explicitly delimit the focus of the study and discuss the research goals and objectives, and it is important that the objectives be specific, clear and achievable. This study intends to propose solutions to the problem statement and to suggest solutions to remedy the problem. Therefore, the research objectives of this study which are informed by the problem statement are:

Firstly, to conduct a comparative analysis on the institutional ability of both the University of Pretoria and the University of Venda in complying and implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Secondly, the research will enquire if the institutions are fully acquainted with the research output policy, and if these institutions have formulated institutional policies in line with the national Policy on Measurement of Research Output by Public Higher Education Institutions, 2003.

Thirdly, in the effort to understand why some higher education institutions find it difficult to implement and comply with the requirements of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, the study will observe and compare how the research output policy is implemented by both universities at an institutional level. This will include the management of research output, the submission process followed and internal measures for ensuring quality control. It is also essential to look at the interpretation of this policy by higher education institutions.

Fourthly, the study will investigate the efficiency and effectiveness of the monitoring and evaluation systems that are in place to ensure the compliance and institutional implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Lastly, the study aims to explore all the challenges encountered by the University of Pretoria and the University of Venda in the effort to effectively implement the Policy and Procedures for the Measurement Research Output of Public Higher Education Institutions, 2003. Thereafter, solutions and recommendations in dealing with these implementation challenges will be provided.

1.8. RESEARCH DESIGN AND METHODOLOGY

By providing the path to how the research will be conducted, the methodology also determines the accuracy and validity of the research. This dissertation recognizes this section as being critical for the success of the study. This is because it is through the application of the appropriate research methodology, that relevant data and evidence will be gathered in order to address the problem statement.

McNabb (2004: 96) defines research design as the way an investigator applies a logical structure to the research. According to Webb and Auriacombe (2006: 589) a research design is basically a set of guidelines and instructions on how to reach the goal that the researcher has set for himself/herself. This means that it is a detailed plan of how a study will be carried out, including identifying the research problem and research questions and describing the means according to which data will be collected. Research design is a crucial step because it serves as a guide to ensure

that the data to be gathered will be sufficient, relevant and appropriate for correctly answering research questions posed.

A great deal of confusion exists between research design and research methodology, however both terms have different meanings attached to them and should not be used interchangeably. According to Babbie and Mouton (2008: 104) a research design is different from research methodology in the sense that "research methodology refers to methods, techniques and procedures that are employed in the process of implementing the research design or research plan". This means that the research methodology answers the question of how the researcher intends to go about conducting the research by providing the research process and the kind of tools and procedures to be used. The research methodology should therefore describe the participants, sampling plan, data collection procedures and instruments. The success of this study relies heavily on the research methodology to be used. This is because it is through the application of the appropriate research methodology, that relevant data and evidence will be gathered in order to address the problem statement.

1.9. TYPES OF RESERCH METHODS

According to Yin (2009: 2), each research method has a number of advantages and disadvantages depending on the type of question, the control an investigator has over actual behavioral events and the focus on contemporary as opposed to historical phenomena. Guba and Lincoln (2005: 191) argue that when choosing a research approach, the researcher should consider the aim of the research, the nature of the research questions and the resources (informative subjects) available. Since all research methods have their limitations and are better suited for some types of problems than others, it is therefore crucial to explain the types of research methods found in social research so as to justify the appropriateness and practicality of the particular research method chosen for this study.

There are three types of research methodological approaches in the field of social research, namely, quantitative, qualitative and mixed method. According to Creswell (1994: 1) quantitative research is an inquiry into social or human problems, based on testing a theory composed of variables, measured with numbers and

analysed with statistical procedures in order to determine whether the predictive theory holds true. Quantitative research focuses on counting and classifying features and constructing statistical models and figures to explain what is observed. In short, it can be argued that qualitative research denotes those studies in which data collected can be analysed using numbers.

Reid and Smith (1981, in De Vos 2002: 80) identified the following characteristics of quantitative research approach:

i. The researcher's role is that of objective observer.
ii. Studies are focused on relatively specific questions.
iii. Data collection procedures and types of measurement are constructed in advance of the study and applied in a standardised manner.
iv. Data collectors are to avoid adding their own interpretations and impressions.
v. Measurement is focused on specific variables that are quantified through rating scales, frequency counts and other means.
vi. Analysis proceeds by obtaining the statistical breakdown of the distribution of variables.
vii. Statistical methods are used to determine associations or differences between variables.

In contrast, a qualitative research approach is concerned with collecting and analysing data that can describe events, situations, people, and so forth without the use of numbers. A qualitative research approach has to do with understanding the processes and the social and cultural context which cause various behavioral patterns and it is mostly concerned with investigating the "why" questions of research (Maree and Van Der Westhuizen 2008: 51). Qualitative research is more open and responsive to its subjects. It requires that the researcher gets close to the people and situations being studied, in order to understand the issues being studied in their totality. This means that the qualitative research approach is used in an attempt to understand phenomena and situations as a whole (Kuhns and Martorana 1982: 8-9).

Qualitative research has the following six characteristics as identified by Kuhns and Martorana (1982: 6-7):

i.   Events can be understood adequately only if they are seen in context.

ii.   The contexts of inquiry are not contrived but are natural.

iii. Nothing is predefined or taken for granted.

iv.   Qualitative researchers want those being studied to speak for themselves, to provide their perspective in words and other actions. Therefore qualitative is an interactive process, in which the person being studied teaches the researcher about their lives.

v.   Qualitative researchers attend to the experience as a whole, not as separate variables. The aim of qualitative research is to understand experiences as a unified event.

vi.   Finally, for many qualitative researchers, the process entails appraisal about what was studied.

Blaxter **et al.** (1996: 60) however argue that qualitative research is harder, more stressful and more time consuming than other types of research approaches. The detailed descriptions, direct quotations and case documentation obtained by qualitative methods are raw data from the empirical world. This data which emerged from a naturalistic inquiry can take time to analyse and make proper deductions.

It is clear that quantitative and qualitative methods signify distinctive approaches to social research, and each approach is associated with a certain cluster of data collecting techniques. Quantitative research is strongly associated with social survey techniques such as structured interviewing, self-administered questionnaires, experiments, structured observations, content analysis and analysis of official statistics and so on. Qualitative research, on the other hand, is typically associated with participant observation, semi and unstructured interviewing, focus groups, literature review, and language based techniques such as conversation and discourse analysis (Brannan 1992: 59).

Although quantitative and qualitative approaches differ in methods employed and in the type of data they produce, there are a number of ways in which both approaches can be combined and used simultaneously. Both approaches can bring about valid results and can be usefully applied. They are not mutually exclusive, but can be used to mutually reinforce each other during an investigation of a specific problem. This

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combination of both qualitative and quantitative approaches is called a mixed method approach. It involves philosophical assumptions, the use of quantitative and qualitative approaches and the mixing of both approaches in a study (Cresswell 2009: 4).

1.10. RESEARCH METHOD CHOSEN FOR THIS STUDY

The methodology used in this study is qualitative, because findings were not derived by statistical procedures or other means of quantification, but the research relied on qualitative measures including interviews, case studies and literature review (Straus and Corbin 1998: 10). The qualitative research methodology was carefully chosen for this study because not only does the approach allow for the interpretation and description of findings, but it also allows the researcher to use open-ended questions to gather detailed data relevant to the research problem. McNabb (2004: 341) argues that qualitative research is descriptive in nature and can be associated with the social sciences, as opposed to the research methods used in the natural sciences. The hindrances in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, can only be explained through descriptive theoretical research as opposed to a quantified basis. The problems associated with public policy implementation need to be described, explained and interpreted which is the role of qualitative research methodology.

According to McNabb (2004: 343), qualitative research strategies can be grouped into three broad strategic classes, which are explanatory research studies, interpretative research studies and critical research studies. Explanatory research studies are conducted to develop a causal explanation of some social phenomenon. In this type of study, the researcher identifies a specific social circumstance that he or she wants to investigate; the researcher then seeks to identify the social, economic, practice, or other such characteristic in the social environment that can be explained as a cause of the problem. Thus in this study, the inability of higher education institutions to fully implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, has been identified as an issue to investigate. The study seeks to identify all the contributing factors that can be explained as causing the inability of higher education institutions to comply with and

implement this policy, and therefore build theories that can be used to predict future behavior or events in similar circumstances.

Interpretative research studies are known for the understanding of actions of people in social circumstances and situations. In this regard, the research arrives at an interpretation of a phenomenon by developing subjective meanings of social events or action. A primary goal of the interpretative research approach is to provide many layered descriptions and interpretations of human experiences (McNabb 2004: 344). This study focuses on the experiences of those directly involved with the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The study investigates how they make sense of the policy and the implementation process, including what they think of the policy, the meaning it has for them, how they interpret the policy and how the policy conflicts with or reinforces their existing attitudes, opinions and behaviors and the challenges they face when implementing the policy. In short, the study seeks to explore, describe and interpret the behavior of those individuals responsible for the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

To understand social phenomena, it is crucial to combine both explanatory and interpretative research strategies. This is because explanatory research studies alone cannot define human events or actions by the causal explanations. Therefore, for thorough understanding of human actions, it is imperative to use both the explanatory and interpretative research strategies. McNabb (2004: 347) points out that critical public administration research begins with the assumption that a crisis exists in some aspect of society. It was highlighted in the problem statement that a crisis exists and the aim is to understand this problem and provide recommendations that would solve the problem.

After deciding which methodological approach will be suitable for the study, there is a need to provide a coherent and specific explanation of the process of data collection. Every methodological approach is associated with a certain cluster of data collecting techniques. The following section pays specific attention to qualitative data collecting techniques used to gather data from research participants.

1.11. DATA COLLECTING TECHNIQUES

Page and Meyer (2006: 43) define data collecting techniques as mechanisms by which information is collected. Kumar (2005: 3) states that "anything that becomes a means of collecting information for your study is called a research tool or a research instrument". Therefore, with the aim of achieving the objectives of this study, various qualitative data collecting instruments will be utilised, namely; the case study method, interviews and a review of relevant literature and official documents.

1.11.1. Case study

The case study approach focuses on the agency, institution, person or group under study, rather than dealing with variables. The objective of the case is to serve as a defining description of the institution. In this way, the case description serves as an example of similar institutions (McNabb 2004: 350). Case studies provide detailed contextual analysis of the problem under study. For the purpose of this study, the University of Pretoria and the University of Venda have been selected for detailed conceptual analysis of the challenges they face in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

According to Welman and Kruger (2001: 183) even if a case study focuses on a single institution, a group or a person for a specific period of time, it should be highly representative of a particular population. Therefore both case studies of the University of Pretoria and the University of Venda must be representative of other higher leaning institutions which are also tasked with the responsibility to implement the Policy and Procedures for the Measurement of Research Output Public Higher Education Institutions. There are 23 higher education institutions which are governed by this policy. Although the main concentration is on the University of Pretoria and University of Venda case studies, they both have to be highly representative of the other 21 public higher education institutions. The findings and recommendations of this research study are not only applicable or beneficial to the University of Pretoria and the University of Venda alone, but to other higher education institutions as well. The University of Pretoria and the University of Venda case studies will therefore serve as an example for other institutions with similar challenges to follow.

A case study approach was chosen for this study because it is the preferred method (i) when how and why questions are being posed, (ii) when the researcher has little control over events, and (iii) when the focus is on a contemporary phenomenon within a real life context (Yin 2009: 2). For example, in an attempt for this study to provide answers to why some higher education institutions more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, a case study approach is more suitable. To be able to scientifically answer this question, case studies of the University of Pretoria and the University of Venda were conducted in order to examine internal factors that might explain differences in policy compliance and implementation amongst public higher education institutions. It was also relevant to use a case study approach in this particular research, because the case study approach is ideally suited to the needs and resources of the small scale researcher; it allows a focus on just one, two or three examples. This might be the researcher's place of work, university or another institution with which they have a connection (McNabb 2004: 351).

Adelman, Jenkins and Kemmis (1980: 59-60) identify some of the advantages that come with using a case study approach. Firstly, it is pointed out that data for case studies is strong in reality and therefore likely to identify with the issues and concerns raised in the case. Secondly, a properly presented case can provide a database of material, which may be reinterpreted by future researchers. Thirdly, a case study can represent multiplicity of viewpoints and can offer support to alternative interpretations.

However, it cannot be denied that there are also shortcomings of using the case study approach. According to Yin (2009: 14-15), case studies take too long and they result in massive, unreadable documents. There is also a concern that the specific institution or individual being studied may not be representative of the population. Mouton (2006: 104) however advises researchers, with the intention of utilizing the case study approach as an instrument, to be explicit about how they will collect data, and how participants have been selected for interviews. It is imperative that a researcher documents the data collection as accurately as possible so that it can be used as a historical record for the researcher himself, or for other potential possible researchers.

1.11.2. Interviews

According to Kumar (2005: 123), an interview is any person-to-person interaction between two or more individuals with a specific purpose in mind. Interviewing techniques may include face-to-face interviewing, over the phone interviewing and both structured and unstructured interviews. For the purpose this study, the interviews were structured and consisted of open-ended questions. This type of interviewing strategy enabled the researcher to ask all interviewees from both universities the same questions.

Kumar (2005: 124) identifies advantages of interviewing as a data collecting instrument which are: questions can be explained, information can be supplemented, in-depth information is collected, interviewing has a wider application, and this method is more beneficial for complex situations. Unstructured interviewing, which will particularly be used in this study, is advantageous as it allows the interviewer to obtain a first hand in-depth view of a social phenomenon, as well as the freedom to explore other opportunities of research emerging from the interview and the autonomy to openly discuss sensitive topics.

However, the disadvantages of this method cannot be overlooked, and they include the fact that interviewing is time consuming and expensive, particularly when respondents are scattered over a wide geographical area. The vast amount of data gathered makes the interpretation and ordering difficult. Bhattacharyya (2003: 54) also acknowledges this problem by arguing that the disadvantage of unstructured interviewing lies in the quantification of the responses, as it is difficult unless the researcher makes up the standard of all responses with some amount of control.

1.11.3. Review of literature

A review of literature is the first phase of any empirical study. It is essential that every research project begins with a review of existing and relevant literature in order to explore the existing scholarship or available body of knowledge. This will help the researcher gain insight on how other scholars theorised and conceptualised issues related to his or her topic. This then informs the investigation to be conducted. Therefore, a literature review forms an essential component of any study. Cresswell (2006: 25) argues that literature review is important for providing a framework for

establishing the importance of the study as well as a benchmark for comparing the results with other findings.

In this study, a review of relevant literature, particularly books, journal articles, both published and unpublished theses and dissertations and legislative documents were conducted. Communiqués from the Department of Higher Education and Training, government publications and mass media reports published in credible newspapers and magazines were also reviewed. Research policies from both universities as well as the Department of Higher Education and Training policies were consulted. Page and Meyer (2006: 43) argue that there are some dangers in using secondary sources because data in these sources was generally collected for reasons different to the research and this may mean that the data is not really suitable for the research. However, this study acknowledges this problem and therefore this was checked carefully; methods used to collect secondary data in this study were carefully scrutinized in order to know about the deficiencies that might exist in the data.

1.12. SAMPLING

In most cases a population to be studied is too large for individual exploration and only a small portion of the population or sample can be studied. Therefore sampling is the use of a subset of the population to represent the whole population; it is cheaper and quicker to study a sample than a complete census. As a general rule of thumb, there are three steps in the sampling process and they are (i) defining the research population (ii) deciding what type of sampling design is required and (iii) deciding what sample size is required (Page and Meyer 2006: 98).

1.12.1. Target population

According to Brynard and Hanekom (2006: 43), a population refers to objects, subjects' phenomenon, cases and activities, which the researcher would like to study in order to identify data. In simpler terms, a research population is understood as the total set from which the individuals participating in the study are chosen. The population for this study were the employees in the research offices from the University of Pretoria and the University of Venda who are directly involved in the implementation of the Policy and Procedures for the Measurement of Research

Output of Public Higher Education Institutions, 2003, in both cases.

1.12.2. Sampling information

A sample is a small portion of the total set of objects or people that make up the subjects of the study. There are two general ways of choosing a sample in the social sciences, namely non-probability and probability methods. In probability sampling, each person or other sampling unit in the population has the same known probability of being selected for participation in the study. The selection of persons from the population is based on some form of random procedure. According to Seaberg (1988: 244) the commonly used methods of obtaining a probability sample are simple random sampling, systematic sampling, stratified random sampling, panel sampling and cluster sampling.

Non-probability sampling, on the other hand, entails selecting the sample size based upon the researcher having to select in-depth information for the case studies which is not familiar without generalizing. Unlike in probability sampling, here the population does not have the same chance of being selected to participate in the study. There are four commonly used methods for obtaining non-probability samples, and they are judgemental or purposive, quota, snowball and accidental methods. For the purpose of this study, judgmental or purposive sampling was used to select the population to be studied. The sample is chosen based on who, in the judgment of the researcher, will best supply the necessary information. As Remenyi **et al.** (1998: 193) highlighted, judgemental samples comprise individuals considered to have the knowledge and information in order to provide useful ideas, experiences and insights. Therefore in this study, the sample originated from those individuals at the University of Pretoria and the University of Venda residing in the research offices who are directly involved in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The purpose of this is to draw from the experiences of those who are directly involved in the implementation process.

The sampling design used in this study was the use of two case studies. The study attempted to conduct a comparative analysis by exploring the hindrances encountered by both the University of Pretoria and the University of Venda in the implementation of

the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. All twenty-three public higher education institutions in South Africa are tasked with the responsibility to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institution, 2003; however, the researcher used judgemental sampling to select the University of Pretoria and the University of Venda to be sample cases in this study. The University of Venda was chosen on the basis that it is one of the institutions which is struggling to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Educations, 2003, evidence being the institution's relatively low research publication output. The University of Venda has also experienced a high rejection rate which proves non-compliance with the requirements of the policy. The University of Pretoria, on the other hand, has since 1999 registered a significant growth in its research output (Madue 2007: 49). To date, the University of Pretoria still falls within the top five South African universities which are referred to as the 'Top Five Research and Development Performers'. Therefore, in the effort to answer the research questions and fulfill the research objectives, the study used the University of Pretoria case study to represent best implementation practices from which the University of Venda and other universities confronted by the same problem can learn.

Social research takes place in a social context and most of the time it involves an intrusion into people's lives. Therefore, it is important to take into account ethical and scientific considerations in designing and executing research. Hence the following sections deals with issues of ethics considered in this study.

1.13. ETHICAL CONSIDERATIONS

Ethics is typically associated with morality and deals with matters of right and wrong. Being ethical means conforming to the standards of conduct of a given profession or group (Babbie 2008: 67). It is crucial to know what is ethical and unethical in the conduct of scientific enquiry. The acceptance of ethical standards as guiding principles for all social research is based upon decisions made during the Nuremberg Military Tribunal on Nazi war crimes held after World War II. The standards that emerged from those trials resulted in the adoption of what is known as the Nuremberg Code (McNabb 2004: 57). Although originally applied to medical

experiments only, today the principles in the code are used in all research that involves human subjects, including the research employed in Public Administration. This section summarises some of the most important general ethical agreements that prevail in social research, as contained in the code, and explain how they are applied in this study. Included in the code are the following principles:

i. The requirement for informed, voluntary consent.
ii. No unnecessary physical or mental suffering.
iii. No experiments where death or disability is likely.
iv. Ending the research if continuation will cause injury or death.
v. Results should be for the good of society and unattainable by any other method.

The study was conducted in accordance with high ethical standards. Each of the abovementioned participants in this study received a letter of informed consent, which ensured that they fully understood the purpose of the study and all the risks involved. This helped them to decide whether to consent voluntarily or decline participation. No one was interviewed against their will. All information gathered from interviewees was only used for academic purposes and did not infringe on the privacy of the individuals, but related to the topic at hand. Most importantly, the study will not expose participants to any sort of harm, both during the process of collecting data and after the completion of the research. The study also recognises that plagiarism is a serious academic offence, and therefore all the secondary sources used and their authors will be acknowledged accordingly. The study also went through the ethical clearance process by the Ethics Committee of the Faculty.

1.14. DATA ANALYSIS

In practically all social research, words and pictures are generated as data that needs to be systematically and objectively categorised, analysed for meaning and interpreted for its impact upon the issue/s at hand (Page and Meyer 2006: 123). This study recognises that some of the raw data collected may be irrelevant to the study; hence the researcher will ensure thorough analysis of all data collected so as to make reductions. Kumar (2011: 26) mentions that the way in which the researcher analyses the information collected largely depends upon two things, namely the type of

information, that is descriptive, quantitative or qualitative, and the way the researcher wants to communicate the findings to the readers.

The study will use the 5-C Protocol Model of policy implementation as a critical apparatus for analysing data acquired through case studies, field interviews and textual analysis of relevant books and documents. This provides the researcher with critical aspects of the policy that are important for the implementation process.

This study employed the following nine-step process for analysing and interpreting qualitative data. Chapter five of this study primarily deals with data analysis and it is in this chapter that the following steps were implemented to insure proper data analysis and interpretation:

Figure 1.1: **A Nine-Step Analysis Process**

Collection of qualitative data through: Interviews; document analysis	**Step 1** Preliminary analysis to identify key patterns and themes	**Step 4** Axial coding to clarify themes and constructs	**Step 5** Interpretative analysis to establish basic constructs from patterns and themes	**Step 8** 2d Reiterative analysis to identify and corroborate links with the literature	**Step 9** Development of aggregative theory from comprehensive analysis and interpretation of the collected data using the 5-C Protocol Model
	Step 2 Open coding to cluster and structure the data	**Step 3** Comprehensive analysis for similarities and contracts	**Step 6** Selective coding for refining fundamental themes	**Step 7** Reiterative analysis to identify and corroborate relationships	

Retrieve analysis and revision if appropriate

Source: Adapted from McNabb (2004: 434)

1.15. CLARIFICATION OF KEY CONCEPTS AND TERMS

This section unpacks the key concepts and terms used throughout this study and identifies the relationship between them. It is important to bring clarity to the key concepts and terms in the study in order to not only avoid ambiguities and obscurities, but also to conceptualise the research within the discipline of Public Administration. Therefore, the following critical concepts and terms are clarified and their contribution to the literature assembled is also highlighted. Furthermore, to avoid ambiguity, these concepts and terms are defined and explained with regard to their usage in the context of this study.

1.15.1. Public Administration and public administration

Public Administration and public administration, like any human endeavours, are difficult to define. The difficulty also lies in the attempt to distinguish these two different concepts. According to Wessels and Pauw (1999:10), Public Administration in capital letters is used to denote the subject, and the lower case of public administration to denote that which is investigated by the subject. Therefore, the terminological distinction between Public Administration and public administration enables one to understand the difference between the two crafts or trades, sometimes called theory and practice. In support of this statement, Botes **et al.** (1992: 257) define Public Administration as a university subject or academic discipline in which the operation of public administration, that is the sphere of activity is studied. Botes **et al.** (1992: 257) further argue that, Public Administration as a scientific discipline is primarily concerned with the implementation of government policy. Public administration as an activity refers to the duties performed by officials within the total spectrum of government institutions to enable different government institutions to achieve their objectives at three spheres of government (Du Toit and Van Der Waldt 1999: 49). One of these duties performed by public officials is public policy implementation.

This study is conducted within the field of Public Administration as a scientific discipline, and will address the existing gap in the body of knowledge on Public Policy, particularly by looking at the implementation of the research output policy with specific reference to the University of Pretoria and the University of Venda. In conducting this study, public administration as an activity carried out by public officials

will also be applied. This is because the focus of this study is on how public higher education institutions implement a specific government policy in order to achieve the set goals and objectives, and policy implementation is one of the functions associated with public administration.

1.15.2. The South African Public Service

The concept of public service is very broad and it has different meanings attached to it. According to the Department of Public Service and Administration (DPSA), the South African government has a range of institutions to render services to citizens. These institutions range from national, provincial and local departments, to constitutional institutions (statutory bodies) and provincial public entities and parastatals. All these institutions and entities are generally referred to as the public service. The main aim of these institutions is to provide services to citizens, either directly through the public sector or by financing private provision services (DPSA 2008).

It is important to mention that the concept of public service goes hand-in-hand with the concept of service delivery, because government institutions exist to effectively and efficiently deliver services to the public, regardless of their income. The concept of public administration is also directly linked to the concept of public service because when officials in government institutions carry out their activities or perform their duties, it is called public administration. Section 197 of the Constitution of the Republic of South Africa 1996 also describes the South African public service by stating that, within public administration, there is a public service for the republic which must function and be structured in terms of national legislation which must loyally execute the lawful policies of the government of the day (Constitution of the Republic of South Africa 1996).

From the above provided definitions of the public service, it can be deduced that as parastatals which are governed and funded by government, public higher education institutions form part of the South African public service. Public higher education institutions report to the Department of Higher Education and Training and are regulated by Acts of Parliament such as the Higher Education Act 1997 (Act 101 of 1997) and the Education Laws Amendment Act 2007 (Act 31 of 2007). Therefore, it is

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clear that the University of Pretoria and the University of Venda operate within the domain of the public service.

1.15.3. Effectiveness

According to Hanekom and Thornhill (1983: 119) effectiveness is the achievement of a predetermined result with minimum expenditure. The effectiveness of an organisation is determined by utilising the same benchmark of evaluating the set objectives accomplished by means of the least amount of human and financial resources in the achievement of the set objectives. Dalton and Dalton (1988: 25) define effectiveness as an extension or consequence that results from efficiency and determines the relationship of an organisation's output to what it intends to accomplish.

In policy terms, effectiveness implies the policy's overall success in producing desired outcomes and reaching its overall objectives. The main problem that encouraged this study was the recognition that the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003 was ineffective. That is, the policy is unsuccessful in producing its desired outcomes and its overall objectives.

1.15.4. Efficiency

Hanekom and Thornhill, (1983:167) argue that efficiency is concerned only with outputs, by measuring the extent to which the goals and objectives of a government unit are realised, relative to an accepted standard of performance. According to Rothwell and Kazanas (1992: 5), efficiency has to do with the question: 'are we doing things right?' In this question, the phrase 'doing things right' means without unnecessary expenditure of time, money or effort. Therefore, efficiency denotes doing things correctly by investigating and avoiding mistakes in order to ensure maximum output with minimum resources.

In policy terms, the concept efficiency implies the state of achieving what the policy is intended to achieve. It is the extent to which a policy gets a lot of output for a little input. Efficiency is generally defined in terms of output and input, whereas effectiveness is generally defined in terms of the quantity of output (Nagel 1984: 35).

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1.15.5. Policy implementation

Different authors have provided different definitions of policy implementation. For the purpose of this study, O'Toole's (2000: 266) definition, which states that policy implementation is "what develops between the establishment of an apparent tension on the part of government to do something, or to stop doing something, and the ultimate impact in the world of action policy implementation, refers to any action intended to achieve policy objectives" will be relevant. This study evaluates the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, with specific reference to the University of Pretoria and the University of Venda. Thus the processes of converting set objectives into measurable outcomes will be evaluated. The implementation of the research output policy will also be evaluated based on the 5-C Protocol, which encompasses the content of the policy; the context of the policy; the commitment of the policy implementers; the research capacity of institutions; the clients the policy is expected to serve and the coalitions of influence (Brynard and De Coning 2006: 197).

1.15.6. Successful policy implementation

In policy implementation, success refers to an initiative in which the strategic action adopted by the administrative arm of government was considered to have delivered the intended policy decision and to have achieved the intended outcomes. Success is achieved when the policy decision under review has been delivered in a manner that addressed its terms of reference as well as achieved the expected functionality to the identified stakeholders (Giacchino and Kakabadse 2003:140). Similarly, Cloete (2007: 4249) explains success as the goal effectiveness or adequacy of a programme.

In policy terms, when a policy achieves its goals and objectives and when the desired outcomes are met, it is called a success. In this study, policy success will refer to the extent to which the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, achieves its goals and objectives.

1.15.7. Public higher education institutions

Mokhoba (2005: 13) defines education as the development of knowledge, skills, ability or character by teaching, training, study or exposure. Higher education refers to

a level of education following the completion of grade 12 or its equivalent; and it includes undergraduate and postgraduate education. It is post-school education of a certain intellectual standard that contains elements of theoretical, abstract and conceptual knowledge and is taught in an environment which includes advanced research activity. Higher education is delivered by higher education institutions such as universities, universities of technology and colleges that award academic degrees, diplomas or professional certificates and conduct research. Therefore, public higher education institutions can be defined as all those institutions of higher learning that are funded by government.

The South African higher education system encompasses 23 public higher education institutions, which include 11 universities, 6 comprehensive universities and 6 universities of technology. In this study, public higher education institutions refer to all 23 institutions of higher learning which are mandated to implement the Policy and procedures for Measurement of Research Output of Public Higher Education Institutions, 2003. In particular the study focuses on the University of Pretoria and the University of Venda.

1.15.8. Research output

In the context of this study, research output refers to output that is recognised in the Policy and Procedures for Measurement of Research Output of Public Higher Education Institutions, 2003. This policy defines research output as textual output where research is understood as original, systematic investigation, undertaken in order to gain new knowledge. This can be in the form of the university's original research papers, research letters, review articles which appear in approved journals, and also books for the specialist and patents. However, for the purpose of the Department of Higher Education and Training subsidy, recognised research output comprises only journals, books and proceedings that meet the criteria listed in the Policy and Procedures for Measurement of Research Output of Public Higher Education Institutions, 2003.

1.16. LIMITATIONS OF THE STUDY

Although the study has reached its aims, there were unavoidable limitations that affected the investigation. The limitations include scope of the study, information and time constraints.

1.16.1. Scope of the study

The Policy and Procedures for Measurement of Research Output of Public Higher Education Institutions, 2003, is implemented by and affects all universities in the country. This study has only concentrated of the University of Pretoria and the University of Venda. This in itself has limited the scope of the study in that different universities use different systems, methodologies and interpretations in implementing the policy. Universities also face different challenges when implementing the policy. Therefore, it would have been valuable to include other universities in the investigation.

1.16.2. Information

This study was partly constrained by a low availability of information. The research output of universities is conducted by the academic and research staff, hence the quality and quantity of research produced by a university will largely depend on the quality and quantity of academic and research staff. Therefore chapter four of this study assessed the academic and research staff of both the University of Pretoria and the University of Venda. However, there was limited access to secondary data pertaining to the numbers and qualifications of academic and research staff of both universities as the information was last updated in the year 2010.

1.16.3. Time constraints

Time is a limited resource, and as such, its optimal usage must be managed effectively (Mouton 2001:63). Time constraints affected this study in three ways; firstly, reaching some employees in the research offices proved difficult either because of demanding schedules or because they were away on leave. Secondly, at the time in which the permission for conducting research at the University of Venda was to be granted, the Director of Research who had to authorise the permission letter to conduct research resigned. Therefore this delayed the commencement of the

study, since the new Director was yet to be appointed. Finally, devoid of time, the researcher is of the view that a thorough comparative investigation on the implementation of the research output policy in other universities in South Africa would have been advantageous.

1.17. DESCRIPTION OF RESEARCH PROCESS AND DELINEATION OF STUDY

In view of the significance of higher education research for the country's development and the importance of effectively implementing the research output policy, the absence of effective implementation strategy and monitoring and evaluation mechanisms could be a serious hindrance to the country's growth and development. The inability of higher education institutions to produce sufficient quality research output is the matter that should be addressed. The study is divided into six chapters, which will describe the research to be conducted in a systematic and comprehensive manner.

Chapter one introduces the research topic and provides a justification or rationale behind the particular focus of this study. In this chapter, the research design and methodology followed for gathering and analysing data are described and their importance explained. The aim of this chapter is to provide a foundation for the research topic and the overall investigation.

Chapter two focuses on the conceptualisation of the implementation of public policy within the discipline of Public Administration. This is the part of the study which extensively outlines the relationship between Public Administration and public policy implementation, particularly focusing on the implementation of the Policy and Procedures for the Measurement of Research Output Policy of Public Higher Education Institutions, 2003.

Chapter three of the study pays specific attention to the research function of higher education and its importance in a country's development. The chapter provides a historical background on the South African higher education system and research, which includes the evolution of legislation supporting higher education research and trends in research production of higher education institutions. The policy shift dates back from the 1980s to 2003 when the Policy and Procedures for the Measurement of

Research Output of Public Higher Education Institutions, 2003, was first introduced.

Chapter four explores and provides a comparative analysis on how the University of Pretoria and the University of Venda implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The central purpose of this chapter is to offer in detail understanding of the differences between the University of Pretoria and the University of Venda regarding the manner in which they implement the research output policy. This includes the capturing and management of research output at an institutional level prior to submission to the Department of Higher Education and Training. The chapter analyses the institutional profiles of both universities which will include the universities' historical developments, institutional capacities, together with their visions and missions regarding research production.

In chapter five, the data collected during an empirical fieldwork: interviews, the case study and literature and document review was systematically analysed, interpreted and presented in themes. This chapter examines the implementation challenges faced by both the University of Pretoria and the University of Venda regarding the effort to implement the research output policy. This is done by evaluating the content of the policy, the context in which the policy is implemented; the commitment of the policy implementers; the capacity to implement, the clients the policy is expected to serve and the coalitions of influence and the communication between the stakeholders involved.

Chapter six is the concluding chapter in this study; it recommends possible solutions to overcome challenges discussed in chapter five of the study. This chapter also makes deductions and therefore draws general conclusions

1.18. CONCLUSION

This chapter comprehensively introduced and offered a background to the study, by outlining the research topic, the motivation for conducting research on this particular topic and the problem statement which highlighted the current gap in knowledge and the extent to which the study will address the gap. The main questions and objectives of the research and the appropriate research methods to be utilised to gather data

were also described. This chapter also explained the rationale for employing a quantitative research approach. The population and sampling details for the study provided information about the subjects and the selection of respondents. Furthermore, the chapter clarified the main concepts that are used throughout the study in order to avoid ambiguities and misapprehensions. Delineation of all the chapters to be covered by the study was also provided. This framework presented a logical sequence that the study followed based on six chapters.

CHAPTER TWO

CONCEPTUALISATION OF PUBLIC POLICY IMPLEMENTATION WITHIN THE DISCIPLINE OF PUBLIC ADMINISTRATION

2.1. INTRODUCTION

Chapter one focused on the background to the research. The purpose of this background was to build a foundation for the overall investigation by providing a justification for evaluating the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. This chapter pays specific attention to the relationship between Public Administration and public policy implementation. Given that the topic of this study falls within the realm of Public Administration, it is crucial that the concept of public policy implementation, which is the main theme of this study, is located within the general theory of the bigger field under which it falls. This approach enables the understanding of the study topic and its related themes, from the general perspectives to the specifics, and helps to show how public policy fits into the broader spectrum of public administration.

This chapter will provide a theoretical framework of public administration. This is where the study unpacks the relationship and distinction between Public Administration as a discipline and public administration as an activity. The developments and challenges that have occurred within the field of Public Administration led to scholars of public administration debating the need to rethink the traditional approach to the field of study. The historical perspectives on the development of public administration are also discussed in the subsequent sections of this chapter. Policy implementation is one of the processes that constitute public administration. Therefore, for the purpose of this study, an in-depth analysis of public policy implementation as a core function of public administration will be undertaken. Furthermore, the public policy implementation in practice, particularly in South Africa as provided primarily by the literature on the subject, will be explored. The chapter finally provides a conceptualisation of policy studies in terms of the 5-C Protocol necessary for policy implementation.

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2.2. THE THEORETICAL FRAMEWORK OF PUBLIC ADMINISTRATION

In simpler terms, public administration is understood to be the practical aspect of the discipline involving government activities. Therefore, in order to understand the government processes, there is a need to learn the theoretical framework of the discipline, which entails the embodiment of Public Administration. The approach will be to distinguish between public administration (the function) and Public Administration (the scientific discipline). Before a distinction can be made between the two, it is essential to provide a brief historical perspective on public administration. Explaining the scientific foundations of public administration will help in attaining a degree of validity in this study.

The discipline of Public Administration has evolved through a number of critical stages, with momentous transformations. Basu (1994: 13-20) presents six main stages, which include Woodrow's politics-administration dichotomy, the principles approach, human relations rise, the behavioural component, computer technology developments and public policy analysis. The public choice and public management schools of the 1970s are also notable stages in the development of modern Public Administration. However, it is important to note that this study does not intend to investigate in depth, nor make a critique of the various stages which the development of the discipline of Public Administration has undergone. The subsequent discussion only provides a brief description of some critical elements of transformation that have embedded the growth of Public Administration over the years, but with some relevance to the notion of public policy implementation.

2.2.1. Historical perspectives on the development of public administration

 (P)public (A)administration has two surfaces, the first denoting an academic discipline, and the second referring to the activity. According to Hanekom (1988: 67) public administration as an activity can be traced as far back as the beginning of humankind. This administration is identified as an activity that takes place between two or more people, in an attempt to achieve an objective. Public Administration as a discipline is known to have originated in the United States, after the publication of Woodrow Wilson's essay entitled "The Study of Administration" in the Political Science Quarterly in 1887, where he emphasised the need for studying Public

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Administration as a discipline apart from politics. According to Wilson (1887: 12) politics and public administration belong to different spheres because administrative questions are not political questions and public administration should be separated from values. These views were amplified by the postulates of Frank J. Goodnow who argued that politics has to do with the expression of the state while administration has to do with the execution of these policies, and elaborated upon by the work of Leonard D. White in 1926 (White 1955: 38). The proponents of positivism, including John Stuart Mill, Herbert Spender and Max Webber, also agreed that separating facts from values was not only possible, but also desirable. This phase typifies the politics-administration dichotomy, which argued that administration was concerned with the implementation of political policy decisions made by the government, and that bureaucracies were instrumental in the efficient implementation of public policies and programmes (Dobuzinskis 1997: 300).

The second phase of the development of Public Administration took place from 1927-1937, and was concerned with the identification of subject matter for study purposes. The central belief of this period was that there are certain 'principles' of administration which are the task of the scholars to discover and apply in order to increase the efficiency and economy of Public Administration. This was called 'Scientific Management Approach', which focused on the *locus* of Public Administration (Gildenhuys 1988: 71). The period of 1938-1947 saw the advocacy of 'Human Relationship Behavioural Approach' to the study of Public Administration. The idea of administrative dichotomy was rejected. The argument was that Administration cannot be separated from politics because of its political nature and role. Administration is not only concerned with policy decisions but it deals also with the policy formulation process (Hanekom and Thornhill 1983: 33).

The postmodern government of the 20th century believes that the management of complex public administration organisations by technical experts has failed, and that the hierarchical structures and top-down approaches to policy implementation no longer address the problems encountered by policy makers. Public administration is becoming more client-centred, emphasising public involvement in policy formulation and implementation. It is argued that managerial hierarchies have to be reshaped and focus placed on innovative leadership and co-operation amongst employees in

order to ensure effective public policy implementation and therefore efficient public service delivery (Dobuzinskis 1997: 300-302).

The aim of this dissertation is not to get deeply involved, nor to make statements, regarding the politics-administration dichotomy. The previous discussion only provided a brief overview of the development of Public Administration as an academic discipline. Public Administration has gone through major developments both in theory and in practice over the years, and every stage of its development enriched the discipline by promoting a greater understanding of government and its relationship with the society it governs, as well as encouraging effective public policy implementation (Henry 1986: 26).

2.2.2. Defining public administration

According to Cloete (1981: 1) administration is found when two or more people work together to achieve an objective. Administration is identified wherever people attempt to achieve a common goal and, therefore, is found in all spheres of human activity where joint action is required to achieve a goal. However, administration does not only emphasise the execution of an activity, but it also has to do with how an activity was implemented (Simon **et al.** 1968: 4). Therefore, efficiency and effectiveness of a goal is crucial in administration. Gladden (1953: 21) identified four generally accepted principles of administration. Firstly, administration efficiency is increased by task specialisation amongst group members. Secondly, administrative efficiency is increased by hierarchical arrangements of group members. Thirdly, administration efficiency is increased by limiting the span of control to a small number, and lastly, administrative efficiency is achieved by grouping employees together for the aim of control according to purpose, process and place.

According to White (1995: 1) public administration consists of all those operations having for their purpose, the fulfilment or enforcement of public policy. Stillman (1980: 3) states that public administration relates to the activities of the executive branch of government, it deals with the formulation and implementation of public policies and involves issues of human behaviour and corporative human effort. Hughes (1998) maintains that public administration is how the administrative parts of government are organised, information is processed and outputs produced into

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policies, laws or goods and services. It is essentially an activity inspired by the need to apply the policies and deliver the services and outputs of those policies as determined by the executive and approved by the legislature. Bailey (1986) defines public administration as human attempt through government to harness natural and human resources for the purpose of approximating politically legitimated goals by constitutionally mandated means. Similarly, Totemeyer (1988: 1) argues that public administration is concerned mostly with the accomplishment of objectives which are predominantly politically determined. In simpler terms, it could be argued that public administration is an activity serving the public by public servants who are tasked with the implementation of public policies.

It is clear that different authors have provided different meanings to public administration; however, the seeming consensus from the above provided definitions is that public administration involves the implementation of government policies. Thus, it can be argued that in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, public administration is involved in the substance of policy as well as in the implementation of policy decisions.

South African institutions are in place to provide public goods and services for the maintenance of the state through a variety of activities known as functions and processes. These activities, processes or functions are collectively known as public administration. Cloete (1986: 2) describes these generic functions of public administration as including policy-making, public finance, organising, financing, staffing, determining work procedures and the exercise of control. The crucial fundamentals of an action oriented government to ensure public administration that is effective, efficient and economically viable rely on these six generic administrative functions.

In the generic administrative functions, policy on the task to be executed is established from the beginning, while the necessary organisational arrangements for its implementation come next, through the establishment of institutions and directing the efforts of employees in particular directions. The description of the generic administrative functions indicates that policy making provides the point of departure for public activities (Hanekom and Thornhill 1986: 7, 10&18). However, this study

does not explain in detail all the generic administrative functions, but a particular emphasis is placed on the policy-making function, especially taking into consideration that the main theme of this study is public policy implementation. The following section therefore pays specific attention to policy implementation as a core function of public administration.

2.3. POLICY IMPLEMENTATION AS A CORE FUNCTION OF PUBLIC ADMINISTRATION

Included in the processes that constitute public administration are policy processes which can also be grouped into policy-making processes, policy implementation processes and policy analysis (Cloete 2006: 90). Burch and Wood (1983: 168) refer to policy as processes and products of government and argue against the use of the term 'implementation' because its separation from policy formulation is unreal and possibly misleading. This separation suggests that once implementation gets underway, there is no more policy-making, whereas both processes are inseparable.

The main function of public administration is to implement government laws, with this implementation shaping government policies that result in or from these laws. Public policy administrators serve as advisors to politicians who are formally mandated by the government of the day to implement a certain policy in a specific sector (Peters and Pierre 2003: 1-2). Notwithstanding their role in policy implementation, public administrators work closely with politicians in the policy-making process which according to Bryner (2003: 301) include: identifying problems in the society, formulating governmental responses or policies, organising administrative mechanisms to implement policies and evaluating the extent to which policy objectives are achieved. As the policy is being formulated, until implementation, public administrators are expected to keep checks on the whole process through a monitoring and evaluation system. Although the role of evaluating the success of a policy is of interest mainly to politicians, public administrators are expected to make a politically neutral professional judgement of the impact of the policy they are implementing (Bryner 2003: 303). It can therefore be argued that the success of the implementation of government policies is dependent on the capacity of public administration.

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Despite the fact that it is generally accepted that policy making is a function of politicians in any government, it cannot be denied that in this process of policy-making there are roles and inputs for both politicians and public administrators (Real 1997). Hood's model of perfect administration is described as a condition in which external elements of resources availability and political acceptability combine with administration to produce perfect policy implementation (Younis and Davidson 1990: 6). According to Colebatch (1998: 74) the policy process has two stages; first, decisions are taken on the goals to be achieved (policy) and second, these decisions are executed through administration. This means that policy-makers have the function of choosing goals, while public administrators are tasked with the responsibility of executing the determined objectives.

In support of the above views, May (2003: 222) points out that policies enacted by governments do not only contain intentions or goals, but also the following factors: instruments or means of accomplishing the intentions of the policy, a designation of governmental entity or entities mandated to implement those intentions and the allocation of resources for the required task. All these factors require public administrators possessing relevant policy management skills in order to ensure effective and successful implementation. Institutions mandated to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, must have the capacity and relevant resources to enable successful implementation.

2.4.   PUBLIC POLICY DEFINED

In general usage, the term public policy denotes whatever government chooses to do or not to do. According to Nagel (1991: 3) public policy refers to the governmental decisions designed to deal with various social problems, such as those related to education, foreign policy, crime, unemployment and numerous other social problems. Correspondingly, Anderson (2003: 4) defines public policy as a relatively stable purposive cause of action followed by government in dealing with some problem or matter of concern. Cloete (2006: 22) argues that policy in public administration is a statement to the effect that the legislature or other component of authority has agreed and proclaimed that specific action should be taken to provide

goods and services to satisfy specific aspirations or needs. It seeks to explain the operation of the political system as a whole, and how decisions produce changes outside the political system as policy outcomes. Public policy as government action is generally the principled guide to action taken by the administrative or executive branches of the state with regard to a class of issues in a manner consistent with the law and institutional customs (Weimer and Vining 2005: 73). Wessels (1995: 17) takes the definition of public policy further by including the importance of the scope of the policy. A proper policy does not only include what the government is going to do, but also factors such as how something is going to be done, who will take action and also the drawing up of the budget.

There are three central elements which can be detected when using the term 'policy', namely authority, expertise and order. Firstly, policy implies that some authorised decision makers have endorsed a course of action. Secondly, policy implies the existence of the requisite expertise or knowledge of the areas under consideration as well as knowledge of the means to adequately attend to these issues. Lastly, the concern of policy with order implies system and consistency in a sense that, according to Colebatch (1998: 7-8) policy sets limits on the behaviour of officials and at the same time it frees them from the need to make choices.

Policies are developed in response to the existence of a perceived problem or an opportunity; they never exist in a vacuum. The stages of policy formulation begin with the identification of problems and the need to resolve those problems through policy processes (Dunn 2004: 16). Hence Friedrich (1963: 70) defines public policy as a proposed cause of action of a person, group or government within a given environment, providing obstacles and opportunities which the policy was proposed to utilise opportunities and overcome obstacles. A properly formulated policy should be able to adapt to its environment; it should be able to respond and adapt to economic, social, political and technological influences.

Although varying understanding of public policy by different authors makes it difficult to reach a generally acceptable definition, Anderson (2003: 4) is of the view that public policies have the following common characteristics:

i.   public policies consist of courses or patterns of action taken over time by government officials;

ii. public policies emerge in response to policy demand. In response to policy demands, public officials make decisions that give content and direction to public policy; and

iii. policy involves what governments actually do, not just what they intend to do or what officials say they are going to do.

For the purpose of this study, it can be deducted that public policy is a declaration of a course that is taken by government to achieve a societal or institutional objective. It is formulated to respond to a certain problem within a society or an institution and it explains how, when and by whom that particular problem will be dealt with. Policy provides a comprehensive framework of action and is thus goal oriented. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, clearly state the purpose and the goals to be achieved. It also states which institutions are mandated to implement the policy and how the implementation should take place.

2.5. THE POLICY MAKING PROCESS

Policy making is a process by which governments translate their political vision into programmes and actions to deliver outcomes. The process of policy-making is a complex one in a sense that public policy operates in an extremely wide environment where governments have obligations to, and are answerable to, every part of civic society. Policy-making often requires a department or the administration as a whole to strike a balance amongst a wide range of competing interests without losing sight of the desired policy outcome. Buse (2006: 12) argues that the public policy making process encompasses steps a government takes to address public concern or an institutional problem.

Policy making is a cyclical process, which according to Howlett and Ramesh (1995: 11) includes in a chronological order: agenda setting (which refers to the process by which problems come to the attention of governments), policy formulation, policy adoption or decision making, policy implementation and policy evaluation. De Coning and Fick (1996: 22) however argue that although the policy process is cyclical in nature, care should be taken to view such a cycle in a dynamic way, in which certain phases or stages need not necessarily take place.

Figure 2.1: **The policy making process**
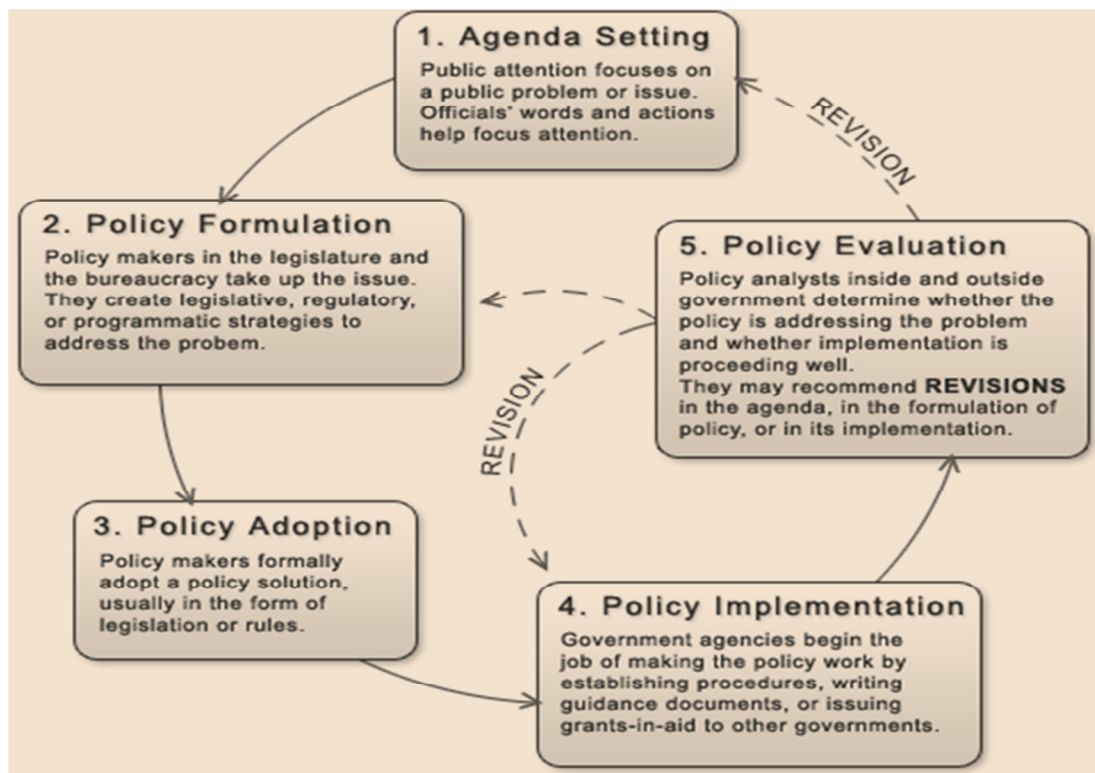
Source: Adapted from Khalid (2001: 88)

The policy making process begins in the agenda setting stage with the recognition and definition of a significant problem and an organised call to government action. This step involves not only the recognition of the problem, but also in-depth study of the problem and its history, that is, determining who is affected, how aware the public is of the issue and whether it is a short or long-term concern. Another key aspect centres on whether an intended intervention or public policy can effect change. An answer to this question may give policy-makers a gauge for which policy interventions are needed to address the identified problem (Buse 2006: 13). The policy problem that led to the development of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, was the recognition that the existing funding framework which was introduced in 1982-1983 was not suitable. Apart from its origin in the apartheid past, it could not be used as a steering mechanism to address national goals and objectives. Therefore a new policy alternative was needed.

In response to the problem, the legislative and bureaucratic machinery of government may formulate strategy to address the problem. This policy-making stage where the government develops proposed courses of action to deal with the problem at hand is called policy formulation. According to Van Niekerk, Van der Walt and Jonker (2001: 95), various alternatives to address the specific problem should be assessed in terms of their benefits, cost implications, and feasibility. Bouser, McGregor and Oster (1991: 48) argue that there are several alternative ways in which one can go about analysing policy options and making rational decisions. Therefore, it can be argued that policy formulation refers to a process involving activities undertaken to arrive at policy options that are feasible.

After a policy is formulated, it is adopted with the support of a legislative majority, consensus among agency directors, or a court decision (Dunn 2004: 45). In the adoption stage, proposals are considered to select one to be approved as policy. After a certain policy is adopted by government and a Bill or an Act has been enacted by a legislature, the subsequent stage is to translate the objectives of the policy into measurable outputs through an effective implementation strategy. An adopted policy according to Dunn (2004: 45) is carried out by administrative units that mobilise financial and human resources to comply with the policy. At this stage, it must be decided what action should be taken by every sphere of government and even stakeholders involved to give effect to the adopted policy (Theodoulou and Cahn 1995: 86). To ensure success, the implementation stage usually requires agency communication and co-operation, sufficient resources (both human and capital), overall compliance to the policy approach and other important implementation factors that will be discussed at a later stage of this dissertation. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is implemented by South African public higher education institutions. This study evaluates the implementation of this policy, however paying specific attention to the University of Pretoria and the University of Venda. The aim is to investigate the challenges faced by these institutions when implanting the policy.

The final stage of the policy-making process is policy evaluation. According to Buse (2006: 14) the policy evaluation stage usually involves studying the effectiveness of the policy in addressing the original problem, and often leads to further public policy

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manipulation. Thus, evaluation of policy effectiveness often reveals shortcomings in formulation or implementation or new problems to add to the policy agenda.

It is clear that a policy-making process is not concluded once a policy decision has been adopted. As highlighted by Cloete and Wissink (2000: 286-287) a policy process is not complete because a specific policy is adopted by government. This is because a demand for new policies may result from existing policy. For instance, while policies are implemented, tension, strains and conflicts are experienced by those who are implementing the policy and by those affected by the policy. The tensions generated by the implementation of polices may cause transection patterns and, in some instances, the establishment of institutions required for the realisation of policy goals (Smith 1973: 202). Therefore no policy is ever completed since it is a continuous and changing process. Its various stages, though distinguishable, are however mutually dependent on the resources and information needed to maintain the policy process.

The policy implementation stage is the most important stage in the policy-making process, which also appears to be the most difficult in terms of its practical execution. The difficulty in translating policy objectives into measurable outputs has resulted in extensive research guided by policy scholars on the strengths and weaknesses of public policies, reasons for policy failure, as well as offering valuable improvements. This study is also another attempt to investigate and solve policy implementation challenges with specific reference to the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It was highlighted in the problem statement of the study that the implementation process of the policy in question reveals some significant shortcomings; hence the study is aimed at providing solutions to these shortcomings. However, it is important to note that challenges are not only encountered in the implementation stage, challenges manifest throughout the policy-making processes; from the first stage of policy formulation to the final stage of policy evaluation.

2.6.   PUBLIC POLICY IMPLEMENTATION

The implementation of the policy objectives represents a critical aspect of the policy process. The most carefully and properly designed policy that is widely accepted by

those it affects can fail because of improper implementation. Policy implementation has different definitions attached to it. Providing a generally accepted definition of an optimal policy implementation procedure is impossible because of the wide range of socio-economic circumstances to which policies are applied, and also because of the diversity of policies themselves.

According to Goggin, Bowman, Lester, and O'Toole (1990: 34) implementation refers to a process, a series of decisions and actions directed toward putting an already decided mandate into effect. It is also defined as those actions by people that are directed at the achievement of objectives set forth in the policy decision (Van Meter and Van Horn 1974). Thus, implementation literally means carrying out, accomplishing, fulfilling, producing or completing a given task. Policy implementation is therefore what develops between an intention of the government to do something and its ultimate impact following action (O'Toole 2000: 273).

Sabatier and Mazmanian (1983: 4) are of the view that policy implementation involves those events and activities that occur after the issuing of authoritative public policy directives, which include both the effort to administer and the substantive impacts on people and events. Kenda (2007: 17) argues that policy implementation is not an event but a process of turning policy into practice and it involves translating the goals and objectives of a policy into an operating, on-going program. The working definition employed by Hargrove (1983: 281) includes two components: (i) the actions required by law are carried out; and (ii) those actions encompass both formal compliance with the law and organisational routines consistent with compliance. Policy implementation covers the activities of private and public organisations, individuals or groups, which are geared towards the realisation of objectives outlined in prior policy decisions (Brynard, in Cloete and Wissink 2000: 166).

Dye (1981: 56) argues that policy implementation is concerned with steering a course of action and seeing that it is followed over time. Meaning, implementation involves translating the goals and objectives of a policy into an operating, on-going programme. It is the stage of policy-making between the establishment of a policy and the consequences of the policy for the people whom it affects. Brynard and De Coning (2006: 187) correspondingly refer to implementation as the conversion of

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mainly physical and financial resources into service delivery outputs in the form of facilities and services, or into other concrete outputs aimed at achieving policy output. Policy implementation therefore refers to the activities that are carried out in the light of established policies. It can be seen as a struggle to achieve satisfaction between those who execute the policy and those who receive the services.

Policy implementation may seem like a simple, straightforward process of just carrying out decisions made by government, however this is not the case. According to Lane (1993: 92) policy implementation is a complicated process involving three considerations which according to Brynard (2007:35) can make it difficult to judge the effectiveness of policy implementation. These considerations include clarification of the objectives involved (the goal function), statement of the relationship between the output and outcomes in causal effectiveness (the causal function) and clarification of the relation between objectives and outcomes in order to affirm the extent of goal achievement (the accomplishment function).

Different policies are implemented by different administrative agencies and institutions. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is specifically implemented by South African public higher education institutions. The implementation programme should therefore take into consideration the institutional and administrative capacity of higher education institutions to cope with the practical implementation of this research output policy and to manage implementation strategies, especially in the previously disadvantaged institutions such as the University of Venda. The financial requirements of the implementation process such as research support; human resource needs, not only imply the availability of trained staff, but also their commitment to carry out their mandate in a professional manner. Adequate infrastructural facilities should also be considered, this would include, amongst others, office space and necessary equipment to produce research (Roux 2005: 73).

The process of policy-making and its implementation is a complex one. Making a policy does not guarantee its implementation, whereas initiating a programme is not a guarantee that desired results will be achieved, because at times a policy can produce unintended consequences. The results may be below expectation, for instance, a programme aimed at alleviating difficulties may create other problems. It

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is difficult to implement a public policy in a straight forward manner as the implementation of policy is always influenced by political, social, economic, structural and institutional constraints. The following section therefore focuses on public policy implementation in practice, particularly in South Africa.

2.6.1. Policy implementation in practice

The difficulty of turning policy into practice has been identified in research since the 1970s. When implementation was first studied there was an assumption that implementation would happen automatically once the appropriate policies were set out. However when this did not happen, research sought to explain implementation 'failure', and concluded that implementation was a political process similar to policy formulation (McLaughlin 1998). More recent research has sought to understand how implementation works in general and how its prospects might be improved.

In democratic South Africa, the policy-making process was mainly guided by the democratic government's objective to address the injustices of apartheid. Higher education policies were particularly guided by the need to create a non-racial, single, co-ordinated higher education system which would incorporate the broader environment. It cannot be denied that an impressive, radical shift in policy content and direction has occurred from apartheid to post-apartheid, however, numerous problems continued within the higher education sector and in policy processes, specifically in their implementation within and between institutions. The policy weaknesses exist in various areas, such as funding, redress and capacity building, both for historically disadvantaged institutions and for students, especially those from disadvantaged backgrounds. One reason for such problems in the higher education system is the fact that the market mechanism remains strong in the system in general and in universities in particular. The system thus continues to be fragmentary, although not altogether fragmented, despite government's efforts at co-ordinating a unified system. Policy implementation at various institutions and in the system in general, remains half-hearted or weak. The socio-economic and politico-geographical reality of apartheid continues in the period under study, with higher education institutions inserted in this landscape of an urban and rural divide between advantaged and disadvantaged campuses (Odhav 2009: 33).

Whereas implementation is the process of turning policy into practice, it is however common to observe that public policy outcomes do not reflect the original objectives policy-makers had in mind. Hence it is common to hear social scientists and policy analysts speak of a gap between policy objectives and outcomes. Far from accepting this as inevitable, many scholars of public policy have explored ways of bridging or closing this policy gap. Birkland (2001: 188) emphasises that policy success is not always guaranteed, and no matter how thorough the policy process has been, more often than is generally realised, policies are unsuccessful or even fail. Having a well formulated policy does not automatically mean that desired results will be achieved.

The public policy literature informs that policy implementation is one of the major problems in developing nations. In South Africa for instance, each year the government formulates impressive policies in its bid to make the best policy options available to the society. However, such options appear often to lack proper guidelines on their implementation (Roux, in Kuye **et al**. 2002: 89). Without proper guidelines, implementation problems are guaranteed. According to Makinde (2005: 63) an implementation problem occurs when the desired result on the target beneficiaries is not achieved. The problem of policy implementation is more wide spread than commonly acknowledged. Makinde (2005: 63) is of the view that developing nations are not the only ones confronted with policy implementation problems.If the critical factors that are crucial to public policy implementation are missing, whether in developing or developed nations, there are bound to be implementation problems. The basic critical factors that impact policy implantation as identified by Makinde (2005: 63) include: communication, resources, dispositions or attitudes and bureaucratic structures.

The four factors identified by Makinde (2005: 63) are important, however it is to be noted that having effective communication, relevant resources, positive attitudes and efficient bureaucratic structure in place does not guarantee implementation success. There are other factors which could arise from the policy itself, policy makers and the environment in which the policy has been made that could result in the policy gap. For instance, if the policy itself is unrealistic or not clear and the implementers lack understanding of the policy, it will be impossible to effectively implement it. Makinde (2005: 65) argues that little attention is being paid to the subject of policy implementation by policy decision makers, while it is often taken for granted that

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once a policy is adopted by government it must be implemented and the desired goals achieved, this lapse has often resulted in poor policy implementation. Other factors contributing to the implementation problem include lack of institutional capacity to meet the objectives of policy implementation, ineffective leadership and lack of monitoring and evaluation mechanisms.

Since the policy under investigation is a higher education policy, it is important to look at the general issues surrounding policy implementation in the South African higher education sector. Jansen (2001) contends that policy implementation failures in South Africa are due to over-investment of the state in political symbolism of policy rather than its practical implementation. For example, there are always difficulties in implementing policies that are launched during election campaigns and those announced to appease the donors, at times these policies do not get implemented at all. The South African government has favoured structural changes with high symbolic value and neglected the details of policy implementation. For instance, the making of higher education policy in South Africa is best described as a struggle for the achievement of a broad political symbolism that would mark the shift from apartheid to post-apartheid society. It is difficult to implement such polices because when they were formulated the pressure and emphasis was on re-structuring and change and the guidelines of implementation were neglected. Therefore the pressure and contestation of power is one of the main factors that impinge on the implementation of policies in South Africa (Sehoole 2005: 37). Correspondingly, Cloete (2002: 286) mentioned that a major achievement of the post-1994 democratic government was to develop, in a participatory, co-operative manner, a comprehensive new higher education framework, but when it came to implementation, there were clearly major problems about developing instruments that could affect the new policy framework. In particular was the lack of a new integrated funding and planning system that could allow government to steer different aspects of the system. Thus, when a new policy initiative is produced, it must be accompanied by a coherent implementation strategy to facilitate effective implementation.

Rogan and Grayson (2001: 2) argue that all too often policy makers and politicians are focused on the desired outcomes but neglect the contextual factors that influence implementation. When a new policy is introduced by government, it must

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be accompanied by a coherent implementation strategy to facilitate effective implementation. It is important to also look into the factors that might negatively influence the implementation process and guard against them. This includes ensuring that institutions mandated to implement the policy are capacitated with the necessary resources. Another challenge that results in ineffective policy implementation in South Africa is the orientation towards centralisation. The fact that policies are developed at national level with little consultation with those carrying out the implementation process, often results in policies failing to capture the subtleties at grassroots level. This causes challenges for the implementers and creates disagreements in the different units of machinery of government (Sajid 2006: 7).

Kraak (2004: 252) argues that since 1994, policy implementation difficulties in the South African higher education sector have been a result of lack of unanimity around the new higher education policies. This period has been worsened by tension due to competing ideas over the modalities for transforming higher education. The higher education community in South Africa has never had a strong consensus over the content of the new policy framework, since there has always been a high level of competing interpretations and discursive tension which have characterised such policy debates since the 1990s (Kraak 2004: 244). This tension has been a contributing factor to poor implementation of higher education policies.

Proper and effective policy implementation is essential to South Africa as a developmental state. According to Gelb (2006: 21), as a developmental state South Africa must be able to carry out four important tasks. Firstly, to formulate a cohesive and focused set of goals for national growth and development, and to put in place a set of policies to achieve these goals. Secondly, to co-ordinate the mobilisation and allocation of financial and human resources for investment in line with the policies identified. Thirdly, to be able to monitor and evaluate progress of policies, and lastly to adjust the mobilisation and allocation of resources in response to progress made towards existing objectives, changes in objectives and exogenous pressures and shocks. As a state which has undergone major transformation, South Africa relies on policies to address the injustices of the past; therefore, proper and effective policy implementation processes are necessary in this regard.

Poor policy implementation is a problem that must be taken seriously as it gives rise to an implementation gap. There is policy failure when there is a significant gap between a policy decision and its implementation. Such a gap is characterised, for example, by the rich getting richer and the poor getting poorer in spite of the government having a policy goal to the contrary. This mismatch between policy intentions and the actual outcome indicates that something went wrong at the implementation stage. Implementation gap thus manifests in the widening of the distance between stated policy goals and the realisation of such planned goals (Makinde 2005: 65).

According to Khosa (2003: 349), the inconsistency between policy and implementation is mainly caused by unrealistic policies, a lack of managerial expertise, the absence of people driven processes and insufficient co-ordination of policy implementation as well as insufficient staffing. Makinde (2005: 63-64) also argues that the absence of adequate resources will result in implementation problems. Resources in this regard include both the human and the material, such as adequate number of staff who are well equipped to carry out the implementation process, relevant and adequate information on implementation processes, the authority to ensure that policies are carried out as they are intended and equipment. Qoboshiyana (2011: 21) is of the view that policies are different and as a result implementation will defer from case to case, and in this study from university to university. Therefore, it is difficult to assign one particular reason to the lack of policy implementation. Higher education institutions are different and therefore different factors will impact their ability to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

Although many policies are characterised as facing challenges when it comes to the implementation stage, and therefore failing to meet the set objectives, it cannot be denied that there are policy implementation initiatives in which the strategic action adopted by government was considered to have delivered the intended policy decisions and to have achieved the intended outcomes. These successful policies must be acknowledged as best practices so as to serve as inspirational guidelines and contribute to policy development. An example of a successfully implemented policy in South Africa is the Child Support Grant (CSG) which was established in 1998. The aim of the Child Support Grant was to tackle and alleviate child poverty in

the country, an objective that was indeed successfully achieved. Although not often the case, it is important that policy implementation research focuses on successful policies too, as this will help to reveal critical factors contributing to successful policy implementation. While factors contributing to policy failure are recognised without difficulty, critical factors that shape successful policy implementation are abundant by policy implementation scholars.

The proverbial gap between policy formulation and implementation has been the subject of many scholarly debates. The public policy literature has, in fact, come a long way in highlighting the inevitable complexity of the policy-making and the implementation process, and the saliency of trying to understand this complexity. After a national policy is formulated, there has to be a formula or a model to be followed that will shape and guide the direction that the implementation might take. This will ensure successful implementation of such a policy. Although there is no widely accepted coherent synthesised theory of effective policy implementation and policy scholars have attempted their different formulas and models to shape the path that implementation might take, there exist a number of critical variables that are generally accepted by a multitude of implementation scholars as being important for effective implementation. The following section will conceptualise these common variables necessary for policy implementation which are known as the 5-C Protocol. This will lead to a consideration of important variables for policy implementation as they are to be used in subsequent chapters of the dissertation to analyse the policy under consideration.

2.7. THE 5-C PROTOCOL OF POLICY IMPLEMENTATION

While there is no single exhaustive theory of public policy implementation that has been adopted thus far, there is however evidence that a measure of consensus exists with regard to the critical variables that impact on implementation. These variables include the content of the policy; the context in which the policy is implemented; the commitment of the policy implementers; the capacity of government institutions; the clients the policy is expected to serve and coalitions of influence. Cloete **et al.** (2006: 194) argue that these five interlinked variables also known as the 5-C Protocol are critical to the success of policy implementation. It is

important to highlight that even though every case of policy implementation is unique, these variables can be applied to a whole range of cases to serve as a frame of reference for successful implementation (Brynard 2005: 13). Therefore, for the purpose of this study, the 5-C Protocol will be used in chapter five, as a critical apparatus for evaluating the implementation status of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

2.7.1. Content

The content of the policy itself is vital in the implementation stage because it explains what the policy sets out to do, how it problematizes the issue and the manner in which the perceived problem will be solved. Roux (2005: 75) argues that the importance of policy content is not limited to the means employed to achieve the objectives of the policy only, but how the goals are determined and the means to achieve those goals are as important as the achievement of the objectives of the policy. Policies are different as they are designed to address different issues, thus it is the content of the policy that explains the intention of the policy and what it stands for. According to Cloete and Wissink (2000: 177), policies can either be distributive, regulatory or redistributive. Distributive policies are those that create public goods and services for the general welfare and are zero-sum in character. Regulatory policies limit the discretion of individuals and institutions by specifying rules of conduct with sanctions for failure to comply. Redistributive policies are those that attempt to change allocations of wealth or power of a certain group at the expense of another (Cloete and Wissik 2000: 197).

2.7.2. Context

The context in which a policy is implemented plays a crucial role in policy implementation. Particular policy decisions may have contributed to specific results, either in the form of livelihood outcomes of the poor, or delivery and governance results. However before proposing changes or adjustments to these specific policies, the broader policy context needs to be analysed completely. The relevance of conceptuality in putting a policy into effect is premised on an important postulation that implementation is inevitably impacted upon by the very context within which

policy implementation takes place. O'Toole (1986: 202) argues that policy makers, implementers and researchers should pay attention to challenges resulting from contextual influences which impact on effective implementation processes. There is a need to pay attention to social, economic, political and legal settings as they have a potential bearing on the outcome of policy implementation. However, a criticism has been raised that many policy makers and researchers ignore how the context of the policy can impact policy implantation. This, according to Najam (1995: 41) has the potential to give rise to two problems: firstly, it poses the danger of losing the accumulation of knowledge and secondly, a failure to account for the impact of context on the effectiveness of implementation.

The focus is on the institutional context which, like other variables, will necessarily be shaped by the larger context of social, economic, political and realities of the system (Brynard 2005: 17). For instance, in South Africa, social inequalities were embedded and reflected in all spheres of social life, as a product of the systemic exclusion of blacks and women under colonialism and apartheid. The higher education system was no exception. Social, political and economic discrimination and inequalities of a class, race, gender, institutional and spatial nature profoundly shaped, and continue to shape, South African higher education. Given this, South Africa's new democratic government committed itself in 1994 to transforming higher education as well as the inherited apartheid social and economic structure and institutionalising a new social order. Policy makers in the new democratic dispensation formulated a comprehensive research policy framework to overturn the inheritance of a fragmented, racially divided and inequitable apartheid higher education system. The new research policy framework places a strong emphasis on the contribution of higher education research to national economic, social and political development (Gray 2009: 28). The Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, was formulated in the context of the social, economic and political variables confronting the higher education system. Though policy makers had considered the social, economic and political variables, policy makers have often failed to connect institutional environmental variables of higher education institutions to deliver upon the mandate.

2.7.3. Commitment

The commitment of those entrusted with carrying out implementation at various levels is one of the key factors identified as imperative to the successful implementation of policy. The literature suggests that commitment can be viewed and defined from multiple angles. Brynard (2009: 561) relates commitment to both the willingness and ability to maintain the focus of an initiative from its inception through to its delivery. Caiden (1999: 815) views commitment as the need for strong political backing and political will. This implies that commitment is more of a top-down, leadership style issue. Other scholars have viewed commitment from a bottom-up approach, where it is seen as the need to command the attention of employees to the initiative and to sustain it over time. This would be achieved through the involvement and participation and the development of a trustful relationship between managers and employees, and politicians and civil servants (Drennan 1989: 815; Miller 2000: 13; Culbert and McDonough 1986; Christensen and Laegreid 1999). It has been argued that even with the most logical policy imaginable, which passes any analysis of its cost versus benefit, if those responsible for carrying it out are unwilling or unable to do so, little will happen (Warwick 1982: 135). According to Brynard (2009: 562), to ensure effective policy implementation, commitment must occur at all levels of the policy process, including policy makers from the top-down or bottom-up hierarchy of government departments and organisations.

Gray (2009: 45) argues that commitment will be influenced by, and will influence, the other four variables in the 5-C Protocol. For instance, there is a connection between the commitment and the ability of implementers to implement a certain policy decision. Ability taken in another sense directly relates to questions of capacity which is yet another critical variable in the 5-C Protocol to be discussed in the subsequent section. Also, there is a link between the content of the policy and the prosperity to implement. It is clear that, depending on the complexity of the implementation scenario at stake, these variables tend to influence and condition each other during the implementation process. Thus the relationship between these variables should not be ignored if effective implementation is to be attained.

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It is important to note that there is a relationship between commitment and attitude. Jackson (2004) argues that commitment issues arise when implementers and their managers do not share the same objectives for the future; or they may even share the same objectives but differ in the way it should be achieved. The use of appropriate leadership and management styles, motivation and reward systems can have an impact on implementers' attitudes and therefore commitment. The level of implementation success will depend on how the implementers see the policies as affecting their organisational and personal interests. For instance, if a policy will result in reduction of pay, low self-esteem or loss of position to the implementers, the attitude will be affected negatively. On the other hand, if a policy enhances the status, pay or self-esteem, the implementers will be favourably disposed to it (Makinde 2005: 64). When the research output policy is effectively implemented and therefore scientific knowledge produced, the academic status and profile of the author and his institution will be enhanced, the institution will receive a subsidy from the Department of Higher Education and Training and academic promotion will be increased due to a strong record of research publications. It can therefore be argued that the research output policy positively affects the implementers' organisational and personal interests.

2.7.4. Capacity

The government capacity to make and implement policies that meet the objective needs of society is another recognised factor necessary for successful policy implementation. It may seem obvious that a minimum condition for successful implementation is to have the necessary administrative and other abilities to do the job. However, with the advent of the network approach to service delivery coupled with government's responsibility to mobilise relevant resources for the attainment of policy objectives, it is to be expected that capacity would be more complex as the participation of various stakeholders in policy implementation becomes inevitable for any measure of success. Pruthi (2005: 5) asserts that effective policy implementation is testing the coping capacity of the government in today's complex situations. Goals have to be clearly set; planning, programming and projections have to be followed step-by-step. The strength of administration and legitimacy of the government

depend more and more on the administration capacity to deliver the goods and services in time and in response to the demands of the citizens.

Brynard (2005: 199) views capacity in terms of the general systems approach as the structural, functional and cultural ability to implement government interventions. Capacity to implement is determined by both tangible and intangible resources. Tangible resources include human, financial, material, technological and logistical resources. Intangible capacity includes factors such as leadership, motivation, commitment, willingness, courage and endurance. O'Toole (1986: 189) views resources, and in particular administrative resources, as a critical variable in policy implementation. Where implementation orders are clear, consistent and accurately transmitted, the absence of sufficient resources will result in implementation gaps, because it means that laws will not be enforced, services will not be provided and reasonable regulations will not be developed. In most cases adequate resources to carry out policy implementation either do not exist or are located in the wrong place (Crosby 1996: 1404). In such situations making progress could mean lobbying for new funding, identifying existing sources of implementation support and negotiating for resource reallocation. All of these efforts are subject to the vagaries of national budgeting processes and shifting political winds. The South African government has an unfavourable record in terms of adequate resource allocation and this is thus the first reason associated with ineffective implementation of public policies.

According to Maluleke (2011: 165), successful implementation of public policies depends on the professional abilities, skills, interest and attitudes of public servants. The capacity of public servants to deliver public policy should not be based on purely political affiliations but rather on ability and knowledge of the policies involved. Therefore, the first requirement to successful policy implementation is sufficient expertise to be able to make adequate decisions. Not only should policy implementers have some substantive knowledge of the policies for which they are responsible, they should also have the skills required to put them into effect. Successful implementation depends on the skills and resources available to implementers. The study will investigate whether higher education institutions have the skills and necessary resources to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It is important that academic staff in higher education institutions have skills and greater

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ability to perform useful research, together with human resources, financial resources and infrastructure that will allow them to effectively engage in and produce quality research.

The important question in understanding how capacity influences implementation effectiveness is not simply one of 'what capacity is required and where?' but also of 'how this capacity can be created and enhanced?' Effective implementation of public policies can be achieved by building capacity where it is lacking. Capacity building has been defined by Savitch (1998) as the total structural, functional and cultural transformation of government in order to mobilise all available resources to achieve policy objectives. Mc Laughlin (1987) argues that although capacity is a potentially difficult issue to overcome, it can be addressed through training, funding or the employment of consultants to provide missing expertise. It is also essential that the government develop policies according to its capacity, as most policies fail because of unrealistic goals. The government should be capable of scanning the environment to weigh and assess the implications of policy alternatives so as to make relevant choices. It was earlier mentioned that the 5-C Protocol variables are all linked to and influence each other, depending on the specific implementation situation. Hence implementation capacity is likely to be a function of the other four variables. For instance, policy content may, or may not, provide for resources for capacity-building; the institutional context of the relevant agencies may hinder or help such capacity enhancement. The commitment of implementers to the goals, causal theory and methods of the policy may make up for the lack of such capacity, or vice versa; or the coalition of actors opposed to effective implementation may stymie the capacity that might otherwise have been sufficient. Also, supportive clients and coalitions may in fact enhance capacity (Brynard 2005: 319).

2.7.5. Clients and coalitions

The support of clients and outside coalitions is another critical variable contributing to the successful implementation of a policy. It is important that the government join coalitions of interest groups, opinion leaders, actors and parties who effectively support a particular policy implementation process (Brynard and De Coning 2006: 203). Non-state actors who actively support or oppose a certain policy initiative can influence the implementation process and therefore the policy outcome. As Warwick

(1982: 163) puts it, clients and stakeholders can "speed, slow, stop or redirect implementation". One of the first steps in a successful implementation process is therefore the identification of the key stakeholders from a wide range of stakeholders whose interests are directly affected by the policy, and to that extent, have the greatest potential to influence its implementation one way or the other. When the government forms coalitions with relevant stakeholders, not only does it increase policy legitimacy, but it also improves governing capacity.

To ensure successful implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, there is a need for regular consultation, debate and dialogue with those affected by the policy. The Department of Higher Education and Training and public higher education institutions have obvious stakes in the implementation process; however, it is important to identify other key stakeholders and to understand their interests and strategies in relationship to those of decision-makers and implementers (Najam 1995: 52). In this regard, the National Research Foundation can be identified as one of the stakeholders that support the implementation of the research output policy. The resources such stakeholders can harness (financial, technological, informational and even moral authority) can significantly direct policy implementation.

Those clients not formally recognised by the policy should not be undermined because they can be very influential. By virtue of not being recognised or catered for, these clients have the greatest incentive to disrupt implementation; moreover, they can often do so with success since implementers are not expecting resistance from them (Najam 1995: 52). Therefore, it is important to identify other potentially important coalition partners whose interests are impacted enough for them to have the desire, or the ability, to influence the implementation process in return.

The 5-C Protocol model is not claiming to be an all-inclusive theory of implementation, but it has achieved something that is not generally possible with most of implementation theories attempted thus far. That is, the model has innovatively considered and included in its scope the most critical variables that impact implementation as identified by different public policy scholars from different perspectives. From the above exposition of the 5-C variables, it is clear that these variables are premised on the assumption that implementation is a complex process

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and far from being a simple administrative process where implementers only execute what policy makers have enacted. The 5-C model revealed that the five critical policy implementation variables are dynamic and diverse, however they inform and shape each other and, as a result, are not static but dynamic. Therefore, the ultimate implementation analysis as envisaged in this model is to manipulate the variables and the linkages between them so as to match the policy in action with the desired goals. This means that implementation cannot be seen as an activity to be planned and carried out according to a carefully predetermined plan; rather, it is a process that can only, at the very best, be managed and lessons learnt as one proceeds though different implementation stages (Brynard 2005: 22).

2.7.6. Communication

This study recognises that communication is an important factor in the implementation process. Without effective communication, effective implementation of public policies will not be achieved. Therefore, although communication does not fall under the domain of the 5-C Protocol, it has been included as a sixth critical variable for implementation in this study. Communication within the government, amongst policy-makers and implementing institutions, and between the government and various interest groups, is essential at each stage in developing and implementing policy. The importance of communication for policy implementation lies in the fact that it is through communication, that orders to implement policies are expected to be transmitted to the appropriate personnel in a clear manner while maintaining accuracy and consistency. Due to inadequate and unclear information, those responsible for the implementation of a certain policy initiative may be confused as to what exactly is required of them. Implementation instructions that are not transmitted, that are distorted in transmission, that are vague, or that are inconsistent can lead to serious obstacles to policy implementation (Makinde 2005: 63). Therefore, effective communication is an important requirement for effective implementation and should be recognised as the first step in the implementation process, because implementers should know and understand what to do and how to do it from the word go. On the contrary, it is also important to note that, instructions that are too precise can have a disadvantage of not leaving room for implementers to exercise discretion and flexibility where and when the need arises, and this can

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hinder implementation. Policy implementation goes hand-in-hand with creativity and adaptability; therefore, while following the directives given by the policy, implementers should also be able to assess the policy situation and react accordingly.

Since government policies do not only affect constituencies, but also a number of actors who support or oppose a particular implementation process, it is therefore important that policy is communicated to affected stakeholders and recipients of the policy. According to the United States Agency for International Development (2007: 3) all participants must have access to the same information, they must trust that information and they must see how that information contributes to the effectiveness of the policy implementation. Communication is important in demonstrating policy-makers' accountability for the policies they develop and for the manner in which they are implemented. Communicating progress in implementing policy decisions and policy outcomes to those favourably or adversely impacted by the policy can help build broader support for the policy, foster dialogue, and lay the foundation for subsequent policy reform in a case where a policy is not achieving the intended outcomes.

Different countries have different strategies of communication. In the South African context, communication throughout the various levels of government is achieved through written circulars, communiqués, comprehensive reports and the Government Gazette. Policy-relevant information can also be communicated to stakeholders through policy-relevant documents such as policy issue papers, memoranda executive summaries, appendices and new releases. Dunn (2004: 20) argues that developing these policy-relevant documents and making oral presentations enhances prospects for the utilisation of policy-relevant knowledge and open-ended debates among stakeholders situated within the policy-making process.

Begerson (1991: 133) argues that public institutions tend to develop into bureaucracies in which information tends to be concentrated at the bottom. The field personnel and technical experts of an institution are in close contact with the environment, but are at the bottom of the institutional structure. Therefore, to provide for every change in the environment and to make appropriate policy and implementation decisions, there must be continuously reliable up and down

transmission of information. The more levels through which information is to be transmitted, the greater the probability that the information will be distorted. This distortion may come from random errors or from deliberate distortion. Selective distortion comes about when, at each level of the institution, officials decide to transmit only information they believe their superiors need to hear, or the information which will boost the image of the subordinates. The transmission of information through a hierarchical institution more often than not results in distortion and misinformation that limits the ability of an institution to successfully implement policies. Furthermore, Solar and Peters (1993: 101) state that effective communication within an institution is hampered by secrecy or information. It is common that there is a need for secrecy within some government institutions; however, this can hinder communication and therefore the implementation of policies.

It is important that there is open and effective communication between all the stakeholders involved in the implementation of the Policy and Procedures for the Measurement of Public Higher Education Institutions, 2003. A system of clear and open communication using a variety of instruments will simultaneously promote transparency and improve accountability of policymakers and implementers. Therefore it can be argued that effective communication legitimises the policy process and it is an important factor contributing to effective implementation of policies.

2.8. POLICY MONITORING AND EVALUATION

Dunn (2004: 277) defines monitoring as the policy-analytical procedure used to produce information about the causes and consequences. It is a primary source of knowledge about policy implementation since it describes relationships between policy programme operations and their outcomes. According to Strarling (1979: 697) monitoring is an activity that evaluates continuously the feedback of an operation against established criteria or standards. Furthermore, monitoring includes search, consideration of alternative possibilities and their effects and a conclusion based on synthesis of progress and implications. In this regard, it can be argued that monitoring involves collecting factual information about public policies before and

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after implementation, so as to see whether the policy is being implemented appropriately and achieving its goals, and if not, why is this the case. For monitoring to be effective, information acquired through the monitoring process should be relevant and valid. As highlighted by Van der Waldt and Du Toit 1999: 279), it is essential to determine whether information about policy actually tests what it is supposed to measure, that is, whether it is valid information. For instance, in implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, relevant information that would enhance successful implementation is required.

According to Dunn (2004: 277) monitoring performs at least four major functions in policy analysis which include compliance, auditing, accounting and explanation. These functions are further explained in detail below:

i. Monitoring helps determine whether the actions of those responsible for the implementation of the policy are in compliance with relevant standards, procedures and legislation

ii. Monitoring performs an auditing function by determining whether resources and services intended for certain target groups and beneficiaries have actually reached them.

iii. Monitoring helps produce information that is helpful in accounting for social and economic changes that follow the implementation of a broad set of public policies and programmes over time.

iv. Monitoring also provides information that helps to explain why the outcome of the programme can differ from those envisaged by public policies.

It is important that the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, be monitored throughout the implementation stage. This will help detect issues such as whether the policy is yielding the intended outcomes, whether there are sufficient resources to implement it, whether there is co-operation amongst the Department of Higher Education and Training and higher education institutions and if all role players are participating in their respective roles. When monitoring is effective and taking place at regular intervals on a continuous basis, challenges will be detected and the implementation of public policies can be improved.

Policy evaluation is not to be confused with policy monitoring. According to Hanekom (1987: 89) policy evaluation has often been referred to as the last stage of the policy process, during which policy makers and policy implementers, and those who were affected by the policy attempt to establish if it has really worked. Once public policy has been operationalized through the formal adoption of laws, rules, or regulations, and the government has taken action to implement the policy, some form of evaluation needs to be accomplished to determine if the policy has achieved the desired outcome or impact. The evaluation of policy performance does not necessarily take place only after the implementation of policy, but could be a continuous process throughout the policy process.

According to Cloete and Wissink (2000: 211) policy evaluation is the use of a policy-analytic research method to measure the effectiveness of a policy project or programme with the intention of continuing, adjusting or terminating it. This implies that policy evaluation must determine whether the purpose of the policy is being met and how the implementation process might be improved. Policy evaluation is the continuous assessment of the outcomes. It focuses primarily on the output of the policy and includes asking the following questions: Did the policy work? Was the policy effective, if not, why not? Was it practical? What difference did it make? (Van Niekerk, Van der Waldt and Jonker 2001: 98). Information about inadequate policy performance may contribute to the application of other policy-analytic methods, for example, by showing that goals and objectives should be redefined. Evaluation can also contribute to the definition of new or revised policy alternatives by showing that a previously favoured policy alternative should be abounded and replaced with another one (Dunn 2004: 358). Policy evaluation is therefore an absolutely critical stage in the policy process, determining whether policy effects are intended or unintended and whether the results are positive or negative for those it affects.

Although research indicates that the main purpose of evaluation is to determine whether an implemented programme is doing what it is supposed to, scholars have identified other functions for policy evaluation. Cloete and Wissink (2000: 212) indicate that policy evaluation is undertaken in order to ensure political and financial accountability; to test the feasibility of an assumption, principle, model, theory, proposal and strategy; to learn how to programme policy review, design or

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implement strategies; and lastly evaluation is undertaken for public relations issues. Nachimas (1995: 178) provided another perspective by arguing that evaluation may be a management tool to reduce and or eliminate conflict in management. Furthermore, evaluation may be an indication that the policy is subject to negotiation and modification once the research findings become available. Also, evaluation serves the function of competency reduction thereby enhancing the chance of successful policy implementation. Dunn (2004: 357-358) reveals that evaluation contributes to the clarification and critique of values that underlie the selection of goals and objectives. In this regard, values are clarified by defining and operationalising goals and objectives and also critiqued by systematically questioning the appropriateness of goals and objectives in relation to the problem being addressed. According to Shapiro (2009: 3), monitoring is a systematic collection and analysis of information aiming at improving efficiency and effectiveness of an institution, based on the initial aims and objectives, while evaluation is an assessment of the institution progress against agreed strategic plans.

Both monitoring and evaluation identifies the most efficient use of available resources and can be used to identify implementation difficulties. It is important that when new government policies are adopted, efforts be made to also introduce monitoring and evaluation systems that will ensure successful implementation.

For the purpose of this study, it was necessary to include a section on the necessity of monitoring and evaluation because one of the objectives of this study is to investigate whether there are efficient and effective monitoring and evaluation mechanisms in place to ensure the compliance and proper implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education institutions, 2003.

2.9.   CONCLUSION

This chapter provided a theoretical framework in which Public Administration and public policy implementation were contextualised. It is clear that Public Administration is the discipline in which public administration is studied, and public policy implementation is one of the practices within public administration. An

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exploration of public policy implementation, as provided primarily by the literature on the subject, was conducted. It was found that the challenge faced by most developing countries, including South Africa, is a mismatch between the intentions of policies and the actual achievement of the policy objectives. This gap is due to a number of factors that affect effective implementation from the policy itself, the policy makers, the policy implementers, or the environment in which the policy was planned. To ensure successful policy implementation, it is vital to analyse the policy throughout all the stages of the policy process so as to identify barriers that may reduce its effectiveness and assess options for overcoming these barriers. There is an urgent need to address policy implementation challenges in South Africa, because it is through proper and effective implementation of policies that major problems confronting the country and citizens can be addressed. The issue of policy implementation is a serious one and should not be neglected.

There is an evident mismatch between the intentions of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and the actual outcome of the policy. Although the aim of the policy is to encourage research productivity and therefore increase research output, it is however evident that research output of South African higher education institutions remains low. This suggests that there are challenges that impede the implementation of the policy as originally designed. The aim of this study is therefore to explore these challenges and attempt to find solutions and recommendations to overcome them so that successful implementation can take place. This focus will incorporate the 5-C Protocol, which includes context, commitment, capacity, and clients and coalitions in the implementation of Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

CHAPTER THREE

THE RESEARCH FUNCTION OF HIGHER EDUCATION

3.1. INTRODUCTION

The previous chapter contextualised the implementation of public policy within public administration. The chapter highlighted that public policy implementation is one of the important functions of public administration. It was also highlighted that most public policies fail because of improper implementation, therefore, there is a need to investigate the implementation challenges that might exist and provide solutions that will ensure proper and effective implementation of policies.

This chapter pays specific attention to the research function of higher education. Traditionally, universities are understood as places where specialist knowledge is imparted to students through combinations of lectures, assigned readings, laboratory sessions, tutorials, writing exercises and examinations (Mintrom 2008: 232). However, today a university encompasses much more than just learning and training. Nowadays there is a new relationship between higher education, the state and society and the economy. Universities play an essential role in producing scientific knowledge through applied research that will enhance the quality of life of the society and also strengthen the economy. In this scenario, research output of higher education institutions becomes increasingly important for growth and development of a state. While the transmission of knowledge is also to social and economic development, general advancement of knowledge comes through research-based acts of discovery. This is why the research function of higher education matters.

The first section of the chapter will explain the nature of a research university, and also explore the contribution of research produced by higher education to the country's development. The second section will focus on the evolution of legislation governing higher education research, which will also incorporate the history of the South African higher education system and research. The third section of the chapter will focus on the Policy and Procedures for the Measurement of Research Output of

Public Higher Education Institutions, 2003, including how the policy came about, the objectives of the policy, the types of output recognised by the policy and the total publication output under the new funding framework.

3.2. HIGHER EDUCATION RESEARCH AS A REQUIREMENT FOR DEVELOPMENT

Higher education research plays an important role in creating growth and progress in developing countries. Historically, research and higher education have not been a central concern within development initiatives. Donor institutions have tended to place more emphasis on primary and, more recently, secondary education in their development assistance. This was because there has been little empirical evidence of economic benefits for the population as a whole, let alone specifically for the poor. Most studies found higher returns to individuals from primary and secondary schooling than the returns from higher education. However, today higher education institutions are tasked with the responsibility to conduct and produce research directed at problems and questions that are related to the developmental needs of society at large.

The importance of higher education for growth and development of a state is confirmed by the former United Nations (UN) Secretary General, Kofi Annan, who argued that the university must become a primary tool for Africa's development in the new century. Universities can help develop African expertise; they can enhance the analysis of African problems, strengthen domestic institutions, serve as a model environment for the practice of good governance, conflict resolution and respect for human rights, and enable African academics to play an active part in the global community of scholars (Kofi Annan, in Bloom **et al**: 2006). It is through the generation, application and dissemination of knowledge that higher education will be able to contribute to this growth and development and also add to the shared stock of human knowledge. Kuye (2007: 6) argues that research is probably one of the most critical responsibilities of higher education institutions as it creates new knowledge that could be transferred to students and utilised by governmental bodies, commerce and industry.

Higher education research output also contributes to the development of democracy and good government in several ways. Research outputs in all fields represent a

critical awareness and contribute to the open, qualified debate which is vital for a new democracy. Moreover, the application of this critical awareness in the fields of social and human sciences can provide knowledge needed for good government. South Africa needs research to choose efficient and well-functioning systems and structures, and to find out if policy measures and reforms are working the way they were intended. Education, health and welfare are just some examples of areas of great importance to society, in which South Africa needs relevant knowledge on which to base its policy making. It is therefore also important for South Africa as a developing country to build capacity in social and human sciences, both to develop the knowledge needed at the national level to make good choices concerning government and administration, and to benefit from knowledge of transnational and transregional relevance developed elsewhere. It is clear that in South Africa, higher education and research play a critical role not just for economic development but also in areas of social and political development. However, the catalyst for growth and development is nullified as research output of higher education institutions is alarmingly low in the country. Therefore, there is a need to give attention to research capacity of higher education institutions in order to obtain sustainable and effective research.

According to Li, Millwater and Hudson (2008: 1), a nation's overall capacity depends considerably on its research. It is widely accepted that research, as the most important source of knowledge generation, occupies a critical position in promoting a nation's prosperity and its citizens' well-being in the knowledge-based era (Abbott & Doucouliagos, 2004; Etzkowitz, Webster, Gebhardt, & Terra, 2000). Research not only helps solve practical problems and brings about material improvements via advanced products; it also provides insights and new ideas that enrich human understanding of various social, economic and cultural phenomena. Research is also regarded as an important indicator of a nation's economic competitiveness for the present and the future (Abbott & Doucouliagos 2004). However, it is research capacity building, that is, the building of a nation's capacity to generate knowledge, that is of central importance to South Africa.

South Africa has several science councils such as the Council for Scientific and Industrial Research (CSIR), the Human Sciences Research Council (HSRC), the Institute for Future Research (IFR) and the National Research Foundation of South

Africa (NRFSA). Nonetheless universities continue to play a prominent role as centres of knowledge production and generation, particularly in pure and basic research. Hence, at a heart of every university's mission is the commitment to new knowledge discovery and development. As stated by Aceto (2005) "an institution of higher learning that does not provide facilities for research is not a university". This indicates that research is one of the key defining characteristics of a university.

According to the International Education Association of South Africa (2010: 18), in South Africa universities conduct approximately 20% each of all research; the government sector (including the science councils and public institutions) conducts about 22.8%; while the business sector undertakes 55.9%. As far as research output in scientific journals is concerned, higher education dominates the National Systems of Innovation (NSI). The CHE (2009: 5) highlighted that in 2007, academics at public universities produced 86% of all Institute of Scientific Information (ISI) indexed papers with a South African address. It is therefore clear that the contribution of higher education in research is a prominent one.

The research function of higher education remains a prime source of knowledge and innovation at national, regional and international levels. However, it cannot be denied that not all higher education institutions are committed to the development of new knowledge. Some universities strive as teaching institutions, where research activities are accorded little time and the rewards to academic staff for pursuing their research interests are limited. Therefore it is crucial for this study to define and explain the meaning of a research university.

3.3. THE NATURE OF A RESEARCH UNIVERSITY

According to Waiyan (2009: 17) a research university is a complex institution with a range of departments, professional schools and faculties which serve the functions of creating new job opportunities, providing new talents, providing industry knowledge and applied research to the state's key industrial clusters and improving the life of the citizens. Due to the diversity of professional fields of a research university, it is clear that these universities play a strategic role in contributing to the nation's economic vitality and the quality of life of the people.

Koropchak **et al.** (2003: 11) argue that research universities are distinguished from other types of post-secondary institutions in that they confer doctoral degrees as well as require research achievements. Mohrman **et al.** (2008: 5) also define research universities as those institutions with a high priority on the discovery of new knowledge and the production of doctorates in a wide range of disciplines. This means that a research university is distinct from all other teaching universities by the relative importance it places on the creation of new knowledge. However, this does not mean that research universities are not committed to teaching and learning or to the social and community roles of universities; rather, it means that the nature and content of these other activities are shaped by their research base.

When the research function is taken seriously, universities carefully select academic staff based on their research capabilities (but not to the exclusion of other capabilities), they offer appropriate incentives for those staff to engage in productive research activities and they provide the time and infrastructure such as libraries, laboratories, technicians and administrative support needed for conducting scholarly work at the highest level (Mintrom 2008: 232). As such these universities have unique social spaces for the collective generation and transmission of knowledge, which makes them research universities.

Both the University of Pretoria and the University of Venda are regarded in this study as research universities. This is due to the emphasis both universities place on research. The mission and vision, as presented in the 2009–2013 Strategic Plan of the University of Venda indicate the willingness and commitment "to be at the centre of tertiary education for rural and regional development in Southern Africa" and to be "a comprehensive institution that offers a range of undergraduate and postgraduate qualifications in fields of study which are responsive to the developmental needs of the Southern African region, using appropriate learning methodologies and research" (University of Venda 2009). The mission of the University of Pretoria is to be "an internationally recognised South African teaching and research university and a member of the international community of scholarly institutions that promotes scholarship through the creation, advancement, application, transmission and preservation of knowledge". Over the past years the University of Pretoria has proven to be a leading research university in South Africa (University of Pretoria 2007). It is clear that research production is central to both the University of Pretoria

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and the University of Venda mission statements; hence the study regards these universities as research universities.

3.4. POLICY SHIFT IN HIGHER EDUCATION AND RESEARCH

Higher education is not an isolated sector which exists in a vacuum; it is an integral part of the comprehensive services sector in which government plays a major role. Hence all the functions of higher education are conducted within a specific policy framework. It is therefore critical for this study to look at the evolution of legislation which supports and governs research in higher education. However, in order to understand the policy shift in higher education research, a brief historical background on the South African higher education system is required.

3.4.1. History of higher education system and research

In this study, the discussion on the history of higher education research in South Africa dates back to the apartheid era. The inclusion of the apartheid era in this study serves the purpose of building a background on how research in higher education was treated during apartheid and in the post-apartheid era. The background will show trends in research production in South Africa and explain how the new research landscape came about. For the purpose of this study, the background includes the period from the early 1980s. Focusing only from the early 1980s was motivated by Pienaar **et al.** (2000), arguing that from the 1960s to the late 1970s universities were influenced by the government to conduct operations research for military support. It was only in the early 1980s that the government began to show interest in the development of scholarship in universities.

Before 1994, all higher education institutions were intensely fashioned by apartheid planning and by the relevant functions assigned to them in relation to the reproduction of the apartheid social order. Research and teaching in these institutions were conducted in line with the socio-economic and political priorities of the apartheid separate development programme (Badat 2007: 6).

In 1984, the *Constitution of the Republic of South Africa (Act 110 of 1983)* was introduced by the apartheid government which entrenched the apartheid divisions in

the South African higher education system. This led to public higher education institutions being designated as being for the exclusive use of one of the four race groups, namely, African, Coloured, Indian and White. As early as 1985, there was already a clear distinction between higher education institutions which were racially fragmented. 19 higher education institutions were designated as being for the exclusive use of Whites (White universities), two for Indians (Indian universities), another two for Coloureds (Coloured universities) and lastly six for Africans (African universities). The National Party (NP) had put in place legal constraints and measures preventing higher education institutions designated for the exclusive use of one race group from enrolling students from other race groups (Bunting 2006: 61).

According to Melck (1995: 45) in the 1980s the South African higher education system was serviced by different government departments. White universities were provided for by the Department of National Education (DNE), and Indian and Coloured universities were assigned to the Department of Internal Affairs (DIA) for current expenditure, and the Department of Community Affairs (DCA) for capital expenditure. Black universities were divided into three sub-categories namely; independent states universities which were catered for by the Department of Foreign Affairs (DFA), self-governing state universities which were catered for by the Department of Higher Education and Training (DHET) and the South African Development Trust (SADT) and lastly, the national government universities which were also a responsibility of DHET and SADT (Melck 1995: 32). The differences in these departments had serious policy implications. There was inequitable distribution of resources and serious disparities between universities that the democratic government is currently battling to address.

Public higher education institutions in South Africa were viewed by the government as legal entities which were brought into existence by an act of the state, and their existence could be terminated by another act of the state. As a result of the belief that higher education institutions are creatures of the state, the apartheid government further fragmented the racially divided higher education system by dividing these institutions into rigid groups according to the functions they were and were not permitted to perform. By the beginning of the 1980s the government made a rigid distinction between higher education institutions it termed 'universities' and another set of institutions the government termed 'technikons' (Bunting 2006: 61-62).

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The National Party government divided the South African higher education system according to the essence of each of the two types of higher education institutions. The essence of universities was science whereas the essence of technikons was technology. The government used the term science to refer to all scholarly activities in which knowledge is studied, and the term technology to refer to activities concerned with the application of knowledge. This distinction followed from the government philosophy of 'essence' that universities could not become involved in the application of knowledge and that technikons could not become involved in scholarly activities involving the generation of knowledge (Bunting 2006: 62).

The government developed specific policies about the functions of each type of institution into its higher education framework. The policies emphasised that the main function of technikons was to train students who would be able to apply scientific principles within the context of a specific career. Technikon students had to be less concerned with abstract thinking and scholarly approaches to knowledge. The policies stressed that the main function of universities was to train basic scientists and researchers, and therefore had to be concerned with the development rather than with the application of knowledge.

3.4.2. Research funding in the old order

In the early 1980s, the Department of National Education (DNE), which was responsible for the national education system under apartheid, introduced a funding formula for universities that incorporated a number of incentives to stimulate research output. Masipa (2010: 159) mentions that submissions on research output were made by each university according to the criteria set by the Department. The institution would then account by submitting an annual report as the internal counting of outputs for inclusion in the annual reports. This was a direct way of determining the research performance of a university, amongst other things, for funding.

However, the formula favoured established, well-functioning institutions which were mainly White universities over smaller, less efficient and rural institutions (Cloete 2002: 285). The deregulated, market-driven higher education environment meant that institutions would have to rely heavily on their institutional culture and capacity, both of which were intimately connected with the institutions' history and location in

the South African apartheid context. This according to Steyn and De Villiers (2006: 39) resulted in funding inequalities within institutions. From 1995 onwards, the South African Post-Secondary Education Information Systems (SAPSE) formula was progressively, although in a fragmented manner, applied to higher education institutions which previously were not funded on the basis of this formula.

3.4.3. Recognised research output under apartheid

According to SAPSE 110 (17-18), research was regarded as primary when it included activities that were intended to produce one or more research output. This means that primary research concentrates more on activities of outcome production, including the production, recognition and application of knowledge. Research falling under the abovementioned three categories of activities (by SAPSE 110) would be subsidised, while research including instruction and/or public service programmes would be subsidised under such categories (instructional and public service programmes). Research that relates to products such as artefacts and other similar products whose market price could not cover costs, received financial assistance outside the block grant. According to SAPSE 110, other forms of research such as those falling under public service with no economic justification, whose benefits are adequately reflected in the market price, do not qualify for subsidy and have therefore not been included in the SAPSE formula.

Research outputs were subsequently subsidised on the basis of the number of scientific articles published. Only articles published in refereed journals accredited by the Department of National Education qualified for subsidy purposes. At a later stage books (but not textbooks) as well as chapters in refereed anthologies were also included for subsidy purposes (Bawa and Mouton 2002: 205).

3.4.4. Total publication output under the SAPSE funding framework

The following graph indicates the total SAPSE output for all higher education institutions from the year 1986 to 2000.

Figure 3.1: Total output (articles/books) according to SAPSE figures: 1986-2000

	1986	1987	1988	1990	1991	1992	1993	1995	1996	1997	1998	1999	2000
Total output	4 463	4 977	5 061	5 226	5 187	5 406	5 336	5 500	5 662	5 614	5 162	5 082	5 333
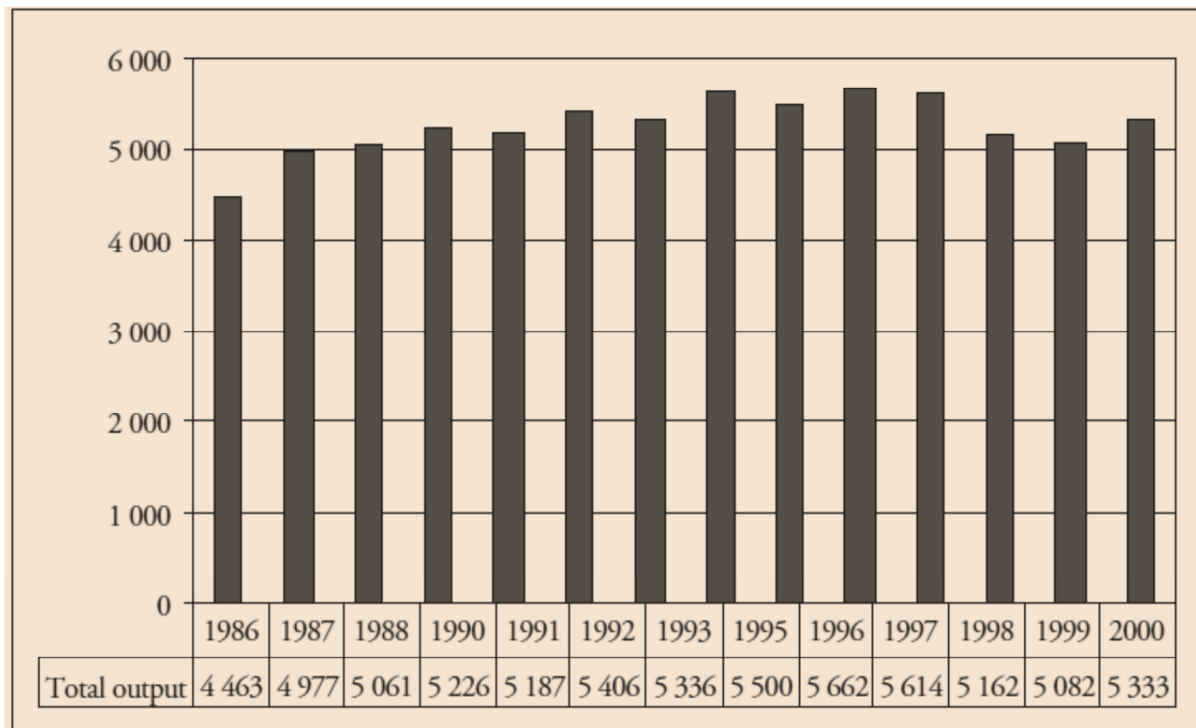
Source: Adapted from DHET formerly DoE (2000)

Figure 3.1 encapsulates the main trends in the output of scientific articles and books as represented in the SAPSE database. It indicates that, as in the results derived from the ISI data, the system remained fairly stable during the 1990s, but with a worrying downward trend after 1996. According to Bawa and Mouton (2002: 206-207), this decrease in research output was explained by some vice-chancellors as resulting from the fact that the Department of Education had not added new journals to the official list since 1998 and that the output statistic was simply a bureaucratic under-count. Other explanations included academics not completing the forms to report their publications because the effort is simply not worth the small part of the subsidy that comes back to the researcher. In other words, publications could be under-counted due to a lack of incentive. Also, it was noted that the decrease in

research output was due to a range of other factors such as staff cuts and rationalisation at universities and technikons, as well as the time taken up with institutional restructuring undertaken by all of the research institutions, activities which have been hugely disruptive. However another factor may be that the many and substantial policy initiatives that were introduced were not accompanied by coherent implementation strategies to facilitate the orderly roll-out of transformation actions.

3.4.5. The post-apartheid era

With the advent of democratic government in 1994, there was a lack of confidence in the higher education system by the majority of the South African society as they believed that it was caught in the trap of an apartheid-based past. As a result of the lack of trust in the education system which was mainly due to the racially based polices, there was a need for a new policy framework for higher education that was to integrate the higher education system fractured by apartheid.

The current policy framework for higher education and training in South Africa can be traced back to 1992 when the African National Congress (ANC) held a National Policy Conference. After the conference, a policy document entitled 'Ready to Govern' was published, it outlined the organisation's broad policy objectives for the education and training system. In 1994, a policy framework was first released as a draft discussion document. The policy framework recognised the importance of translating policy proposals into implementable plans. This happened through an Implementation Plan for Education and Training in July 1994 (ANC Education Department 1995: 5).

The ANC Policy Framework for Higher Education sees the higher education system as representing a major resource for national reconstruction and development and for the country's capacity to contribute to the worldwide advance in knowledge and skills. The framework viewed the present higher education structure and capacity as seriously distorted, its systems outmoded and its funding arrangements led to serious crises for both students and institutions. Therefore, the framework envisages a situation where, after consultation, a representative Commission on Higher Education would be appointed to investigate and report on the role of the sector in

reconstruction and development, its structure, institutional governance and governance of the system and capacity building (ANC Education Department 1995: 13). According to Lidovho (2006: 207), the 1995 ANC Policy Framework for Education and Training suggested policy proposals on the shape and structure of the higher education system, the provision and access to higher education, governance and research. After the demise of apartheid in 1994, the ANC came into power and had the opportunity to put its policy proposals into action.

The post-1994 higher education policy process, beginning with the National Commission on Higher Education (NCHE), was influenced heavily by the relatively unconstrained discussions that characterised the policy debates that occurred under the aegis of the National Education Policy Investigation (Nepi) and the Union of Democratic University Staff Associations (Udusa). Many of these ideas were carried into the later processes (Cloete 2002: 57). The White Paper 3 on Higher Education Transformation (DHET formerly DoE 1997) drew heavily on the Report of the National Commission on Higher Education (1996) and attempted to extend the substance of the proposals for research.

The White Paper 3 outlines initiatives for the transformation of the South Africa higher education system and also called for increased responsiveness of higher education research. According to the White Paper 3, the point of departure was to treat the higher education system as a single unitary system in order for it to contribute to the social, cultural and economic development of the country (DHET formerly DoE 1997a). The National Plan for Higher Education in South Africa (DHET formerly DoE 2001), that was introduced to operationalize the ideas of the White Paper 3, highlighted that this single co-ordinated system would be achieved incrementally, observing the missions of the institutions in their three year institutional plans.

Whereas the White Paper 3 acknowledges the achievements and strengths of the higher education system, it also observed limitations in its ability to meet the moral, political, social and economic demands of the new South Africa. It also acknowledged amongst other things, that the capacity, distribution and outcomes of research in the higher education system are cause for concern. In particular, the White Paper observed insufficient articulation between the different elements of the

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research system, and between the research system and national needs for social, economic, cultural and intellectual reconstruction. A special observation was made regarding research capacity of higher education institutions. It was noted that there is insufficient research capacity in higher education and existing capacity is poorly co-ordinated and not adequately linked to postgraduate studies. it was also found that the distribution of research capacity in higher education institutions is skewed, in a sense that, under apartheid, the development of research capacity in previously Black universities was severely limited, and the historically disadvantaged institutions have only recently integrated research into their core functions; and a research mandate has only in recent years been included in the institutional mission of technikons. The demographic composition of researchers in higher education, research councils and private sector research establishments was also of great concern in a sense that Black people and women are severely under represented (DHET formerly DoE 1997).

The White Paper 3 observed that the South African research system is confronted by two main challenges. Firstly, it must redress past inequalities and strengthen and diversify research capacity. Secondly, it must keep abreast with the emerging global trends, particularly, the development of participatory and applications-driven research addressing critical national needs, which requires collaboration between knowledge producers, knowledge interpreters, knowledge managers and implementers. The White Paper 3 further stated that strengthening the role of higher education in the national research system requires increasing current research capacity, protecting current research resources, finding new sources of research funding, and using all these resources more effectively (DHET formerly DoE 1997).

The National Plan for Higher Education (DHET formerly DoE 2001) outlines the framework and mechanisms for implementing and realising the policy goals of the White Paper 3. It recognises the strengths and weaknesses of the higher education system and is based on a developmental approach intended to guide institutions towards meeting the goals of the system as a whole. In order to meet pressing national needs and to respond to new realities, the National Plan suggested that government maintain the standards of better performing institutions. Higher education institutions would also produce research and other outputs required to

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meet national development needs, and which would enable the country to become competitive in the new global context (DHET formerly DoE 2001).

The National Plan for Higher Education (DHET formerly DoE 2001) refers to research as a principal tool for creating new knowledge with a potential for inquiry and critical thinking, which has to be disseminated through teaching and collaborative research tasks. With regard to sustaining and promoting research, the White Paper 3 and the National Plan identified a comprehensive list of priorities and strategies to support effective higher education research:

i. Postgraduate enrolments and outputs needed to be increased, with priority access for black and women students to master's, doctoral and postdoctoral programmes. The National Plan outlined forms of funding support intended for this.

ii. Institutional research outputs and quality needed to be enhanced. This would be achieved through quality assurance measures and through revised policies and procedures for the measurement of research outputs.

iii. New centres of excellence and niche areas needed to be developed in higher education institutions with demonstrable research capacity or potential, while sustaining existing capacity.

iv. Collaboration and partnerships needed to be increased, particularly at regional level in research and postgraduate training. The National Plan proposed earmarked funding to support this initiative.

v. Greater articulation and co-ordination of research activities was needed across the national system.

vi. A national research plan should be in place, setting out priorities for research and postgraduate training; processes to identify centres of excellence; targets to achieve a more representative research community and incentives for collaboration and partnerships.

vii. Research funding strategies and mechanisms were needed to add value to research priorities, to reduce fragmentation and to build capacity in higher education research. These strategies and mechanisms would need, amongst other things, to promote institutional accountability for the use of research funds; to draw universities and technikons within one research funding framework and to expand the institutional base for research through redress

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funding for historically disadvantaged institutions. The National Plan outlined a new system of earmarked and block grant funds for research.

The emphasis on research in the White Paper 3 is based on the recognition that national growth and competitiveness in the context of the emergence of a knowledge society is dependent on continuous technological improvement and innovation, driven by a well organised, vibrant research and development system which integrates the research and training capacity of higher education with the needs of industry and social reconstruction (White Paper 1997: 1.12). The development and sustainability of the national research system is also dependent on its ability to respond to opportunities and challenges provided by the global transformation in knowledge production and dissemination. The national research system has to adapt to the increasingly changing ways in which global knowledge is produced, mediated and used. Therefore, the role of the national research system is not only to respond to local imperatives, but also to develop the capacity to take advantage of opportunities presented by globalisation.

Research is the most critical function of higher education that South Africa as a developmental state has to depend on, in order to meet its developmental objectives. As the White Paper 3 states, "basic research is crucial for nurturing a national intellectual culture, generating high-level and discipline-specific human resource, and providing opportunities for keeping in touch with international scientific developments, all of which facilitates innovation" (White Paper on Higher Education Transformation 1997: 2.89). This means that not only does research contribute to the global accumulation of knowledge, it also allows the growth of an innovative culture in which new ideas, approaches and applications increase the adaptive and responsive capacity of the society, thereby enhancing both the nation's industrial competitiveness and the ability to solve the nation's most pressing social challenges. According to the National Plan for Higher Education (DoE 2001), the challenge that faces the higher education system is ensuring that all these benefits of research are generated by the national research system.

Regardless of the emphasis that the White Paper 3 placed on the need to develop research capacity and output; the capacity, distribution and outcomes of the higher education system remained distressing. The National Plan of Higher Education (DoE

2001) acknowledged that there have been signs of decline in research output of higher education institutions in recent years. The average research output for 1999 was 10% which is less than that for 1997. Also, it is estimated that South Africa's share of output declined from 0.7% in 1994 to approximately 0.51% in 1998 (as measured by the Institute for Scientific Information). The reasons for this decline were not clear at the time. Masters and doctoral output accounted for approximately only 6% of all university and technikon graduates in 1998. Higher education institutions held that the cause of these low enrolments in postgraduate programmes was caused by the lack of postgraduate scholarships and the lack of incentives for postgraduate study. However, regardless of the reasons behind the low research output of higher education institutions, the decline called into question the ability of the higher education system to meet the research and development agenda of the country.

3.4.6. Research funding in the new dispensation

In the new South Africa, higher education institutions continue to be funded by government. According to the White Paper on Science and Technology, 1996, the Department of Education is responsible for research funding through the general university funds, which are grants base on publications in peer reviewed journals, full-time equivalence funds (FET) for which the institutions have to account, and innovative funds obtained through the National Research Foundation (NRF) on the submission of proposals. The Department of Higher Education and Training also targets block funding to support research based postgraduate students and this is done in fields where higher education institutions have demonstrated a high research training capacity (Masipa 2010: 182).

According to the White Paper 3, the post-apartheid funding formula is understood to consider equitable allocations, promote excellence and is seen to be widely acceptable within the principle of institutional autonomy and public accountability. The Department of Education uses different funding strategies as advised by the Council of Higher Education. Firstly, goal-oriented strategies were used to improve access for students, to improve the quality of teaching and research and to improve

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completion rates and responsiveness to social needs. Secondly, the performance-related funding was used for performance related activities.

The White Paper 3 highlights that the new funding framework for public higher education institutions entails block funding on a triennial-rolling basis, while earmarked funds are meant for specific purposes such as research development, libraries and information technology. 85% of the funds are said to be allocated on a subsidy formula, while the other 15% is shared for urgent needs such as for transformation activities. Some funds have been included in the block grants for the historically disadvantaged institutions and initiatives for women in research.

The White Paper 3 recommended that the former Department of Education adopt a policy of concentration and selectivity in the funding of research and research training (White Paper 1997a: 49). It was also suggested that negotiations for the funding of research students be done on competitive levels based on research capacity, competitive success and output of faculties. This implies that emphasis would be laid on research strength and within the funding grid, the Department of Education would support and assist the expansion of postgraduate training in those parts of institutions both historically advantaged and historically disadvantaged alike, where there is demonstrable strength. In this way, earmarked funds would assist in the development of institutional centres for postgraduate training where there is potential for success. The National Plan for Higher Education (DoE 2001) also suggested that research be funded separately based on research and graduate output.

Several limitations were observed and cited by the National Plan for Higher Education (DoE 2001) regarding policies which were used at the time for measuring research output. These limitations include the lack of recognition given to certain types of publication outputs such as technical reports and policy reports; insufficient acknowledgement of the distinctive character of research at technikons; bias against certain disciplines in the arts and the humanities. In that the system does not recognise all forms of creative output, such as music and drama; an out-dated list of accredited journals; and lack of response to the development of new knowledge systems and new modes of knowledge production. Based upon these limitations of the previously used policies for measuring research output, there was a need to

review these policies in order to revise the present system and to address its challenges. According to the National Plan for Higher Education (DoE 2001), the introduction of a revised policy would assist in the enhancement of research performance. This led to the introduction of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, which is discussed in the following section.

3.5. THE POLICY AND PROCEDURES FOR THE MEASUREMENT OF RESEARCH OUTPUT OF PUBLIC HIGHER EDUCATION INSTITUTIONS

The need for a new funding framework for the measurement of research output led to the establishment of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, based on Section 3(1) and 3(2) of the Higher Education Act, 1994 (Act 101 of 1994) after consultation with the Council on Higher Education. The policy has been in operation since January 2005, however considering the 2004 research output. In line with the White Paper 3, a Programme for the Transformation of the Higher Education System, together with the National Plan for Higher Education 2001, this policy applies to all public higher education institutions, and therefore does not differentiate between universities and technikons (DoE 1997(a):1).

The commitment of the South African government to restructure the higher education system and to be committed to national development was evident in the enactment of new laws and regulations and regular amendments of these; policy implementation on numerous fronts and occasional policy review. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, indicates the government's commitment to transforming the country's research mission to focus on national and African concerns and development. This policy was formulated to develop and sustain research cultures in higher education institutions and therefore increase research output necessary for national growth and development.

The new funding framework was necessary as the existing framework which was introduced in the 1980s was no longer applicable. Despite its origin in the apartheid past, it could not be used as a steering mechanism to address national goals and

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objectives (Madue 2006: 28). In this context, it is critical to have a clear understanding of the objectives of the current policy for the measurement of research output of South African higher education institutions. The understanding of the policy objectives is a starting point for assessing whether the policy is successful or not. Therefore, to determine if the policy is yielding the desired outcomes, it is essential to comprehend its objectives.

3.5.1. Objectives of the policy for the measurement of research output

According to the National Plan for Higher Education (DoE 2001), the main aim of the policy is to sustain current research strength and to promote research and other knowledge outputs required to meet national development needs (DHET formerly DoE, 2003:4). This would be achieved through the encouragement of research productivity by rewarding quality research output. The policy intends to enhance productivity by recognising the major types of research output and by using proxies to determine the quality of such research output. It is clear that the policy reflects a new funding framework which is a goal-oriented and performance-related distributive mechanism that explicitly links the allocation of funds to research output which contributes to the social and economic development of the country.

This reward system does not cater for commissioned and contract research outputs but only for original, systematic investigations undertaken to gain new knowledge and understanding, that is, self-initiated research. It is clear that this type of funding has been separated from the general university block grant. Unlike previous policies, the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, also considers different modes of dissemination of research output, such as electronic publications. The policy further outlines the criteria which must be met by submitted research output.

The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, also gives all public higher education institutions the responsibility to enhance the effectiveness and efficiency of policy implementation. In order to ensure that the policy fulfils its main objectives, institutions are mandated by the policy to be acquainted with the national policy and procedures, and also establish internal institutional mechanisms of promoting and

producing research output meeting the criteria in the national policy on research output.

3.5.1.1. Types of recognised research output

For the purpose of subsidy, the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, recognises research output in the form of journals, books and proceedings which are explained below.

i. Journals as research output

Journal-article publishing is an important form of scholarly publishing in every discipline. According to the policy, journals refer to peer-reviewed periodical publications such as articles, research letters, research papers and articles which are devoted to disseminating original research and new developments within a specific discipline or field of study. However, only approved journals with an International Standard Serial Number (ISSN) or International Standard Book Number (ISBN), and those which appear in the Science Citation Index, the Social Science Citation Index, the International Bibliography of Social Sciences (IBSS) and the Arts and Humanities Citation Index (AHCI), are recognised by the Department of Higher Education and Training for subsidy. The subsidy for a journal article is a single (1) unit per article.

South African journals not appearing in the above indices, but whose seat of publication is in South Africa and which meet the Department of Higher Education and Training minimum criteria are also included in the list of approved journals. These journals are included in a separate index of Approved South African Journals maintained by the Department of Higher Education and Training and subject to an annual review (DHET formerly DoE 2003: 6). As stated by the policy, these journals have to meet the following criteria in order to be accredited by the Department of Higher Education and Training:

- The required purpose of the journal must be to disseminate research results and the content must support high level learning, teaching and research in the relevant subject area

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- Articles accepted for publication in the journal must be peer reviewed
- The majority of contributions to the journal must be beyond a single institution
- The journal must have an International Standard Serial Number (ISSN)
- The journal must be published regularly
- The journal must have an editorial board that includes members beyond a single institution and is reflective of expertise in the relevant subject area
- The journal must be distributed beyond a single institution

According to ASSAF (2006: 29), there are about 255 South African scientific or scholarly journals recognised by the Department of Higher Education and Training as meeting the minimum requirements for state subsidy as stipulated by the policy. Twenty-three of these journals appear in one of the ISI Citation Indexes, 14 are indexed in the IBSS (2 journals appear in both), whereas the last 220 journals are accredited separately by the Department.

ii. Books as research output

According to Madue (2007: 70), research methods, tacit knowledge and technical artefacts cannot be communicated completely through only research papers in refereed journals. Books and book chapters are also important means through which knowledge can be transferred. Therefore, books are a very important research output as well as a reference resource. In terms of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, books refer to peer reviewed, non-periodical scholarly or research publications disseminating original research on developments within specific disciplines, sub-disciplines or fields of study (DHET formerly DoE 2003: 4).

A publication can be included under this category if it meets the following requirements: there must be evidence of peer review; it must have an ISBN number; it should not have less than 60 pages; excluding references, bibliography, appendices, this being above the minimum norm of 49 pages proposed by the United Nations Education, Scientific and Cultural Organisation (UNESCO) definition of a book as a non-periodical literary publication consisting of 49 or more pages, covers excluded. The target audience of the book must be specialists in the relevant

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field and it should be written by a single author and it should have been published by a recognised commercial press or publisher. The different types of accepted books according to the policy include monographs, chapters and edited works. Publications such as text books, dissertations and theses, fiction, speeches and reports are not recognised for subsidy. An evaluation panel of senior academics is constituted by the Department of Higher Education and Training to evaluate the books submitted for subsidy. A maximum of five (5) units may be allocated for books.

iii. Proceedings as research output

According to the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, peer reviewed published conference, congress and symposium proceedings meeting specified criteria are eligible for subsidisation. These criteria include evidence of peer review, the proceeding must have an ISBN number and the target audience of the proceeding must be specialists in the relevant field. The purpose of a proceeding should be to disseminate original research and new developments within specific disciplines, sub-disciplines or fields of study and after a proceeding has complied with all the requirements, a maximum of one half a unit (0.5%) will be allocated (DHET formerly DoE 2003: 6-7). The policy clearly indicates that other forms of output such as text books, book reviews, dissertations and theses, fiction speeches and reports are not recognised for subsidy.

3.5.2. Total publication output under the new funding framework

The following table indicates the total publication output of higher education institutions by clusters under the new funding framework. This is from the year 2006 to 2010. For the purpose of this study, the clustering of institutions is based on their individual proportions, that is, the volume of research production.

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Table 3.1: Percentages of research outputs by clusters of institutions: 2006-2011

Cluster A	2006	2007	2008	2009	2010	2011
UP	15%	14.9%	14.2%	13%	12.2%	11.7%
UCT	11.3%	13.1%	13%	13%	12.9%	11.7%
UKZN	13.5%	11.3%	11.7%	12.2%	11.8%	11.2%
SU	11.7%	11.4%	11.4%	11.5%	10.6%	10.3%
Wits	10.5%	11.7%	10.1%	10.1%	9.6%	9.3%
TOTAL	62%	62.4%	60.4%	59.8%	57%	54.2%
Cluster B	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
UNISA	7.3%	7.1%	7.8%	6.9%	7.5%	7.1%
UJ	4.8%	4.5%	4.7%	5.1%	6.3%	6.9%
NW	4.5%	4.9%	6%	4.9%	6.0%	6.6%
UFS	5.8%	6.1%	5.3%	5.6%	5.1%	5.1%
RU	3.7%	3.5%	4%	3.9%	3.3%	3.2%
NMMU	2.3%	2.3%	2.2%	2.5%	2.6%	3.1%
UWC	2.5%	2.8%	2.9%	3.1%	2.7%	3.1%
TOTAL	30.9%	31.2%	32.9%	32%	33.6%	35.1%
Cluster C	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
TUT	1.3%	1.3%	1.7%	1.4%	1.9%	2.2%
UFH	0.9%	0.9%	1%	1.5%	1.5%	1.6%
UL	1.3%	1.3%	1%	0.8%	1%	1.3%
CPUT	0.8%	0.6%	1%	1.4%	1.6%	1.3%
UV	0.2%	0.2%	0.4%	0.6%	0.8%	1.2%
DUT	0.4%	0.5%	0.3%	0.5%	0.5%	0.8%
VUT	0.3%	0.2%	0.2%	0.4%	0.5%	0.7%
UZ	0.7%	0.6%	0.8%	0.8%	0.7%	0.6%
CUT	0.5%	0.4%	0.3%	0.4%	0.4%	0.4%
WSU	0.3%	0.2%	0.2%	0.3%	0.5%	0.4%
MUT	0.1%	0%	0%	0%	0.1%	0.2%
TOTAL	6.8%	6.2%	6.9%	8.1%	9.4%	10.7%

Source: Adapted from DHET (2011: 15-16)

Note: For the purpose of this study, the clustering of institutions is based on their individual proportions, that is, volume of research production.

Table 1.1 indicates that the five institutions in Cluster A which have traditionally produced more than 60% of publications outputs experienced a gradual decline in their overall sector contribution from 62% in 2006 to 54.2% in 2011. It is clear that the percentage share of overall output produced by the University of Pretoria has been dropping steadily over the past six years from 15% in 2006 to 11.7% in 2011.

It can also be noted that both Cluster B and Cluster C institutions, that is, the seven institutions that traditionally produced about 30% of outputs and the eleven institutions that traditionally produced less than 10% of overall research publications outputs respectively, have been increasing their publications outputs over the past 6

years. The percentage share of overall output produced by the University of Venda in Cluster C has been increasing over the past six years from 0.4% in 2005 to 0.8% in 2010. However, despite an increase in publication outputs of Cluster B and Cluster C institutions, the overall research publication output of these institutions remains low. Furthermore, the fact that a high proportion of research publications are contributed by only five institutions is a problem that needs to be addressed.

The focus of this study is on the implementation of the research output policy of public higher education institutions at the University of Pretoria and the University of Venda. Table 1 illustrates that the University of Pretoria falls under Cluster A (the high performing institutions in research publications). The University of Venda, on the other hand, falls under Cluster C (the least performing institutions in research publication output). Therefore, table 1 serves to justify the choice of University of Pretoria and University of Venda as case studies for this research. A comparison is made on how the two institutions implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

It must be highlighted that the purpose of this study is not to quantify research output produced by higher education institutions, nor to critique the funding framework used by the government for subsidy. The study evaluates implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, where factors hindering the successful implementation of this policy will be explored and recommendations will be made to overcome these barriers.

3.6. CONCLUSION

This chapter explained the research function of higher education as being vital for South Africa's growth and development. The evolution of legislation which supports research in higher education was also explained. It is clear that there have been significant changes regarding the funding and the promotion of higher education research. However, regardless of the new policy initiatives to sustain and encourage research productivity, research outputs of higher education institutions remain relatively low. This questions the ability of higher education institutions to effectively implement the policy.

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The Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, is both vital and relevant in ensuring that South Africa meets its developmental goals. The main objective of the policy is to encourage and strengthen research output required to meet national development needs. However, the state of research productivity of higher education institutions indicates that the policy faces the serious challenge of failing to achieve the intended outcomes.

There are many reasons associated with the lack of effective policy implementation, and higher education institutions are different and will therefore face different challenges when implementing the Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003. Whatever the reason, the inability of higher education institutions to effectively implement this policy is a matter that requires urgent attention. Failure to address the problem will not only compromise the country's growth and sustainable development, but also, all the achievements and efforts completed by the post-1994 South African government to develop a new comprehensive higher education research policy framework which contribute to the country's social and economic development, will have been in vain.

CHAPTER FOUR

THE UNIVERSITY OF PRETORIA AND THE UNIVERSITY OF VENDA CASE STUDIES

4.1. INTRODUCTION

The previous chapter highlighted the history of the South African higher education system and research as well as the evolution of the legislation thereof. It is evident that the South African higher education system has its roots in the nation's colonial and apartheid past. This has shaped a deeply fragmented legacy upon which the building blocks of the new system must draw. It is therefore crucial to acknowledge that the emergence, roles and cultures of higher education institutions in the new South Africa relate quite directly to the history of white political, economic and cultural domination. It cannot be denied that the South African higher education system reflects the distortion of the apartheid era. South Africa has a highly differentiated university sector when assessed in terms of key and relevant indicators. The twenty-three universities are still deeply divided in terms of material resources, research performance, research capacity, academic credibility and in the connectedness to international research environments.

The differing political, economic and social histories and geographical circumstances of higher education institutions have created an array of environments in which these institutions operate. With the changing socio-political climate in South Africa it became an imperative that intervention programmes and policies to address this imbalance were introduced. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is one such policy, whose key goals and objectives, amongst others, is to establish a research culture, sustain and promote research output required for national development and allocate subsidy fairly based on the production of quality research output.

The University of Pretoria and the University of Venda are both tasked with the responsibility to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003; however, given the

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differing institutional histories, environmental circumstances, missions, visions, profiles and capacities, it is expected that the two universities will be confronted by different challenges and opportunities when implementing the policy.

It is clear that the post-1994 democratic government succeeded in transforming the higher education system which was designed to entrench the power and privileges of the ruling minority. The government eliminated the racially fragmented policies which governed research in higher education institutions and introduced a new research funding framework aimed at enhancing research productivity in all public higher education institutions. Therefore, in order to consolidate the accomplishments already completed towards higher education and research and to address the inheritance of the past and ensure that South Africa achieves its policy goals regarding research output, the focus now has to be on the implementation of the new policy and on the measurement of research output of public higher education institutions.

This chapter will explore and provide a comparative analysis on how the University of Pretoria and the University of Venda implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The chapter will begin with an analysis of institutional profiles of both universities which will include the universities' historical developments, together with their visions and missions regarding research production. Institutional profiles of universities have a strong bearing on the manner in which universities will successfully achieve their research mandate and properly implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Through a comparative analysis of the two environments within which the two universities operate, the study can establish why some higher education institutions are more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Learning Institutions, 2003.

The central purpose of this chapter is to offer in detail an understanding of the differences between the University of Pretoria and the University of Venda regarding the manner in which they implement the research output policy. This includes the capturing and management of research output at an institutional level prior to

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submission to the Department of Higher Education and Training. Although universities are expected to measure their research output according to the Department of Higher Education and Training predetermined criteria, each university uses its own approach to capture, manage, measure, monitor and report on its research output. These different approaches used by the University of Pretoria and the University of Venda are discussed in this chapter.

4.2. THE HISTORY AND DEVELOPMENT OF THE UNIVERISTY OF VENDA AND THE UNIVERSTY OF PRETORIA

It is appropriate to give a brief analysis of the development of both the University of Pretoria and the University of Venda from a historical perspective. Prior to 1960, South African universities could be grouped into English or Afrikaans language institutions. The University of South Africa (UNISA) was the only correspondence university with a special feature in that it offered tuition in both the then official languages, namely, English and Afrikaans. It was only in 1959 after the passing of the Extension of University Education Act, 1959 (Act 45 of 1959) that university education exclusively for "non-whites" was introduced. This gave birth to the University College of the North and others to provide for various ethnic groups in South Africa. The University College of the North was meant to cater exclusively for the Northern Sotho, Southern Sotho, Tsonga, Tswana and Venda national units (Nkondo 1977: 1-10).

The University of Venda was established as a branch campus of the University of the North on 18 February 1981. It became independent from the University of the North on 6 November 1981 when the University of Venda Act, 1981 (Act 19 of 1981) was passed by the then Republic of Venda Parliament (University of Venda 2012: 1). The intension of the then apartheid government of South Africa was that the University of Venda would become a tribunal homeland institution, primarily serving the population of the then Venda Independent State, the latter being one of the homelands established to run the affairs of different ethnic groups in South Africa, in this case the Vha-Venda ethnic group (Compton 1995: 393). The University of Venda has however, since its inception, refused to be dictated to by this policy in both the selection of its personnel and students, as well as in teaching and research. The

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University of Venda vigorously campaigned against the perception of being an ethnic university. It is evident in the university's staff composition that from its early years academic personnel have been drawn from many places and backgrounds in Africa and abroad (University of Venda 2012: 2)

In the new democracy, South Africa's racially defined higher education institutions were rationalised through a merger process into 23 non-racial universities. In 2002, the University of Venda was part of a government-led restructuring of the higher education system by which it was identified to become a comprehensive university, that is, a university offering general formative, professional and vocational qualifications. The University of Venda, as one of the two rural institutions providing higher education for the people of the Limpopo province, has since its days as a homeland university, expanded its student enrolment to such an extent that its carrying capacity has come increasingly under pressure (Council on Higher Education Audit Report 2011: 7).

Currently, the University of Venda has over 11000 enrolled students distributed across eight schools. These schools offer qualifications from certificates and undergraduate degrees to postgraduate qualifications. Student enrolment patterns indicate that the University of Venda is predominantly an undergraduate higher education institution. The academic, administrative and support tasks necessary for the functioning of the university are carried by 710 staff members, comprising 343 academics and 367 administration and service staff (Council on Higher Education Audit Report 2011: 7).

The University of Pretoria, on the other hand, has its origins in the Transvaal University College, which was founded in 1908 as a public higher education institution offering arts and science courses. By 1923 five faculties had been established; and in 1930, the institution was renamed the University of Pretoria. Four further faculties were created in the following 25 years. Under the apartheid regime, the University of Pretoria was a whites-only Afrikaans-medium institution. In the mid-1990s under the new democratic dispensation, there was a rapid change in the demographic profile of the students enrolled at the University of Pretoria. This change was accompanied by the introduction of a new language policy which recognised English as well as Afrikaans as languages of instruction at the institution.

This facilitated the enrolment of non-Afrikaans mother tongue students so that by 2005 African students constituted 59.68% of its headcount enrolments (Council on Higher Education 2008: 4).

The University of Pretoria currently has more than 62 500 students and offers courses in both English and Afrikaans and has transformed from a mainly white, Afrikaner institution to a multicultural, multiracial university that offers quality education to South Africans and international students. In 2011, there were almost 45 000 contact students of whom 54.9% are female and 45.9% are black students. The university has almost 18 000 distance education students, and nearly 4 000 international students, of whom more than 67% are from Southern African Development Community countries. The University of Pretoria offers 2 034 programmes in both Afrikaans and English, with some programmes and modules being offered in English only (University of Pretoria 2012: 4).

The University of Pretoria operates across six campuses and its administrative seat is located in Hatfield which houses six of nine faculties. The nine faculties include, Economic and Management Sciences; Education; Engineering, Built Environment and Information Technology; Health Sciences; Humanities; Law; Natural and Agricultural Sciences; Theology; and Veterinary Science. The other five campuses are in Groenkloof, Prinshof, Onderstepoort, Sandton and Mamelodi, the last of which was incorporated into the University of Pretoria as a result of the restructuring of the higher education landscape (University of Pretoria 2012: 5)

4.3. THE LOCATION OF THE UNIVERSITY OF VENDA

The University of Venda is located in Thohoyandou in the Vhembe district of the Limpopo province. Demographics of the Limpopo Province from which the university largely draws its student complement, show that the region has the lowest level of economic activity of all the nine provinces in South Africa, that it has weak infrastructure and that people development is at its lowest within the borders of South Africa, for instance, the province only contributes 6.9% of the GDP of South Africa. The province also recorded a higher population growth rate than the aggregate for South Africa, namely, 4.3% against 2.6% respectively. Furthermore, it has the largest percentage of children under the age of 15 years, achieving a higher

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growth rate in this category of 3.8% since 1980, thus placing an abnormally high burden of dependency on its total economy (Limpopo Provincial Government 2010: 4)

The demographic and economic profile of the Limpopo province highlights the key developmental challenges of unemployment, poverty, high dependency ratio, HIV and AIDS, unequal distribution of resources, equity and illiteracy (Limpopo Provincial Government 2010: 4). Due to the rural and underdeveloped nature of the region, the University of Venda faces a daunting challenge. The education it offers should develop social, economic, cultural and political skills and equip its graduates and the community in general to face the challenge of poverty and unemployment.

4.4. THE LOCATION OF THE UNIVERSITY OF PRETORIA

The University of Pretoria is situated in the metropolitan area of Tshwane in the Gauteng Province. Gauteng is the smallest province in South Africa, with only 1.4% of the land area, but it is highly urbanised, containing the cities of Johannesburg and Pretoria. As of 2011, the province had a population of nearly 12.3 million, making it the most populous province in South Africa. Gauteng is considered the economic hub of South Africa and contributes heavily in the financial, manufacturing, transport, technology and telecommunications sectors, amongst others. It also plays host to a large number of overseas companies requiring a commercial base in and gateway to Africa. Although Gauteng is the smallest of South Africa's nine provinces, it generated 35.6% or an estimated R675 billion of the GDP in 2011, consolidating its position as the single largest contributor to the economy of the country. Gauteng province generates about 10% of the total GDP of sub-Saharan Africa and about 7% of total African GDP, an indication of the province's importance as one of the economic hubs of the continent (Gauteng Provincial Economic Review and Outlook 2012: 19).

The location and surrounding circumstances of any institution can affect its day-to-day functioning and the ability to implement its policies and achieve its mandate. When compared with the University of Pretoria, the University of Venda is already at a disadvantage because of its poor location. For instance, the University of Venda will struggle to get funding for its research projects as compared to the University of

Pretoria. In addition, due to the rural and underdeveloped nature of the region in which the University of Venda is situated, it is difficult to attract and retain academics and researchers in the university. These are some of the factors that can contribute negatively to the ability of the University of Venda to produce sufficient quality research output and effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

4.5. MISSIONS, VISIONS AND GOALS OF THE UNIVERSITY OF PRETORIA AND THE UNIVERSITY OF VENDA

The visions and missions of both the University of Pretoria and the University of Venda ask two fundamental questions: firstly, *where* does the university see itself within a particular timeframe? (vision) and secondly, *how* the university will achieve its vision (mission). The vision and mission statements describe the University of Pretoria and the University of Venda's willingness and commitment to achieve their mandate. The vision and mission statements provide a critical direction for institutions and can therefore impact policy implementation. The mission and vision of the University of Venda as presented in the 2012–2016 Strategic Plan are as follows: the vision is to be "at the centre of tertiary education for rural and regional development in Southern Africa" and the mission is to be "a comprehensive institution that offers a range of undergraduate and postgraduate qualifications in fields of study which are responsive to the developmental needs of the Southern African region, using appropriate learning methodologies and research" (University of Venda 2012: 9).

According to the University of Pretoria Strategic Plan (2012: 4), the vision is to strive to be:

- A leader in higher education that is recognised internationally for academic excellence, with a focus on quality;
- A university that is known for international competitiveness and local relevance through continuous innovation;
- The university of choice for students, staff, employers of graduates and those requiring research solutions;

- A university with an inclusive and enabling, value-driven organisational culture that provides an intellectual home for the rich diversity of South African academic talent; and

- The premier university in South Africa that acknowledges its prominent role in Africa, is a symbol of national aspiration and hope, reconciliation and pride, and is committed to discharging its social responsibilities.

The University of Pretoria's mission is to be "an internationally recognised South African teaching and research university and a member of the international community of scholarly institutions that promotes scholarship through the creation, advancement, application, transmission and preservation of knowledge".

The University of Pretoria has also, as part of its strategic plan, developed a research agenda based on four principles. Firstly, research conducted at the university will make a positive contribution to local, national and international needs aligned with the National Research and Development Strategy as well as international trends. Secondly, the research will be based on the proven capacity that exists within the university and will be built on work of excellent researchers and research leaders. Thirdly, research themes will not only be defined on short-term needs, but also be visionary in that they will identify areas of future potential that will require the university to build competencies in order to remain a premier research institution. Lastly, the University of Pretoria research agenda should also take cognisance of unique competencies that exist within the university (University of Pretoria Strategic Plan 2012).

The vision and mission statement are very powerful tools in any institution because they set the direction for employees and stakeholders and therefore impact policy implementation. The mission and vision statements, as well as the goals and objectives of both the University of Pretoria and the University of Venda underlie the commitment that both universities have in encouraging and promoting research output productivity that will meet developmental needs of South Africa and also properly implement the nation's research output policy. However, the realisation of the University of Venda's mission and vision as translated in the Strategic Plan is not without problems. For instance, since its rural character is determined by its location, the university has selected agriculture as one of its research niche areas that is

aligned to provincial developmental priorities. This has been translated into the development of a Programme Qualification Mix (PQM) focused on agriculture, rural development and poverty alleviation and environmental studies. However, there is a contradiction between this PQM and the profile of the University of Venda's student enrolments where the difficulty to attract staff and students to agriculture and other rural-related programmes undermines the realisation of this focus (Council on Higher Education Audit Report 2011: 18).

4.6. THE UNIVERSITY OF VENDA AND THE UNIVERSITY OF PRETORA STAFF DATA

It is important for this study to assess the academic and research staff of both the University of Pretoria and the University of Venda. The research output of universities is conducted by the academic and research staff, hence the quality and quantity of research produced by a university will largely depend on the quality and quantity of academic and research staff. Academic and research staff are the major stakeholders in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, therefore it is necessary for this study to provide a summary of statistics and qualifications of academic and research staff of both universities.

4.6.1. The University of Venda staff data

The table below displays the distribution of academic and research staff at the University of Venda according to main field of study:

Table 4.1: University of Venda academic and research staff

Major field of study	Total number (headcount)
Science, Engineering & Technology	90
Business, Management & Law	52
Humanities & Social Sciences	80
Health Sciences	23
TOTAL	**245**

Source: Adapted from Southern African Regional Universities Association (2010: 167)

The qualifications held by academic and research staff members in each faculty of the University of Venda are presented below:

Table 4.2: University of Venda academic and research staff's highest level of qualification

Major field of study	Number of academic and research staff and their HIGHEST qualification				
	Undergraduate degree/diploma	Postgraduate degree/diploma	Masters Degree	Doctoral Degree	other
Science, Engineering & Technology	0	3	39	48	0
Business, Management & Law	0	8	34	10	0
Humanities & Social Sciences	1	4	43	32	0
Health Sciences	0	4	11	8	0
Other (Agricultural resources)	0	1	5	1	0
TOTAL	**1**	**20**	**132**	**99**	**0**

Source: Adapted from Southern African Regional Universities Association (2010: 167)

The University of Venda faces a major challenge when it comes to recruiting and retaining suitably qualified and experienced academic staff. The rural character of the university and its concomitant problems such as a lack of choice of schools, inadequate staff housing and lack of comparable amenities constitute obstacles to attracting appropriately qualified academic staff (Council on Higher Education Audit Report 2011: 8).

In terms of qualifications, it is evident that almost half of the academic staff hold a master's degree with just above 32% holding doctorates. While this is a comparatively high proportion of staff with postgraduate qualifications for a Comprehensive University, it will be important for the university to consider how, with a staff complement with these numbers of qualifications, it can contribute to increased research productivity of the university.

4.6.2. The University of Pretoria staff data

The following table displays the distribution of academic and research staff at the University of Pretoria according to main field of study:

Table 4.3: University of Pretoria academic and research staff

Major field of study	Total number (headcount)
Science, Engineering & Technology	737
Business, Management & Law	295
Humanities & Social Sciences	245
Health Sciences	717
Veterinary Science/Education	255
Academic innovation and other support	12
TOTAL	**2,261**

Source: Adapted from Southern African Regional Universities Association (2010: 129)

The qualifications held by academic and research staff in each faculty of the University of Pretoria is presented in the following table.

Table 4.4: University of Pretoria academic and research highest level of qualification

Major field of study	Number of academic and research staff and their HIGHEST qualification			
	Undergraduate degree/diploma	Postgraduate degree/diploma	Masters Degree	Doctoral Degree
Science, Engineering & Technology	183	104	161	161
Business, Management & Law	57	73	83	82
Humanities & Social Sciences	24	23	80	118
Health Sciences	367	33	245	72
Veterinary Science/Education/Other	67	51	68	81
TOTAL	**698**	**284**	**637**	**642**

Source: Adapted from Southern African Regional Universities Association (2010: 129)

When comparing the University of Pretoria and the University of Venda in terms of the quantity and qualifications of academic and research staff, it is evident that the University of Pretoria is more capacitated with qualified staff. It was relevant and crucial for this study to provide an overview of the quantity and the level of qualifications of academic and research staff of both the University of Pretoria and the University of Venda because one of the major barriers for advancing research and post-graduate training at South African universities is the low proportion of academic staff with the appropriate qualifications to oversee post-graduate research and to advance knowledge creation. This study evaluates the implementation of the

research output policy with specific reference to the University of Pretoria and the University of Venda; therefore, it is important to assess the research capacity of both universities which incorporates the availability of highly qualified research professionals. There are various factors which impact on the ability of an institution or academic to engage in quality research. While developing a research culture is of the utmost importance, staff ratios and academic qualifications also impact on the quantity and quality of research undertaken.

Higher education institutions which lack sufficient expertise that will allow them to effectively engage in and produce quality research should consider capacity building. Capacity building is a broad, over-inclusive concept, amenable to many interpretations and operationalisations. However, the concept has been commonly understood as a basic human resource issue, that is, a matter of building institutional man-power to the point where there is an adequate skills base to fulfil the tasks of an organisation or institution. More recently, the notion of capacity building has incorporated broader dimensions which include, but go beyond, the human resource issue. An organisation may thus have suitably trained personnel, but if it lacks a clear mission, vision and strategic goals, and has inadequate governance and management structures to support those personnel, it is unlikely that it will function optimally (Council on Higher Education: 2002: 1). It is therefore important for this study to take into consideration all these other factors when assessing the capacity of the University of Pretoria and the University of Venda to implement and comply with the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, as these factors have a bearing on the manner in which both universities will successfully achieve their research mandate and properly implement the research output policy.

4.7. THE IMPLEMENTATION OF THE RESEARCH OUTPUT POLICY AT THE INSTITUTIONAL LEVEL

A core function of higher education institutions is to continuously produce new knowledge required by the 21st century. The South African government, having early recognised higher education as a major building block for national development, has been taking continuous steps to raise competitiveness in the sector. This comes in

line with the recent growth of demands for higher education institutions to match their quantitative developments with qualitative improvement, so as to better meet the challenges of today's globalised knowledge-based era and the social and economic developmental needs of the nation. In response, the democratic government introduced the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, which aims to sustain current research strengths and to promote research and other knowledge outputs required to meet national development needs by rewarding quality research output.

The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, gives all public higher education institutions the responsibility to enhance the effectiveness and efficiency of policy implementation. In order to ensure that the policy fulfils its main objectives, institutions are mandated by this policy to be acquainted with the national policy and procedures, and also establish internal institutional mechanisms of promoting and producing research output meeting the criteria in the national policy on the measurement of research output. This section of the chapter therefore pays specific attention to the manner in which the University of Pretoria and the University of Venda implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at institutional level. The section particularly focuses on the mechanism, strategies and policy initiatives adopted by both universities, that reflect the aims and objectives of the national policy on the measurement of research output, and also on how research output is captured and managed at an institutional level prior to submission to the Department of Higher Education and Training.

4.7.1. Institutional management of research output

The "teaching" function, that is, the knowledge transfer to students, is probably the most obvious and important mission higher education institutions have to fulfil. For this reason South African universities have always been focused on improving their knowledge base by hiring the best lecturers and developing better processes and services in order to increase the knowledge transfer to students. On the other hand, the "research" function has not been managed as carefully as the "teaching" function, since it wasn't usually considered the "core" of these institutions. However,

every South African higher education institution today understands that the research function should be managed as carefully as the teaching function.

Throughout the world, the production of research output has become a complex and competitive pursuit. Through the production of research output, higher education institutions compete for scarce state and donor funding. In South Africa, research output is recognised through government subsidy-earnings guided by the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. In this context, the management of research within higher education institutions has become a highly specialised task that requires the ability to understand and translate national policies and directives at the institutional level into opportunities for individual researchers and postgraduate students to pursue their interests and achieve their potential. However, in order to efficiently manage this task, research managers need to be able to develop and use management information systems for the purposes of monitoring, evaluating and planning in relation to national objectives as well as following up individual's careers (Higher Education Quality Committee 2005: 3-4).

The process of managing research at higher education institutions comprises activities and procedures that are geared towards creating an enabling environment for research to flourish and encouraging a culture that fosters imaginative, creative, innovative and high quality research. Research management also encompasses processes that ensure the proper allocation and management of resources, and that research projects are executed and monitored. An important element of the research management process is to ensure that research projects culminate in quality research output (Madue 2007: 79).

Since research management is an important element in creating the conditions for producing quality research, the process at the institutional level within higher education institutions has become a highly specialised and professional task. The majority of South African higher education institutions employ dedicated quality assurance officers and research and innovation directors or managers who preside over research management and administration offices. The purpose of these research management and administration offices is to ensure that institutions' research agendas together with the national policy on the measurement of research

output of higher education institutions are effectively implemented at the institutional level.

4.7.2. Institutional management of research output at the University Pretoria

Research at the University of Pretoria is managed and promoted by the Department of Research and Development Support which plays a critical role in the practical implementation of the university's research agenda. The Department is responsible for promoting quality research development and ensuring that research output submitted to the Department of Higher Education and Training meet the set criteria for subsidisation outlined in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It is also responsible for grants funding, research quality assurance and the management of a research information system that serves multiple research-specific purposes. The Department supports research planning and policy implementation, and manages the government requirements for research subsidy. Besides contributing to academic staff development through a series of targeted interventions to enhance research capacity, the Department is responsible for a range of annual reports, international research exchange and a series of research benchmarking activities. It further drives and supports the research activities that ensue from strategic partnerships and formal agreements with research councils, research institutions and government departments (University of Pretoria Research and Innovation Support 2012: 1)

The purpose of this study is to evaluate the implementation of the research output policy at the University of Pretoria and the University of Venda. In order to understand how both universities implement the research output policy and the challenges encountered, it is important to evaluate all the processes involved in the implementation process at the institutional level, which include research output submission process, research output capturing and the use of the Research Information Management System (RIMS) to capture and monitor research output prior to submission to the Department of Higher Education and Training.

4.7.2.1. Research output submission process at the University of Pretoria

The University of Pretoria has nine faculties that comprise a total of 140 departments and 85 centres and bureaus. In most cases, each department has an administrator who captures the research information of the whole department, and each faculty has a Research Information System Co-ordinator who has been appointed by the dean. The current tool used by the university to capture and monitor its research output is the Research Information Management System database. According to the Council on Higher Education (2005: 12), a Research Information Management System is a computerised information system (electronic database) that stores up-to-date and accurate information about the research and innovation activities, resources (research personnel, funding, equipment) and outputs of the higher education institution. It further states that such a system should provide for easy retrieval of information and the production of appropriate research management reports that can support the planning, monitoring and implementation of the institution's research goals.

The following flowchart diagram shows the process followed by the University of Pretoria in co-ordinating the submission and assessment of the university's research output prior to submission to the Department of Higher Education and Training:

Figure 4.1: the overall research output submission process of the University of Pretoria

Researcher	Data Capturer	RIS Co-ordinator & HoD	Research Office	DHET
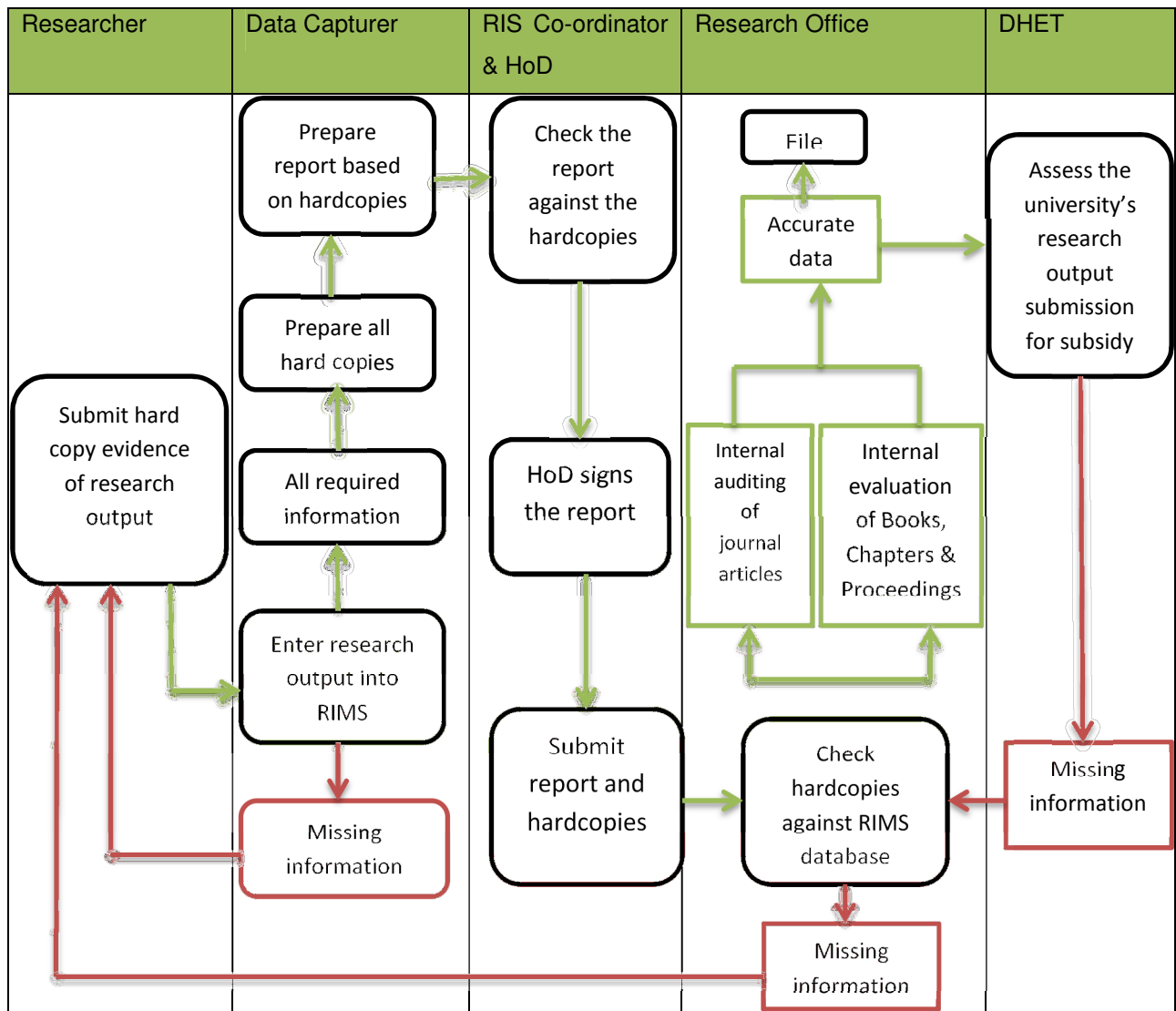
Source: Author's own adaptation

It is clear from Figure 4.1 that at the University of Pretoria, the co-ordination and capturing of the research output is made possible by the data capturers. The researchers must submit their publications to the data capturer in the department before a specific date. For any late publications, the researcher must provide, in writing, a credible motivation. The data capturer enters the publications on the Research Information Management System during the publication year. The data capturer must only enter the information directly from the copies that were submitted by the researcher and not the information that was provided in an email, a hand-written note or over the phone by the researcher. If any information is missing, the

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data capturer should contact the researcher to acquire the outstanding information. Capturing from the direct source will ascertain the accuracy of data in the system. Upon capturing all the research output in the department, the data capturer prints out a report, that is, a list of all captured publications and submits it along with the hard copies of the outputs to the Research Information System Co-ordinator for approval. It is the duty of the Research Information System Co-ordinator to check all the hard copies from different departments against their accompanying reports and to submit the reports to the heads of such departments for confirmation. The head of department signs the reports and the Research Information System Co-ordinator co-ordinates the submission of both the signed reports and hard copies to the Research Office which is the Department of Research Innovation and Support.

Within the Department of Research Innovation and Support, a team of three people manages the university's research output submission process. The team starts quality control by reconciling the hard copies with the information in the Research Information Management System. Duplicates are removed and the team liaises directly with the researcher to acquire any outstanding information. In some cases, the researchers provide wrong documents to support their submissions, for example, a printed web page showing comments and reviews about the publication instead of the unambiguous process of peer-review prior to publication. In such cases, the team contacts the researchers directly to request the correct documents. Once there are no discrepancies between the information in the Research Information Management System and the hard copies, the team arranges for the internal auditing of journal articles by independent auditors. The auditors spend 3-5 days in the Research Office while working in isolation on the journal articles. From this stage forth, no journal article will be captured in the system for this round of submissions.

Books, chapters in books and conference proceedings are prepared for evaluation by the University of Pretoria's academic panel which is chaired by the Vice-Principal of Postgraduate Studies. This panel consists of academics from different departments across the institution and the Chair approves the panellists before the evaluation. While other criteria in these publications can be readily spotted by the team in the Research Office, for example, ISBN, publication date, publisher, evidence of peer-review process and target audience, the scholarly nature of the work is best assessed by the panel. Once the research outputs have been

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evaluated, the team packs the outputs according to the format as required by the Department of Higher Education and Training, thereafter the whole research output is delivered directly to the Department of Higher Education and Training.

Although the academic aspects of research programmes within the University of Pretoria are the responsibility of the various faculties, the management of research output is centrally co-ordinated by the Department of Research Innovation and Support. From the above explanation of the submission process, it is clear that the University of Pretoria employs the systems theory in co-ordinating the research output submission and assessment process. Daniels (1994: 111) defines systems theory, also called system's thinking, as "the idea to view any business activity as a whole system of information, perception, values and activities". A system comprises a number of elements which are connected or related and which are organised, either naturally or by design, to achieve some purpose (Bentely 1998: 61).

Figure 4.1 depicts an information management system for research output management used by the University of Pretoria, whereby the system receives inputs (by data capturers and the Research Information System co-ordinator), acts upon them (processing by the Department of Research and Innovation Support) and converts them into outputs in order to meet the objective of the system (Madue 2007: 78). Research Information Management systems are used by higher education institutions to capture, monitor and retrieve research information. Such systems also provide reports which assist in the managerial monitoring and control of institutional functions, resources and other responsibilities. Through the use of the Research Information Management System, the Department of Research Innovation and Support plays a crucial role in ensuring that the research output is submitted to the Department of Higher Education and Training according to the criteria set out in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

4.7.3. Institutional management of research output at the University of Venda

Like the University of Pretoria, the University of Venda has a Research and Innovation Department which was established in 2002. The Department plays a vital role in the practical implementation of the university's research agenda together with

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the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The aim of the Research and Innovation Department is to become the instigator of vigorous and excellent research activities with the mission to drive innovative and relevant research activities in the university for the pursuit of knowledge geared towards the development of local, national and international communities (University of Venda Research Policy 2005: 1).

The willingness and commitment of the University of Venda to encourage research culture and productivity is also reflected on the specific goals and objectives of the Research and Innovation Department which are:

- To implement a clear and flexible research policy and guidelines
- To promote high quality research activities of a high national and international standard to attract national and international recognition to the university
- To drive research activities at the university in a way that it will be used as a vehicle for fund generation
- To encourage research activities that will meet the special needs of the rural population amongst whom we are situated
- To provide efficient and transparent services to researchers irrespective of race or gender
- To design and implement strategies that will motivate researchers to work hard, and to stimulate in them the urge to publish and create the necessary research culture at the university
- To design and implement strategies that will develop research capacity amongst young researchers and graduate students
- To design and implement strategies that will encourage inter-disciplinary and collaborative research work with internal and external partners
- To establish strategic research partnerships for the university and for individual researchers for quality control and to improve research capacity

The overall management and promotion of research at the University of Venda is the responsibility of the Deputy Vice-Chancellor (Academic Affairs and Research). He or she discharges this responsibility through the Director of Research, the school deans and the Research and Publication Committee, which is a committee of Senate. The

current administrative structure of the Research and Innovation Department starts with the Director who reports to the Deputy Vice Chancellor (DVC), Academic Administrator and Executive Secretary. The Directorate of Research and Innovation is responsible for the administrative function of all research related matters including capacity building, research output, collaboration and resource mobilisation (University of Venda 2005: 2).

4.7.3.1. Research output submission process at the University of Venda

The University of Venda uses a different process of research output submission as compared to the University of Pretoria. At the University of Venda, the researchers submit their publication directly to the research office which is the Research and Innovation Department where the co-ordination and capturing of these publications is made possible by the Research Administrator. The University of Venda does not make use of the Research Information Management System but instead, the Research Administrator captures research data on a spread sheet database. After capturing of the data, the draft document is sent to academics and researchers to verify their captured research outputs. Upon verification, the draft document is submitted to the DVC Academic and Director of Research and Innovation for further scrutiny. The DVC Academic then arranges for the captured data to be externally audited through the university's Director of Finance. Thereafter, it is sent directly to the Department of Higher Education and Training.

The following flowchart diagram shows the process followed by the University of Venda in co-ordinating the submission and assessment of the university's research output prior to submission to the Department of Higher Education and Training:

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Figure 4.2: The overall research output submission process of the University of Venda

Researcher	Research Office	DHET
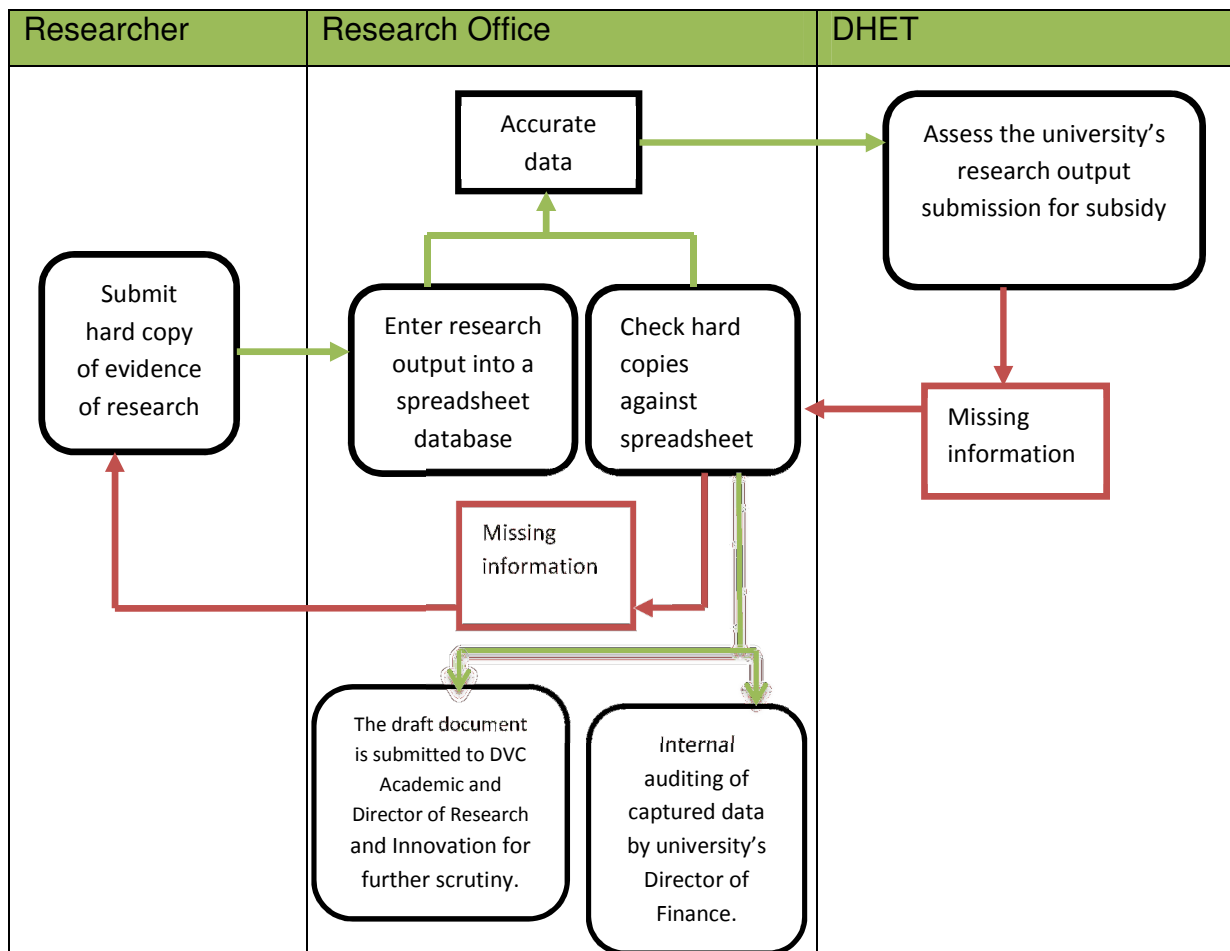
Source: Author's own adaptation

The use of a spread sheet database instead of a Research Information Management System can have a negative impact on research data capturing. Spread sheets lack detailed sorting and querying abilities and are error-prone. According to the Imperial College London (2010: 17), employing spread sheets as a system to capture research information could lead to huge difficulties in data cleanliness, management, and reporting and duplication of data entry. Research Information Management Systems play a key role in the implementation of the research output policy. Information is a fundamental resource to both government and the private sector alike. Without access to relevant information, many institutions would lose their competitive advantage over others (Van der Waldt **et al.** 2002: 129).

In the context of research information, if research data is not captured correctly, wrong information can be submitted to the Department of Higher Education and Training and therefore the whole subsidy claim can be affected. It is important that higher education institutions use a standard process which identifies various common operative phases for managing research output information. Such an information management system is vital for the collecting, capturing and monitoring of all the internal scientific publications and co-ordinating the assessment process prior to submission to the Department of Higher Education and Training. The University of Venda should consider introducing the Research Information Management System so as to improve the university's research output capturing and management.

4.8. CONCLUSION

Higher education funding through the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is driven by specific goals such as to encourage research culture and productivity, thereby encouraging the development of centres of excellence for research at universities. In terms of the policy, all public higher education institutions must annually submit their subsidy funding claims for research outputs, in the form of publications, to the Department of Higher Education and Training. The Department allocates research subsidy based on unit calculations for approved publications. Universities are mandated by the Department of Higher Education and Training to effectively implement this policy at an institutional level by putting in place measures that will realise the goals of the policy and produce sufficient quality research output required for the development of the country. This chapter intended to analyse and offer an in-depth understanding of the manner in which both the University of Pretoria and the University of Venda implement the research output policy.

The chapter began with an analysis of institutional profiles of both universities, which included the location of both universities, together with their visions and missions regarding research production. The chapter revealed that the differing political, economic and social histories and geographical circumstances of these universities have an impact on their ability to operate effectively and implement their mandates.

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The historical development of the South African higher education system has resulted in two distinct types of institutions, namely the Historically White Universities (HWU) and the Historically Black Universities (HBU), the University of Pretoria being the former and the University of Venda the latter. The key differentiating feature of the institutions being that the HWU have been well-resourced and are well developed, whereas, to a large extent, the opposite exists in the HBU. Although the democratic government has put intervention programmes and policies in place to address this imbalance and also ensure that the role that HBUs can play in the social and economic development of the people and the country is enhanced, these universities are still deeply divided in terms of material resources, research performance, research capacity, academic credibility and in the connectedness to international research environments. Therefore, the University of Venda as a HBU will struggle to implement the research output policy as compared to a Historically White University such as the University of Pretoria which is well resourced.

The chapter also provided and compared the institutional mechanisms and strategies set in place within the University of Pretoria and the University of Venda to effectively implement the national policy on the measurement of research output, and also how these strategies are implemented at an institutional level. These included the submission, capturing and management of research output at an institutional level prior to submission to the Department of Higher Education and Training. It was found that the University of Pretoria and the University of Venda employ different strategies in the implementation of the research output policy and in the management of research output. Firstly, whereas the University of Venda employs the spreadsheet database to capture and co-ordinate its research output, the University of Pretoria uses the Research Information Management System. The chapter recommended that the University of Venda introduces a Research Information Management system to capture, monitor and retrieve research information, because spreadsheets are error-prone and can therefore result in incorrect information being sent to the Department of Higher Education and Training. Secondly, the University of Venda uses a straight forward submission process where a researcher directly submits research publication to the Research Office where it is captured by the Research Administrator and the draft document is submitted to the DVC Academic and Director of Research and Innovation for further scrutiny and

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thereafter to the university's Director of Finance for auditing. At the University of Pretoria, research output travels from the researcher to the data capturer in the department, from the data capturer to the faculty RIS Co-ordinator for approval, the research output is then sent to the Research Office for internal auditing and evaluation. Thirdly, whereas the Research Office at the University of Pretoria has an independent audit team and evaluation panel which spends days auditing and evaluating research output according to the Department of Higher Education and Training predetermined criteria, the University of Venda does not have such a panel, but captured data is submitted to the DVC Academic and Director of Research and Innovation for further evaluation. It is important that universities have their own institutional panels for evaluation and auditing, as such a practice can help in avoiding the non-approval of submitted claims to the Department of Higher Education and Training.

Translation of policy directives and achieving some of the performance objectives as authorised by the policy makers has proven challenging in South Africa. The policy implementation gap can arise as a result of different factors from the policy itself, the policy makers, the policy implementers, or the environment in which the policy was formulated. The following chapter of the dissertation will then present the findings made by research and also engage in the analysis of such data. The specific policy implementation challenges faced by higher education institutions in the effort to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, are revealed in the following chapter.

CHAPTER FIVE

EXPOSITION AND ANALYSIS OF RESEARCH RESULTS: CHALLENGES IN THE IMPLEMENTATION OF THE RESEARCH OUTPUT POLICY

5.1. INTRODUCTION

The previous chapter offered an in-depth understanding of the differences between the University of Pretoria and the University of Venda with regard to the manner in which they implement the research output policy. The purpose of this study, as stated in the first chapter, was to investigate the challenges that negatively affect the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and to suggest options for overcoming these challenges with the aim of improving and increasing research output produced by higher education institutions.

Having mapped out in chapter one the process of data collection and a critical literature review of the issues at hand, the scene is now set for linking the critical issues raised in previous chapters to a practical analysis of the data collected, and for applying a check against the problem, objectives, and theoretical propositions postulated. This chapter therefore focuses on the analysis of the University of Pretoria and the University of Venda case studies in which the possible hindrances in the implementation of the research output policy are raised. This analysis will also help determine why some higher education institutions are more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Questions and responses to interviews conducted with those responsible for the implementation of the research output policy will be presented in depth.

Monitoring and evaluation is at the core of this study and is further elaborated in this chapter by focusing on the measures the Department of Higher Education and Training, as the main stakeholder in the implementation of the research output policy, has put in place to monitor and support higher education institutions, so as to ensure proper and effective implementation process. This chapter will at the end

focus on the application of the 5-C Protocol Model to the data collected in order to inform the conclusions to be made about the status of the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

5.2. RESEARCH APPROACH

As it was stipulated in the first chapter of this study, a qualitative, analytical research approach was adopted, as the study aimed to provide an in-depth description of the views of a group of people through analysing responses received from interviews. Qualitative researchers study human or social conditions and problems in their natural settings and attempt to make sense of these conditions and problems in terms of the meanings people bring to them (Fink 2005: 143). It is in this context that the qualitative research approach was adopted for collecting and analysing data on the implementation of the research output policy. The approach was adopted in order to understand the challenges encountered by research respondents in their effort to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The study also utilised other qualitative measures such as the case study method and the survey of relevant literature. The survey of the literature was conducted in order to obtain perspectives on the most recent research findings related to public policy implementation, and issues relating to the measurement of research output of public higher education institutions to improve the interpretation of results.

The data collection strategies utilised in the fieldwork were interviews and the case study method. The case studies of two higher education institutions selected for this research were the University of Pretoria and the University of Venda. The study utilised purposive sampling to select the research participants, where respondents were chosen based on who, according to the judgment of the researcher, would best supply the necessary and relevant information. Therefore, the respondents in this study are those individuals considered to have the knowledge and information in order to provide useful ideas, experiences and insights. These respondents included personnel drawn from the Department of Research and Innovation Support team at the University of Pretoria and the Research and Innovation Department team at the

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University of Venda. These departments are responsible for the practical implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at an institutional level. Relevant employees of the Department of Higher Education and Training were also interviewed, in order to gain insight on the measures and mechanisms put in place by the Department to monitor and support higher education institutions so as to ensure a proper and effective implementation process of the research output policy.

This study is explanatory, and was aimed at expanding on existing baseline literature in an attempt to integrate existing knowledge into a framework without limiting the framework to the existing literature alone. By evaluating the implementation of the research output policy, the study aims to provide a theoretical framework in which the implementation challenges can be conceptualised and solutions provided. Therefore, the interviews conducted were aimed at strengthening the quality of the research findings derived from the analysis of literature review as presented in chapter one by getting the viewpoints and experiences of those who are directly involved in the implementation of the research output policy.

5.3. PRESENTATION OF DATA ANALYSIS AND FINDINGS

According to Potter (1996: 134), there is a wide selection of data analysis methods available to qualitative researchers. These methods can be used separately, but they are more likely to be used in combination created by the researcher to fulfil a particular purpose. This section presents the data that was collected from the interviews and due to the theoretical nature of the data, the analysis is systematically categorised into sub-headings which represent different themes and concepts that emanate from the questions that were asked in the interviews. An interview schedule that was utilised for the purposes of the interviews is attached to the appendix (**Appendix A and B**) for consideration.

For the purpose of this study, three sets of interviews were conducted with those involved in the implementation of the research output policy. The first set of interviews was held with a team from the University of Pretoria Research Office and the second set of interviews with a team from the University of Venda Research Office. The last interview was held with relevant officials in the University Education

Policy Development Unit within the Department of Higher Education and Training. The interviews were conducted to check the accuracy of and verify or refute impressions gained through other methods. Interviews with implementers of the research output policy have been useful in determining the understanding and interpretations of the policy and also challenges encountered in the implementation process.

An interview schedule comprising of 18 carefully constructed questions inquiring into the status of the implementation of the policy, was utilised to interview those involved in the implementation process at the University of Pretoria and the University of Venda. Questions posed to the University of Pretoria and the University of Venda had to be similar and structured in order to allow for comparative analysis. The interview held with officials in the University Education Policy Development Unit within the Department of Higher Education and Training was also structured, and inquired about the efforts of the Department in supporting higher education institutions and ensuring proper and efficient policy implementation processes. The inquiry sought, amongst other things, responses regarding the mechanisms used by the Department of Higher Education and Training to monitor the implementation of the research output policy; how the Department ensures that universities comply with the requirements of the policy and the challenges faced by the Department in this regard.

5.3.1. Presenting data from interviews

This section therefore addresses the questions posed to the Department of Research and Innovation Support team at the University of Pretoria and the Research and Innovation Department team at the University of Venda and the responses thereto. This study seeks to solicit knowledge, understanding and insight from those who are directly involved in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

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i. The role of the department in implementing the research output policy

The first question inquired about the role of the department in implementing the research output policy. The Director of Research and Innovation Support began by explaining that the Department facilitates the creation of an enabling environment to conduct research and obtain funding from third parties; it also provides information and operational support to the university's research programmes. However, the unit which is particularly charged with implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is the Research Output Unit which falls under the Department of Research and Innovation Support. Besides evaluating and capturing the research output prior to submission to the Department of Higher Education and Training, the unit is responsible for making sure that researchers understand the policy. The members of the unit mentioned that this is a challenging task because there is a power relationship between them as administrators and academics, where some senior academics argue that the administrators' interpretation of the policy is wrong and theirs is right. This misinterpretation of the policy often results in academics submitting research output that does not meet the policy requirements.

The unit also develops strategies to ensure that researchers and academics report their research output. It was mentioned that sometimes there are gaps in the reporting of research output. For instance, it is difficult for data capturers to know if a certain book was written by the University of Pretoria academic if the author did not report it.

The Research and Innovation Directorate at the University of Venda also plays a crucial role in the practical implementation of the university's research agenda, together with the implementation of the Policy and Procedures for the Measurement of research output of Public Higher Education Institutions, 2003. Its key performance areas as responsibilities include, research capacity building, research funding mobilisation, research output and research administration capacity building.

It was mentioned that the Directorate's priority is the development of basic and applied research. The Directorate aims to build a support cadre of research leaders such as postdoctoral fellows, research professors, and professor emeriti, and also to develop support and training programmes to assist staff and postgraduate students

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to publish their research findings and to participate in regional, national and international conferences with the aim to increase the University of Venda's research output.

ii. **Lack of sufficient resources as a hindrance to effective implementation**

The second question raised with the respondents inquired if the Department has enough resources such as human, finances, equipment and so forth required to achieve its objectives and effectively implement the research output policy. The lack of sufficient human resources was identified by respondents as the biggest constraint in the implementation of the research output policy. The University of Pretoria has 160 data capturers throughout all faculty departments who play a role of capturing data on the RIS system and collecting hard copies of the research output in the form of books, chapters in books, published conference proceedings and journal articles to be submitted to the Department of Research and Innovation Support.

The research output unit within the Department of Research and Innovation Support plays a pivotal role in managing the system, verifying technical requirements of each submission, comparing the submitted research output against the subsidy requirements of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and ensuring that research output presented to the auditors actually qualifies for subsidy. However, the research output unit lacks sufficient human resources to carry out its mandate. Respondents revealed that the unit currently has one permanent staff member, one intern and one person on contract, and it is extremely difficult for three people to evaluate and go through the whole University's research output prior to submission to the auditors.

The lack of sufficient human resources is also a challenge for the University of Venda. It was identified that the Research and Innovation Directorate currently has two senior staff members, three administrators, one secretary, two interns and one staff member on short term contract. Considering the extensive responsibilities assigned to the Directorate, these human resources are not sufficient and there is a need for more staff appointments in order to effectively carry out the Directorate's mandate.

iii.   The capacity needs of the department

The third question probed into the capacity building needs of the Department. Both respondents from the University of Pretoria and the University of Venda argued that there is a serious need for human resource capacity. In this regard, human resource capacity was defined as a measure to ensure that the Department of Research and Innovation Support and the Research and Innovation Directorate have a sufficient number of qualified people in the right place at the right time to achieve their objectives.

Respondents from the University of Pretoria jointly argued that it would be better if research output capturing is centralised, where there will be a pool of about 10 employees residing in the research office employed exclusively to evaluate and capture data. Unlike the current decentralised system where research outputs are captured in the various academic departments by different people who have their own understanding of the policy and sometimes are not even aware of all the requirements for subsidy publication, the centralised system will ensure more quality control. The need for human resource capacity is intensified by the fact that the University of Pretoria is the largest research residential university in South Africa and therefore has a huge volume of publications. When the interview was conducted 3 400 journal articles were already submitted to the Department of Research and Innovation for evaluation and verification, this is excluding books and conference proceedings. Therefore, it is extremely difficult for three people to evaluate and go through the whole university's research output prior to submission to the auditors.

Besides human resource capacity which was earlier mentioned as a constraint in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Venda, respondents mentioned other areas in which the Directorate needs to build capacity for it to function effectively and efficiently. These areas include technology transfer support, which also incorporates technology transfer programmes that will close the chasm that exists between the knowledge generated in universities, and the impact that this knowledge has on the growth and development of communities; grant management; postgraduate student support and specialised training provision for researchers including staff and students.

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iv. Understanding and complying with the content of the research output policy

According to both the respondents from the University of Pretoria and the University of Venda, the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is very clear and straight forward for them, and therefore very easy to understand. At the University of Venda, the policy document is often placed on agendas for Schools or Senate Research and Publications Committees so that all researchers are familiar with the policy. It is also sent by email to all university staff. However, it was revealed that convincing academics to comply with the policy requirements for subsidy before preparing for publications is a great challenge in both universities. The subsidy requirements for journals, books and conference proceedings are clearly stated in the policy as outlined in chapter three of this study, yet academics are inclined to push through every publication even if it does not meet the criteria set out in the policy.

The most common examples experience by the Department of Research and Innovation Support and the Research and Innovation Directorate include the submission of textbooks, books with no evidence of peer review, articles which are published in journals not appearing in the indices listed in the policy. It is important for academics to make an informed decision before choosing a publisher or journal, however this is a challenge. The respondents from the University of Pretoria mentioned that this behaviour is exacerbated by the pressure the university puts on academics to produce numbers of research outputs, which almost inevitably places quantity of research ahead of quality.

It was highlighted that it is not easy to comply with the policy requirement of affiliation of authors in the context of the University of Pretoria. The university has got a lot of extraordinary professors who are above the retirement age and therefore, are not registered as full-time employees by the human resource department. As a result, some articles are published without proof of University of Pretoria affiliation. Another problem regarding affiliation is that of researchers who are linked to science councils or research institutions, and in most cases, these researchers list these facilities in their publications as their affiliation instead of the University of Pretoria.

The research database manager at the University of Pretoria proved that complying with the content of the research output policy is a huge challenge when she held that

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"a lot of output is submitted but never gets past the academic panel which is appointed to check the scholarly nature of research output". Academics tend to think that everything they write qualifies for subsidy and this is not always the case.

v. Gaps in the research output policy

The respondents were asked what they perceive to be the gaps in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. This question aimed to provide participants with an opportunity to express their issues of concern about the policy itself. This question helped in gathering all the dissatisfactions the participants have about the policy. Respondents from both the University of Pretoria and the University of Venda held the same frustration that some of the important journal indices which academics publish in are not recognised by the policy. Therefore there should be consideration of other journal indices in the policy. It was also mentioned that the policy excludes other important research outputs such as artwork, music and artefacts. Respondents argued that other knowledge output produced by academics such as textbooks they publish, chapters in books and patents should be recognised somewhere in the policy as they also contribute and add to the existing body of knowledge. It was also mentioned that in terms of procedures, the Department of Higher Education and Training constituted panel needs to be more representative of disciplines within the Classification of Educational Subject Matter (CESM) categories, and types of institutions.

vi. The implementation of institutional research output policy in line with the national policy

This question probed about the existence of an institutional research output policy in line with the national Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and if such a policy is accompanied by an official programme of action regulating implementation. The University of Pretoria does not have an institutional research output policy but adopted a framework called the 'Quick Guide' which is the shortened version of the Policy and Procedures for the Measurement of Research Output of Public Higher

education Institutions, 2003, as well as the InfoEd Research Information Management System Research Output Module user manual. This framework consists of guidelines explaining what to do and how to do it. The respondents highlighted that they have a system in place which can be regarded as a programme of action where they inform academics, departmental capturers and RIS co-ordinators when the system is open to send through their research output and give them a timeline of when the system will be closed again. However, it was mentioned that most of the time researchers don't keep to the timeline.

The University of Venda has an institutional research output policy which was developed in 2001 and amended in 2005. This policy document contains the general information related to the research enterprise at the University of Venda. According to respondents, this institutional policy promotes research output that meets the subsidy requirements of the national Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It was mentioned that within the University of Venda research policy, there are sections dealing with institutional expectations of researchers' outputs which are implemented, and these are regarded by the university as a programme of action regulating the implementation of the policy.

vii. **The effectiveness of structures and measures established by universities to evaluate, monitor and screen research output**

Two questions were further posed to the respondents. One question probed the existence of the structures and measures established by the university to evaluate, monitor and screen output in terms of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, prior to submission to the Department of Higher Education and Training; whereas the second inquiry sought to have responses regarding the effectiveness and efficiency of these measures. According to the respondents at the University of Pretoria, the process of evaluating and screening research output starts in the academic departments where researchers submit their publications to the data capturer in the department to be entered into the Research Information Management System. Upon capturing all the research output in the department, the data capturer prints out a

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report, that is, a list of all captured publications, and submits it along with the hardcopies of the outputs to the Research Information System Co-ordinator for approval. It is the duty of the Research Information System Co-ordinator to check all the hard copies from different departments against their accompanying reports and to submit the reports to the heads of such departments for confirmation. The heads of department must sign the reports and the Research Information System Co-ordinator co-ordinates the submission of both the signed reports and hard copies to the Department of Research and Innovation Support.

After research output is submitted to the Department of Research and Innovation Support, the research output team starts quality control by reconciling the hard copies with the information in the Research Information Management System. Once there are no discrepancies between the information in the Research Information Management System and the hardcopies, the team arranges for the internal auditing of journal articles by independent auditors who are the university's financial auditors. From this stage forth, no journal article will be captured in the system for this round of submissions. The evaluation of books, chapters in books and conference proceedings is conducted by the University of Pretoria evaluation committee which consists of academics from different departments across the institution and chaired by the Vice-Principal of Postgraduate Studies. The research database manager at the University of Pretoria mentioned that *"in the last four years, the university has had 0.01% error rate with the auditors and we want to keep that up"*. Therefore it can be argued that these structures and measures established by the University of Pretoria to evaluate and screen research output prior to submission to the Department of Higher Education and Training are effective in ensuring that research output submitted is without error and meets the requirements of the policy.

At the University of Venda the researcher first submits a manuscript to publishers, and once accepted, they make a submission to the Research and Innovation Directorate with relevant documentation. The journal chosen is then evaluated by members of staff in order to ensure compliance with the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Only manuscripts accepted by journals in line with the policy are considered for publication funding. If the journal chosen is not recognised by the policy, the researcher is advised to change or pay for it themselves. Once published, the

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researcher is expected to submit a copy of the original article to the Research and Innovation Directorate.

After research output is submitted to the Directorate, the Research Officer of the Directorate of Research and Innovation uses the Department of Higher Education and Training template to capture research outputs. After data is captured, the draft document is sent to academics and researchers to verify their captured research outputs. Upon verification, the draft document is submitted to the DVC Academic and the Director of Research and Innovation for further scrutiny. The DVC Academic will then arrange for the captured data to be externally audited through the University of Venda's Director of Finance. The audited research output is then submitted to the Department of Higher Education and Training.

viii. **Other tools used by the department to manage the technical and quality requirements of research output data**

Besides the template provided by the Department of Higher Education and Training, the Department of Research and Innovation Support at the University of Pretoria established a detailed Research Output Module user manual that guides faculty Research Information System co-ordinators and data capturers on effective data capturing techniques. For the convenience of researchers, data capturers and faculty RIS co-ordinators, the Research Output Module user manual is available as a hardcopy and can also be accessed on the university website. To complement the Research Output Module user manual, the Department of Research and Innovation Support has also drafted a checklist for research output which data capturers and RIS co-ordinators can use to manage the technical requirements of each submission.

The Research and Innovation Directorate of the University of Venda has not yet established other tools or mechanisms to manage the technical and quality requirements of research output data, but relies only on the template provided by the Department of Higher education and Training. The list of SAPSE- accredited journals and articles published in conference proceedings recognised by the Department of Higher Education and Training is also consulted when evaluating research output.

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ix. The main challenges faced by the university when implementing the research output policy

Participants were requested to conceptualise the main challenges that perhaps both the University of Pretoria and the University of Venda may be confronted with when attempting to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The question elicited varying opinions on what constitutes the policy implementation challenges in both universities.

Respondents from the University of Pretoria identified four key challenges. The issue of capacity emerged again, more specifically human capacity. There is an urgent need to enhance human resource capacity within the Department of Research and Innovation Support, in order to ensure efficient research output capturing and therefore proper policy implementation. The second problem emanates from communication, as it was identified that since researchers are very busy, it is always difficult to get a prompt response when certain documents that will qualify their publications for subsidy are outstanding. Another issue with regard to communication lies with the Department of Higher Education and Training, and respondents mentioned that getting feedback from the Department on submitted research output takes a long time and this is a big problem that must be addressed. Thirdly, a very high number of a diverse group of data capturers from different faculty departments presents a serious challenge with regard to data capturing. This is exacerbated by the fact that data capturers are primarily departmental administrators who treat research output data capturing as an add-on to their portfolios. The ultimate result as one respondent pointed out is that data is not properly captured. Respondents suggested that data capturing should be centralised in order to have more quality control. Fourthly, another major challenge faced by the Department of Research and Innovation Support lies with the researchers, as accurate information as well as the relevant output types are best known by them, however researchers tend to submit research output not eligible for subsidy. One respondent highlighted that in an academic environment, everything is open to interpretation, and, as such, academics want to interpret the research output policy in a way that will suit them and their publications.

Respondents from the University of Venda identified three main obstacles hindering the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at an institutional level. The first challenge has to do with compliance as many researchers believe in choosing publication houses they like, whether recognised by the policy or not. Researchers also have a tendency to submit conference proceedings that are not recognised by the policy. It seems that researchers do not consult the list of journal indices provided in the policy when choosing journals in which to publish. Secondly, researchers tend to submit their research output to the Research and Innovation Directory subsequent to the deadline, and this late submission affects data capturing of research outputs. This consequently affects all other processes that have to take place such as the evaluation of the research output prior to submission to the Department of Higher Education and Training. The last challenge mentioned originates from barriers in communication, as it was mentioned that it is clear that researchers do not understand the requirements of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and some insist on submitting theses and dissertations, book reviews, abstracts, edited works, non-peer reviewed articles in journals and conference proceedings, fiction novels and biographies. Respondents argued that this is a result of a communication problem because school representatives who are responsible for informing and ensuring that researchers are fully acquainted with the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, seem not to be able to convey the correct interpretation of the policy to their colleagues. Another communication challenge faced by the University of Venda is with the Department of Higher Education and Training; respondents mentioned that the Department should improve its communication to universities especially on issues regarding the annual modification of the different lists of journals for subsidy. It was revealed that the Department makes changes to the lists of journals and requires immediate implementation. This act discourages researchers who may have engaged with a journal for the publication of an article for over 18 months only to realise that it is no longer on the list of the policy accredited journals when it is published.

Table 5.1: **An illustration of the main obstacles hampering effective implementation of the research output policy at the University of Pretoria and the University of Venda as perceived by respondents**

The University of Pretoria	The University of Venda
• Lack of human resource capacity.	• Lack of human resource capacity.
• Lack of communication between researchers and the research office. • Getting feedback from the Department of Higher Education and Training takes time.	• Lack of communication between school representatives and researchers. • Lack of communication between the Department of Higher Education and Training and the research office.
• Lack of policy compliance by researchers, characterised by researchers submitting research output not eligible for subsidy • Misunderstanding of the policy content by researchers	• Lack of policy compliance by researchers, characterised by researchers submitting research output not eligible for subsidy • Misunderstanding of the policy content by researchers
• Decentralised data capturing process, as a result data is not properly captured.	

It is clear that respondents from the University of Pretoria and those from the University of Venda identified similar obstacles as hindering effective implementation of the research output policy.

x. **Factors contributing to the university's success or failure in research productivity**

Respondents were asked to give their own opinion on whether or not the university was currently doing well in terms of its research productivity, and what they thought to be contributing factors to this success or failure in research productivity. Respondents from the University of Pretoria commonly held that the university is

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currently doing well and that this success is contributed to by numerous factors, such as the fact that the university has a good foundation of putting emphasis on research, and for instance, the prioritisation of research over teaching hence a higher number of research staff than teaching staff. Secondly, the university continuously invests in growing its research output, mainly by establishing new institutional platforms for increasing research productivity. For example, the university has an internal support system for the newer generation of researchers, giving them all the support and training they need to produce useful original research that advances knowledge. There is a Post-doctoral Fellowship Programme and PhD funding where participants are funded for three years (in that period they are expected to produce research output). This programme also provides established and research entities with opportunities to recruit outstanding young individuals to increase their research capacity and activities. The Department recently introduced an Early Career Development Programme which will be running writing workshops together with mentoring programmes. There is also a programme of International Exchange where staff and students are encouraged to participate in special programmes to pursue research activities with international universities, and therefore that enhances research outputs. Senior researchers in some departments also co-publish with students in an effort to encourage students to publish, thus leading to a bigger pool of academics. According to respondents, the fact that deans of faculties keep a very close watch on research activity is also a contributing factor to the university's success in research productivity.

It is clear that the University of Pretoria constantly invests in numerous mechanisms of encouraging research productivity. However, a respondent pointed out that although the University of Pretoria is doing well in terms of research productivity, it could do better if all academics contributed to this success. It was indicated that a high proportion of research publication units (80%) are contributed by a small number of academics (20%). This imbalance poses a threat to the university's research productivity because once those academics who are actively participating in the production of research leave the university, the units will drop instantly.

Respondents from the University of Venda also held that the university is currently doing well; research output productivity has improved over the past 5 years. It was revealed that the contributing factors to this success are anchored on intervention

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measures put in place by the university leadership, especially the DVC Academic. These measures include incentives for authors and supervisors or promoters; interventions to support emerging researchers such as support for scientific visits; special support given to staff towards attainment of masters and doctoral degrees from a research development grant; increasing and mobilising resources for research; advancement of numbers of students in postgraduate studies and postdoctoral fellows; ensuring that appropriate resources for both researchers and postgraduate students are available and improving multi-disciplinary internal and external research collaboration support.

Respondents highlighted that the University of Venda is committed to increasing research capacity through the recruitment and retention of active researchers, rated researchers and a special cadre of professors. Effective research management and monitoring interventions such as Research and Publications Committees and Research Ethics Committees were also introduced. Also, putting in place reward mechanisms such as the Vice Chancellor's awards for Research Excellence, amongst other incentives, contributed to the encouragement of research productivity and therefore an increase in the university research output.

xi. **Reward system for research production**

The purpose of this question was to determine reward strategies implemented by both the University of Pretoria and the University of Venda in order to motivate their researchers to perform at their best and produce sufficient original research that advances knowledge. To perform at their best, most individuals need to have financial or other extrinsic rewards tied to their performance.

The respondents at the University of Pretoria mentioned that, the university rewards its researchers in a number of ways. Firstly, there is a Publication Rewards Scheme in which the university rewards all academics who produce research in an academic year with a portion from the subsidy received from the Department of Higher Education and Training for the institutional research outputs. This money is available to fund research activities. Secondly, there are Faculty Research Funds, which staff members can access; however, faculties have their own criteria for allocating funds to faculty members. Faculties also have discretion over the aims of their funding and

the types of activities that they fund. Most faculties provide funding for conference attendance to faculty members. Thirdly, researchers, particularly those who obtain or retain NRF ratings, receive bonuses and contributions to their research funds.

Researchers of the University of Pretoria also receive non-monetary rewards in the form of prestigious awards. These awards include the Chancellor's Award, the Award for Outstanding Academic Achievement, the Exceptional Young Researcher Award and the Faculty Awards. Certificates for these achievements are presented at institutional events annually. According to the respondents, these monetary and non-monetary rewards play an essential role in promoting a high performance research culture.

The University of Venda has reward systems in place which are also recognised in the University's Research and Innovation Policy used to reward academics who produce research. Firstly, researchers submit proposals for their projects which are internally funded up to R150 000.00. Secondly, productive researchers are sponsored up to R45 000.00 to attend conferences, workshops and symposia. Researchers are also given financial support to attend three international and two national conferences provided they have presentations to make. Thirdly, the university acknowledges its NRF rated researchers by rewarding them with appropriate incentives, including bonuses. Lastly, the University of Venda has the following other annual awards for research excellence:

- Researcher with most publications
- Researcher with most external funds
- Researcher with most research masters students graduating that year
- Research with most research doctoral students graduating that year
- Researchers who attracted R500 000.00 external funds for research
- School with most publications
- School that has shown significant improvement in its research outputs
- School with most active researchers
- Rated researchers
- Masters supervisors and co-supervisors
- Doctoral promoters and co-promoters

5.4. THE DEPARTMENT OF HIGHER EDUCATION AND TRAINING

Since the policy under investigation is a higher education policy, it was important and relevant for this study to also inquire into the role of the Department of Higher Education and Training in its implementation. The aim of this inquiry was to particularly gain insight on what the Department of Higher Education and Training as the main stakeholder of the Policy and Procedures for the Measurement of Research Output of Public Higher education Institutions, 2003 is currently doing to monitor and support higher education institutions so as to ensure proper and effective implementation processes. An interview was held with the Chief Director of the University Education Policy Development Unit, which is the unit in the Department of Higher Education and Training particularly charged with the implementation of the research output policy. The following is the presentation of data yielded from the interview.

5.4.1. The role of the university education policy development

The role of the Unit is to provide leadership on different policies within the higher education or university sector, including their implementation, monitoring and improvement. Most importantly, the Unit manages the policy on the subsidisation of research output, titled: Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The Chief-Director explained that this is aimed at providing support for the development of research at public universities. It was also revealed that the Unit is currently developing another policy on research development in the sector. In addition, the respondent highlighted that the Unit manages the Higher Education HIV and AIDS Programme (HEAIDS) in collaboration with Higher Education South Africa (HESA), and is also responsible for the promotion of the internationalisation of the university education system.

5.4.2. Supporting higher education institutions to ensure proper and effective implementation

The second question probed the measures used by the Department of Higher Education and Training to support higher education institutions, in order to ensure

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proper and effective implementation processes of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. According to the respondent, the Department frequently visits higher education institutions for meetings with research office staff and also make presentations to academics. These meetings and presentations focus on the policy requirements, the panel process, and the general problems encountered on the submissions of the institutions visited.

The Department also organises mini-workshops to assist staff from research offices with regard to the policy implementation and respond to any questions or problems that they might have regarding the submission of research output claims. The workshops also involve practical sessions where attendees have to go through the process of capturing the research outputs in preparation for the submission to the Department of Higher Education and Training.

The respondent held that the Department is very supportive to higher education institutions and there is constant communication with institutions through email. The Department also had an electronic Communiqué that was regularly sent to higher education institutions but due to staff shortages, this has been halted.

5.4.3. Monitoring and evaluation mechanisms to oversee proper implementation of the policy

The third question focused on monitoring and evaluation mechanisms set in place to oversee proper implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It was revealed that the Department monitors and evaluates the implementation of the policy through direct interaction with the institutions. The Department interacts with research offices and Deputy Vice-Chancellors responsible for research with the aim to monitor and evaluate the implementation process, by listening or accepting feedback from the institutions about the policy and by conducting annual analyses of the performance of the individual institutions and the sector as a whole.

5.4.4. The main policy implementation challenges faced by the Department of Higher Education and Training

A question regarding the challenges faced by the Department of Higher Education and Training when implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, was raised with the respondent. According to the respondent, the implementation of the policy requires personnel and the Department is lacking in this regard. As in the cases of the University of Pretoria and the University of Venda, lack of human resource capacity present a serious implementation challenge for the Department of Higher Education and Training. Furthermore, the respondent also highlighted that the monitoring of policy implementation and performance requires close analysis and scrutiny, which means meticulous attention to detail which also requires adequate personnel, which the Department is currently lacking.

5.5. THE ANALYSIS OF THE RESEARCH RESULTS

The previous section provided an in-depth presentation of data gathered from interviews. This section of the chapter therefore analyses the data yielded by research using the 5-C Protocol Model as the tool of analysis indicated in the previous research methodology chapter. The intention is to interpret and model data yielded so that it is made clear as to what it means in respect of the research questions proposed by this study.

5.5.1. The content of the policy and the extent of its implementation in the university

The fundamental question that must be raised at this level of inquiry about the implementation of the content of the research output policy within the University of Pretoria and the University of Venda is twofold. On the one hand, it is important to indicate on the basis of the data collected, whether the policy is regulatory, distributive or redistributive in content. On the other hand, based on the data collected there is a need to indicate whether the content of the policy is implementable. In a sense, what needs to be interrogated is whether the content of

the policy is realistic and easily understood by all parties involved in the implementation process.

There is a clear regulatory content in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The policy stipulates rules and procedures that regulate how higher education institutions are expected to produce research output. This regulatory content is expressed in the policy's expectation that every academic publish at least 1.25 articles annually in journals that the Department has accredited. Higher education institutions receive financial rewards in the form of subsidy for meeting this target, and are penalised for failing to meet it.

The regulatory content of the research output policy is coupled with a strong redistributive content evident in the policy's intention. The democratic government saw a need to overturn the inheritance of a fragmented, racially divided and inequitable apartheid higher education system by introducing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, as the new funding framework. This funding framework is a goal-oriented and performance-related redistributive mechanism that explicitly links the allocation of funds to academic activity and research output contributing to the social and economic development of the county.

This study has also established that the content of the policy must be properly understood by all parties involved in and affected by the implementation process for it to be successful. In this regard, the data collected suggests that not all parties involved in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, understand its content. Whereas employees in the research offices at both the University of Pretoria and the University of Venda understand the content of the policy, researchers in both universities seem to be struggling in this regard. This is exemplified amongst other things by the inability of researchers to comply with the policy and submit appropriate research output meeting the policy requirements. This presents a threat to the potential that the policy has to resolve, in a targeted manner, the nature of the problem it seeks to address. Public policy is intended to be an integrated intervention that seeks to resolve a specific problem experienced collectively and has been

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politically constructed as warranting solution. To this extent, public policy presupposes a type of theory intended for social change. Therefore, there is a need for all the stakeholders involved in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, to have a mutual understanding of the policy in order to ensure effective and efficient implementation processes. Although there is poor understanding of the policy by the researchers, the data collected revealed that the policy content is implementable and realistic, as it contains comprehensive goals and objectives and the implementation plan to be followed by implementers.

The research also revealed that there are gaps in the policy content which impact policy implementation. These gaps include the research policy's non-recognition of other research outputs important to academics such as textbooks, artwork, music and artefacts and other important journal indices in which academics publish.

5.5.2. The role of the institutional context in the implementation of the policy

The context in which a policy is implemented contributes a crucial role in ensuring successful implementation, and may perhaps be the difference between the success and the failure of a policy. At this level of inquiry, it is important to pay attention to the challenges resulting from contextual influences which impact on effective implementation processes. As Brynard (2005: 17) puts it, the focus should be on the institutional context which, like other variables, will necessarily be shaped by the larger context of social, economic, political and realities of the system. In South Africa, social inequalities were embedded and reflected in all spheres of social life, as a product of the systemic exclusion of blacks and women under colonialism and apartheid. The higher education system was no exception. Social, political and economic discrimination and inequalities of a class, race, gender, institutional and spatial nature profoundly shaped, and continue to shape, South African higher education. Given this, South Africa's new democratic government committed itself in 1994 to transforming higher education as well as the inherited apartheid social and economic structure and institutionalising a new social order. Policy makers in the democratic dispensation formulated a comprehensive research policy framework to overturn the inheritance of a fragmented, racially divided and inequitable apartheid

higher education system. The Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, was formulated in the context of the social, economic and political variables confronting the higher education system.

Though policy makers had considered the social, economic and political variables, they have often failed to connect institutional environmental variables of higher education institutions to deliver upon the mandate. It is evident in the Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, that higher education institutions are given a greater developmental mandate to produce scientific knowledge output required to meet national development needs, however, data collected reveals that institutional context of universities has a great bearing on the manner in which universities will successfully achieve their research mandate and properly implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

There are various contextual factors impacting policy implementation at both the University of Pretoria and the University of Venda. Firstly, when comparing both universities, it is clear that the University of Pretoria as a HWU has always been well-resourced and well developed, whereas, to a large extent, the opposite exists in the University of Venda which is a HBU. Although the democratic government has put intervention programmes and policies in place to address this imbalance and also to ensure that the role that HBU can play in the social and economic development of the people and the country is enhanced, these universities are still deeply divided in terms of material resources, research performance, research capacity, academic credibility and in the connectedness to international research environments. All these are factors in the institutional context which hamper implementation. The University of Venda finds it difficult to implement the research output policy as compared to the University of Pretoria which is well resourced.

The lack of effective strategic direction demonstrated by the profound absence of specific institutional programmes of action particularly designed to regulate the implementation of the research output policy in both the University of Pretoria and the University of Venda, is another factor in the constitutional context hampering

implementation. If an institution lacks a scientific mechanism designed to guide all parties involved on what and when is required of them, it is likely for the implantation process to be unsuccessful. Both the University of Pretoria and the University of Venda lack such a mechanism.

The shortage of human resource capacity and the misunderstanding of the policy content are further indicators of an institutional context not favourable to effective implementation of the policy. The data collected revealed that these factors are the main challenges faced by both universities in the effort to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It is important to note that the 5-C Protocol variables can influence and condition each other during the implementation process. In this regard, it is evident that the capacity to implement and the understanding of the policy content by the implementers impacts on the policy implementation context.

5.5.3. The commitment of actors to implement

The commitment of those entrusted with carrying out implementation at various levels is one of the key factors identified as crucial to the successful implementation of policy. The use of appropriate leadership and management styles, motivation and reward systems can have an impact on implementers' attitudes and therefore commitment. According to the implementation data collected, it is evident that the University of Pretoria and the University of Venda use various strategies to motivate and encourage researchers so that they can be committed to research production. Firstly, the different reward systems used by both universities, such as research bonuses, publication awards and research funding, play a crucial role in promoting a high performance research culture and commitment. Secondly, interventions to promote research such as the Post-doctoral Fellowship and PhD funding where participants are funded for a couple of years and in turn produce useful original research, are also meant to ensure the commitment of researchers. Thirdly, the mission and vision statements of both the University of Pretoria and the University of Venda also indicate the commitment of these universities to achieve their research mandate and properly implement the national research output policy.

The Department of Higher Education and Training visits higher education institutions and conducts annual performance analysis of research production of higher education institutions. This is intended to monitor and ensure the commitment of actors in the policy arena. There is also a sense in which the regulatory content in the form of the legal mandate of the policy can be regarded as another form of mechanism used to ensure commitment from higher education institutions entrusted with the implantation of the intervention. The purpose of the research output policy is to encourage research productivity by rewarding quality research output at public higher education institutions. To this extent therefore, the policy links effective implementation to the commitment of the targeted actors.

According to Makinde (2005: 64), the level of implementation success will depend on how the implementers see the policy as affecting their organisational and personal interests. For instance, if a policy will result in reduction of pay, low self-esteem or loss of position to the implementers, the attitude will be affected negatively. On the other hand, if a policy enhances the status, pay or self-esteem, the implementers will be favourably disposed to it and therefore committed to its implementation. When the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is effectively implemented and therefore scientific knowledge produced, the academic status and profile of the author and his institution will be enhanced; the institution will receive a subsidy from the Department of Higher Education and Training; and academic promotion will be increased due to a strong record of research publications. Therefore, it is clear that the research output policy positively affects the implementers' organisational and personal interests.

The actual implementation of the policy, as per the data collected, however depicts low levels of commitment from some of the actors on whose behaviour implementation depends. This is indicated in a number of instances identified during field interviews:

- Responses received from respondents regarding the main challenges faced in the effort to effectively implement the research output policy revealed that researchers tend to submit research output not meeting the policy requirements for subsidy. It seems as though researchers do not consult the

policy when producing research and choosing journals in which to publish. This is an indication of lack of commitment.

- Lack of commitment is also evident in the fact that some researchers do not respond on time when certain documentation that would qualify their publications is missing. The research output policy explicitly states that all documents and information must be submitted to the Department of Higher Education and Training timeously and must be accurate. However, researchers tend to submit their research output to the research office subsequent to the deadline.

- At the University of Pretoria data capturers are primarily departmental administrators who treat research output data capturing as an add-on to their portfolios, and therefore tend to inaccurately capture data. This behaviour depicts lack of commitment to implement the research policy by departmental administrators.

- The fact that a high proportion of research publication units (80%) are contributed by a small number of academics (20%) suggests that the majority of academics are not committed to the implementation of the research output policy. Once the academics contributing to the 80% of units leave the university, the units will drop instantly, thus impacting on the commitment of the university's mandate to produce research.

- The interrogation of implementation documents such as universities' strategic plans have no clear focus on the requirements of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Whereas the University of Pretoria does not have an institutional research output policy document but uses the 'Quick Guide' and the InfoEd Research Information Management System Research Output Module user manual, the University of Venda has an institutional research policy. However, with reference to the University of Venda research policy document itself, it is clear that the policy does not incorporate processes and procedures of the national policy. To this extent, there is not enough commitment to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003 displayed in the strategic planning processes of the University.

5.5.4. The capacity of the university to implement

For policy implementation to be successful, it is fundamental for institutions to have the necessary administrative and other abilities required to carry out the implementation process. The research revealed that it is important for higher education institutions to have the necessary skills and resources to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. These necessary skills and resources include the availability of sufficient numbers of qualified staff within the research offices to evaluate and capture research output data, and also academic and research staff having skills and greater ability to perform useful research, together with financial resources and infrastructure that will allow them to effectively engage in and produce quality research.

The assessment of the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, within the University of Pretoria and the University of Venda depicts severe capacity limitations. The lack of sufficient staff was found to be of particular concern during the implementation process. Both Universities and the Department of Higher Education and Training sited this as a burning issue and a major stumbling block. The implementation of the research output policy at an institutional level requires the production of sufficient quality research output focusing on national development needs, the capturing of research output and the evaluation of submitted research output against the requirements of the policy. All this requires adequate personnel which is lacking at the moment. In other words, the implementation of the research output policy is personnel intensive.

Data yielded revealed that the University of Pretoria lacks sufficient administrative staff in the Research Office, whereas the University of Venda lacks both the administrative staff in the Research Office and academic staff having appropriate qualifications to oversee postgraduate research and advance knowledge creation. The University Education Policy Development Unit within the Department of Higher Education and Training which is charged with managing the national research output policy and providing support to higher education institutions also has a shortage of staff.

The important question in understanding how capacity influences implementation effectiveness is not simply one of 'what capacity is required and where?' but also of 'how this capacity can be created and enhanced?' Effective implementation of public policies can be achieved by building capacity where it is lacking. The analysis of the content of the research output policy reveals that mechanisms to ensure adequate capacitation of the actors involved in the implementation process are not incorporated in the policy. However, both the University of Pretoria and the University of Venda employ various institutional mechanisms to enhance research capacity. These mechanisms include amongst others, post-doctoral fellowship and research training and workshops provided by the University of Pretoria, and funding given to staff towards the attainment of masters and doctoral degrees and research collaboration support evident at the University of Venda. It was earlier mentioned that the 5-C Protocol variables are all linked to and influence one another. In this regard, the policy content may not provide for resources for capacity-building, however the commitment of implementers to the goals which is reflected in the effort of both the University of Pretoria and the University of Venda to employ institutional mechanisms of enhancing the capacity to implement, may make up for the lack of such capacity.

5.5.5. The role of clients and coalition

The support of clients and outside coalitions is another critical variable contributing to the successful implementation of a policy. One of the first steps in a successful implementation process is the identification of the key stakeholders from a wide range of stakeholders whose interests are directly affected by the policy, and to that extent, have the greatest potential to influence its implementation one way or the other. To ensure successful implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, there is a need for regular consultation, debate and dialogue with those affected by the policy.

The Department of Higher Education and Training and higher education institutions have obvious stakes in the implementation process; however, it is important to identify other key stakeholders and to understand their interests and strategies in

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relationship to those of decision-makers and implementers (Najam 1995: 52). The resources such stakeholders can harness (financial, technological, informational and even moral authority) can significantly direct policy implementation. This study identified the National Research Foundation as one of the major stakeholders that support the implementation of the research output policy. The National Research Foundation promotes and supports research in higher education institutions through funding, human resource development and the provision of the necessary facilities in order to facilitate the creation of knowledge, and therefore indirectly influence the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

It is also necessary for higher education institutions to create coalitions amongst themselves so as to ensure effective implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. These coalitions can be effected in the form of research collaborations amongst universities. This study identified the need for underdeveloped universities such as the University of Venda to form research collaborations with other universities. These collaborations can also be used as a research capacity building strategy.

5.5.6. Communication as an important requirement for effective implementation

Although communication does not fall under the domain of the 5-C Protocol, it has been included as a sixth critical variable for implementation in this study. The importance of communication for policy implementation lies in the fact that it is through communication that orders to implement policies are expected to be transmitted to the appropriate personnel in a clear manner, while maintaining accuracy and consistency. As a result of inadequate and unclear information, those responsible for the implementation of a policy initiative may be confused as to what exactly is required of them.

Open and effective communication between the Department of Higher Education and Training and higher education institutions, as well as the stakeholders involved in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is essential if

effective implementation processes are to be achieved. A system of clear and open communication will simultaneously promote transparency and improve accountability of implementers.

Evidence yielded by the research suggests a weak communication between the critical constellations responsible for policy implementation at both the University of Pretoria and the University of Venda, and also between the Department of Higher Education and Training and higher education institutions. This is demonstrated by the misinterpretation of the policy content, particularly by some academic and research staff. The fact that some researchers struggle to comply with the policy requirements for subsidy is an indication of a gap in communication between researchers, research offices and the Department of Higher Education and Training. It seems as though there are unclear implementation instructions. By the same token this is further exacerbated by the fact that sometimes getting feedback from the Department of Higher Education and Training on submitted research output takes forever. Although respondents at the Department of Higher Education and Training mentioned that there is constant communication with higher education institutions through mini-workshops and meetings where presentations focusing on policy requirements are made and clarities are resolved, the actual implementation data collected provides evidence that these visits are not as often as they should be and therefore not efficient. This is exemplified amongst other things by the high rejection rate of research output not meeting the policy requirements. There is also an identified communication gap between the Department of Higher Education and Training and higher education institutions on issues regarding the annual modification of the different lists of journals for subsidy, where the Department makes changes on the list of accredited journals and requires immediate implementation without any prior communication with higher education institutions. These are the communication challenges that hinder effective implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003.

5.6. CONCLUSION

This chapter has exclusively examined the general views of those charged with the responsibility to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. This included personnel drawn from the Department of Research and Innovation Support team at the University of Pretoria, the Research and Innovation Department team at the University of Venda, and relevant officials at the Department of Higher Education and Training. There is a significant difference between the way the research output policy is being implemented at the University of Pretoria and the University of Venda, however, similarities were identified in the challenges the two universities face when implementing the policy. Both the University of Pretoria and the University of Venda are being hit hard by issues of human resource capacity, lack of commitment, communication barriers, incorrect data capturing, knowledge and understanding of the research output policy and ineffective internal control measures. Absence of regular monitoring by the Department of Higher Education and Training was also identified as another obstacle to effective implementation. The problem statement argued that the rationale behind the unsuccessful implementation of the research output policy is due to the universities' incapacity (institutional, human, financial), owing to a number of factors. The University of Pretoria is more capacitated than the University of Venda in terms of material resources, qualified academic and research staff, research funding and equipment and the connectedness to international research environments. Hence the University of Pretoria is more successful than the University of Venda in producing sufficient research output and therefore effectively implanting the research output policy.

The field research provided evidence that capacity building is a cross-cutting demand that impinges on underdeveloped or previously disadvantaged institutions such as the University of Venda, and large and developed institutions resembling the University of Pretoria similarly. The University of Pretoria is a research university in a true sense of the word, hence it places greater emphasis on research, however it was revealed that a high proportion of research output is contributed by a small number of academics. The University of Venda, comparable to other underdeveloped universities situated in rural areas, has to offer education that will develop social, economic, cultural and political skills and equip its graduates to face

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the challenge of poverty and unemployment, hence prioritisation of teaching over research. Though confronted with challenges of research capacity human and financial resources, the University of Venda acknowledges its responsibility as a public higher education institution to produce research output that will contribute to the country's development and to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. This acknowledgment is reflected in the University's mission statement, which was quoted in chapter four of this study, and the initiatives taken by the University to promote and encourage research. To build research capacity, higher education institutions should foster research collaboration amongst institutions and authors.

Inevitably a critical analysis of the data yielded using the 5-C Protocol variables extrapolates that there are serious challenges faced by both the University of Pretoria and the University of Venda in respect of the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. To this extent therefore, the following chapter will present conclusions and recommendations to help universities overcome these implementation challenges.

CHAPTER SIX

SUMMARY OF CHAPTERS AND RECOMMENDATIONS

6.1.   INTRODUCTION

When the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, was introduced in 2003, the policy was to serve the purpose of encouraging research productivity and establishing a research culture that would contribute to the production of knowledge required to meet national development needs. This would be done by rewarding quality research output at public higher education institutions. However, considering the state of research productivity of higher education institutions, it is clear that the policy is failing to effectively achieve its intended outcomes. The high rejection rate by the Department of Higher Education and Training of research output not meeting the subsidy requirements, as stipulated in the policy, is another indication that there is lack of compliance and improper policy implementation.

The previous chapter of the study expansively analysed the results that were obtained from the interviews conducted. As was highlighted in the previous chapter, the purpose of the interviews was to provide research participants with an opportunity to convey their personal views, opinions and perceptions on the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, particularly on the challenges they face. To reiterate the earlier premise of the research questions and for the clarification of the reader, it is worthwhile to re-state the research questions that have guided this study:

- "What are the possible hindrances in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?"
- "Why are some higher education institutions more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Learning Institutions, 2003?"

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The chapter concluded that factors such as human resource capacity, lack of commitment, communication barriers, incorrect research output capturing, misunderstanding of the research output policy, ineffective internal control measures and absence of regular monitoring and evaluation negatively impact the proper implementation of the research output policy at both the University of Pretoria and the University of Venda.

This chapter will provide a summary of the key points that were underlined in the previous five chapters of the study. Furthermore, recommendations will be provided for the purposes of overcoming the hindrances in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Research output produced by higher education institutions is important not only for the allocation of government subsidy to institutions but also for growth and development of a state. Therefore, there is a need to address the challenges that hinder effective implementation of the research output policy and suggest recommendations with a view to improving and increasing institutions' research output. In addition to recommending possible solutions, the chapter will provide possible areas of research that can be perused in future and conclude the study.

6.2.   SUMMARY OF PRECEDING CHAPTERS

Chapter one introduced the study by providing a background to some of the crucial issues surrounding the measurement of research output in South Africa. The chapter also clarified the meaning of research output in the South African context. It is clear that the meaning of research output is highly contested amongst scholars and many criticise the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, for only recognising journals, books and conference proceeding as being eligible for subsidy and disregarding other important outputs such as textbooks, monographs and artifacts. An outline of the history of measuring research output in South Africa was also provided. There were limitations identified in the old funding framework which led to the establishment of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It was also in chapter one that the empirical claims of other

scholars were highlighted so as to identify the weaknesses or the gap that exists in this published knowledge which served as a justification for the particular focus of this study. The research design and methodology followed for gathering and analysing data were described and their importance explained, together with the objective, research questions and the motivation behind the study. The aim of this chapter was to provide a foundation for the research topic and the overall investigation.

The overall purpose of chapter two was to conceptualise the implementation of public policy within the discipline of Public Administration. The chapter extensively outlined the relationship that exists between Public Administration and public policy implementation, particularly focusing on the implementation of the Policy and Procedures for the Measurement of Research Output Policy of Public Higher Education Institutions, 2003. Furthermore, the policy implementation challenges faced by South Africa as provided primarily by the literature on the subject were explored. The chapter provided the critical variables in the form of the 5-C Protocol which shape and are necessary for policy implementation. The 5-C Protocol Model of policy implementation was used in this study as an important apparatus for analysing the status of research output policy implementation at both the University of Pretoria and the University of Venda.

Chapter three of the study focused on the research function of higher education and its importance in the country's development. The chapter provided a historical background on the South African higher education system and research, which included the evolution of legislation supporting higher education research and trends in research production of higher education institutions. The policy shift dates back from the 1980s to 2003 when the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, was first introduced.

Chapter four provided a comparative analysis of the manner in which the University of Pretoria and the University of Venda implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The chapter analysed the institutional profiles of both universities which included their historical developments, institutional capacities, together with their visions and missions regarding research production. Chapter four drew attention to the fact that institutional profiles of universities have a bearing on the manner in which they will

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successfully achieve their research mandate and properly implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The chapter also analysed and compared the institutional mechanisms and strategies set in place within the University of Pretoria and the University of Venda to capture and manage research output prior to submission to the Department of Higher Education and Training. This chapter concluded that the University of Pretoria and the University of Venda are both tasked with the responsibility to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003; however, given the differing institutional histories, environmental circumstances, missions, visions, profiles and capacities, the two universities will be confronted by different challenges and opportunities when implementing the policy. All these factors impact policy implementation and therefore have to be taken into consideration if successful implementation is to be attained.

Chapter five presented the results of the data that was collected from interviews with research participants. The chapter aimed to identify and explore the challenges faced by both the University of Pretoria and the University of Venda when implementing the research output policy. This was done by probing into the content of the policy; the context of the policy; the commitment of the policy implementers; the capacity of institutions to implement; the clients the policy is expected to serve and the coalitions of influence; and the communication between the stakeholders involved in the implementation process. The chapter relied heavily on the perspectives and subjective perceptions as well as interpretation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, by those involved in the implementation process. Chapter five deduced that participants drawn from both the University of Pretoria and the University of Venda are of the opinion that the implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at an institutional level is a difficult task. Both the University of Pretoria and the University of Venda are confronted by similar challenges when implementing the policy. These challenges include issues of human resource capacity; lack of commitment; communication barriers; incorrect data capturing; misunderstanding of the research output policy; ineffective internal control measures and the absence of regular monitoring and

evaluation. These challenges need to be addressed adequately by the universities and the Department of Higher Education and Training if effective and efficient implementation of the research output policy is to be attained.

On the basis of the results provided in chapter five, this chapter will provide plausible recommendations for overcoming the policy implementation challenges confronted by universities, with the aim of improving the implementation of the research output policy in both universities. The Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, plays a vital role in South Africa as a developing country in a sense that, by properly implementing the policy, useful knowledge required to meet national development needs is created and distributed through the tradition of public disclosure in science, by way of publications such as journals, books, conference proceedings and patents. Therefore, there is a need to address the challenges faced by higher education institutions in the effort to implement this policy, because failure to do so will not only compromise research subsidy money allocated to institutions for producing quality research output, but also the country's sustainable development. The chapter will finally highlight potential areas of further research that can be pursued in relation to this subject.

6.3. SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

This study has employed the 5-C Protocol Model for evaluating the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The 5-C Protocol variables which include the content of the policy, the context in which the policy in implemented, the commitment of the implementers, the capacity to implement and the role of clients and coalitions, have been identified by this study as necessary for effective policy implantation. Although communication does not fall within the ambit of the 5-C Protocol, it was included as a sixth variable in this study.

The findings of this study revealed an important and unexpected aspect. It was mentioned in chapter one of this study that the University of Venda has experienced a high rejection rate of its research publications which proves non-compliance with requirements of the policy, whereas the University of Pretoria has since 1999 registered a significant growth in its research output, and to date it still falls within the

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top five South African Universities which are referred to as the 'Top Five Research and Development Performers'. Therefore, in the effort to answer the research questions, the study chose the University of Pretoria as a case study to represent best practices from which the University of Venda can learn. However, the field study revealed that just like the University of Venda, the University of Pretoria is also confronted with major challenges when implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. In actual fact, similarities were identified in the challenges the two universities face when implementing the policy. Therefore, it cannot be assumed that because a university is producing sufficient research and rated a top university, it is not confronted by implementation challenges.

The stated primary goal of this dissertation is investigating the policy implementation challenges that exist in both the University of Pretoria and the University of Venda in the effort to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and subsequently propose recommendations for overcoming these challenges with a view to increase and improve South African universities' research output. This investigation's emergent findings revealed that:

i.   There is a lack of human resource capacity at both the University of Pretoria and the University of Venda.

ii.   There is a misunderstanding of the content of the policy which is reflected in the tendency of researchers of both universities to submit research output not meeting the policy requirements for subsidy.

iii. The policy's recognition of only a selective sample of publications that meet prescribed criteria is a problem for higher education institutions. According to the policy, recognised research output is comprised of journals, books and conference proceedings. This listing is limiting as it excludes other research outputs which are important to academics such as textbooks, artwork, music and artifacts. Some of the important journal indices which academics publish in are also not recognised by the policy.

iv.   The institutional context lacks enough strategic direction and effective internal control measures for the implementation of the policy, which, amongst other

things, is reflected in the absence of specific institutional programmes of action, particularly those designed to regulate and monitor the implementation of the research output policy in both the University of Pretoria and the University of Venda.

v. There is an absence of regular monitoring and evaluation by the Department of Higher Education and Training which is another obstacle to effective implementation.

vi. There is a lack of required commitment to implement.

vii. There is weak communication between the critical constellations of clients and coalitions directly affected by the policy.

viii. Higher education institutions have varying capacity and procedures for managing research outputs prior to submission to the Department of Higher Education and Training. The two universities in this study employ different strategies to manage the process of submitting their research output, and such different methods have an impact on the production rate of each university's research output.

To this extent, drastic measures will have to be taken to expedite a turnaround if the implementation status quo is to improve significantly, and therefore improve and increase research output produced by higher education institutions. This leads the study to the following recommendations:

6.3.1. Decentralisation of research output capturing process

Research participants from the University of Pretoria suggested in chapter five that, in order to overcome the challenge of insufficient human resource capacity, incorrect data capturing should be centralised, where there will be a pool of employees residing in the Research Office employed exclusively to evaluate and capture data. Unlike the current decentralised system where research outputs are captured in the various academic departments by different people who have their own understanding of the policy, and are sometimes not even aware of all the requirements for subsidy publication, the centralised system will ensure more quality control. The same is recommended for the University of Venda. Both universities

should consider having a pool of a minimum of fifteen employees not exceeding twenty who will be charged with the responsibility of collecting hard copies of research output, capturing it on the RIS system, managing the system and ensuring that submitted output meets the subsidy requirements of the policy. In short, the process of research output capturing at both universities should be centralised.

6.3.2. Fostering research collaboration

Chapter four stipulated that the University of Venda also lacks academic staff having appropriate qualifications to oversee postgraduate research and advance knowledge creation. The implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at an institutional level requires the production of sufficient quality research output focusing on national development needs, and this output can only be produced by research and academic staff. Therefore, the availability of qualified research and academic staff is a critical driver in ensuring the effective implementation of the research output policy. It is imperative for the University of Venda to form research collaborations with other universities, and collaborations amongst authors within the university should also be encouraged and promoted. These collaborations can serve as a research capacity building strategy.

6.3.3. Expansion of the policy content

Other categories of research output should be incorporated in the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. There should be an expansion of subsidised research output to include artwork, textbooks, music and artefacts. There appear to be few rewards for academics who take part in many of the other research related activities that are excluded by the current measurement system, for example, academics who serve as referees for journals, research seminar participation, supervision of Masters and PhD students, cross discipline etc. While the Department of Higher Education and Training categories listed in the policy remain the primary reference point for research output, it must be recognised that a myriad of research output can result from such activities. Therefore, there is a need to establish indicators that would

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incorporate neglected research output and other research related activities contributing to the advancement of knowledge production, in order to reach a fair and reasonable measurement of research output.

It was mentioned in chapter five that some of the important journal indices which academics publish in are also not recognised by the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. It is therefore recommended that the Department of Higher Education and Training conduct an investigation to determine these other journal indices in which academics publish, so that they can be considered for accreditation. The policy should be reviewed regularly and changes should be implemented where gaps are identified, however all stakeholders should be involved in this process

6.3.4. Monitoring and evaluation

As highlighted in chapter two, monitoring is a systematic collection and analysis of information aimed at improving efficiency and effectiveness of an institution based on the initial aims and objectives, while evaluation is an assessment of the institutional progress against agreed strategic plans (Shapiro 2009: 3). Therefore, for the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, to be successful, it is crucial that monitoring and evaluation are not taken for granted. The key role players responsible for the implementation of the policy need to work congruently if the policy is to effectively attain its objective of sustaining current research strength and promoting quality research required to meet national development needs.

It is recommended that the Department of Higher Education and Training develops a monitoring and evaluation division within the University Education Policy Development Unit to help monitor progress towards the achievement of the research output policy aims and objectives, the impact of the research output policy on higher education institutions and the country's development, and to assess the effectiveness of the policy and provide clear guidance on areas that need to be changed. The Monitoring and Evaluation Division should regularly visit higher education institutions to help them with some of the challenges they face. Research participants from the University of Venda particularly suggested that the Department

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of Higher Education and Training meetings with staff who capture data should be diarised and the invitation extended to the University on an annual basis, as this is currently not the case.

Monitoring and evaluation of the Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003, will have positive benefits. For example, monitoring and evaluation will bring about better understanding of the intended and unintended outcomes. These results should be well documented, and higher education institutions be provided with copies. By so doing, higher education institutions will be able to redefine their implementation strategies so that the policy can have optimum impact. When the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is monitored and evaluated at regular intervals on a continuous basis, challenges can be detected earlier, and if the need arises, new or revised policy alternatives can be initiated.

If it is impossible to visit all higher education institutions annually, it is recommended that the Department of Higher Education and Training considers conducting an annual conference on recognised research outputs which will be attended by research offices from all higher education institutions and research and academic staff. This conference will bring different institutions together to discuss the gaps in the policy, the implementation challenges and the solutions thereof.

The study revealed an institutional context which lacks enough strategic direction and effective internal control measures for the implementation of the research output policy which, amongst other things, is reflected in the absence of specific institutional programmes of action particularly designed to regulate and monitor the implementation of the policy in both the University of Pretoria and the University of Venda. It is recommended that both the University of Pretoria and the University of Venda develop institutional monitoring and evaluation divisions which will be based in the research offices so as to ensure effective implementation of the research output policy at an institutional level. The division in each institution should be responsible for conducting a thorough self-monitoring and evaluation of the university's research performance and its implementation of the research output policy. The division should monitor and evaluate each faculty's research

performance by focusing on the strengths, weaknesses and achievements. Faculties experiencing challenges with implementing the research output policy should be assisted accordingly.

6.3.5. The development of research output communication division

Communication occupies an innermost role in any institutional structure and is regarded as the binding factor for several disjointed activities of an executive institution into a meaningful whole. The implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, is decentralised with various stakeholders at both national and university level playing a part. Referring to chapter five, it is also clear that the University of Pretoria uses a decentralised data capturing system where research outputs are captured in the various academic departments by departmental administrators before they can be sent to the research office for final evaluation and thereafter to the Department of Higher Education and Training. Thus, this indicates the need for continuous communication amongst the various stakeholders for effective implementation of the research output policy. Referring to the interview responses in chapter five, such communication seem to be lacking amongst the various stakeholders. This is demonstrated by the fact that some researchers at the University of Pretoria and the University of Venda tend to submit publications not meeting the policy requirements; by delayed feedback from the Department of Higher Education and Training and by the tendency of the Department of Higher Education and Training to make changes to the list of journals without prior discussion with the universities and to require immediate implementation.

It is therefore recommended that for the Department of Higher Education and Training to improve its communication mechanisms so as to reach all higher education institutions, it should develop a division of research output communication within the University Education Policy Development Unit of the Department. This division will specifically be charged with providing information to all stakeholders; ensuring that higher education institutions receive timeous feedback on submitted research output; regularly communicating with higher education institutions about the policy objectives, the policy requirements for subsidisation and issues regarding the

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modification of the list of accredited journals.

6.3.6. Internal workshops on recognised research output

In order to foster maximum communication at all levels of implementation at an institutional level, and therefore ensure effective implementation of the research output policy, it is recommended that the University of Pretoria and the University of Venda research offices consider conducting workshops on recognised research outputs where researchers attend and presentations are made. These workshops should be conducted quarterly. The workshops will help remedy the challenge of the misunderstanding of the policy content by some researchers which is reflected in their inability to comply with the policy requirements for subsidy.

6.4. SUGGESTIONS FOR FURTHER RESEARCH

There are a number of possibilities for further investigation of the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The study was limited to only two universities due to time constraints and limited resources. Further comparative research on other higher education institutions needs to be conducted to identify and remedy the causes of lower production of research output and ineffective policy implementation.

There are also potential areas of further research that can be pursued in relation to this subject. The critical aspect that requires more research in this regard would be to extensively explore other research related activities contributing to the advancement of knowledge production that are excluded by the current measurement system, in order to reach a fair and reasonable measurement of research output. This would also entail the development of relevant indicators that would be used to measure and incorporate such neglected research output and other research related activities which could also be an area of research on its own.

6.5. CONCLUSION

This chapter provided a summary of the previous chapters and extensively exposed the findings and recommendations thereof. The main purpose of this study was to investigate the policy implementation challenges that exist at both the University of Pretoria and the University of Venda in the effort to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. The study employed the 5-C Protocol Model of policy implementation as a critical apparatus for evaluating the implementation of this policy at the University of Pretoria and the University of Venda.

Higher education institutions play an essential role in producing scientific knowledge through applied research that will enhance the quality of life of the society and also strengthen the economy. In this regard, research output of higher education institutions becomes increasingly important for growth and development of a state. Therefore, the country's growth and development relies on the proper and effective implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. In the problem statement of this study, it was mentioned that the policy has been in place for eight years but research outputs of higher education institutions are very low at about 0.4 research outputs per researcher per year. South Africa spends 0,92% of Gross Domestic Product on research and is still struggling to reach the elusive 1% spend, which is the government's strategic aim. An important reason for this low research output by higher education institutions is closely related to the fact that a high proportion of research publications are contributed by a small number of academics; and also because of the high rejection rate by the Department of Higher Education and Training of research publications submitted by higher education institutions due to not meeting the policy requirements. This proves that higher education institutions are struggling with implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003. Therefore there was a need to investigate the policy implementation challenges confronted by higher education institutions in the effort to implement the research output policy and provide recommendations for overcoming these implementation challenges with the aim to increase and improve universities' research output.

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The research questions which guided this study were: What are the possible hindrances in the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003? and why are some higher education institutions more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Education Institutions, 2003? The University of Pretoria and the University of Venda were used as case studies to answer these questions. The study found that the University of Pretoria and the University of Venda are confronted with massive challenges in the effort to implement the policy. These challenges include lack of human resource capacity; lack of the commitment to implement; lack of communication between various stakeholders involved in the implementation process; incorrect data capturing; misunderstanding of the research output policy content characterised by the tendency of researchers to submit research output not meeting the policy requirements of subsidy; and ineffective internal control measures. Furthermore, the absence of regular monitoring by the Department of Higher Education and Training was also identified as another hindrance to effective implementation.

A comparative analysis between the University of Pretoria and the University of Venda was made in chapter four to determine why some higher education institutions are more successful than others in implementing and complying with the Policy and Procedures for the Measurement of Research Output of Higher Learning Institutions, 2003. The University of Pretoria and the University of Venda are both tasked with the responsibility to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003; however, given the differing institutional histories, environmental circumstances, missions, profiles and capacities, it is expected that the two universities will be confronted by different challenges and opportunities when implementing the research output policy. It was found that the differing political, economic and social histories and geographical circumstances of these universities have an impact on their ability to effectively implement the research output policy. The University of Pretoria is more capacitated than the University of Venda in terms of material resources, qualified academic and research staff, research funding and equipment, and the connectedness to international research environments.

Although the democratic government has put intervention programmes and policies in place to address this imbalance, and also to ensure that the role that Historically Black Universities can play in the social and economic development of the society and the country is enhanced, these universities are still deeply divided in terms of material resources, research performance, research capacity, academic credibility and in the connectedness to international research environments. Therefore, the University of Venda as a Historically Black University will struggle to implement the research output policy as compared to a Historically White University such as the University of Pretoria which is well resourced. Hence the University of Pretoria is more successful than the University of Venda in producing sufficient research output and therefore effectively implanting the research output policy.

This chapter made recommendations based on the understanding of the root causes of the challenges affecting both the University of Pretoria and the University of Venda. Some of the recommendations include the centralisation of research output capturing in universities; building and strengthening research capacity by fostering research collaborations; the expansion of the policy content to include other journal indices and other research outputs such as artwork, textbooks, music and artefacts; the development of a division of research output communication and the monitoring and evaluation division; annual conference and workshops on recognised research outputs. The abovementioned recommendations should be considered for improving the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, and therefore improving and increasing research output of universities required to meet the country's developmental needs.

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8. APPENDIX A

Interview schedule to evaluate the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Pretoria.

Opening

My name is Ms Mmudi Maphalla; I am a student at the University of Pretoria, doing research for my Mphil in Public Policy. The tittle of my dissertation is *The implementation of the research output policy with reference to the University of Pretoria and the University of Venda,* under the supervision of Professor L.P. Malan at the School of Public Management and Administration (SPMA) at the University of Pretoria. I would like to ask you some questions related to compliance in implementing the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions. The finished research will assist in identifying the underlying issues and challenges faced by higher education institutions in the implementation of the research output policy and suggest a way forward. The specific focus of the study is to investigate factors hindering the effective implementation of the research output policy in both Universities and later suggest solutions to overcome these policy implementation challenges. My study will provide recommendations on how best can the policy be implemented with the view of increasing or improving universities' research output and also improving research output capturing.

1. What is the role of the Department of Research and Innovation Support?

2. Does the Department have enough resources such as human, finances, equipment and so forth to achieve its objectives?

3. What are the capacity building needs of the Department?

4. Is it easy to understand the content of the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

5. Is it easy to comply with the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, in the context of this University?

6. What do you perceive to be the gaps in the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, in the context of this University?

7. Does the University have an institutional research output policy in line with the national Policy on Measurement of Research Output by Public Higher Education Institutions, 2003? If yes,

8. Is the policy accompanied by an official programme of actions regulating implementation?

9. What are the structures and measures established by the University to evaluate, monitor and screen output in terms of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, prior to submission to the Department of Higher Education and Training? And how effective are these measures?

10. Besides the templates provided by the Department of Higher Education and Training, what tools or mechanisms does the Department use to manage the technical and quality requirements of research output data?

11. What would you say are the main challenges faced by the University in the effort to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

12. What are the challenges faced with regard to data capturing of research outputs?

13. Before research output can be submitted to the Department of Higher Education and Training, it goes through different channels: from the researcher, to data capturer, to RIS co-ordinator, then to research office for final evaluation. As such communication becomes an important contributing factor in the success of the implementation of the research output policy. What are the communication challenges that you face during the implementation of the research output policy?

14. In your opinion, would you say the University is currently doing well in terms of its research productivity? What do you think are the contributing factors to this success or failure in research productivity?

15. The University of Pretoria has been a leading University in terms of research output production. What can other higher education institutions learn from the experiences of the University of Pretoria?

16. What role does the Department play in supporting research stuff and encouraging research productivity in the University?

17. What system is used by the University to reward academics who produce research?

18. What are the general recommendations based on your experiences in this Department, that will be more useful in ensuring that the University is able to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

Thank you for your cooperation.

9. APPENDIX B

Interview schedule to evaluate the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Venda.

Opening

My name is Ms Mmudi Maphalla; I am a student at the University of Pretoria, doing research for my MPhil in Public Policy. The title of my dissertation is *The implementation of the research output policy with reference to the University of Pretoria and the University of Venda,* under the supervision of Professor L.P. Malan at the School of Public Management and Administration (SPMA) at the University of Pretoria. I would like to ask you some questions related to compliance in implementing the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions. The finished research will assist in identifying the underlying issues and challenges faced by higher education institutions in the implementation of the research output policy and suggest a way forward. The specific focus of the study is to investigate factors hindering the effective implementation of the research output policy in both Universities and later suggest solutions to overcome these policy implementation challenges. My study will provide recommendations on how best can the policy be implemented with the view of increasing or improving universities' research output and also improving research output capturing.

1. What is the role of the Research and Innovation Directorate?

2. Does the Directorate have enough resources such as human, finances, equipment and so forth to achieve its objectives?

3. What are the capacity building needs of the Directorate?

4. Is it easy to understand the content of the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

5. Is it easy to comply with the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, in the context of this University?

6. What do you perceive to be the gaps in the Policy and Procedures Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, in the context of this University?

7. Does the University have an institutional research output policy in line with the national Policy on Measurement of Research Output by Public Higher Education Institutions, 2003? If yes,

8. Is the policy accompanied by an official programme of actions regulating implementation?

9. What are the structures and measures established by the University to evaluate, monitor and screen output in terms of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, prior to submission to the Department of Higher Education and Training? And how effective are these measures?

10. Besides the templates provided by the Department of Higher Education and Training, what tools or mechanisms does the Department use to manage the technical and quality requirements of research output data?

11. What would you say are the main challenges faced by the University in the effort to implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

12. What are the challenges faced with regard to data capturing of research outputs?

13. Before research output can be submitted to the Department of Higher Education and Training, it goes through different channels: for instance, from the researcher, to data capturer, to RIS co-ordinator, then to research office for final evaluation. As such communication becomes an important contributing factor in the success of the implementation of the research output policy. What are the communication challenges that you face during the implementation of the research output policy?

14. In your opinion, would you say the University is currently doing well in terms of its research productivity? What do you think are the contributing factors to this success or failure in research productivity?

15. According to the Ministerial report on the evaluation of the 2010 institutional research publications (2011), the University of Venda has shown an improvement in publication output per capita. What can other higher education institutions learn from the experiences of the University of Venda?

16. What role does the Directorate play in supporting research stuff and encouraging research productivity in the University?

17. What system is used by the University to reward academics who produce research?

18. What are the general recommendations based on your experiences in this Directorate, that will be more useful in ensuring that the University is able to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003?

Thank you for your cooperation.

10. APPENDIX C

Interview questions to the Department of Higher Education and Training.

1. What is the role of the University Education Policy Development Unit within the Department of Higher Education and Training?

2. How does the Department support higher education institutions in order to ensure proper and effective implementation process of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions?

   ➢ Are there monitoring and evaluation mechanisms set in place to oversee the proper implementation of this policy?

3. What would you say are the main challenges faced by the Department in terms of implementing the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions?

4. What are the general recommendations based on your experience in this Department that will be more useful in ensuring that the Department together with universities are able to effectively implement the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions?

Thank you for your cooperation

11. APPENDIX D

Informed Consent

Faculty of Economic and
Management Sciences
**School of Public Management
and Administration**

School of Public Management and Administration

Title of the study
The implementation of research output policy with reference to the University of Pretoria and the University of Venda

<u>Research conducted by</u>:
Ms. O.M Maphalla (27365078)
Cell: 083 398 7495

Dear Respondent

You are invited to participate in an academic research study conducted by Onicca Mmudi Maphalla, Masters Student from the School of Public Management and Administration at the University of Pretoria.

The purpose of the study is to evaluate the implementation of the Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions, 2003, at the University of Pretoria and the University of Venda. The specific focus of the study is to investigate factors hindering the effective implementation of this policy in the two institutions and later suggest solutions to overcome these policy implementation challenges.

Please note the following:

- This study involves an <u>interview</u>. The answers you give will be treated as strictly <u>confidential</u>. You cannot be identified in person based on the answers you give.
- Your participation in this study is very important to me. You may, however, choose not to participate and you may also stop participating at any time without any negative consequences.

- Please answer the questions in the interview questionnaire as completely and honestly as possible. This should not take more than 60 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.
- Please contact my study leader, Prof. L Malan, 012 420 2063 or e-mail address Lianne.Malan@up.ac.za if you have any questions or comments regarding the study.

Please sign the form to indicate that:
- You have read and understand the information provided above.
- You give your consent to participate in the study on a voluntary basis.

_____

Respondent's signature

_____

Date