A FRAMEWORK FOR ENHANCING THE RESEARCH CULTURE WITHIN THE FACULTY OF HEALTH SCIENCES AT THE UNIVERSITY OF THE FREE STATE

by

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DECLARATION

I, Lauren Shelley Coetzee declare that the Doctoral research thesis that I herewith submit to the University of the Free State, is my independent work and that I have not previously submitted it for a qualification to another institution of higher education. I am aware that the copyright is vested in the University of the Free State. I, Lauren Shelley Coetzee hereby declare that all royalties as regards intellectual property that was developed during the course of and/or in connection with the study at the University of the Free State, will accrue to the University.

_____ _____

L.S. COETZEE **Date**

DEDICATION

This thesis is dedicated to teachers. Especially those who have made a lasting impact on my life, who inspired in me a love of language, learning and laughter:

Glynis Rademan, Margaret Brightman, Gail Penny;

Sandra Gerber, Gavin Thomson, H. Basie Viljoen, Laura Bekker.

SUMMARY

Keywords: research culture, Higher Education, framework, philosophy, University of the Free State

The focus on becoming a research-intensive institution requires an awareness of the existent research culture in order to support and stimulate research and become research-intensive. There is an open declaration of the prominence of research at the University of the Free State (UFS), to fulfil the goal of becoming a research-intensive university. Part of the strategy to achieve this status is the required presence of a culture of research, enabled by the research environment. Thus, the evaluation of the existing research culture is of significance.

This study was aimed at determining the existing research culture at the Faculty of Health Sciences (FoHS) UFS as perceived by the staff of the Faculty, identify factors perceived to influence this existing research culture and compile a framework for the enhancement of the research culture at the FoHS, UFS.

The studied population comprised of all academic (permanent staff, joint-appointment, contract staff in either a full-time or a part-time capacity) staff of the FOHs UFs employed within the three schools: School for Allied Professions, School of Medicine and School of Nursing. In addition, academic staff within the support domain (i.e. staff employed in a support capacity, yet have a research/teaching component as part of their role) were also included in the study. Furthermore, members of Executive Committee of each of the Schools, and the Dean of the Faculty were also invited and formed the target population for the validation meetings (VMs).

This research was designed as an evaluative study with elements of case study evaluation (CSE) and Improvement-oriented evaluation (IOE). Methods utilized includes a comprehensive literature review; questionnaire survey; nominal group discussion technique (NGD) and VMs to gather both quantitative and qualitative data. Quantitative data were analysed using Statistical Package for the Social Sciences version 24 (SPSS v24) and the results presented in frequencies and tables. Data obtained from the open ended questions, NDG and VMs were content analysed. Thematic analysis formed the cornerstone of the analysis, and specific attention was givento patterns and emerging themes.

Qualitative data obtained from the literature review process contexualised the study in the body of existing literature and gave an overview of the theoretical underpinnings of the study. The departure point of the study was the academic culture model compiled by Smerek, *et al*. (2010). Research culture was defined and factors established in literature were identified. The contextual incorporation of health and higher education of this study to research culture culminated in the derivation of the theoretical framework of research culture.

The perceived existing research culture in the FoHS UFs as opined by the participants of this study (result obtained from the thematic analysis of the open-ended questions) revealed 14 themes namely; Accepted norms; Context; Individual; Inter- and intra-personal interactions; New knowledge; Others; Perceptions and emotions; Philosophy; Policies; Research process; Staffing; Stakeholders; Support; and Time. These findings represent the perceived existing culture, through the lived experience of the participants in their work environment as a faculty academic.

Similarly, thematic analysis of the participants' comments on factors that affect research culture in the FOHs UFS revealed seven themes namely; Context; Support; Policies; Individual; Inter- and intra-personal interactions; Research process and Philosophy. Furthermore, secondary analysis of themes using methods as described by Van Breda (2005) and McMillan, *et al.* (2014) revealed that the three most important ranked themes were Context, Support and Policies.

Data obtained from the VMs provided additional perspectives from management on the existing research culture and the factors that affect research culture in the faculty. The final framework to enhance the research culture at the FoHS at the UFS was collated, utilising the data collected from these three methods. This framework gives insight into the hierarchy and relationships of the factors required (currently perceived as present, partially present or absent) to be able to inculcate a research culture that is driven by successful knowledge creation and dissemination.

This study represents the first investigation into the research culture of the FoHS at the UFS. In this way, this study also provides new data in the field of research culture in the context of a health and higher education (HE) Faculty in South Africa.

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- The Lord Almighty for the abundance of blessings and the abilities bestowed on me.

14 I praise you because I am fearfully and wonderfully made;
your works are wonderful,
I know that full well.
15 My frame was not hidden from you
when I was made in the secret place,
when I was woven together in the depths of the earth.

Psalm 139:14-15 New International Version (NIV)

LIST OF ACRONYMS

APMEC	**Asia Pacific Medical Education Conference**
AS	**Academic Support**
ASSAF	**Academy of Science South Africa**
BRICS	**Brazil, Russia, India, China and South Africa**
c	**Circa**
cf.	**Cross reference**
CREST	**Centre for Research on Evaluation, Science and Technology**
CSE	**Case Study Evaluation**
CSU	**Clinical Skills Unit**
CTL	**Centre for Teaching and Learning**
CUT	**Central University of Technology, FS**
CVF	**Competing Values Framework**
DHSE	**Division: Health Education Sciences**
DHET	**Department of Higher Education and Training**
DOAJ	**Directory of Open Access Journals**
DoH	**Department of Health**
EC	**Executive Committee**
et al.	**and others**
FoHS	**Faculty of Health Sciences**
FM	**Faculty Management**
FNAS	**Faculty of Natural and Agriculture Sciences**
FSDoH	**Free State Department of Health**
G	**Group (followed by a number in text, e.g. G1)**
HE	**Higher Education**
HEI	**Higher Education Institution**
HoD	**Head of Department**
HEMIS	**Higher Education Management Information System**
HPE	**Health Professions Education**
HRD-SA	**Human Resources Development Strategy for South Africa**
HRHSA	**Human Resources for Health South Africa**
HPCSA	**Health Professions Council of South Africa**
HSREC	**Health Sciences Research Ethics Committee**
HWSETA	**Health and Welfare Sector Education and Training Authority**

IOE	**Improvement Oriented Evaluation**
M	**Master's (degree)**
MBChB	**Bachelor of Medicine and Bachelor of Surgery**
MDG	**Millennium Development Goals**
MMed	**Master of Medicine**
MoE	**Ministry of Education**
MoU	**Memorandum of Understanding**
MSU	**Medical Skills Unit**
n	**Number**
NA	**Not applicable**
nd	**No date**
NDP	**National Development Plan**
NDoH	**National Department of Health**
nGAP	**New Generation of Academics Programme**
NGD	**Nominal group discussion**
NHLS	**National Health Laboratory Services**
NPHE	**National Plan for Higher Education**
NRF	**National Research Foundation**
PhD	**Doctor of Philosophy (Doctorate)**
RCC	**Research Capacity and Culture**
RIMS	**Research Information Management System**
RSA	**Republic of South Africa**
RSVP	**Répondez s'il vous plaît (Meaning "Please respond")**
RWOPS	**Remunerative Work Outside Public Service**
SA	**Somewhat applicable**
SAHP	**School for Allied Health Professions**
sic	**sic erat scriptum (thus it had been written)** **Meaning that the quote prior was transcribed as it was found in the original source, complete with errors, colloquialisms and so forth**
SoM	**School of Medicine**
SoN	**School of Nursing**
SORC	**Survey of Organizational Research Climate**
SM	**School Management**
SPSS v24	**Statistical Package for the Social Sciences version 24**

SPU	**Sol Plaatjie University**
SU	**Stellenbosch University**
SWOT	**Strengths-weaknesses-opportunities-threats**
TAC	**Treatment Action Campaign**
TUFH	**Together United for Health**
UCT	**University of Cape Town**
UFS	**University of the Free State**
UJ	**University of Johannesburg**
UKZN	**University of KwaZulu-Natal**
UMP	**University of Mpumalanga**
UNISA	**University of South Africa**
UP	**University of Pretoria**
UWC	**University of the Western Cape**
TLM	**Teaching and Learning Manager**
TQM	**Total Quality Management**
USA	**United States of America**
VA	**Very applicable**
VM	**Validation meeting**
WITS	**University of the Witwatersrand**

DEFINITIONS OF TERMS/CONCEPT CLARIFICATION

The main concepts in the title of the study are defined for the reader.

Research culture:

Research culture is defined in the context of this study as the individual and institutional factors that may influence research culture: the signs, symbols, heroes, values, ideologies and assumptions that pertain to policy and processes, reward and promotion, communication, relationships of collegiality, leadership and mentorship; resources, technologies, infrastructure of the institution; opportunities, challenges, strengths and weaknesses within the department, school and university as perceived by the participant.

This may be integrative in nature as described in organisational theory or differentiated or fragmented as described by Smerek (2010:382). This definition is based on the literature of Bland and Ruffin (1992:385-397); Hofstede 1983:54; Salazar-Clemeña and Alamonte-Acosta (2007:4) and Wilkes and Jackson (2013:32).

Faculty of Health Sciences:

A faculty is defined as a group of university departments concerned with a major division of knowledge; the teaching or research staff of a group of university departments viewed as a body (derived from Merriam-Webster:online). In the context of this study, this is chosen to mean theacademic body of the faculty, namely staff who are employed in an academic capacity by either the University of the Free State, or jointly with the Free State Department of Health in a permanent and/or contractual and/or full-time and/or part-time basis.

Framework:

A set of principles or ideas that is used when forming decisions and judgments; conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful (derived from Merriam-Webster:online).

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Note: Appendices are grouped according to the timeline of the study. Appendix A1 relates to the literature review; Appendices B1-B4 pertains to the Ethical approval, amendments and information sessions prior to data collection; Appendices C1-C9 recount the pilot study and data collection of the questionnaire. Appendices D1-D9 refer to communications, pilot and data collection of the Nominal Group Discussions. Appendix E1 communicates the data analysis of the questionnaire and F1 and F2 to the VM documentation. These appendices are grouped in this way for ease of use on the CD and do not follow chronologically in text.

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CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

The landscape of Higher Education (HE) is changing. Greater competition in and among institutions, greater accountability and more visible performance review systems along with a greater sense of the scarcity of resources - and therefore responsibility - are some of these vicissitudes (De Jager, Frick & Van de Spuy 2017:1; Jansen 2004:310). There is also national pressure for participation in research activities (Rath 2009:90) and for HE to set the pace for transformation in South Africa (Hay 2000:54).

With the shift in competitiveness for funding, trends are noted towards an emphasis on research, as this avenue provides income streams from external benefactors such as the Department of Higher Education and Training (DHET 2014a:2) and a return on investment for government in the form of evidenced-based patient care (Neta, Glasgow, Carpenter, Grimshaw, Rabin, Fernandez & Brownson 2015:49).

This study is based on these developments within the global HE environment - with a focus on research - due to a greater demand for social accountability and social development expected from the academic arena. This is also germane to the health context, where the demand for service delivery and social support is on the rise (National Planning Committee (NPC): National Development Plan (NDP) 2011:353).

The *Times Higher Education World University Rankings* (Baty 2017:online) list the 980 top universities in the world, the widest international league table to date. More than half a million books and book chapters have been included in the analysis of 11.9 million research outputs to determine the research score for these universities.

The highest ranked was the University of Oxford (99.1). The University of the Witwatersrand (WITS) (37.3) and the University of Cape Town (UCT) (37.2) are ranked in the top 200, with the University of KwaZulu-Natal (UKZN) (25.3), Stellenbosch University (SU) (24.8), University of Pretoria (UP) (24.1), University of Johannesburg (UJ) (18.4) and University of South Africa (UNISA) (14.3) coming up the ranks. The African continent has six other countries making the list: Egypt (six universities); Kenya (one university); Morocco (three

universities); Nigeria (one university); Tunisia (two universities) and Uganda (one university).

The University of the Free State (UFS) is as yet not rated as research-intensive institution, although it strives to be (UFS 2015:3;7). Thus, there are efforts focused to support and stimulate research in order to become more competitive nationally and internationally. These strategic efforts, which focus on becoming a research-intensive institution, puts a spotlight on the capabilities of staff and the accountability of the use of resources. A prerequisite is to be aware of the existent research culture in order to support and stimulate research and become research-intensive. Research cultures are multi-functional (community, academic, managerial and value-oriented functions of research) as identified by Holligan, Wilson and Humes (2007:721).

This study, however, aimed to investigate the research culture as perceived only by academics in the Faculty of Health Sciences (FoHS) at the UFS. An enhanced research culture for the FoHS will create benefits for the UFS, not only in intangibles such as reputation, but spinoff in terms of possibly increased outputs, funding for projects, collaborative ventures and attraction of staff and students. The integrated nature of the Faculty with the Free State Department of Health (FSDoH) may also allow for cross-pollination of new knowledge, implemented in patient care and the development of best practice for the improvement of the community at large.

The concept of research culture has taken theoretical foundations from organisational culture, behavioural theory, as well the conception of social and academic capital (cf. 2.2). These theories have influenced and driven the development of more specific models. Culture in broad terms involves accepted rites, rituals and behaviours within a given context (Merriam Webster Dictionary:online); this can be expanded to the way an academic should behave and is expected to perform academic tasks (Petersen 2007:477) and called the academicity of individuals and groups. The framework of academic culture in Smerek (2010:410) is the departure point of this study.

Research culture is the specific culture of an academic to the task of research. Levels of culture can be described as being visible artefacts, policies and advertised values in mission statements, and unwritten rules of conduct and socialisation (Schein 1996:229-240). These thoughts, feelings and actions towards research, and the perceptions thereof from the academic staff at the FoHS of the UFS, are yet unexplored.

This study will complete a framework, which identifies the factors that influence the research culture within the FoHS at the UFS and provide recommendations to enhance the research culture, based on these findings. This framework is grounded in the background to the research problem.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

As the UFS is resolute in becoming a research-intensive university, the generation of new knowledge and innovation is a priority. To achieve this status, it is acknowledged that the presence of a culture of research is necessary.

The central factors that have been attributed to the establishment of a mature research culture in the South African HE context have been given by De Jager, *et al*. (2017:6) as: the attraction of international colleagues as permanent staff to the institution; providing staff international exposure in their field; prioritisation and incentivisation of research as a core academic function; and developing niche areas in which there are collaborative projects allowing for co-authorship.

Other eminent factors recognised are the building of a strong research-driven postgraduate programme within the department (De Jager, *et al*. 2017:7); allocated research time; a programme director for support; faculty involvement; forums and opportunities for presenting research; and an integrated research curriculum (DeHaven, Wilson & O'Connor-Kettlestrings 1998:505).

Deterrents to the research culture include the noted lack of supervision capacity and limited funding for postgraduate studies (De Jager, *et al.* 2017:7). Other difficulties evidenced include the struggle of technical writing, knowledgeable use of statistics, the use of experimental designs, selection of a research topic and a heavy academic workload and clinical commitments, limited time available, a lack of resources and the ethical approval process (Leibowitz, Bozalek, Van Schalkwyk & Winberg 2015:322; Thiruthaneeswaran, Turner, Milross & Gogna 2014:164). A lack of personal interest and lack of experience, responsibilities to family, and finances (Weber II & He 2010:38) were also obstacles.

Evaluation of culture in the HE setting was originally measured quantitatively; however, within the last two decades a shift has been made to more qualitative methods (cf. Appendix A1:7-26 for a synopsis of these articles). These analyses have generated survey instruments

for research knowledge, at an individual and team outlook (Holden, Pager, Golenko & Ware 2012:62-67), with the emphasis on capacity building.

The context of health and HE brings into play various unique aspects. This is partly due to the structure of the shared appointments between the FSDoH and the UFS. The UFS has a clear, directed path (UFS 2015:7) that espouses the value placed on research and which is in line with the goals for South African development at a national policy level (NDP 2011:71,322,371; Millennium Development Goals (MDG) Country Report 2013:89,144; Department of Education: Human Resources Development Strategy for South Africa (DoE:HRD-SA) 2010–2030, 2009:38).

The existing platforms in use by academic staff within the FSDoH are admittedly understaffed and under-resourced (FSDoH 2016:45, 50, 55). This puts pressure on service delivery and the primary mandate of patient care. Through these ineffective systems, the interplay of the two institutions leaves staff caught serving two masters. In terms of research as a priority, there is dissonance, as the importance of research portrayed in the national policies are poorly reflected in the day-to-day reality of the health care system.

With this context in mind, previous studies into research culture, even in the HE and health arenas, may not truly reflect the experiences and reality of the target population in this study. As such, the problem statement appeals for the motivation of this study.

1.3 PROBLEM STATEMENT

With the notion of universities becoming more research-intensive (cf. 1.1), many institutions have mandated research as a key role for academics. The UFS also aims to become a research-intensive university (cf. 1.1). At present, there has not been an investigation into the research culture at the UFS (including the FoHS). The intention of the FoHS to become research-intensive (as in line with the institutional vision) is evidenced by their future research agendas (FoHS 2013:3, 6). This highlights the relevance of this research in identifying the existent research culture in the FoHS.

The introductory discussion has highlighted the importance of understanding the research culture in the academic environment and factors that are enabling of a research environment. By the identification of the underlying beliefs and perceptions, and current symbols within the Faculty, a starting point for rectification (negative factors) and

amplification (positive factors) of these factors is created. From this, it is possible to generate the impetus to develop the existing research culture.

Once participants have established a shared vision by describing the meaningfulness of their personal analysis of research (O'Brien 2013:10) and articulating their priorities and needs, all stakeholders can feel that they are firmly rooted in the Faculty. This study also offered the first opportunity for academic staff to have their voice heard in this context.

The specific context of health HE in a university with various commitments of staff to the mandates of their employee/s (cf. 2.5.4.1; 2.8.5.1) made this study neatly focused on these interactions and how they may influence research culture.

This study therefore aimed to identify these factors, which affect the research culture (including barriers as well as enablers) within the FoHS at the UFS. This, in turn, provided the foundations for a framework that is designed for the enhancement of the research culture.

This framework is a unique contribution to the field of research culture. Minimal literature is present on the specific topic of a research culture in a health faculty in HE, and none specifically in the South African health HE context has been established. This was the identified gap in the existing body of knowledge within this field. This reflection leads the researcher to ask pertinent research questions surrounding this topic.

1.3.1 Overall aim of the study

The overall aim of the study was to determine the perceptions of academic staff in the FoHS of the UFS of the existing research culture and the factors, which were perceived to influence this existing research culture. With these influences identified, a framework for the enhancement of the research culture at the FoHS of UFS was developed.

1.4 RESEARCH QUESTIONS AND OBJECTIVES OF THE STUDY

The study was undertaken as it was seen to be an imperative for an organisation, and especially universities, to embody a strong, enabled research culture. In order to attain the stated goal, the following questions were posed:

i. *What is the current, perceived research culture in the FoHS at the UFS?*
ii. *Which factors influence the research culture within the FoHS at the UFS?*
iii. *How can the current research culture in the FoHS at the UFS be enhanced to enable a research-intensive academic environment?*

The following were the objectives of the study, which answered the research questions posed:

i. *To conceptualise and contextualise the factors that influence research culture in a theoretical framework (Literature study).*
ii. *To identify the perceived, existing research culture by way of description by the participants (Questionnaire and NGDs).*
iii. *To determine the staff perceptions and views on the factors that influence research culture (Questionnaire and NGDs).*
iv. *To develop a preliminary framework (using data from objectives i, ii and iii above) which will be refined to generate a final framework (using findings from the VMs) that can be used to enhance the existing research culture in the faculty.*

These questions and objectives were in line with the research design and the qualitative emphasis of this mixed-method methodology and the nature of the study; namely, to have answered questions contextually and strategically (Srivastava & Thompson 2009:74). In order to address the objectives holistically, a suitable research design and applicable methods were selected (cf. 3.3), namely a questionnaire, NGDs and VMs (cf. 3.4).

1.5 ASSUMPTIONS OF THE STUDY

Assumptions relating to the participants were that those who chose to participate were knowledgeable and fluent enough in language skills to answer honestly, and to the best of their ability. Researcher biases and that of the facilitator have been declared openly and through the process of bracketing; these have been put aside, with the greatest of care.
Every effort has been made to ensure the reliability and validity of the data presented. The questionnaire comprised questions subsequent to the perusal of the literature. Due to the varying population sizes of the four Schools and the Divisions in the FoHS, it is unlikely that the groupings could be declared homogenous.

Although these anticipated effects were acknowledged, this does not detract from the significance and value of the study.

1.6 VALUE AND SIGNIFICANCE OF THE STUDY

The value of the study relates to the benefits incurred by the UFS with strategies that were put forward to assist management with the growth of a stronger research culture. The development of a validated instrument (cf. Appendix C9) by which to measure research culture allows for the use of the instrument in other appropriate environments.

The research highlights the need for specific research skills training; new opportunities via interdepartmental collaboration; networking; and larger longitudinal projects that novice researchers may use as a learning platform. A strong research culture is reliant on collaborative engagement; and the organisation that prescribes this cultural context should allow for continuous development of the collaboration (Johnson & Louw 2014:154).

The significance of the study was that at the time of the study there was (and remains) a dearth in the body of knowledge within the domain of the research culture in health HE. This study speaks specifically to the current research culture that exists in the FoHS at the UFS. This study contributed to new knowledge in the fields of research culture and academic staff perceptions. It has built on existing models of research culture in the context of HE and provides new knowledge in the context of a Faculty in the Health Sciences, in South Africa.

Additionally, the significance of this study is extended by the complex nature of the context of the research, as the majority of academics within the FoHS is on joint appointment with the FSDoH. Due to this extended significance of this study, a valuable contribution to the body of knowledge on the development of research cultures within "difficult" contextual environments at national and international level, and more specifically within the Healthcare context, has been made. As part of the introduction, the context of the researcher is given.

1.7 BACKGROUND OF THE RESEARCHER

The intention of the researcher in this section was to present the background, experiences and interests held (Fischer 2009:584; Sherif 2001:438). These influences are further laid bare (cf. 3.7.8; 7.6); with the purpose of transparency, the biases and attitudes that

informed this study, and impacted on this study as well as the attempted bracketing thereof (cf. 3.4.3.1; 3.7.8), are specified.

The researcher, in the context of this study, is a qualified optometrist holding a Masters' in Health Professions Education (HPE), and undergraduate and honours degrees in Economics and Strategic Management respectively. She is currently employed at the Department of Optometry in the SAHP, within the FoHS at the UFS. Subsequently, this study can be said to be conducted as insider research.

Harris (2002:52) notes that much of medical education research is impacted greatly by social science research as the disciplines of the researchers are rooted there; it is for this reason that the role of researcher as interpreter will be heavily influenced by her frame of reference. The insider/outsider continuum as a concept and the reflective nature of qualitative research, the bracketing typology and linked research paradigm are discussed in detail later in this thesis.

After seven years in private practice, the mind shift of academia presented a challenge to the researcher. Primarily as a lecturer and supervisor to undergraduate students, and the expectation of the university, of staff to perform research piqued the interest of the researcher. This led to a study on attitudes to research in undergraduate students, while this investigation extends the theme to the broader staff of the FoHS at the UFS.

At staff training and development opportunities, staff bemoan the "ever shifting goalposts" of academia. The seemingly unflattering utterances are not unique to one faculty. The personal research experience of the researcher is somewhat limited to an undergraduate level. The influences of the researcher's research culture are primarily the workload of clinical hours and having no administrative staff in the department. Resources are also limited and study funding must be driven independently.

Workload, one can argue, is relative. At a conference, the researcher met a colleague, at the same post level, same profession, but a different university. This colleague is responsible for one semester module and one clinic; with six months research time. The researcher is responsible for three year-modules, one semester module, two clinics and a practical. For this study, funding had to be obtained to gain a six-week research sabbatical. This highlights how in one institution the allocation of research time is actively supported and less so, in the other.

This subject appealed to the researcher for other reasons. The office of the researcher is off campus, also leading towards a feeling of alienation or isolation; of being "out of the loop" - a perpetual feeling of not quite knowing what is going on, or how it is supposed to be done. This is in particular with the performance managements systems and the research administration procedures. These experiences and personal circumstances relay to the reader the initial impetus to study this topic.

This small excerpt specified, in the most superficial way, the reflexivity encouraged in the qualitative research stance. The research perspective of the researcher was described (cf. 3.2) and thus, the researcher aimed to be respectful. Every avenue was followed in order to have written the truth and to be true to the participants - without which, this study would not have been possible.

The final output of a framework, along with the full thesis, represents the final product of the study. It is intended that these outputs be disseminated, as given below.

1.8 IMPLEMENTATIONS OF THE FINDINGS

This report containing the findings of the study was submitted to the attention of all relevant stakeholders in the FoHS. The research findings and framework will be submitted to academic journals with a view to publication; at present, a number of articles have been drafted. Thus far, selected results have been presented at the Together United for Health (TUFH) conference hosted at the University of Limerick, in August 2018, and at the Asia Pacific Medical Education Conference (APMEC) in Singapore in January 2019. Following on, is the structured layout of the thesis.

1.9 ARRANGEMENT OF THE REPORT

In order to provide clarity on the topic, the methods used and the findings thereof, as well the final outcome of the study, are outlined in the following chapters:

This, Chapter 1, **Orientation to the study**, the background to the study is briefly summated; the problem statement and research questions and objectives were provided. The design and methodology of the study was given, as well as the significance, scope and limitations of the study. A brief background to the researcher was listed. In Chapter 2 **Literature Review** is elucidated upon. This chapter outlines the theoretical framework for the study.

The methodology and methods of investigation are presented and explained in greater detail in Chapter 3, **Research design and methodology**. This chapter also informs the reader of the research paradigm of the researcher, the bracketing methods imposed on the study and transparency regarding the validity and trustworthiness of the study. Ethical considerations are also noted.

The results are presented in alignment with each of the objectives (cf. 1.4). **Participants' perceptions of the existing research culture** forms Chapter 4. This exposition represents the findings aligned to the second objective of the study. The findings aligned to the third objective is collated in Chapter 5 comprising the **Participants' perceptions and views on the factors that influence research culture.**

Chapter 6, **Discussion of the findings**, informs how the data collected and analysed in the two prior chapters, builds on the framework development. This chapter presents the preliminary framework. Chapter 7, **A framework to enhance the existing research culture**, culminates in the presentation of the final framework. These two chapters, through the discussion of the development (cf. Chapter 6) and refinement (cf. Chapter 7) of the framework, together meet the fourth and final objective of the study.

The final chapter, Chapter 8, entitled **Concluding remarks**, gives an overview of the study; dictates further recommendations and acknowledges limitations of the study. References and Appendices are included at the end of the thesis.

1.10 SUMMARY

Chapter 1 provided the background to the investigation into the research culture at the FoHS at the UFS. This study was deemed significant as it informed stakeholders and management of HE, of the influences in research culture at the nexus of health and academia within the given context. The framework to enhance such a research culture was the final outcome of the study.

The aim of this chapter was to orient the reader to the study as a whole and introduce the research questions, objectives and methodology of the study was provided. A concise precis of the scope, assumptions and limitations, terminology and implementation of the findings was given. The following chapter will be a study of the relevant literature, Chapter 2, **LITERATURE REVIEW**.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Research culture has been resultant from the global change in the HE arena (cf. 1.1), whereby the need to be research focused has intensified. This term was consequent also to the likening of HE as a product, and the university as a profitable organisation (cf. 1.3).

Baty (*Times Higher Education World Universities Ranking: BRICS and Emerging Economies* 2017:online) warns that it would be foolhardy to ignore the global competition; that emerging countries should develop their research universities to hold their own. The *Times Higher Education World Universities Ranking: BRICS and Emerging Economies* report for 2017, highlights the need of such a ranking to gauge performance against global standards and to raise the national competitiveness of universities.

Amongst the countries comprising of the world's emerging economies (Brazil, Russia, India, China and South Africa; BRICS) South Africa boast of eight ranked universities in 2017, according to the Times Higher Education World Universities Ranking: BRICS and Emerging Economies (Baty 2017:online) ranking. The top ranked universities in the country include:

- UCT (4[a]; 37.2[b]);
- WITS (8[a]; 37.3[b]);
- SU (42[a]; 24.8[b]);
- UKZN (58[a]; 25.3[b]);
- UP (74; 24.1);
- University of the Western Cape (UWC) (102[a]; 14.3[b]);
- UJ (141[a]; 18.4[b]); and
- UNISA (range given as 251-300[a] for 2017, ranked 197 for 2016; 9.9[b]).

Key:
a; ranked position
b; institution research score out of 100 (Baty 2017:online)

As mentioned (cf. 1.2), the UFS is yet not rated as a research-intensive institution and aims to be. This puts the spotlight on the capabilities of staff and the accountability of the use of resources. This necessitates that the University become aware of the existent research culture in order to support and stimulate research and become research-intensive (Leibowitz, *et al.* 2015:317). Many aspects affect research culture, and with varying levels of influence.

A university can be compared to a profit-driven institution, by which organisational theory can be applied. By virtue of being an organisation, made of people who interact, communicate and have diverging interests, the human aspect comes into play. People are individuals, with inherent beliefs, needs and personal histories. For this reason, the theories derived from human behaviour, how people adapt and learn, socialise with and tolerate others are of interest in this study. Similarly, within the HE sector, a trifocal directive comprising of teaching and learning, community engagement and research activities is the core charter and crux of academia (Chambers & Walker 2016:5). This trifocal model of academia has been the focus of some research culture studies in the past, in the Philippines by Salazar-Clemeña, Almonte-Acosta (2007:1-13) and locally by Johnson and Louw (2014:151-164). However, Hill (2002:23) notes conflict in these roles.

This discourse aims to guide the reader through the most pertinent points of intersection between the theories that generate the foundational theoretical framework for research culture as an inquiry field. Furthermore, this chapter introduces the concept of research culture and factors that influence academic culture from a theoretical perspective; as well as how these theories are applied in the literature. Research culture is examined as an independent variable (cf. 2.4), but also by means of common instrumentation of evaluation (cf. 2.6). Furthermore, some guidance is given on the strategies that may enhance research culture (cf. 2.7). The latter sections of this chapter provide more detail on the context of the HE in South Africa, along with the alignment of this study with UFS policies (cf. 2.8.4).

2.2 ORGANISATIONAL CULTURE AS A THEORETICAL FOUNDATION

Culture can broadly be interpreted from anthropological literature as being the accepted behavioural norms in the boundaries of a defined group, as directed by a pattern of shared, learned beliefs, traditions and principles (Ardichvili, Mitchell & Jondle 2009:445). Culture in general is informed from many theoretical perspectives. The first and broadest theoretical perspectives underpinning current studies in culture stem from the field of Organisational theory.

2.2.1 Schein's hierarchy of organisational culture

There are multiple functional units to an organisation, however the interest in this study is focused on only one such aspect, that of organisational culture. The interest in this study is focused on only one such aspect, that of organisational culture, as fathered by Schein (1996:229). The elements comprising organisational culture propagated by Schein (1996:229-240), suggested that it is manifested within an environment by three interwoven and integrative levels (cf. Figure 2.1): observable artefacts (lowest level); values, norms and ideologies (intermediate level); and assumptions that are expectations which influence perceptions and feelings of an organisation (highest level).

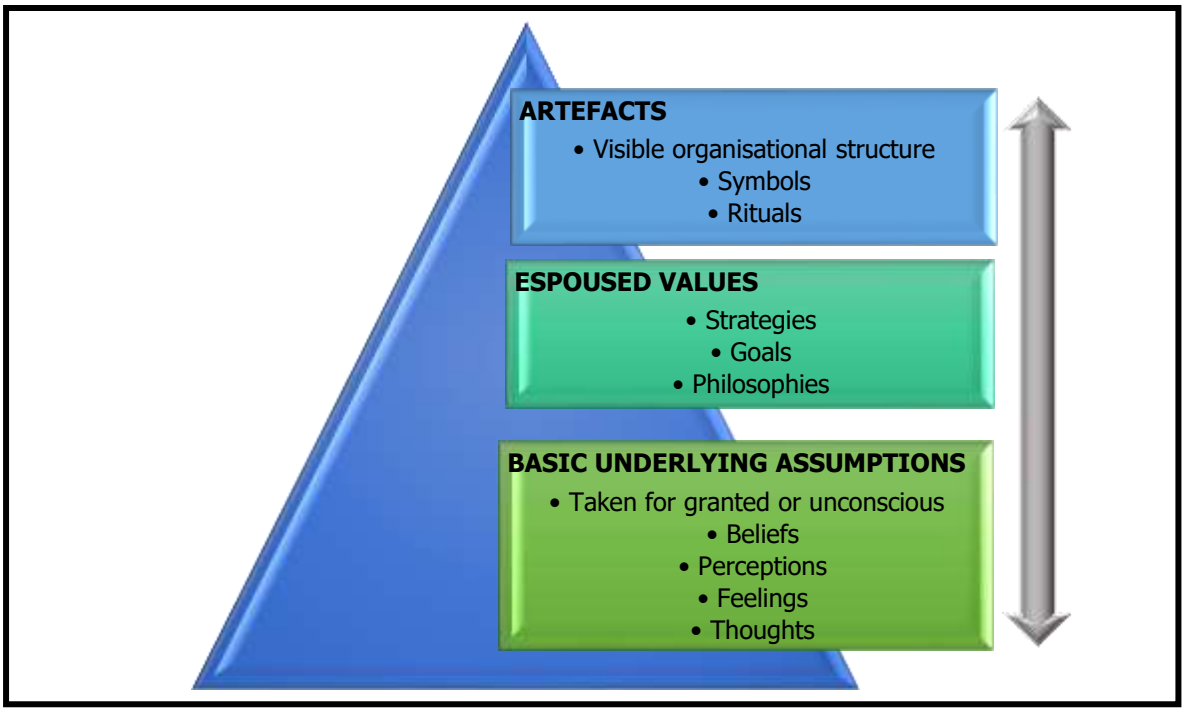

Figure 2.1: The hierarchy of organisational culture (Adapted from Schein 1996)

From an organisational perspective, the inculcated culture within the organisation is driven to support the structure and goals of the organisation. This is in line with espoused values that support the objectives of the organisation. An organisation's culture regulates the way the organisation conducts its business, and as a result influences its processes (Ismail, Romle & Aznida Azmar 2015:16).

Culture is the "*social glue*" binding an organisation together (Hernández-Mendez & Del Rosario Reyes Cruz 2014:17). The components of organisational culture, which are manifested through the hierarchical levels (cf. Figure 2.1), are: leadership, structure, policies, reward systems, socialisation mechanisms and decision- making processes

(Ardichvil, *et al.* 2009:445). These are formalised, as they are transparently acknowledged, often in physical documents. An informal, undocumented culture within an organisation also exists, including implicit behavioural norms, role models, rituals, historical anecdotes and language (Schein 2004:265-267).

Today, Schein's theory is prolifically in use, and applied to the context of HE (Ismail, *et al.* 2015:14-19; Zhu & Engels 2014:136-158). In this regard, the academic culture describes the requirements of uniformity to drive the directives of any Higher Education Institution (HEI). In a commercial organisation, this unanimous support is advantageous as it allows for efficiency in functional units; in studies of HE organisations, this uniformity was not always present.

Individuals are not without their own accepted culture when joining an organisation. This may be from life experiences, familial bonds, religious backgrounds and various other influences. Thus, those who identify with the organisation's culture are inspired to join the organisation, to grow and establish themselves with the organisation. Those who do not identify with the culture or cannot adapt sufficiently on a behavioural level, often choose to leave, in order to find organisational fit with their inherent culture, elsewhere.

Organisations are, by virtue of their goal-driven orientation, continuously manipulating symbols (Hofstede 1983:54) to achieve their goals through the cohesive nature of these symbols. Therefore, it is not surprising that the way organisations are managed are a result of the culture of the society of the people who work for the organisation.

Just as the levels of manifestations of organisational culture show feedback to and from each other, so too is the organisation as a whole dynamic; in this way an organisation can be viewed as a system. A short explanation on systems theory provide the linkage of organisational culture to that of an organisation as a system.

2.2.2 Systems theory

A system can be defined as a collection of objects integrated by some form of ordered interaction or interdependence:

> "*In regard to its elements, a system can be detailed in terms of its components, composed of people, processes and products; its attributes, composed of the input, process and output characteristics of each component; and its relationships, composed of interactions between components and characteristics*" (Tien & Berg 2003:23-24).

System characteristics (Mele, Pels & Polese 2010:127-128) are: wholeness and interdependence (the whole is more than the sum of all parts); correlations; distinguishing causes; chain of effect; hierarchy; suprasystems and subsystems; self-regulation and control; goal-oriented, interaction with the environment; inputs and outputs; the need for homeostasis, change and adaptability; and that there are several ways to achieve goals.

Systems exist in an environment and is, thus, a set of things that affect one another within an environment. These components may form a larger pattern that is different from any of the parts; the adage that a system is greater than the sum of elementary parts (Mele, *et al.* 2010:127). A closed system does not interact with its environment. It does not take in information and therefore is likely to degenerate. Similarly, an organisation that does not assimilate cultural change is likely to be at odds with societal norms and not meet the expectations of society.

An open system receives information, which it uses to interact dynamically with its environment (Mele, *et al.* 2010:127). Openness increases the likelihood to survive and grow. In terms of an organisation: the environment, the individual and the group do not exist in isolation (Kong 2003:91) and can be viewed as an open system. Senge (2006:341, 342, 356) describes this as an "*inescapable network of mutuality*" and that organisations are multifaceted and placed within larger systems, such as communities and industry. As systems shape and manifest at multiple levels, so too can individuals work at multiple levels and this should create learning-oriented work cultures; this is possible through shared commitment, common understanding and trust among co-workers (Senge 2006:348,350, 357). Similarly, these aspects of systems theory, find complementary aspects in behavioural theory. Through both the lenses of systems theory and behaviour theory, the visibility of the interconnectedness of this is given by the accepted behaviours of organisational theory previously mentioned.

2.2.3 Behaviour theory

The social system of the group operates through behaviour; it is people acting in concert that do the aspiring, motivating and regulating. The social system cannot act independently of the beliefs and actions of the individuals who make up the system.
Succinctly put:

> "*The cultivated identities, values, belief structures, and agentic capabilities are the psychosocial systems through which experiences are filtered*" (Bandura 2002:272).

In Bandura's Learning theory (1977:3-4), people are models, from which others can imitate the actions of the model. The model can respond with reinforcement of the actions in a positive or negative way. In this model of reciprocal determinism, behaviour, cognitive, and other personal factors as well as environmental events function as interacting determinants that influence each other bi-directionally (Wood & Bandura 1989:362). Due to this bi-directionality of influence, people are likewise products and producers of their environment.

This can be linked to the feedback in an open system. This Social cognitive theory identifies psychological mechanisms by which organisational cultures can affect individual behaviour (Wood & Bandura 1989:380). The following sub-section illuminates how behavioural theory complements organisational culture theory.

Bandura (1977:5-6) believes that humans are active information processors and think about the connection between their behaviour and the consequences thereof. These cognitive processes allow for observational learning to take place. These conceptual factors intervene in the learning process to decide whether or not a new response is learnt. As such, individuals do not automatically observe the behaviour of a model and then imitate it. There is some thought prior to the imitation and this consideration is called the mediational process.

Bandura (1977:3-4) is in agreement with the behaviourist learning theories of classical conditioning and operant conditioning. By understanding the values that reinforce behaviour, the emphasis of daily tasks relating to research can be learnt; and the transfer of using research in clinical practice can be implemented (Scott-Findlay & Golden-Biddle 2005:365). Bandura (2002:269-290) later discussed human functioning in cultural embeddedness from an agentic perspective of the social cognitive theory. Agency is divided into direct personal, proxy and collective agency; and is exercised in relative contributions to bring influence to bear on the environment to manage their lives. Agency occurs through the mechanism of self-efficacy: the belief that one can change the circumstances that one is in or create desired effects through one's actions.

The strong effects that induced belief systems have on managerial capability and organisational controllability are relevant to issues of organisational culture (Bandura 2002:279). This line of theorising in belief systems of organisations dictates that it influences people's interpretations of happenings and organisational action.

2.2.4 Cultural capital theory

Cultural values are integral to learning styles (Aktas 2012:359. The way in which people identify their values, are inherited from their innate place in society, as explained by the cultural capital theory of Bourdieu. Bourdieu's works on cultural capital explains how people view themselves; how people connect; and whether people are accepted as equals or viewed academically inferior. The degree to which you are a recognisable member of the group, is determined by the level of performance of the tacit knowledge; both contextually and in a manner that is intelligible and appropriate (Petersen 2007:478). Deem and Lucas (2007) identify with this theory as their departure point for their inquiry into research culture.

Bourdieu in *The Forms of Capital* (1986:46-58), differentiates between three types of capital. Firstly, Economic capital is the command of economic resources such as assets. Social capital relates to resources grounded on group membership, relationships, networks of influence and support. Bourdieu (1986:51) described social capital as:

> "*The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition*".

Furthermore, Cultural capital (1986:242) are systems of knowledge, skills, education, and other advantages that people possess, which give them a higher status in society. Parents instil in their children cultural capital through the transmission of attitudes and knowledge needed to succeed in the current educational system. From these explanations, this study perceives linkages with both social capital and cultural capital, where the Faculty is a group and network base, and the embodiment of the transmission of new knowledge.

These theories have looked at the manifestations of culture in a hierarchical view, from the obvious to the invisible (cf. 2.2.1), the societal influences bred into groups of people that can influence values and relationships in the workplace (cf. 2.2.1, 2.2.3-2.2.4). In addition, how learning can affect socialisation, mentoring and assimilation (cf. 2.2.3), as well as adaption at an organisational level.

To put these theories into context, the reality of the South African HE domain is multifaceted. To assume that the culture of the microcosm of a Faculty is simple or uniform, would be naïve; the variables that each individual brings to the fore is unique in their

personal culture described by Schein (cf. 2.2.1), which is in turn influenced by their familial or societal culture (cf. 2.2.4) and the work environment. In essence, not only is culture influenced by organisational theory and by being part of an open-system, but also through the theories of the behaviourists. As organisations are made up of people, and in some instances thousands of people, the way people behave (or are told to behave) can have great impact on the way organisations function. As mentioned, an academic institution can be identified as a specific type of an organisation; with this in mind, the following section delves into academic culture as a separate entity.

2.3 ACADEMIC CULTURE

Smerek (2010:410) proposed this academic culture model in order to direct conversation on academic culture in a structured way. The organisational culture of the academic environment is a product of its history, leadership, critical events, and thus the importance of the historical context that the institution emerged from (Smerek 2010:411). Smerek's model derived three perspectives, namely that of integration, differentiation and fragmentation (cf. Table 2.1). These perspectives arose after an analysis of studies undertaken in HE, describing the cultures identified.

Table 2.1: Three perspectives summaries (Adapted from Martin & Meyerson 1987:625-626, 630-632, 637-641 & Smerek 2010:385)

	INTEGRATION	DIFFERENTIATION	FRAGMENTATION (AMBIGUITY)
Orientation to consensus	Organisation-wide consensus Consistency to cultural manifestations	Sub-cultural consensus which reflect various affiliations	Multiplicity of views that are irreconcilable
Treatment of ambiguity	Excludes or denies ambiguity	Channels ambiguity outside sub-cultures; attention is restricted to consistencies in manifestations	Acknowledge ambiguity
Descriptive characteristic of culture	Harmonious	Conflict and differences emphasised: reflections of broader societal elements e.g. Gender, occupation, hierarchy	Irony, paradox and multiple interpretations that do not amalgamate to uniform consensus
Culture creators	Leaders: charismatic	Open system perspective: internal and external influences, i.e. multiple sources	Individual adjustments and interpretations

The academic culture that conforms to the integration perspective embodies a culture of unity, organisation-wide consensus and clearly communicated values. Any deviation from the integrated ideal is seen as defective; the culture is often rooted in the authority of the leader (Kong 2003:95). This perspective assumes that people in the organisation have shared stories, jargon and that consensus can be reached (Smerek 2010:383).

Studies that identified this type of organisational culture were criticised for small sample sizes; not considering conflict; weighting the influence of managers too highly and not including data that deviate from the shared culture (Smerek 2010:383). Academic culture is perceived by such academic institutions as a method to garner support; each worker has a formalised role and that culture can be manipulated to achieve organisational effectiveness (Smerek 2010:386-388).

Critically, Schein's Organisational culture theory relies on the shared experience and the shared values and understandings of the members; this is not always guaranteed in larger groups of people. Within a large organisation, it is not unusual to have differences in culture so divergent that they can be seen as having their own features. This may be termed as a sub-culture. Sub-cultures are any cultures that vary in *values* with the dominant culture; this does not necessarily mean it is detrimental (Sporn 1996:78). A sub-culture is defined by four characteristics: A subset of individuals who are regularly interacting with one another; identify themselves as a distinct group within in the organisation; share a set of concerns; and often take action based on the collective understandings of the group that is unique to them (Van Maanen & Barley 1985:38).

Contrast also needs to be drawn between a dominant culture, a sub-culture and a counter-culture. These dominant, sub-culture or countercultures may occur in any perspective (integration, differentiation, fragmentation). The dominant culture is the pervasive culture, which extends to the core of the organisation and is the entrenched common meanings and assumptions across the span of the organisation. The dominant culture infuses into common language, shared understanding and research activity integrated into the vision and mission of the organisation (O'Brien 2013:3). Counter-culture exists when members of the organisation fight against the dominant culture or are inclined to want to change the dominant culture.

The differentiation perspective adopts the notion that culture is exhibited by differences in sub-units and harmony only occurs in sub-cultures. The emphasis on sub-cultures indicates

how the smaller groups reflect the larger society. Also, in the context of the university, sub-cultures may be found in different departments or among colleagues who retain vestiges of culture from previous institutions of work or study (Hill 1999:7). The content by which the culture is refined is through occupational influences, demographics and national contexts; through this it is possible to simultaneously belong to multiple cultures (Smerek 2010:384).

In the literature, it is noted that these sub-cultures may be managerial, discipline-based, social groups, peer groups created by proximity and special interest related groups (Kuh & Whitt 1988:65). Similarly, to the differentiation perspective identified by Smerek (2010:409) in academic culture, Deem and Lucas (2007:125) identify departmental research cultures, also indicating that research cultures are differentiated through the university.

This perspective does not ignore conflict; the roles of different employees in the academic setting put emphasis on different outcomes. This is clear in the distinction between the administrations of a division financially, allocating limited funds; and the administration of a division for knowledge creation and dissemination (Smerek 2010:400).

Fragmentation allows ambiguity to be the primary characteristic of the inherent culture (Smerek 2010:382). Any unanimity in a fragmented culture is short-lived and issue-specific; as issues develop and disintegrate so too do the affinities of the individuals involved. Fragmentation cultures exist when there are unclear goals and uncertainty if or how outcomes have been achieved. Hay (2000:57) has noted this fragmentation of HE in South Africa. Sporn (1996:41-61) fêted by Smerek (2010:388), also classified university culture as fragmented, but ambiguously so: by being both internally and externally oriented. The argument for the fragmented perspective in HE is that due to the nature of temporary alliances, it allows for interdisciplinary and/or multidisciplinary generation of knowledge. In a uniform culture, the similarity in the thought processes may hinder unique insights (Smerek 2010:403).

With these three perspectives in mind, Smerek (2010:410) presented a model that illustrates the complex interactions and influences on the academic environment (cf. Figure 2.2, on the following page). This framework utilises the seminal works of Hofstede (1983:46-74) to conceptualise national culture, whereby cultural differences among nations were described. This model acts as the departure point for the theoretical framework of this study.

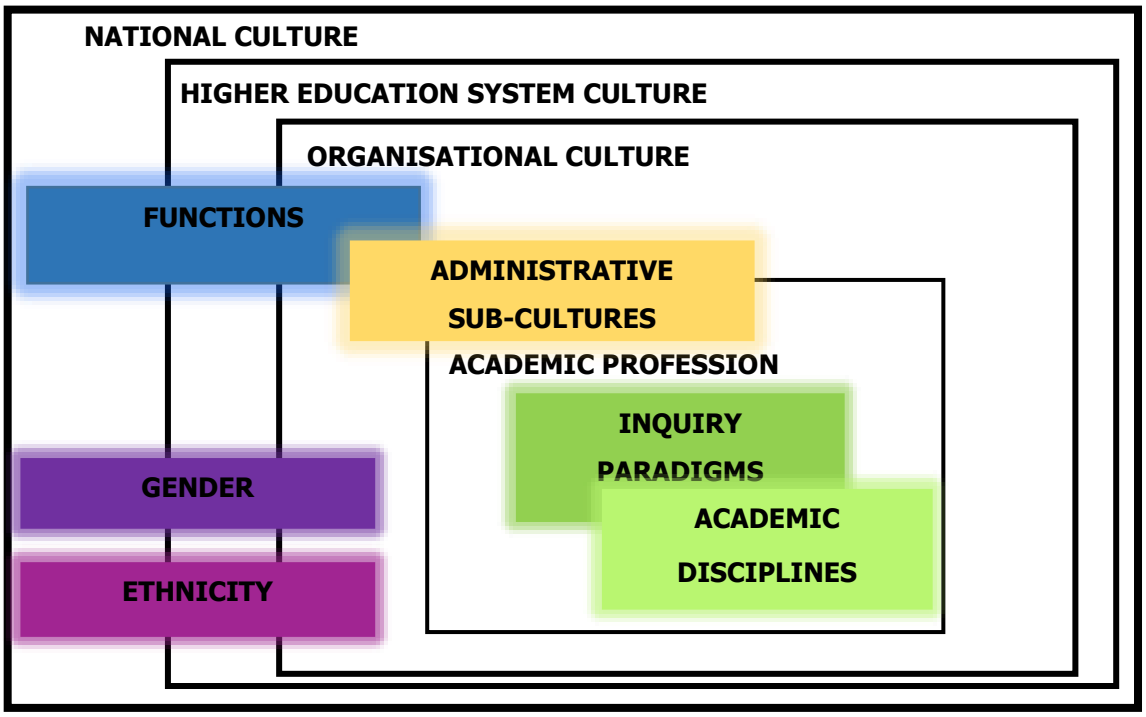

Figure 2.2: A framework for analysing academic culture in Higher Education (Adapted from Smerek 2010:410)

Smerek notes that the framework visually portrays the idea that "*colleges and universities are organisational systems comprising many overlapping subsystems*" (Bess 2006:504). Shortcomings are acknowledged by the developer; the inertia represented by the model does not do justice to the real-world dynamics (Smerek 2010:410), although interactions and overlaps are indicated. The model highlights the duality of the individual in the workplace, where the academic needs to fulfil the role of administrator as well as that of the faculty member. Smerek (2010:384) summates:

> *"Thus, culture in a higher education context may be more plausibly explained by a world of unclear goals and irresolvable time-conflicts and tensions, with no clearly-defined unitary culture".*

2.4 RESEARCH CULTURE

The concept at the core of this study is research culture. Smerek (2010:410) incorporated academic disciplines as a core factor influencing the academic culture. Likewise, research being a component of the aforementioned trifocal mandate of being an academic also contributes to this model. As a corollary thereof, research culture has unique contributions, which can be investigated as a stand-alone concept.

2.4.1 Research culture defined

The emphasis on research culture as an independent avenue of study began in the early 1990's. The first documented inclusive definition was that of Hill (1999:2), which stated that research culture is:

> "*The values, ideals and beliefs about research within the organisation, which are manifest in the research behaviours, research actions and research symbols of the organisation"*.

Hill (1999:1-2) adapted the existing definitions of organisational culture (cf. 2.2) to give arrangement to the term research culture; he translated the terms to provide the following:

- Observable behavioural regularities are when people engage in research, such as the language and rituals. An example within the FoHS would be the process of candidates presenting at an evaluation committee meeting;
- The norms that evolve in research groups of research environments;
- The dominant research-related values espoused by an organisation - that research is a worthwhile activity and a pillar of the trifocal role mandate to staff of the university;
- The philosophy that guides the organisation's policy on research;
- The rules of the game for getting along with research in the organisation, how to become accepted as an experienced researcher; and
- The feeling or climate about research that is conveyed in the organisation by the physical and administrative facilities, as well as the way in which researchers interact with one another.

With these aspects in mind, the full definition given by Hill (1999:2) for the term research culture arises as:

> *"A pattern of basic assumptions about research-invented, discovered or developed by a given group as it learns to cope with the external and internal problems of research - that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to research problems".*

These definitions speak to specific aspects of research culture, although not including a specific focus on the health domain, as this study will investigate. These definitions summarily assume uniformity and the integration perspective of research culture. As described by Smerek (2010:394-404), differentiation and fragmentation are valid perspectives of culture in themselves (cf. 2.3), although they do not conform to the

expectations of the harmonious culture proposed by organisational theory (cf. 2.2.1). These perspectives are not clearly addressed by the current definitions, particularly the perspective of fragmentation. It can be argued through the presentation of disciplines within the definitions that there is room created for the differentiation perspective.

2.4.2 Complementary features between academic culture and research culture

Using the basis of academic culture as a departure point for this study, the exposition has now elucidated a number of similarities between important aspects in an organisation, in terms of organisational culture, and academic culture when these two entities are compared to research culture. Table 2.2 indicates these overlaps between academic culture and research culture; Table 2.3 compares organisational culture to research culture.

Table 2.2: Overview of comparative factors between the academic culture theoretical model and research culture

ACADEMIC MODEL (Smerek 2010)	RESEARCH CULTURE (Various preliminary readings)
National Culture	Impact on research methods Context-specific problems in South Africa
Higher Education system culture	Competition for funding and reputation
Academic and Administration sub-cultures	Specific focus of research culture of health academics, although not to negate the need for support from administrative forces. Sub-cultures may refer to social groups, groups created by proximity or special interest
Profession at Large and disciplines	Academic values drive health professionals Discipline specific differentiation of research culture, within and among disciplines
Inquiry paradigms	Knowledge creation and dissemination a core function of researchers
Functions	Individual attributes and duality of research roles in health impact on the research culture

The characteristics of what it is to be a research-active academic, to connect with others in recognition of this, as well as across and within disciplines links to the cultural capital theory (cf. 2.2.4), and the shared beliefs of these individuals. These identifiers of 'sameness' may be that of their profession, the value system of patient care or the network of shared experiences through social interaction. The mandate of research outputs and policy expectations of research provide a similar encapsulation to the staff: all staff are expected to produce research. For this capacity-building motive and the evaluation of policies, investigations into research culture specifically have come to the fore.

Relating the university to an organisation, similar components are present, as in every organisation: the values, the policies that guide and drive the goals of the institution, leadership and communication, processes for evaluation and improvement. There are also implications for recruitment, retention and succession (Holligan, *et al.* 2011:716). Similarly, there are drivers in the organisation that serve analogous functions, yet are implemented differently between organisational culture and research culture.

Table 2.3: Comparison of organisational culture and research culture

DRIVERS	ORGANISATIONAL CULTURE	RESEARCH CULTURE
Values, feelings, beliefs	Equity Transparency Social responsibility	Autonomy Ethical conduct
Goals and objectives	Profit driven Stakeholder is client	Knowledge creation Stakeholder is student, patient, community
Strategic alignment	Decentralised decision-making Lean and flexible operations	Alignment of Faculties within the Strategy of the institution and HE arena
Task/job descriptor	Harmony of same goal Uniformity in dress and conduct	Independent thought encouraged Niche field researchers
Interpersonal relationships	Hierarchical line of managerialism	Research networks

Organisational culture is then not able to be distinguished from what the organisation *is,* the culture is the essence of the organisation (Scott-Findlay & Golden-Biddle 2005:360). Organisational culture is a concept that endeavours to describe and explain activities in the organisation holistically.

Underpinning the directives of any organisation is the inculcated organisational culture, derived from a central value system (Barrett 2010:4; O'Reilly III, Chatman & Caldwell 1991:493). At the basis of any organisational culture framework lie the values of the institution. In research culture, the core values shine through and include integrity (Ellis 2015:752), pro-activeness and autonomy (Holiday-Goodman 2012:269), honesty, trust, innovation, ethical practices (Wilkes & Jackson 2013:31) and a passion for better outcomes for patients (Gardner & Nunan 2007:346). These values may arise also as a product of the institution's history, leadership, critical events, and thus the importance of the historical context is noted (Smerek 2010:411).

These values will provide the foundation for policies such as the mission statement of the institution. Table 2.4 draws from two sources, given their very similar views of the

institutional aspects that drive research culture in academia. However, these two sources are from the fields of social work and business administration and lack the distinct facet of patient care in the considerations, as applicable to this study. The administration of a faculty with a distinctive emphasis on the role of the academic as also a health practitioner will filter into the organisational aspects of day-to-day management, but is not yet fully documented and highlighted in the problem statement of this study (cf. 1.3).

Organisational factors that have been identified as singularly important in research culture are the communication of research, decision-making in research policies or processes within the organisation (Hill 2002:21) and the allocation or availability of resources for research (Hanover Report 2014:7).

Table 2.4: Influential organisational factors (Adapted from: Hanover Research: Building a Culture of Research: Recommended Practices) (May 2014) and Marchant (2009:3-4))

FACTOR	CHARACTERISTICS	EMPIRICAL AGREEMENT
Effective leadership and clear goals	• Culture development as a point on agendas for important committee meetings • Clear and publicised articulation of institutional research goals and expectations • Align all levels of the university with the cultural development strategy • Participative governing • Socialisation	Barner, Holosko, Thyer & King Jr (2015); Gabriele & Caines (2013); Kiel, O'Neil, Gallgher & Mohammad (2015)
Faculty training and support programs	• Mentoring • Continuing education courses • Grant-writing support • Research funding • Support for terminal degree attainment	Bolon & Philips (2010); Gill (2004); Greenwood & Gray (1998); Hernandez- Mendez & Del Rosario Reyes Cruz (2014); Kljakovic (2009); O'Brien (2013); Tynan & Garbett (2007); Yates (2010)
Research centres	• Allocation of funding • Infrastructure to facilitate training and support programmes • Centralised research office	Bolon & Philips (2010); Feuer, Towne & Shavelson (2004); Hernandez-Mendez & Del Rosario Reyes Cruz (2014); Dimond, St Germain, Nacpil, Zaren, Swanson, Minnick, Carrigan, Denicoff, Igo, Acoba, Gonzalez & McCaskill-Stevens (2015)
Recognition of research production	• Human resource policies • Performance management • New letters, faculty awards	Ellis (2004); Johnston (1994); Kljakovic (2008)
Encouragement of faculty collaboration	• Attending, hosting and sponsoring of conferences • Collegiality • Team research projects • Relationship building of Universities and Professional bodies • Government organisations	Joyce (c2013); Rath (2009); Whitworth, Haining & Stringer (2012)
Balanced research and teaching responsibilities	• Dedicated research time • Designated research positions	McNicholl, Coates & Dunne (2008); Thiruthaneeswaran, *et al.* (2014); Tynan & Garbett (2007); Wilkes, Cummings & McKay (2013)
Communication	• Frequent communication • Positive group atmosphere	Henson, Hull & Williams (2010)

These studies in Table 2.4 can be seen to link broadly to and with academic culture and organisational culture, by virtue of agreement in values of autonomy, efficiency and collaboration. This emphasises the interlaced nature of the tenets of research culture. The corporate organisational culture that overarches an institution can thus be a mechanism of infiltrative or symbiotic deployment to the encompassing research culture.

Culture is then a driver to provide a way of continuous improvement, to maintain a competitive advantage in the market (Smit, Cronje, Brevis & Vrba 2011:258). In conjunction with an in-depth knowledge of the culture, the interpersonal relationships between the members play a vital role in the understanding of the dynamics of organisational culture (Ismail, *et al.* 2015:14-19; Zhu & Engels 2014:137) and the social context (Atkas 2012:360). From this discussion, it is established that many organisational theory aspects can be identified with, from the viewpoint of research culture in academia.

These differences lie in the emphasis of HE in the context of South Africa (cf. 2.8) and the trifocal roles of an academic (cf. 2.1; 2.3). Academic culture underlines the role of teaching and learning; a commitment to student development; advocacy for the discipline; managerial roles of staff; and assessment of staff according to the trifocal role; concern for diversity, equity and transformation within the student body.

Contrastingly, research culture is primarily focused on a commitment to the generation of new knowledge, the collegiality of a research network (often outside of the same institution), niche field recognition and appraisal from peers rather than human resource policy. From these collectively, then, it can be concluded that although academic culture, organisational culture and research culture overlap significantly, there is merit in studying research culture independently, as there are also significant differences from academic culture, particularly in the health context of HE (Gardner & Nunan 2015:346; Holligan, *et al.* 2011:716, 730; Joyce c2013:78-79; UFS 2015:1).

There have been multiple independent studies into the separate entity of research culture. An analysis of these studies on the concept of research culture, display many similar characteristics, shown in Table 2.5. The characteristics can be broadly grouped in three main themes: Generic organisational aspect (mission, stakeholders, leadership and managerial structures, processes); Interpersonal attributes (individual attributes, values, personal qualities, relationships, collaboration, inclusivity) and the Environmental workplace aspects (Faculty support, appreciation of staff, transparency and fairness, training).

Table 2.5: Overview of previous studies

AUTHOR	YEAR	TYPE OR DESCRIPTION OF CULTURE	FACTORS OR CHARACTERISTICS PRESENT/ TYPOLOGIES	DOMINANT THEME
Wilkes & Jackson	2013	Enabling	• Research productivity • Collegial relationships • Inclusivity • Non-competitiveness • Effective research processes and training	Environmental
Johnson & Louw	2014	Higher Education: South African University of Technology	• Institutional attributes • Individual attributes • Collaboration • Research leadership • Valuing and appreciating staff	
Evans	2007	Developmentalism	• Restricted researcher professionality typology • Extended researcher professionality typology	Interpersonal
Holligan, *et al.*	2011	Higher Education: Scottish and United Kingdom Universities	• Leadership and managerial styles • Personal qualities • Faculty support • Other: University reputation	
Ardichvili, *et al.*	2009	Ethical	• Mission and values driven • Stakeholder balance • Leadership effectiveness • Fairness • Transparency • Long-term perspective	Organisational
Schein	1996	Managerial	• Operator typology • Engineer typology • Executive typology	

Essentially, all the aspects that make up the environment that an employee works in, coupled with individual aspects such as demographic aspects, motivation and behavioural personality traits, have bearing on the research culture that is inculcated.

2.4.3 Factors which influence the concept of Research Culture

Research culture can then as a specific concept be derived from these theories (cf. 2.2; 2.3) to four broad viewpoints, namely: workplace environment, national influences, personal constructs and societal influences (cf. Figure 2.3, on the following page). This forms the departure point for the discussion in this section.

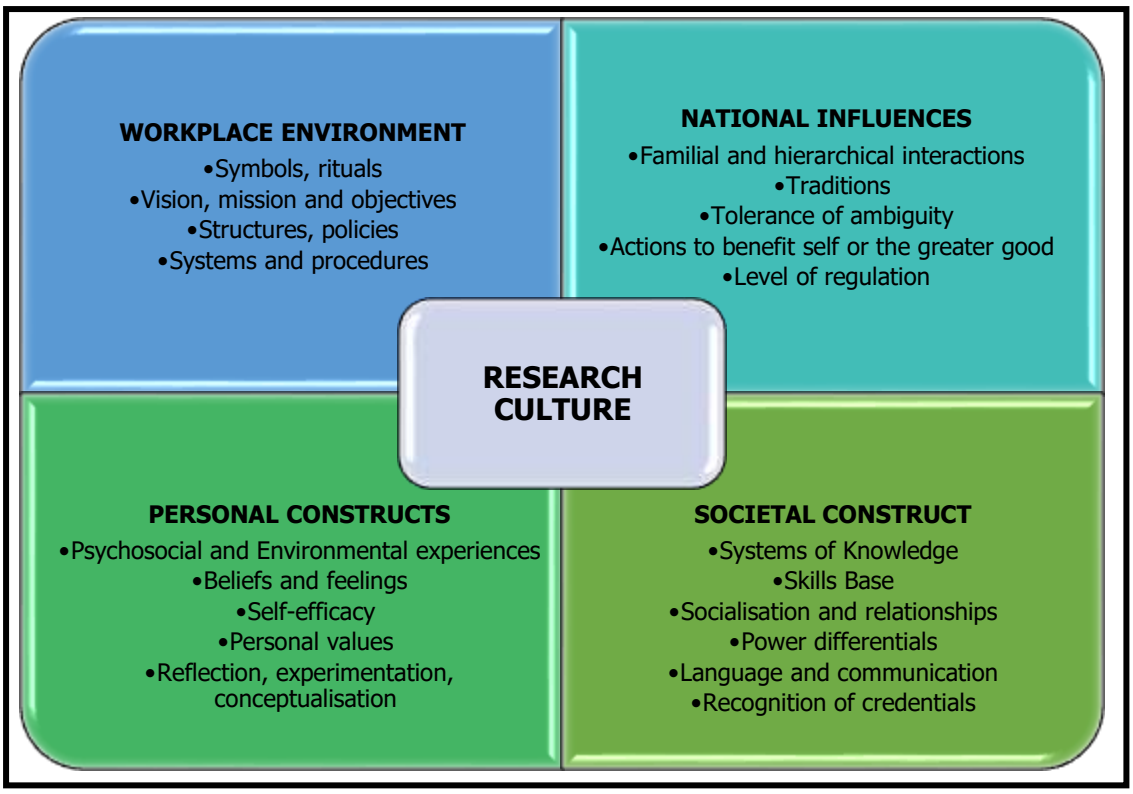

Figure 2.3: Influences on the concept of research culture

Salazar-Clemeña and Alamonte-Acosta (2007:4) provide indicators of a positive research culture: institutional research polices and agenda, departmental culture and working conditions, budget for research, infrastructure, collaboration with and access to research professionals in other institutions, guidelines for benefits and incentives linked to research, having a research committee and the quality and quantity of publications. These factors align quite agreeably with general organisational theory and aspects of Schein's hierarchy of organisational culture, whereby these policies and behaviours are guided by the espoused values of the organisation (cf. 2.2.1). A further indicator highlighted by these researchers are the faculty workload. These can all broadly be described as factors that are evident in the working environment.

Wilkes and Jackson (2013:32) describe an enabling research culture as having the following core features:

- Research productivity;
- Effective research processes and training;
- Sharing;
- Non-competitiveness;
- Supportive;

- Collaborative;
- Collegial and positive relationships; and
- Inclusivity.

Schulze (2008:651) states that a strong research culture at an institution and in departments inspires quality research. A research culture is formed by practices that include recognition and reward for quality research, the identification of models of good research processes and administrative support. This recognition draws a parallel with that of positive reinforcement in Bandura's social learning model (cf. 2.2.3).

An often-cited summary of an enabled and high performing research environment are the factors given by Bland and Ruffin (1992:385-397): clear goals for co-ordination, research emphasis, positive group climate, decentralised organisation, recruitment emphasis, frequent communication, resourcing, group age, participative governance, size and diversity, appropriate rewards, leadership in research and management and research culture. From these findings, it can be seen that the factors lean very heavily towards that of organisational theory, whereby these factors are the manifestations of the philosophy of the organisation and the strategies of the organisation (cf. 2.2.1).

Collegial relationships should be based on trust, integrity, honesty, respect, ethical practices and being valued (Wilkes & Jackson 2013:32). Mentoring networks are significant contributors to research culture (Cheetham 2007:4; Wilkes & Jackson 2013:33); as well as staff with Doctorate degrees or Doctor Philosophiæ qualifications (PhDs) who are productive in their early career (De Jager, *et al.* 2017:7). In Bandura's social cognitive (cf. 2.2.3) theory, it can be seen that the link to research culture is defined by the actions of mentors; the actions of goal setting; and that the determinants of motivation are closely meshed with the agentic aspect.

The perceptions of staff about their ability to control their environment and their belief structures affect the social climate. This also extends to the socialisation of new staff, and perpetuation of social systems that are embedded in the presiding cultural norms (Zhang & Higgins 2008:12). Academic socialisation is the way in which new academic staff are communicated the expectations, the policies and shown the "ropes" of the faculty; these may often be unwritten or vague expectations (Mullen & Hutinger 2008:182). Reinforced behaviour becomes the standard that individuals follow and subscribe to; creating the pervading culture in the direct environment of the individuals that form the social system

(Bandura 2002:277). The patterns of behaviour within the environment are the expression of the culture of the environment; just as productivity of research within a faculty an embodiment of the research culture (Johnson & Louw 2014:152, 154).

An analysis by Thiruthaneeswaran, *et al.* (2014:164), give a few barriers to a novice researcher: clinical commitments, time available, lack of resources and supervisors, the ethical approval process and inability to find a suitable project, among others. The lack of computer access, library access and suitable supervision was seen as obstacles to a strong research culture in Pakistani public universities (Naoreen & Aslam Adeeb 2013:3014-3015) as well as in South Africa (De Jager, *et al.* 2017:7).

Wilkes and Jackson (2013:29) thus define an "*enabling research culture*" as one in which the organisation constructs an environment that is supportive of the generation of new knowledge and provides opportunities for growth and interaction among researchers. Sporn (1996:44) advocates the following characteristics of a performance-enhancing university culture, due to the changing HE environment:

- Motivated employees are aligned with goals, and control mechanisms exist;
- Strategically appropriate contextual fit; and
- Anticipation of change and environmental adaptability.

From this literature, it can be summarised that there are multiple aspects that influence a culture. Predominant in the findings are: relationships such as mentoring, or leadership; resources such as time, funding, infrastructure, administrative assistance; communication with colleagues, transparency and availability of information pertaining to policies and procedures; the rewards and recognition of employees.

Theoretical alignment can be seen in the aspects of socialisation (cf. 2.2.3) and power relationships (leadership, mentorship, collegiality); similarly, with broad organisational aspects (cf. 2.2.1) (policies, communication structures, goal-driven objectives). These factors have been previously theoretically identified; the empirical congruence with this was provided in Figure 2.3 (cf. 2.4.3).

The following section draws away from the generic overarching aspects of the model discussed so far, to focus on the individual. Each person has a unique personality, set of motivators and life experiences, which will influence their perception of the working environment (and existing culture).

2.4.3.1 *Personal construct*

An individual's age (Tynan & Garbett 2007:418), gender (Schick Case & Richley 2013:327-349; Yates 2010:29) and personal characteristics are factors that have been found to be influences in an individual's research culture (Johnson & Louw 2014:153), as well as mentorship in the academic workplace and career development. The ability and knowledge relating to research and the confidence to perform research also impacts their feelings towards research (Deem & Lucas 2007:122; Hermanson 2008:53; Kamler 2008:283-294; Manathunga 2006:2). Likewise this was found by Salazar-Clemeña and Alamonte-Acosta (2007:4) whereby the individuals knowledge and abilities, as well as the attitude to perform research was of importance.

An extension of the self-efficacy academics feel to perform and supervise research was adopted by Evans (2007:online), who identifies individual professional development as a typology of research cultures in academics, and consequently distinguishes between a restricted researcher professionality typology and an extended researcher professionality typology.

As mentioned previously (cf. 2.3), the discipline of an individual may also be pertinent to research culture, as studied in nursing (Corchan, Watson, Arantzamendi & Saracibar 2010:217-226; Gill 2004:876-879; McNicholl, *et al.* 2008:344-351; Wilkes, Cummings & McKay 2013:1-8), oncology (Dimond, *et al.* 2015:246-256; Thiruthaneeswaran, *et al.* 2014:162-173), podiatry (Williams & Lazzarini 2015:5-6) and also general practitioners (Kljakovic 2009:1-7).

Lodhi (2012:476) considers that balancing time between teaching and research to be the most influential aspect of the individual's research culture. This self-management was also high on a list of personal qualities that facilitate research culture, by Holligan, *et al.* (2007:724). Other personal qualities include motivation; ambition; emotional intelligence and creativity; among others.

Individuals have to balance all of their various commitments and roles (Johnson & Louw 2014:161); this role conflict and strain was also noted by Holligan, *et al.* (2007:727). The functions of the individual may be related to their research skills set: administrative tasks related to grant funding writing; and liaison role with students, supervision or mentorship.

Individual attributes will also be influenced and honed with the sway of the working environment in which the individual is immersed on a daily basis.

2.5 THE DEVELOPMENT OF RESEARCH CULTURE AS A FIELD OF STUDY

As indicated, there is relevance in the study of research culture as an independent entity (cf. 2.4; Table 2.5). The following sections are a discourse on the progression of the studies in research culture over the last three decades, this is summated in the Table 2.6. The preliminary literature search used various databases and online platforms and yielded 54 publications varying from peer-reviewed articles to editorials and reports (cf. Appendix A1).

At the outset, an overview of the characteristics of the publications will be outlined in decades. It can be shown that from exploratory and descriptive studies in the earlier decades, research in the field of research culture has evolved to deeper and richer qualitative studies in present day. The aspects of individual and environment (infrastructure, management, leadership and resources) are still prevalent (cf. Table 2.4), although the theoretical lens may have transformed from a focus on the elemental to integrated structures.

Table 2.6: Progression of research culture in the literature (1990-present)

	1990-1999	2000-2009	2010-PRESENT
Number of outputs	6	20	28
Origin of outputs	First world countries	Introduction of developing nations; predominantly United Kingdom	One third developing countries; predominantly United States of America (USA) and Australia
Study design	Case studies and quantitative elements	Qualitative and literature reviews	Qualitative and the development of measuring instruments
Theoretical background	Predictive model of productivity	Learning and behavioural theory	Organisational theory, social learning and feminist theory
Contributions to the field	Defining research culture; identification of the characteristics	Synergy and interaction of individual factors and infrastructure and resources	Implementation in evidence-based practice and patient care; ethical conduct; mentorship.
Implied source of impact on research culture	The individual	Institutional synergy of factors	Integration of the individual and the institution within the context

At present, no formal framework to enhance research culture has been promulgated for Health Sciences in HE, although strategies informed by organisational theory are mentioned (cf. 2.2; 2.3). With this overview of the history of the field of research culture, more in-depth explanations are provided hereafter, pertaining to Health and HE specifically.

It can be seen that the proliferation of articles on research culture in HE and health-related fields have dramatically increased over the past few years. The majority of the publications remain the domain of only a few main countries, namely the United Kingdom, Australia, New Zealand, and the USA, but this may be due to a search for literature only in English.

The recent surge in publications by developing countries indicate the global trend towards HE focusing on research culture (Hernandez-Mendez & Del Rosario Reyes Cruz 2014:136), instigated by the growth in the number of universities in these countries (Pratt, Margaritis, & Coy 1999:43) and educational reform (Henson, *et al.* 2010:230; Lewis & Simmons, 2004:337).

The number of publications over the time period covered (cf. 2.3.3) show a greater number in HE than in any one discipline; numbers in parenthesis represent the number of publications in that field. Nursing (2) and medical studies (2) and publications within HE (7) represent half of the target populations in the 2000's; in the 2010's, HE (6), medicine (4), nursing (3), joined by allied health and social work (5). Thus, only 16 articles over a span of three decades are focused on research culture within disciplines of health. A short dialogue on these articles follows.

2.5.1 Health-related literature

Through consultation with nurses, a new angle in the research was unearthed: through the conducting of research, nurses felt that they had greater autonomy and could better decide on clinical care of their patients (McNicholl, *et al.* 2008:344-351). This was the final epiphany of the era: the *relationship of research culture and the impact on patient care*. This was given greater attention in the present decade, where the focus of much of the first world research was on evidence-based practice, ethical conduct and patient care. In 2016, Borkowski, McKinstry, Cotchett, Williams and Haines (2016:294-303) published a literature review of research culture in allied health. Their search of 11 databases yielded 15 articles specific to allied health alone; of which only one was qualitative in design. This study by Golenko, Pager and Holden (2012:276) was based on grounded theory, focussed on capacity building and had a total of nine participants.

In this literature review, it was found that 12 of the 15 articles were published in Australia, limiting the generalisability of these findings. Eight studies utilised a standardised tool, which combines questions on capacity and culture. The authors note that there were inconsistencies in the use and the analysis of this tool (Borkowski, *et al.* 2016:301); the reporting did not allow for meta-analyses due to the different statistical methods of reporting utilised. Through this review, it is once again highlighted that there is a lack of clear guidelines to investigate research culture as an independent construction within health faculties of a university.

The analysis of the works indicates that a deeper understanding of the topic of research culture has evolved over the last few decades, as evidenced in the summary given. Surprisingly, with this progression of the concept in the domain of health and HE, there still exists a lack of a clear classification of research culture in that context. No literature found by the researcher speaks specifically to research culture in health HE in the South African context. However, relating to the context of health, the Academy of Science South Africa (ASSAF) drafted "*The Consensus Report on Revitalising Clinical Research in South Africa: A Study on Clinical Research and Related Training in South Africa (2010)*". This report defined aspects of clinical research culture, by which all clinicians, academic or other, would be held accountable to.

These guidelines will also be valid outside of the health HE context; through these guidelines it indicates how health HE can be viewed differently from other HE faculties. It is for this reason also that the ethical considerations in health faculties are so stringently advocated: health practitioners (academic or otherwise) are accountable for patient care.

Clinical research culture has the following characteristics that make up a common, productive culture of high quality research that is sustainable in the clinical sector. These characteristics are (ASSAF 2010:49-50):

- The acceptance of the principle that '*the proper study of humankind is humans themselves*';
- The understanding that sustainable health care systems require direction by a critical mass of research-experienced clinicians and the ongoing training of new generations of research-informed clinical care givers;
- Recognition of the complex, multi-dimensional, and challenging nature of clinical research;

- An appropriate balance between risks and benefits;
- An appropriate balance between curiosity-driven and problem-directed research;
- A clear emphasis on public service and public benefit; and
- Protection and development of new intellectual property.

Thus, although these guiding principles do not completely answer the question of research culture in health education, the focus of this study, the principles do still inform it. This study speaks the importance of the unique niche of research culture in the HE health domain. Academic health practitioners are at the forefront of developments in the improvement of patient care, sustainable and adaptable medical education and the torchbearers for their professions.

2.6 EVALUATING RESEARCH CULTURE AND STRATEGIES TO ENHANCE RESEARCH CULTURE

Although some specific tools do exist for the measurement of research culture, many institutions are using questionnaires based on organisational theory. Table 2.6 indicates a synopsis of culture-based studies in HE that have used two axes (internal and external focus; flexible and control) to create typologies of organisational culture.

Table 2.7: Models of organisational culture in Higher Education (Adapted from Sanderson 2006:35)

STUDY	HUMANISTIC FOCUS: INTERNAL AND FLEXIBLE	HUMANISTIC FOCUS: EXTERNAL AND FLEXIBLE	MANAGERIAL FOCUS: INTERNAL AND CONTROL	MANAGERIAL FOCUS: EXTERNAL AND CONTROL
Birnbaum 1988	Collegial institution	Anarchical institution	Bureaucratic institution	Political institution
Bergquist 1992	Collegial Developmental Negotiating	Negotiating	Managerial	
McNay 1995	Collegium	Enterprise	Bureaucracy	Corporation
Sporn 1996	Weak	Weak	Strong	Strong

The dominant culture has been identified in organisations in previous studies by using the competing values framework (CVF) developed by Quinn and Rohrbaugh (1983:363-377). This instrument is the most commonly used in healthcare settings research and health education research to assess organisational culture (Helfrich, Li, Mohr, Meterko & Sales 2007:2) and HE (Smerek 2010:389).

The instrument enables an overview of the perception of the organisational factors and can identify the overall dominant culture. The instrument does not have leeway for multiple cultures within smaller groups, merely an overarching trend of the population. As it is an organisational tool, this is the main emphasis - not the individual, the drivers or detractors in the environment.

As an introductory investigation, this tool will assist in identifying some aspects of the organisation but does not allow for explanations from the participants. Hill (1999:8) acknowledges that an investigation will first have to identify the dominant culture, and accept that there may be many sub-cultures, which may be distinguished through comparing differences and similarities.

A questionnaire based on the CVF, comprising 16 questions, was developed by Zammuto and Krakower (1991:83-114) to establish the dominant culture in an organisation.

Holden, *et al.* (2012:62-67) developed the Research Capacity and Culture (RCC) tool, which evaluated individual, team and organisational levels in public healthcare, as a questionnaire tool, it was found by the authors to have excellent internal consistency; this tool did not undergo construct validity. The RCC tool was utilised by three of the developers in a study on allied health practitioners in multidisciplinary teams in a primary healthcare facility. This study identified that some of the factors influencing individuals to do research were different to those influencing teams, and reference is made to the underlying organisational behaviour and theories of motivation to address these differences (Pager, Holden & Golenko 2012:53-59). A noted limitation was the difficulty in defining the terms enabler and barrier (Pager, *et al.* 2012:58). This tool has also been utilised in podiatry (Williams & Lazzarini 2015) where individual motivators and barriers were identified. Australian podiatrists in non-clinical and public health sector roles conveyed greater post-graduate study involvement, research activity involvement, resources to perform research and individual research achievement and skill than those working in the private health sector.

Martinson, Thrush and Crain (2013:813-834) developed and validated a survey tool: Survey of Organisational Research Climate (SORC), which measures regulatory and integrity norms of research in Medical schools. Organisational climate is defined as the "the shared meaning organizational members attach to the events, policies, practices, and procedures they experience and the behaviors they see being rewarded, supported, and expected." (Ehrhart, Schenider & Macey 2013:115). Climate is an observable and manifest aspect of

organisations as opposed to the concept of organisational culture, which refers to underlying values, beliefs and assumptions that guide behaviours of individuals (cf. 2.1). This SORC tool provides a measure of how participants identify the quality of the environment in which they are immersed and the degree to which their organisational components support research practices and integrity (Martinson, Thrush & Crain 2013:818). Martinson, Nelson, Hagel-Campbell, Mohr, Charns, Bangerter, Thrush, Ghilardi, Bloomfield, Owen and Wells undertook initial testing of this tool on the U.S. Department of Veterans Affairs Healthcare System (2016:1-18). This study concluded that there was more meaningful variability in research climate scores within than between facilities in the Veterans Affairs research service and thus, in order to foster greater research integrity, programs should address sub-units of an organisation, rather than a global approach (2016:15).

In addition, Borysowich (2008:online) states that in order to evaluate culture, four methods can be executed: interviewing of employees; reviewing press coverage; reviewing the strategic objectives and observing workers' behaviour. Likewise, throughout this discussion the blending of features from Organisational theory to that of research culture have been documented in the literature. Models of organisational culture have been developed from investigations into the HE context that predate the academic model promulgated by Smerek (cf. 2.3).

Primarily, the identification of barriers and enablers has been the first step to enhance or change an existing culture type (Joyce c2013:78; Naoreen & Aslam Adeeb 2013:3014-3015; Thiruthaneeswaran, *et al.* 2014:164-165; Whitworth *et al.* 2012:290; Williams & Lazzarini 2015:11-14). Thereafter, strategies at individual and group levels can address the identified barriers.

Dimond, *et al.* (2015:249-252) provide four strategies to enhance culture within a group: engaging leadership to gain support at an executive level; create collaborative and mentorship initiatives; build infrastructure to support research; and engage in multidisciplinary teamwork to leverage partnerships inside and outside of the organisation. A strength-weaknesses-opportunities-threats (SWOT) analysis of existent infrastructure and personnel services and partnerships is advised.

Thus far, the reader's attention has been drawn to the development of research culture as a topic of investigation over the last four decades; the factors that are most pertinent in relating this study to that of the model of Smerek; the most common methods of evaluation

and some instances of strategic intervention following an investigation into research culture. Once the evaluation of the research culture has been undertaken, there may be indicators reflecting a need for change or enhancement. The following section mentions methods to bring about transformation of the research culture through change management.

2.7 CULTURAL CHANGE MANAGEMENT

Change management is described within this section from the perspectives of the institutional level (cf. 2.7.1), the individual (cf. 2.7.2), the leader (cf. 2.7.3), specific to the HE context (cf. 2.7.4) and the HE and health sector.

2.7.1 Managing change

When choosing a strategy the following aspects needs to be considered (Nickols 2016:5): the degree of change required, the amount of resistance experienced, the size of the institution, the time frame, the level and direction of dependency between the institution and the employee; and what expertise the change instigators have. These factors will guide the leaders in selecting a method of managing the intended change.

Nosek (2018:online) proposes a hierarchal process to change a research culture, whereby a top-down approach is implemented, as indicated in Figure 2.4 below. This model addresses the process that should be followed by journals to promote an open research culture, which can to a degree be related to that of an institution who wishes to adopt such a research culture. The lower levels speak to the online platforms for journals and will not be elaborated upon.

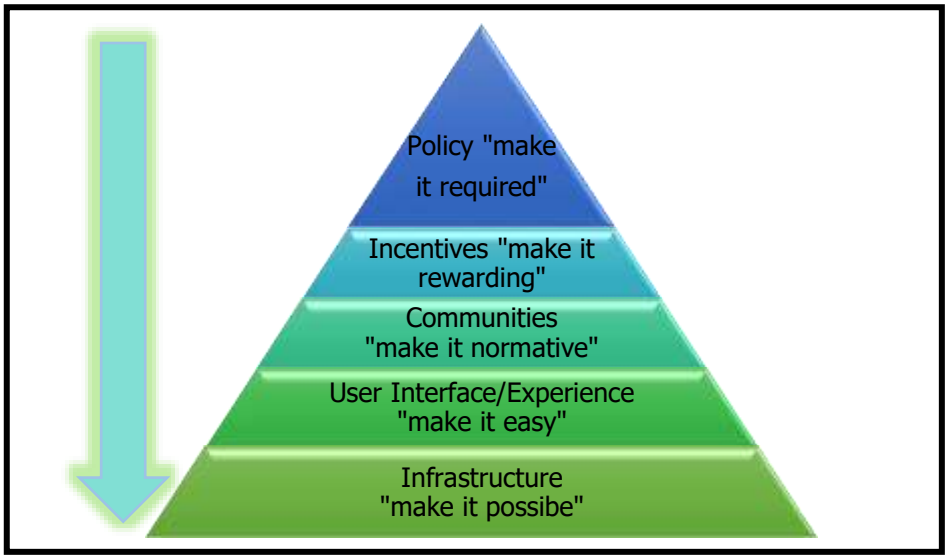

Figure 2.4: Nosek's pyramid of change in research culture

This model proposes that policy dictates the acceptable behaviours and that transparency and sharing should be behaviours that are adopted (Nosek 2018:online). Smerek (2010:411) indicates how differing values are the root of sub-cultures; through the alignment of values, a more homogenous culture could develop. There are also needs to be harmony between the formal and informal relationships within the organisation. To further inculcate the policies mandates as norms, incentivisation is a key method (Nosek 2018:online). Placing more emphasis on the quality of research, as well as recognising outputs such as work on peer review, sharing of data, teaching and the community outreach efforts, has merit (Hurst 2018:online).

Research communities embed normative behaviour through socialisation and the advertisement of the accepted research norms. These advertisements may take the form of newsletters, awards, training events and publication guidelines (Nosek 2018:online). Positions such as a clinician-researcher, whose paid role is to practice and conduct research as well as the establishment of interdisciplinary teams of researchers create critical mass (Svab 2004:531) within the research communities. These communities can be discipline specific and Svab generates a summary to assist in culture change, from the departure point is that of the family medicine profession. Likewise, this model may be adapted to apply to an institution of faculty.

Table 2.8: Svab's approach to changing research culture (Adapted from Svab 2004:532)

ELEMENT	PROCESS
Adaption of the existing structure	• Inform about the current position • Collaborate with established entities • Publish within established journals
Introduction of change	• Develop research agendas • Collaborate internationally • Develop own success criteria

Another proposed guide to change was promulgated by Aguirre and Alpern (2004:online), who give 10 principles that assist in the complex process of change:

- Leverage the emotional energy to align the current culture with the change that is to be brought about.
- Change management initiatives should start at top management.
- Have buy in by involving each level of employee.
- Ensure to engage the employee's heart and mind by making them feel that the changes they implement with make a real difference.

- Leaders should visibly embody the changes.
- Constant communication in multiple channels. Use symbols to reinforce the words.
- Use the informal leaders to assist.
- Redesign structure, rewards, operating and training methods to align with the change.
- Enforce the strengths of the existing deeply embedded culture to align with the change.
- Continually monitor and adapt the implemented strategies to work more efficiently.

The Hanover report (2014) establishes focussed points to assist in the development and change of a research culture. These include the need for both institutional- and unit-based leaders to set clear research goals and communicate them effectively. Institutions should allocate significant resources for faculty training and support and promote open and collaborative personal relationships among faculty members. To implement cultural change, administrators must be willing to tailor resource allocations based on faculty members' current motivations and abilities. It is also noted that a culture of research may take years to cultivate and, once established, requires regular maintenance. In order to achieve this described organisational change progression, the individuals within the organisation should be willing to change.

2.7.2 Promoting change on an individual level

Gardner and Nunan (207:342) propose reflection as a method to change the attitude towards research at individual level. Evans (2007:4) identifies six stages of cultural change in an individual. These stages are the result of two elements of development, that of functional development (consisting of procedural and/or productive foci of change) and of attitudinal development (consisting of intellectual and/or motivational foci of change) (Evans 2007:5). Retrospective reflection dissatisfaction is the prompt for this change, seeking improvement; this developmental framework may be influenced by the individual's research leaders (2007:5). Theses stages are applicable when attempting to enhance research culture:

- Recognition of perceived imperfections or deficiencies.
- Recognition of perceived alternative constituting improvement in a 'better way'.
- The motivation to adapt the perceived 'better way'.
- The adoption of the perceived 'better way'.
- Recognition of the new practice as an improvement.

In order to alter the status quo among groups of individuals, the process of change management may be implemented through strategies of transforming values and norms accepted in the organisation (Gutterman 2010:1). Once an analysis of the current culture has been completed and the impact of the current culture established, Gutterman (2010:2-4) proposes the following steps to culture change: clear strategic goals of the desired changes can be drawn up; identification of existent behaviours that are aligned with these desired changes can be emphasised.

2.7.3 Leadership of change management

In order for these strategies mentioned, to carry weight, the buy-in of top decision-makers is key. It is for this reason that senior management should undertake an analysis of strengths and weaknesses, of what may be retained from the current culture. Distinct guidelines on the socialisation of new members and training of existing staff are to be drawn up. Change agents, who can inspire others, will need to be identified by top management, to drive the change process. Resources need to be committed to the change process and this requires forward planning of the change process (Gale & Grant 1997:6; Gault 2012:online). Staff should also be given an opportunity to ask questions and voice uncertainties.

In order to have leadership for change Davis and White (2003:926) propose a dean of a medical faculty should have the following skills: consensus-building; team-building; ability to inspire and motivate; commands respect; delegation; mentoring; ability to say "no" and to "hold the line" and create a vision; political savvy; compromise; have an understanding of power and how to use it.

2.7.4 Change management strategies specific to Higher Education

Most education systems rely on single loop learning; where corrective measures are based on historically entrenched routines and the existing policies (Lunenburg 2011:2). With a learning culture, this engrained process can be altered, as staff are encouraged to use the operational processed to improve the system or institution. In order to imbed the notion of continuous learning academic institutions are recommended to apply the following strategies (Lunenburg 2011:3-5):

- Create continuous learning opportunities: through mentorship; personal development.
- Promote inquiry and dialogue: asks questions freely and allow for feedback to and from all levels.
- Encourage collaboration and team learning: create effective cross-functional teams through skills training in negotiation, consensus and meeting management.
- Create systems to capture and share learning: celebration events; communications of lessons learnt.
- Empower people toward a collective vision: alignment of the vision requires identification of elements that are inconsistent with the vision.
- Connect the organisation to its environment: benchmarking; environmental scanning and creation of special interest groups through digital platforms.
- Provide strategic leadership for learning: leaders should make information readily available and seek out resources to support faculty development.

Gault (2012:online) also recommends the identification of change agents; the context of the Faculty should be taken into account; communication should be frequent and repeated, in simple terminology. He also warns that the transition phases may be chaotic and to expect the stages of change: denial, resistance, exploration and commitment.

2.7.5 Change management in the Higher Education health sector

Unique in the medical context is the autonomy of the medical professional, who through this often veto the change sanction. Committees with authority can be used to promote the change; and decision-making can be aided through the force field theory proposed by Kurt Lewin (1951). Lewin perceived the school organisation as a dynamic balance of forces working in opposite direction within the organisation; through a change in the balance of the forces, a new desired direction can be taken (Lunenburg 2010:5).

The three-step model (Figure 2.5) has been widely adopted among academics (Swanson & Creed 2014:30). Although the depiction has been simplified, Swanson and Creed (2014:33) note the hallmarks of the theory are the complexity and dynamism of the organic nature of the system, where the vectors of the forces may alter course and flow, and even reverse. They also argue that the true interpretative ontology of the theory needs to be accredited to guarantee a more suitably aligned perspective on change management (2014:34).

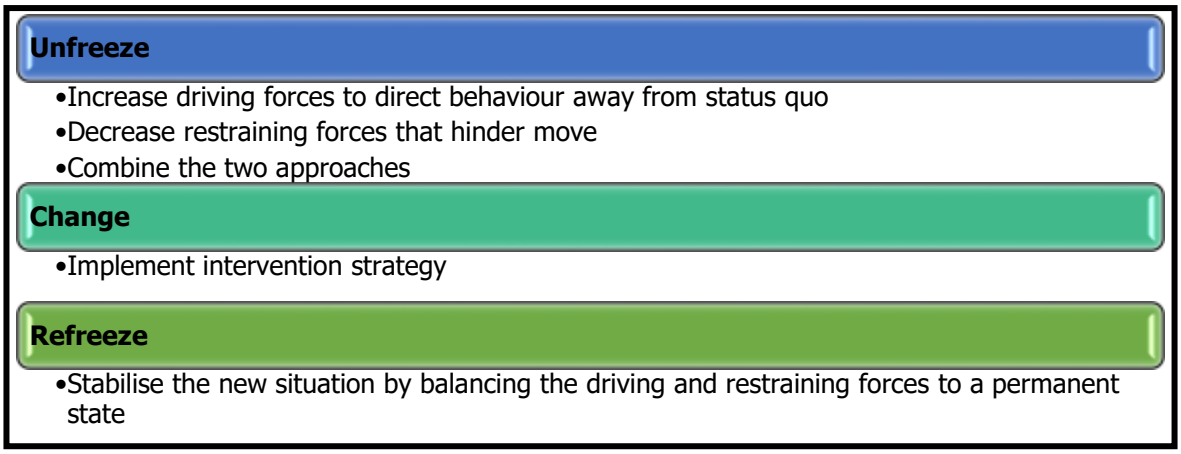

Figure 2.5: Lewin's three-stage model of the change process (Swanson & Creed 2014:30)

This model can be applied to HE research culture, as it has been applied in the past to change in corporate culture. Meyerson and Martin (1987:628-641) wrote a paradigm of corporate cultural change of which there are four characteristics: the nature of the process; the scope and source; the implications for managing process (Table 2.9). It is identified that the critical part of the unfreezing stage is psychological safety; as the ambiguity of the unknown needs to be recognised (Meyerson & Martin 1987:630). New behaviours and their meanings are learnt. The refreezing, the final step, is the new equilibrium of the change. These cultural change paradigms are corollaries of the model described (cf. 2.3).

Table 2.9: Cultural change paradigms (Adapted from Meyerson & Martin 1987:641)

CHARACTERISTICS	INTEGRATION	DIFFERENTIATION	FRAGMENTATION
Nature of process	Revolutionary	Incremental	Continual
Scope	Organisation-wide	Localised and loosely coupled	Issue-specific; changes among individuals
Source	Leader-oriented	External and internal catalysts	Individual adjustments; attention and interpretation
Implications for managing the process	Superficial: controllable Deeper: difficult to control	Predictable and unpredictable sources and consequences of change	Relatively uncontrollable due to continual change

Each of these approaches to change management are linked to the context in which the changed is identified, the following section will elaborate on the context specific to this study.

2.8 CONTEXTUAL OVERVIEW

The following sections illuminate the South African setting relevant to research culture in the health HE context. Context is one of the most significant and least often reported components in research (Neta, *et al.* 2015:50). Archer (1995:11) defines context as:

> "*The environment in which the ('macro') features of a system are either reproduced or transformed*".

This study is focused on a defined, specific context: the research culture within the HE health sector, in a single Faculty, FoHS at the UFS. This definition is considered to have meaning, by the way in which the research culture within the context of the FoHS at the UFS may be enhanced (reproduced) or changed (transformed) by the outcomes and results of this investigation. The factors and features of the research culture are investigated in light of this specific context.

Culturally, each society - such as a country - has defined characteristics. The manner in which hierarchy is established (cf. 2.2); for example, familial monarchies or democracies; vary. There are defined sex or gender roles within societies and differences relating to the individual in terms of wealth and abilities. In an African and Asian context, individualism is resisted, and a more collective culture is espoused. The focus on Individualism versus Collectivism (Hofstede 1983:54) determines the degree to which people in a society are integrated into groups. Individualistic societies have loose ties that often relate an individual only to his/her immediate family. The emphasis lies with "I" instead of "we". Contrastingly, collectivism describes a society in which tightly integrated relationships bond extended families and others into in-groups. These in-groups are expressed with undoubted loyalty and support; this concept is widely described in a local context as Ubuntu.

Studies have shown that research culture is impacted by the national heritages and cultures incorporated into citizens and that local researchers should champion local problems (Lewis & Simmons 2010:339). The national system of HE was considered an important factor in works relating to academic disciplines and university cultures by Deem and Lucas (2007:115-133); Gibson, Morgan, Abel and Hickling (2007:171-177), Ridley (2011:285-302) and Thomas (2011:75-76).

South Africa is a country with diverse cultures, and a painful past that is ever present in the inequality still prevalent. With the historical weight of inequality in South Africa, policies and

action plans have gained momentum. Zeelen (2003:146) investigated the research culture in a South African university and states that the historical impact of the Bantu education system cannot be discounted.

This overview attempts to direct the reader to the complexity of the multi-directional relationships that exist in this study. This progression of the discussion, indicating the influences from two specific forces, namely HE and health perspectives, is given in Figure 2.6 below. The interconnectedness of this specific context is similar to the embeddedness of the National Culture and HE system culture of Smerek (cf. Figure 2.2).

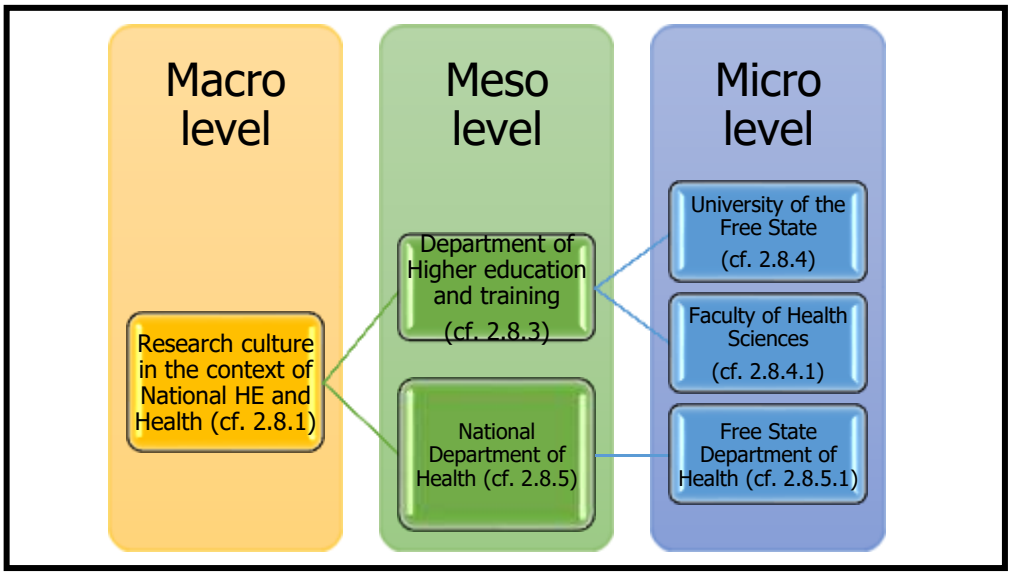

Figure 2.6: Contextual overview at macro, meso and micro levels

The simple introduction to Systems theory (cf. 2.2.2) can once again be called upon to highlight how multiple inputs are processed within the FoHS. The macro inputs at national level and micro inputs, those at an individual or departmental level.

2.8.1 National imperatives and policies

In order to ameliorate the inequality of the past (Zeelen 2003:146), the current government has a vision for the future linked to the goals drafted in many policy documents as alluded to in Table 2.10, shown on the following page. These documents form the basis for the discussion of the context in this study; as indicated in the table, the sections of the study are divided into two main tiers, that of HE (cf. 2.8.3) and that of health (cf. 2.8.5).

Table 2.10: Documents from national government and governmental departments with relevance to this study

<table>
<tr><th colspan="2">NATIONAL GOVERNMENT (cf. 2.8.1)</th></tr>
<tr><td colspan="2">• National Development Plan (2011) Department: Presidency
• Millennium Development Goals Country Report (2013)
• Human Resources Development Strategy for South Africa (DoE:HRD-SA 2010–2030)</td></tr>
<tr><th>DEPARTMENT OF HIGHER EDUCATION AND TRAINING (cf. 2.8.3)</th><th>DEPARTMENT OF HEALTH (cf. 2.8.5)</th></tr>
<tr><td rowspan="2">• National Plan for Higher Education (2001)
• Report of the Working Group on Fee Free University Education for the Poor in South Africa (2012)
• Research Agenda (2013)
• White Paper for Post-School Education and Training: Building and Expanded, Effective and Integrated Post-School Education System (2014)
• Strategic Plan 2015/16-2019/20 (2015)</td><td>• Human Resources for Health South Africa (2012)</td></tr>
<tr><th>FREE STATE DEPARTMENT OF HEALTH (cf. 2.8.5.1)</th></tr>
<tr><td></td><td>• Annual Performance Plan 2015/2016
• Annual Performance Plan 2016/2017</td></tr>
</table>

Currently, South Africa has 26 universities (including Universities of Technology). In 2014, two new comprehensive universities, the University of Mpumalanga (UMP) in Mpumalanga Province and Sol Plaatje University (SPU) in the Northern Cape Province, admitted their first students. Just as business entities have mergers and liquidation of departments, so too can this organisational analogy be put to universities. Sefako Makgatho Health Sciences University and University of Limpopo, who have previously been merged into one institution, demerged again in 2016.

In line with global trends of the massification of HE, the Distance Education Policy was published in 2014. The policy provides for contact universities to embark on distance provisioning. This will enable universities to diversify their mode of delivery and assist with expansion of the system, especially at the post-graduate level. This trend of massification largely influences the committed time of the academic to teaching and learning, as well as assessment of a greater number of students (Naidoo 2004:463).

In order to bring about the desired changes, the South African Government proposes to increase the resource allocation for research, development and innovation, and increase the pool of young researchers. This promises to sustain existing research capacity and strengths, as well as create new centres of excellence and niche areas in institutions where there is demonstrable research capacity or potential. Furthermore, the intention is to ensure research concentration and funding linked to subsequent outputs. Likewise, emphasis is given to facilitate collaboration and partnerships, especially at regional level, in research and postgraduate training.

In detail, the NPC presents the NDP whereby there are objectives, actions and comments on the status of the country at present; these objectives are aligned with the study with the promotion of higher degrees, medical training and the utilisation of research evidence to care for patients:

- "*Objectives (NDP 2011:71): Increase the percentage of PhD qualified staff in the higher education sector from the current 34 percent to over 75 percent by 2030…. Expand science, technology and innovation outputs by increasing research and development spending by government and through encouraging industry to do so…";*
- *"…universities are the dominant producers of new knowledge (NDP 2011:322), and they critique information and find new local and global applications for existing knowledge. South Africa needs knowledge that equips people for a changing society and economy";*
- *"Specialised medical training is currently out of step with what South Africa needs. Training specialists to improve the quality of care in their field in district hospitals and surrounding health centres and clinics is the priority. They should also be trained to improve the planning, management and monitoring of district services in their field (NDP 2011:351)"; and*
- *"Health services are costly, and it is essential to base planning, resource allocation and clinical practice on empirical evidence. Evidence-based evaluation, planning and implementation improves the quality of planning. The health workforce, particularly leadership, needs to become familiar with using evidence in all aspects of practice (NDP 2011:353)".*

This is at odds with the actuality, as policy implementation of evidence-based practice takes too long and presents missed opportunities and cases of suboptimal care (Neta, *et al.* 2015:49). The Country Report on the MDG (2013:89) states that:

> "*Beyond 2015, South Africa should be in a position to design, research and implement combination packages/interventions that are feasible, effective, affordable, community and population-specific*".

Additionally, the report dictates the important role research plays in generating long-term growth in an economy, by both accelerating technological advances, and by certifying a wider dispersion of new and existing technologies; this once again emphasises the national import of forward progression (MDG 2013:114).

The Human Resource Development Strategy for South Africa (DoE:HRD-SA) 2010–2030 (DoE:HRD-SA 2009:41) indicates the Strategic Priority 6.2:

> "*To improve South Africa's performance in areas of teaching, research, innovation and the commercial application of high-level science, engineering and technology knowledge*".

The strategic objective indicator/outputs are given (DoE:HRD-SA 2009:38), whereby the baseline indicates the status of the objective as a numerical reference:

- *"To accelerate awarding of research chairs (Baseline: 56 in 2006);*
- *To increase the number of researchers per 1 000 people (Baseline: 1,2 per 1000 people);*

- *To increase the percentage global share of research publications; and*
- *Percentage global share of research publications (Baseline: 0,5%)".*

These domestic policies highlight the government's commitment to the national research agenda.

2.8.2 Research culture within the research context

As government prizes research (cf. 2.8.1), it is the business of universities to show the evidence of such policies in their research objectives and strategies. Due to the ranking of universities based on the research activities a university produces, much emphasis is placed on becoming a research-intensive institution (Barner, *et al.* 2015:6; Thuraisingam, *et al.* 2014:521).

Cheetham (2007:3) provides reasons as to why universities should be concerned about their research cultures:

- Research is the basis of how university education works;
- It is the intellectual lifeblood of the staff;
- It supports teaching; and
- It provides a structure of support for the community.

To introduce this topic, an overview is given of the two main aspects influencing this study, that of HE and that of the health sector. Policies and the current situations of these sectors will be discussed. The context is brought into focus by shifting from a national departmental level to a micro level at the UFS and the FoHS.

2.8.3 The Department of Higher Education and Training

The Government provides guidelines for the advancement of research, to which HE must answer. The objectives of the DHET (2015a:35-36) are to enrol 1 070 000 undergraduate students at universities for this (2018) academic year, and graduate 45 000 students from the Human Health and Animal Health curricula (cumulative from 2014 to 2018 academic year). Furthermore, an expectation of 34 000 Research Master's graduates and 12 000 Doctoral graduates from universities (cumulative from 2014 to 2018 academic year).

The DHET aims to enrich the national development by promoting innovative, quality research (DHET 2014a:5). The DHET agrees that in a differentiated university structure, it

is unrealistic for all universities to have analogous research goals. It mandates in their Research Agenda (DHET 2013:35):

> "*However, all universities must be research-active. Universities with lower levels of research output must be supported through planning and funding to develop their research capacity in particular areas of specialisation, as well as to develop a research culture*".

The National Plan for Higher Education (NHPE) (RSA MoE 2001:online) provides outcomes and strategies for the development of the country's HE system. The paper points out the emphasis of the efficiency of funds regarding research, and the sustainability of academia through research. With the current climate of HE funding for undergraduate students, resources for research are becoming ever more competitive with each university vying for subsidies from a constrained pool of funds (Jansen 2004:310).

Under Section 1 of the NPHE, challenges are noted; these include the role of HE to provide national competitiveness through the acquisition and application of new knowledge in a continuous fashion. South African researchers are part of local, regional and global research communities, creating new knowledge and contributing critically in the South African, regional and international research conversation (DHET 2014a:5). Staff are also expected to upskill through academic qualifications. Staff with PhDs are expected to increase to 46% of all academic appointments. One of the four primary purposes of the NPHE is to ensure that "*the quality of the academic programmes, including teaching and research, is improving across the system*" (RSA MoE 2001:online).

The Strategic Plan 2015/16-2019/20 from the DHET incorporates the spirit of transformation in the HE arena:

> "*Research and development should be significantly expanded to contribute towards building an inclusive society, providing equal opportunities and helping all South Africans to realise their full potential, in particular those previously disadvantaged by apartheid policies, namely black individuals, women and individuals with disabilities*" (DHET 2015a:16) and intends the development of a new policy for research development (DHET 2015a:37).

This study has bearing with the cultural form of capital. The inequality of the population in HE has been in the spotlight, through protests and the closure of universities (Davids & Waghid 2016:online). This highlights that the socio-economic status inherited by today's youth affects the number of graduating students. The lack of equity in academics has also been investigated. In 2008, black academics constituted 43% of the total academic staff out of more than 15 000 academics. Women academics, who made up 46% of academics, continued to be concentrated at the lower levels of the academic hierarchy (Badat 2010:31).

The embodied cultural capital is personified in that white males still dominate HE professorships and chairs (Naidoo 2004:460). Academic appointments and promotion in HE is heavily subject to institutional cultural capital (Naidoo 2004:458).

The 2012, Higher Education Management Information System (HEMIS) audited data across the university system indicated that there were 5 008 professors (full professors and associate professors) appointed across the university sector (including permanent and temporary appointments). Of these, 1 425 (25.8%) were women, 1 288 (26%) were black, and 810 (16%) black Africans. It was acknowledged by the DHET that the number of black and/or women professors is too low across the system and needs serious attention (DHET 2014b:4).

Likewise, due to the limited resources available to much of the country's population, the access to HE is limited for children from lower income families (Letseka & Maile 2008:6). With 12 official languages, language policies of HE and the language of tuition is also fraught with complexities for those who are not first language English speaking (Naidoo 2004:462); the existing trend is likely to continue.

As the demographics of the country indicate that very few families are able to afford HE, there is a movement to increasing students in HE in line with transformation and the right to access of HE. A document drafted in 2012 by the DHET investigated free HE in the *Report of the Working Group on Fee Free University Education for the Poor in South Africa* (DHET 2012). The answers are still not clear. In light of the "Fees Must Fall" and the "Access to Education" campaigns from students across the country, the HE system in South Africa is at a pivotal point in its young democratic history. As critical events are part of the basis of the shared history of an institution's culture (Smerek 2010:411), the protests and backlash of students in social media cannot be ignored.

This is of relevance to academics who are now expected to teach larger classes, double classes, and over weekends (Morgan 2016:online). The expectations of disruptions by protests require new methods (and venues) for learning to be accessed. These ad hoc calendar adjustments and upskilling of e-learning takes time away from research activities, which has previously been regarded as a time of hiatus in the academic calendar.

Through this explanation it can be seen how the culture of the nation (or in this instance the viewpoint of large masses of the youth) can have an impact on the workplace, in this

instance the academic platform. It is inevitable that research activities are disrupted during these closures; just as meetings, exhibitions and shows are cancelled or rescheduled. It would be remiss of the researcher to fail to reflect on the repercussions that the protests have on the staff; many in physical fear to be at their place of work.

The *White Paper for Post School Education and Training: Building and Expanded, Effective and Integrated Post-School Education System* emphasised that there are not sufficient academics to replace the workforce that will be retiring in the next decade and university staff are encouraged to obtain higher degrees (DHET 2014a:10). The New Generation of Academics Programme (nGAP) is addressing this (DHET 2015b:online).

The nGAP involves the recruitment of highly capable scholars as new academics, taking into account the carefully designed and balanced equity considerations and also in light of the disciplinary areas of highest need. The first intake relates to 125 posts advertised in local newspapers in May 2015 (DHET 2015b:online). The most important features of the programme are that successful applicants are appointed into permanent posts firmly factored into long-term staffing plans. Appointments are governed by contracts that clearly spell out the expectations, obligations, roles and responsibilities of the employing university and of the newly appointed academic. From this viewpoint of HE, a more attentive look at the populaces in question are examined.

2.8.4 University of the Free State

The mission of the national agenda is taken seriously and reiterated by the goals of HEIs. The UFS aims to be recognised for research and states (UFS 2015:7):

> *"In order to compete for funding nationally and internationally, it is critical to generate relevant research, which is read and cited broadly and in turn assists in building a culture of research excellence that leads to the recognition of a research-intensive university".*

The UFS further summarises their intent (UFS 2015:3):

> *"The Academic Project aims at strengthening and enhancing the University's academic reputation and also specifically aims at developing research excellence. As such it is directly linked to the Academic Appointment and Promotions Policy, which emphasises the alignment of professional advancement to National Research Foundation (NRF) rating criteria and minimum research output requirements".*

This aim clearly emphasises the importance of research culture to the UFS. Research has been described by Shahid (2014:297) as the "backbone" of success in universities and the

future of growth of HE. In order to prevent becoming irrelevant in the knowledge economy, staff and institutions need to recognise the *"cultural movement focused on knowledge creation"*, warn Johnson and Louw (2014:151).

The UFS policies have the following objectives that are specifically research focused:

Objective 1: Develop a research culture through a strategic focus to research development

Ensure synergistic research policy directives, effective strategies and a strategic understanding of the research environment, requiring a personnel corps who understand and accept critical changes and new approaches in the university environment (both nationally and internationally).

- *"Objective 1; strategy 1: Monitor external and internal environmental factors and assumptions, as well as policy directives and policy-making which may influence research at the UFS;*
- *Objective 1, strategy 2: Launch studies to gain an understanding of the research environment, for example, obstacles and disincentives with regard to research, lack of time, requirements for development of infrastructure;*
- *Objective 1, strategy 4: Bring problematic areas to the attention of the leadership of the University (EM, EXCO, Deans); and*
- *Objective 1, strategy 10: Ensure a culture of sympathetic leadership and support by the concerned University authorities during the implementation of new policy directives and critical initiatives".*

Objective 2: Quality assurance

Ensure an internationally competitive research system through high quality researchers and effective and quality post-graduate training.

- *"Objective 2, strategy 11: Create a culture, within the University, of monitoring and evaluation for own development".*

Objective 3: Equity

Development of the research capacity of priority groups.

- *"Objective 3, strategy 6: Identify the needs of managers and develop appropriate strategies; and*
- *Objective 3, strategy 7: Stimulate a research culture in faculties and departments through regular seminars, discussions, debates, etc.".*

Objective 4: Financial sustainability

Effectively increase income from external sources by projecting an image of a research-orientated university.

- *"Objective 4, strategy 1: Collect information on research activities and achievements at the University and supply it regularly and systematically to diverse internal and external sources".*

The updated strategic focus for the UFS (2015:18) therefore includes target actions such as:

- *"Increase the number of research leaders and sustainable critical mass in research in targeted areas;*
- *Increase the percentage of academic staff with a doctoral degree to 50%;*
- *Double research output in terms of publications;*
- *Increase the number of rated researchers by 20%; and*
- *Increase the volume and value of collaborative research".*

Kiel, *et al.* (2015:41) succinctly put forward that evolving research landscape is evidence-based, value-driven, and client-focussed and takes a flexible partnership approach. The UFS have shown, through the strategic outlook provided above, that it wishes to answer this call to adapt to the changing domain of research.

In order to achieve these goals, the culture and perspectives of those at ground level need to be well documented and understood.

2.8.4.1 *Faculty of Health Sciences*

The research-specific aspects and the current initiatives of the FoHS will be elaborated on in this section. The FoHS has drafted an implementation plan for capacity building; two of the actions promulgated are (FoHS 2013:3,6):

> "*Building and sustaining a postgraduate research culture and create productive and sustainable international networks"* and *"Presenting training sessions for students and supervisors".*

Although some research has been stimulated by these action plans, the focus has been primarily on students (Du Toit & Wilkinson 2010a, 2010b, 2011; Du Toit, Wilkinson & Adam 2010).

The newly formed Research Directorate (UFS Website 2017:online) currently consists of four posts: the director (post vacant); the research administrator and two medical writing editors. It is their mandate to:

- increase the research outputs of the faculty through help with grant applications, protocol planning and writing of publications;
- streamline the administration of research to make it easier for everybody; and
- make internal documents on research outputs, funding opportunities, funding calendar and the research calendar of the faculty available to staff members.

The Health Sciences Research Ethics Committee (HSREC) colloquially spoken about as the Ethics Committee approves each research project undertaken in the Faculty before commencement. HSREC is accountable for managing and assisting the ethical and governance review processes. This involves coordinating scientific and ethical review of research. In addition, the HSREC is responsible for compliance governance including research monitoring, the provision of researcher support and advice, and risk management. The HSREC ensures that:

- research studies are reviewed such that investigators and other parties involved follow appropriate ethical guidelines as stipulated in the Constitution of the HSREC; and
- safeguards that research participants are protected against unethical behaviour by investigators during any kind of research.

Annually, research presentations are heard at the research Faculty Forum. The Faculty website states:

> "*At the Faculty of Health Sciences, we place a high premium on the quality of research, and quality research is conducted on an on-going basis. The pursuit of improvement, a scientific approach and academic enrichment remains one of the objectives of the faculty. The aim of the Faculty Research Forum is to serve as a showcase for all the research conducted in the faculty and also as exposure for junior staff members. Staff members involved in research are therefore invited to use this opportunity for presenting the results of their research*".

This event is hosted over a period of one day for student research and over two days for staff; there are numerous sponsorships from external stakeholders and prizes, trophies and medals are awarded.

Other artefacts of an active and proud research culture are the number of departments who advertise their publications on the departmental noticeboards. Many of these articles are made possible by the Department of Biostatistics, manned by four staff members who provide statistical support and data analysis when requested.

Within the FoHS, there are three Schools. In October 2014, The SoN was privileged to add an academic and research space to its existing facilities at Benediktus Kok building. The aim was to provide academic staff and students in the School and the Faculty of Health Sciences with a facility that enables teaching and learning strategies and the numerous academic and research activities to take place.

As the FoHS is in collaboration with government, through the academic training hospitals and the appointment of staff on a joint structure with both the FSDoH and the National Health Laboratory Services (NHLS), the goals and policies of the NDoH are pertinent to the context of this study (cf. Figure 2.7).

2.8.5 National Department of Health

The education and training system for the health sector in South Africa has not grown adequately to meet health needs and health system requirements, as stated by the Human Resources for Health South Africa (HRHSA) (2012:12). The reduction of specialist and sub-specialist training posts influences the capacity of the health system as a whole. Of the 2 361 accredited Health Professions Council of South Africa (HPCSA) academic specialist medical and surgical clinician posts, 591 (or 30%) are unfilled and unfunded (HRHSA 2012:50).

Academic clinicians are mostly employed in joint posts, which entails a dual appointment between the provincial level Department of Health (DoH) and the university to which they are affiliated. In essence, in most provinces the academic clinician is employed by the provincial department of health, with the exception of the Western Cape (HRHSA 2012:51), where there is a 51%/49% funding relationship between the faculty and the provincial department of health for a limited part of the academic clinical staff.

The disadvantage of this model is that there is not necessarily any alignment in the clinical and academic missions of affiliated parties, and therefore the related resources and organisational performance outcomes. The Hospital Board does not play a dominant role,

and the provincial DoH is the primary authority administrating the financing, planning and staffing of the institutions that act as accredited academic training sites (HRHSA 2012:110).

There is no national policy that provides a guideline for 'joint appointments' aimed at the relationship between provincial departments of health, academic hospitals, other training sites, and the faculties of Health Sciences. As the academic conditions of employment are not defined in all provinces and faculties of Health Sciences, this leads to the destabilisation of the academic clinical and research role (HRHSA 2012:51).

A report of the ASSAF published in 2010, detailed the situation with regard to clinical research in South Africa. The report highlighted the importance of revitalising the culture (cf. 2.5.1) of clinical research in South Africa, which originated at the beginning of the twentieth century. ASSAF recognised the waning of published clinical research outputs in South Africa and the ageing of the academic clinical research fraternity, over the past 15 years. Although clinical research is of great significance to the NDoH, this study does however focus primarily on the research culture from a HE perspective; this does not imply that there is no component of clinical research that pertains to the research culture in HE.

ASSAF identified the barriers to stimulating clinical research in South Africa. These include (2010: xxxi-xxxii):

- Inadequate public engagement with clinical research:
    - Government does not promote clinical research sufficiently in the public domain; and
    - Researchers do not engage sufficiently with issues of importance to research participants and policy-makers.
- Lack of research planning, regulation and co-ordination;
- Inadequate capacity for clinical research (human resources and infrastructure);
- Lack of adequate and appropriate funding; and
- An absence of monitoring and evaluation of clinical research.

In addition to profession-specific education and training, health professionals should be taught research skills and a culture of critical inquiry developed. The NDoH aims to achieve these objectives through collaboration with the HEIs, the Academy of Science and the NDoH Committee on Clinical Research to implement nationally prioritised clinical research platforms, in order to develop research skills and improve service and clinical intervention.

2.8.5.1 *Free State Department of Health*

As the previous discussion clarifies, at national level many posts are not filled; the picture is similar on a smaller scale in the FSDoH. This is in part due to academic clinicians exiting the academic hospital (Choane & Dlodlo 2016:online) and that the prerequisite growth in academic clinicians has not taken place, leading to reduced academic capacity for clinical training and clinical research.

The current status of the FSDoH is that the system is low on manpower (23 doctors to 100 000 patients) and with each resignation or retirement, no replacement staff is hired, given the strategic considerations to cut vacant posts (FSDoH 2016:45,50,55). Universitas Hospital has dropped to the worst ranked academic hospital in the country; this has prompted Minister of Health Aaron Motsoaledi to start an investigation into the 30% reduction in quality assurance over the last financial year (Dlodlo 2016:online).

The 2016/2017 Annual Performance Plan prioritises research, strategic goal #6 (FSDoH 2016:7) through knowledge management (2016:97), in alignment with the NDP goals of improving patient quality of care through the use of evidence. Yet, this document also acknowledges that the inability to replace specialists and a reduction in the number of specialists in training is impacting the performance of the FSDoH (2016:119). This shortcoming in recruitment and retention of health professionals is also found in the unstable position of the current joint appointed academic health professionals. This is evidenced by the intended objectives given in the 2016/2017 Annual Performance Plan (FSDoH 2016:7) describe as the "*measures given to ensure the sustainability of services*":

- *"Review posts on the Memorandum of Understanding (MoU) with University of Free State;*
- *Support the JAC in the finalisation of the financial model of the MoU in order to recover funds for the joint appointees at the University of Free State (FSDoH 2016:119)".*

The 2015/2016 Annual Performance Plan (2015:5,26,44), a year earlier, admits to these challenges:

- *"The high turnover of health professionals is affecting the quality of services provided, leading to poor quality of services, dissatisfied clients, increased complaints, adverse events and litigations…;*
- *The average vacancy rate for Specialists are 38%. Medical officers are 36%, Professional Nurses 20% and Pharmacists 40%...;*
- *Due to the financial challenges in the Department, some of the priority posts could not be filled…; and*
- *The Department will remain constrained in its bid to deal effectively with the health sector challenges and priorities which include the filling of vacant posts, procurement of*

> *appropriate resources and effective management of infrastructure due to insignificant increases year on year of the budget".*

Du Plooy (2007:online) obtained feedback from several workshops attended by 173 FSDoH employees, held in 2006. It was found that unfilled posts, nurses receiving non-nursing tasks from supervisors, a lack of consultation in the decision-making process and minimal mentoring support contributed to a culture of discontent in the FSDoH.

From these three sources, it can be seen that the trend is longstanding and that the current financial status of the FSDoH will not allow for vast improvements in the near future.

Resources are limited and the Department remains under administration, due to poor management of funds. The Treatment Action Campaign (TAC) argues that the FSDoH is "falling apart" (Health24 2015:online). Research can play a large role in identification of best policies, and to monitor and evaluate progress (Gonzalez-Block 2004:2); this is at present a requirement of the FSDoH to improve the status quo.

From the above-quoted evidence, joint appointment staff are no doubt influenced by the state of affairs within the FSDoH; the varying mandates, values and policies may be difficult for staff to reconcile (Whitworth, *et al.* 2012:291). With limited time, money and resources for patient care foremost visible to staff daily, it is anticipated that research mandates may fall by the wayside. Now that the picture of the status of the health sector is outlined, the objectives of the university and the alignment with HE goals, the contextualisation of the study has been framed.

To combine the theoretical components that contributed to the concept of culture, the development of an academic model of culture and the progression of research culture as a legitimate stand-alone topic of investigation, with this contextualisation, the framework pertinent to this study can be put forward.

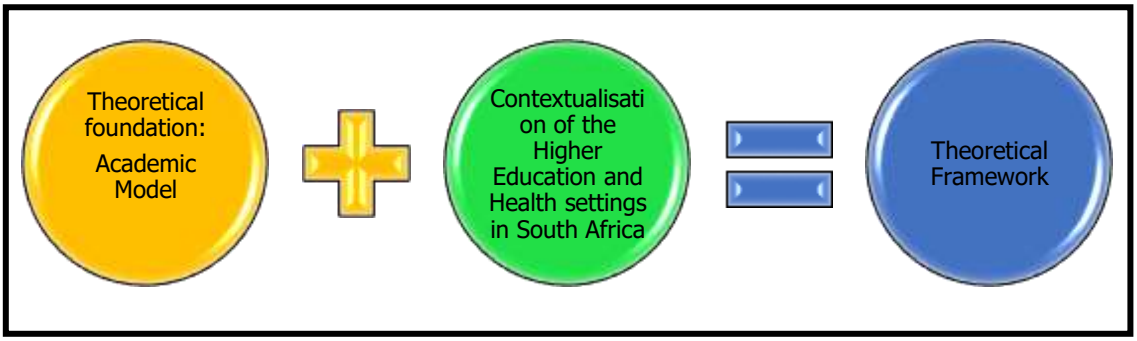

Figure 2.7: Compilation of the theoretical framework of this study

Figure 2.7 indicates how the theories explained and the mandates, goals and current positions within the context have informed the theoretical framework of this study.

2.9 TOWARDS AN INTEGRATED THEORETICAL FRAMEWORK

The theoretical underpinnings of this study of research culture have been outlined (cf. 2.2) and multifaceted analyses have been empirically investigated in prior studies (cf. 2.5) over a period of three decades. It transpires that the topic of research culture is still not fully explored. From the previous discussions, it can be seen that to identify culture has great importance (cf. 1.1; 2.1). Schein (1996:239) advises that much more time needs to be spent on the observation and absorption of cultures, as viewed by the insider's perspective, in order to understand how cultures affect the way organisations work. As such, factors that play a role in moulding the culture within an organisation can provide integral information to an organisation about which strategies carry impact and are viewed positively or negatively by employees. These strategies should include goal setting that internalises research values (Hill 2002:17).

Through the analysis of research culture literature, it was revealed that tools from organisational backgrounds (cf. 2.6) have commonly been used to identify research culture. Survey tools in the form of questionnaires have also been formatted. The crux of this literature review brings into focus a few facets that are common across ranging contextual and discipline-specific studies. In order for research culture to be fostered, the commitment to both allocating time and the management of time, for staff to perform research in required (Hill 2002:20). There remains an opportunity to address the investigation of research culture at a deeper level.

Two aspects that are found specifically in the readings based on research culture within the health context, though not in the domain of HE, are resources to undertake research and the implementation of applied research in patient care and health policies. These aspects will also form part of this study's theoretical framework, as previous investigations have found these aspects relevant and is of contextual significance as explained in the context of FSDoH. The niche arena of HE and health reminds us of the importance of research, as the implementation thereof has a very real outcome to real people. As Hurst (2018:online) prompts "…*the wider benefits that healthy research culture can bring not only to researchers, but to society as a whole*." This pertains also to the specific arrangement of joint appointments in the context of the target populations (cf. 2.5.4; 2.8.5.1), whereby the

nexus of government employees in the DoH with that of the UFS and HE, brings a unique set of variables into focus.

The context of the institution cannot readily be separated from the greater national agenda, the influence of political policy or that of socioeconomic circumstances that inform those policies. Universities in South Africa remain accountable to implement the vision of the DHET. As put forward in the previous contextual analysis, not only does the DHET impact on the FoHS at the UFS, but also the collaborative agreement with the FSDoH, driven by the higher directives of the NDoH.

For the purposes of this study, an integrated theoretical framework, derived from the perspectives on academic as well as research culture, has been created. This theoretical framework was, in part, derived from the synopsis of readings provided in Appendix A1. Which lay the conceptual foundation for this literature study. The concept of research culture is heavily intertwined in that of the institutional or academic culture that suffuses the general working environment. A framework is a manner for the anchoring of the study and serves as a reference point for the researcher during the stages of analysis (Baxter & Jack 2008:553). The generation of this conceptual and contextual theoretical framework meets with the first objective of this study (cf. 1.4).

The purpose of this framework is to create a way to investigate the relationships of the components; to provide a common language and provide a frame of reference for research culture in HE, with a focus on a health faculty (and its inevitable integration with healthcare provision). This framework is embedded in the context of the UFS, FSDoH and the agendas of South African HE at national and international levels.

The departure point of this study is the collation of the factors identified that are pertinent to the specific context of a HE faculty, which is focused on health, in the dynamic South African milieu. The framework creates a platform from which to improve research culture and from which new data can be interpreted. This includes a visual depiction of aspects (cf. Figure 2.8) that would be included in the study in order to direct the investigation into the research culture in the FoHS at the UFS.

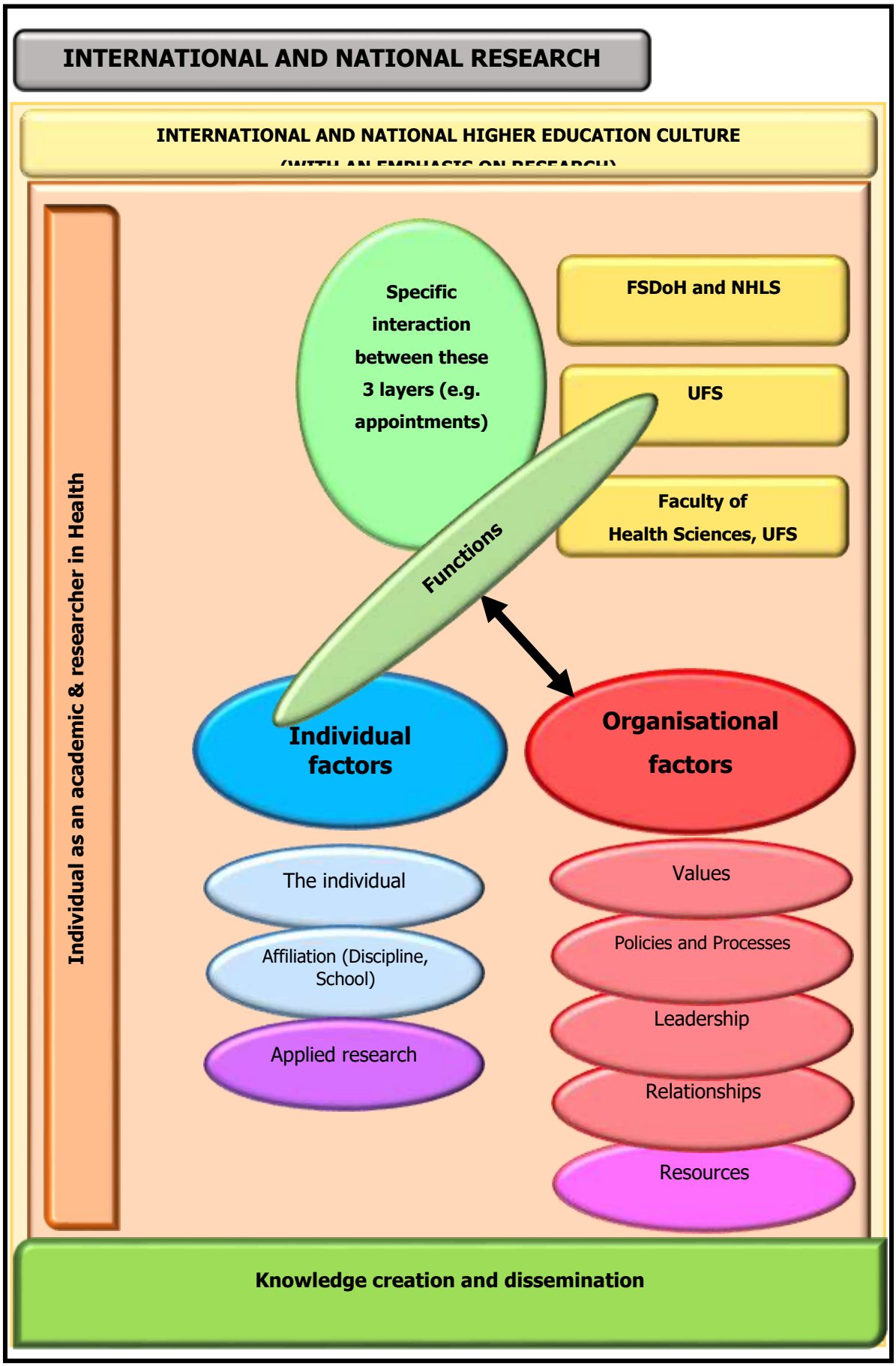

Figure 2.8: Theoretical framework of the study

The purpose of research in HE is for the creation of new knowledge (Marchant 2009:9), improvement on existing knowledge and the dissemination of this - and thus forms the foundation of this framework, as it is central to the mission of the UFS. As found in literature, the individual factors, and the environmental aspects of the organisation play significant roles.

The model proposes two primary pillars: individual and organisational/institutional factors, similar to the findings by Greenwood and Gray (1998:642-648). These researchers investigated nursing research culture in health sectors in Western Australia. Both of these are placed within the greater context described and are dually influenced by the roles or functions of their appointment. An individual within the FoHS is an amalgamation of their own abilities, their discipline and is influenced by the institutional culture of the UFS and NDoH for joint appointed staff, or staff in departments who have a mixture of these appointment structures.

Dashed lines indicate factors or aspects unique to the model in this study and solid lines indicate that of the overlap between the model by Smerek (2010:410) and that of this study. Dashed lines are specific to the context and the joint appointment agreement between FSDoH and UFS; resources are physical and electronic, time and funding; applied research is the use of the individuals' own research implemented to the requisite population (students, patients, policies, methods and instrumentation in real-world situations).

The relationships between these factors are indicated by the overlapping nature of items, and the strength or impact implied by these relationships is indicated by the positioning. That is to say, smaller depictions can be deciphered as more malleable. The intrinsic overarching factors, of which there is little control, are surrounding the whole framework. This is indicative of the deep and underlying nature of these factors.

2.10 SUMMARY

This chapter lead the reader from the baseline of organisational theory (cf. 2.2.1), where the terminology of institutional culture was born. From this, Smerek summated three broad categories of academic culture, namely integration, differentiation and fragmentation (cf. 2.3; Table 2.1). His model of academic culture has many similarities with that of investigated research cultures, and these were elaborated upon (cf. 2.4.2).

Relevant readings were collated and a progression of the studies into the field of research culture was analysed (cf. 2.5). Over a period of three decades, the term research culture has evolved and many studies in the field have progressed to developing tools to evaluate perspectives (cf. 2.6). Although these tools are in existence, a strong leaning towards organisational theory still exists. There is justification for the study to convey new indicators in this field. Evaluation measurements of culture and the strategies recommended to improve research culture were identified and explained (cf. 2.7).

The context of the study was highlighted from three aspects, that of the national culture (cf. 2.8.1), the University mandates (cf. 2.8.4) and the status of the FSDoH (cf. 2.8.5.1). This context is uniquely positioned in the health HE sector, which as explained is complex and fraught with challenges. This nexus, in conjunction with expectations from national level - based on policies drafted since the dawn of democracy in South Africa - present a favourable platform to identify the perspectives of the researchers that work within and amongst these realms. The theoretical framework (cf. 2.9; Figure 2.8) of this study is founded on the findings and shortcomings of previous studies in the health and education sectors. This theoretical framework, corroborated through the synopsis of literature given in the Appendix A1, meets the first of objective of this study (cf. 1.4).

The chapter that follows, Chapter 3: **Research design and methodology** will expand on the research paradigm of the researcher; as well as the methods of investigation and the procedures undertaken during data analysis; lastly, efforts to ensure the rigour of the study and ethical considerations are provided.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter introduces the research design and the methodology of the study, as summarised in Figure 3.1. This is accompanied by the philosophy of research held by the researcher, the steps taken to bracket by reflection and the awareness of bias in the study, as well as the insider/outsider perspectives and the continuum of these perspectives over the length of the study.

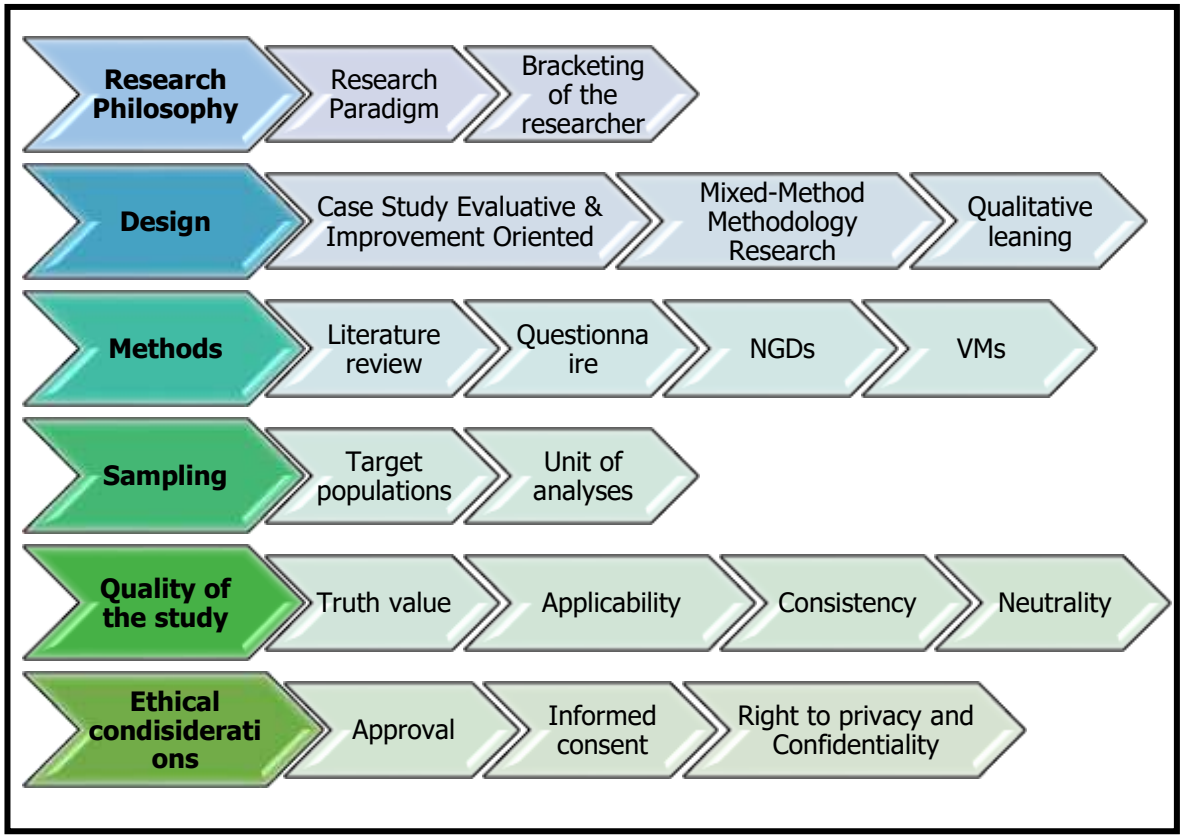

Figure 3.1: Overview of research design and methodology

Detailed discussion is included on the methods, and also the study populations. The nomenclature of the participants is determined by the method: quantitative methods label a *sample* and qualitative methods label a *unit of analysis*. The use of the methods in the *pilot study* of the questionnaire and the *exploratory interview* of the NGD are provided. Detailed information is given on the settings for the data collection and the considerations of the facilitator selection. Lastly, the ways in which the rigour and reliability of the study were improved are described and ethical considerations are declared.

In order to place the research paradigm, discussed in the next section, into context, the researcher summates the chosen design of the study. The mixed-method design (Johnson & Christensen 2017:478) is a QUAL + quan design, which utilizes an inductive qualitatively driven concurrent design with the aim of triangulation, complementarity of data collection and analysis as well as a developmental purpose. This design is in alignment with the ontological and epistemological viewpoint of the constructivist, interpretivist paradigm of the researcher.

3.2 RESEARCH PARADIGM

Thomas Kuhn, an American physicist, historian and philosopher of science, who defines 'paradigm' as the application of theories in the solution of important problems, introduced the concept of a paradigm. He is considered to be one of the most influential philosophers of the twentieth century and added great significance to the positivist view (Stanford Encyclopaedia of Philosophy 2014:online).

According to Kuhn, a paradigm fulfils three functions: (i) it suggests new problems; (ii) it suggests approaches to solving those problems; and (iii) it is the standard by which the quality of a proposed solution can be measured (Kuhn 1970:38–9). However, following Kuhn, Nieuwenhuis (2007:47) describes research paradigm rather as a set of assumptions or views about fundamental traits of reality, which generates a particular worldview.

The researcher identifies with the viewpoint of Weaver and Olsen (2006:460), which add that:

> "*paradigms are patterns of belief and practices that regulate inquiry within a discipline by providing lenses, frames, processes through which investigation is accomplished*".

Harris (2002:47) adds that a paradigm encompasses accepted research approaches and procedures for researchers.

With this concept defined, the researcher's own belief and worldview of reality determined the research paradigm held. The researcher holds an interpretative constructivist view. Short explanations of these philosophies are provided below.

A requirement to conduct any research is that the researcher should have a gestalt of philosophies associated with "*the scientific nature of seeking knowledge*" and a well-

established worldview (Botma, Greeff, Mulaudzi & Wright 2010:39). Botma, *et al.* (2010) explain that researchers use three philosophical assumptions to formulate their views, namely ontological, epistemological and methodological assumptions (Botma, *et al.* 2010:40).

3.2.1 Ontology

Ontology is the view on the nature of reality and asks "*what is truth?*" (Nieuwenhuis 2007:47); the two main beliefs are that of positivism and interpretivism. The positivist philosophy argues that there is one objective reality and that the observation of a participant does not impact the object being observed. This is in contradiction to the interpretivist view. The interpretative philosophy, which dominates in qualitative research, is that there are many truths and multiple realities; that these realities are constructed from the social context. These philosophical views are part of the nominal-realist debate; the nominalist views the social world as subjective and reliant on individual cognition (Illings 2013:615).

The stance of interpretivism can be explained as every person has their own set of experiences through their unique environment, which provides them with their own unique set of insights and perceptions. Each person may experience the same event differently and is a reflection of their own personal truth; thus, there are multiple realities and truths for any particular event. This scenario was categorised by Grbich (2007:4) as - the subjective truth, the relative truth, the objective truth and the philosophical truth. Similarly, Mercer (2007:12) notes that the same person can have multiple understandings of reality, depending on the situation; their verbalisations of this will vary at different times, with different people. The interpretivist view holds the following assumptions (Nieuwenhuis 2007:59,60):

- Human life can merely be understood from within: the focus is subjective experiences;
- Social life is a uniquely human product: truth is socially constructed;
- The human mind is the purposive origin of meaning: by exploring phenomena of participants in their social settings, researchers can uncover meaning;
- Human behaviour is influenced by knowledge of the social world: realities will differ in time and place; and
- The social world does not occur independently from human knowledge: knowledge is limited to an individual's exposure to experiences.

Interpretivism is the view that was held by the researcher based on the assumption that since the study will involve different individuals within an academic organisation, each person may experience the same event differently. It is therefore imperative for the researcher to interpret individual responses as a reflection of their own personal truth.

3.2.2 Epistemology

Epistemology is how we come to know reality and ask:

> "*What is the relationship between the knower and what is known? How do we know what we know? What counts as knowledge?*" (Krauss 2005:759).

The basic argument of the constructionist debate is that reality is socially created by and between the people who experience it (Gergen 1999:702). The epistemological aspect is addressed by subjective evidence collected based on individual views from research conducted.

The theoretical lens of constructivism asks broad, general, open-ended questions and concentrates on the historical and cultural settings of participants. This view recognises that the researcher's own background shapes interpretation. Schein (1996:229) argues that the individual who researches culture is one who will perform research in a manner that is as a result of their own culture; this is a bias that revealed to the researcher much about the choice of the qualitative emphasis of this study and is also mentioned in Chapter 1 (cf. 1.7).

Thus, it requires the researcher to investigate these actions or beliefs in terms of meaning (Nieuwenhuis 2007:55). Meanings are the linguistic categories of the person's view of reality, by which their actions are defined; a person draws meanings from or gives meanings to events and experiences. As such, meanings are the underlying motivation behind thoughts and the analysis of knowledge (Krauss 2005:762-763).

Constructivism, being a theory whereby people construct knowledge and meaning from their experiences, the development of research culture and the knowledge related to research, may be influenced by the way in which the individual experiences tasks and the environment that applies to research.

The interpretivist constructivist views of the researcher influence the research methods chosen, which involves the use of quantitative data to support and deepen the qualitative data (Mackenzie & Knipe 2006:193).

3.2.3 Methodology

Phenomenology is the study of experience from the viewpoint of the individual, 'bracketing' taken-for-granted assumptions. Epistemologically, phenomenological research is based on a paradigm of personal knowledge and subjectivity, and the emphasis of the importance of a personal perspective and interpretation. This type of methodology is useful to understand the lived, subjective experience of a person and thereby gaining insights into people's motivations and behaviours and breaking through the taken-for-granted assumptions of the context (Lester 1999:1).

This study also speaks to the postmodernism perspective (Creswell 2012:27) in that the study will assess group affiliations. This perspective probes the environment of hierarchies, power, control, and viewpoints of individuals in the hierarchy as well as the multiple meanings of language. Part thereof is the recognition of bias the researcher brings into the study, which is discussed in conjunction with the selection of the facilitator (cf. 3.4.3.1) and the disclosure of the researcher (cf. 3.7.5).

The arrangement of such a type of methodology's results are according to themes and topics and which highlight key issues discussed or given by participants. The aim of this methodology is to be faithful to the participants; to share their truth; and to be aware of biases being brought to the findings (Lester 1999:3). This study makes use of thematic analysis of open-ended questions by way of questionnaire survey (cf. 3.4.2) and statements recorded in NGDs (cf. 3.4.3). Through these methods, the voice of the individual is given chance to be raised; this is also the case of the management through VMs (cf. 3.4.4). The researcher's paradigm is in alignment with the selection of the research design, which follows.

3.3 RESEARCH DESIGN

The research inductive approach was an evaluative design with elements of CSE (Case Study Evaluation) and IOE (Improvement-oriented evaluation) as propagated by Stufflebeam (2001:57). The need for this design stemmed from the failure of experimental methods to deliver suitable and useful information for decision-making (Harris 2002:54). The concept of research culture, the influences and contextual interference, thus far, has failed to be fully investigated by experimental methods (cf. Appendix A1).

According to the United States Government Accountability Office, the definition of CSE (USAID 2013:1) is:

> "*Case study as an evaluation method is a means of learning about a complex instance, based on a comprehensive understanding of that instance obtained through extensive description and analysis of that instance taken as a whole and in its context*".

This is in agreement with the researcher's purpose of learning about the research culture in the FoHS and the intention of the methods of description used in the study. These concepts are explained further.

3.3.1 Case study evaluation

Case Study Evaluation (CSE) is used by researchers to describe the topic of interest; the focus of which is described in depth and the holistic contextual understanding thereof (USAID 2013:1); the manifestation of the meaning to particular individuals or groups (Leech & Onwuegbuzie 2007:558). It is a useful design when not much is known about an issue or phenomenon; or to gain understanding of how the case influences and is influenced by its context; there are no clear boundaries between the phenomenon and the context (Baxter & Jack 2008:545).

Thus, CSE can be implemented to explain links that are too complicated or multifaceted (Baxter & Jack 2008:544) to be determined by experimental strategies and explore situations where no single clear-set guidelines exist (Yin 2013:321). In this instance, the lack of knowledge with regard to the research culture in the research-specific context (cf. 1.2) makes this design applicable. This is also aligned with the interpretative constructivist viewpoint of the researcher (cf. 3.2) (Baxter & Jack 2008:545).

Through the development of an evaluative framework, the analysis allows for organisational and integration issues to be dealt with, within a specific time frame, with this pre-designed sample (Srivastava & Thomson 2009:73). The developmental design of a framework uses different methods to assess the similar phenomena, conceptualised within the same paradigm (Greene, Caracelli & Graham 1989:267).

Case studies can be selective, concentrating on one or two subjects that are fundamental to understanding of the system or programme being examined (Nieuwenhuis 2007:75). When data are collected from subunits, and this data can be analysed within and between subunits, the case is termed a "*single case with embedded units*" (Baxter & Jack 2008:550).

In this study, the critical unit of analysis and the unique/particular group of individuals are the academic staff appointees within the FoHS at the UFS, at the time of the study. The subunits are the four populations under study: SoN, SoM, SAHP and the AS; the analyses are described later in this chapter (cf. 3.6). This is therefore a classic example of a single case with embedded units as described by Baxter & Jack (2008:550).

3.3.2 Improvement-oriented evaluation

According to Patton (1997:68), Improvement-oriented evaluation (IOE) is a form of evaluation carried out with the aim of making things better. It can incorporate an assortment of approaches, including:

> "*Formative evaluation, quality enhancement, and responsive evaluation, learning organisation approaches, humanistic evaluation and Total Quality Management (TQM), among others*".

Advantages of the approach are that it encourages staff to use evaluation continuously and systematically to plan and implement programs that meet targeted needs; aids decision-making at all organisational levels and presents information for helping staff be accountable for their decisions and actions. Learning or change can also occur as a result of participants being involved in the evaluation process (Patton 2010:online).

Patton (2008:262-264) outlines 14 premises for the Evaluative study design, of which many are applicable to this study:

- *Commitment to the intended use by the intended users*: it is aimed that the framework from this study be implemented by the FoHS, for the benefit of each individual in the faculty;
- *The personal factor contributes significantly to use*: this study is aimed at interests of the University and its staff and will identify the specific personal needs of the participants in their workplaces;
- *Careful and thoughtful stakeholder analysis*: more than one level of staff, from all the subunits in the FoHS, are approached for input and these are the primary users (stakeholders);
- *Evaluations must be focused in some way*: focus is on the research culture of the intended users;
- *Focusing on intended use requires making deliberate and thoughtful choices*: the purpose of the study is to generate conceptual knowledge on research culture for appropriate strategies to be developed to enhance the research culture;

- *Useful evaluations must be designed and adapted situationally*: the context of the study was established in Chapter 2 (cf. 2.6);
- *Intended users' commitment to use can be nurtured*: the NGD method increases ownership and commitment as it is a consensus and problem-solving technique;
- *High quality participation is the goal, not high quantity participation*: this requires a skilled facilitator (cf. 3.4.5.1); open-ended questions in the questionnaire allow for detailed descriptions;
- *Use is different from reporting and dissemination*: although this study aims to report on and disseminate the data gathered, this does not mean that actual decision-making, knowledge gains and a change in thinking are not achieved by this; and
- *Serious attention to use involves financial and time costs that are far from trivial*: budgets should be made clear; this was provided in the protocol of this study.

Stufflebeam's design (2001:42) involves the full complement of participants in the process; this ensures that everyone's needs are well addressed and to encourage and support them to make effective use of the evaluation findings. It is inclusive in attending to context, inputs, process and outcomes. Patton (2008:269-270) continues by providing the contextual underpinnings of the study design. He warns that not all information is useful, that not all people are information users and information that is credible is ultimately powerful. The methods imposed to ensure credibility of this study are provided in this chapter (cf. 3.7.2).

Evaluative designs balance the use of quantitative and qualitative methods. This study aimed to evaluate the research culture of the FoHS at the UFS with the view of enhancement of the existing culture. The quantitative data were gathered through the dissemination of a questionnaire survey and obtained data on the aspects of individual, institutional, leadership and external elements that influence this culture. The qualitative data were gathered through the method of NGDs, and described the factors that influence the research culture and gave opportunity to provide recommendations.

These methods were selected to increase the body of knowledge on the topic and to serve as evidence in the development of a framework. As the study contained both qualitative and quantitative aspects, it was thus mixed-methods methodology research.

3.3.3 Mixed-method research

A mixed-methods methodology was strongly recommended in alignment with the aim of the study to develop a framework for a specific context (Neta, *et al.* 2015:50). According to Creswell and Plano Clark (2007:259) quantitative and qualitative research methods contrast in how knowledge is created, but both approaches can be applied to study the same research problem. Within a case study design, the use of both quantitative and qualitative data, from more than one source, allows for the pieces of the puzzle to come together (Baxter & Jack 2008:554). The study was designed with the intention to meet the following primary and secondary dimensions (Schoonenboom & Johnson 2017:110-124), tabulated, Table 3.1.

Table 3.1: Mixed-methods design dimensions in the study

DIMENSION	SELECTED ASPECT(S)	EXPLANATION
Purpose	**Triangulation Complementarity Development**	The three methods utilised in the study allow for convergence; enhancement and clarification. The analyses of the first two methods allowed for the development of the third. This enhances the integrity of the findings and aligns with the diversity of views in the ontological viewpoint of the researcher
Theoretical drive	**Inductive**	The qualitative leaning of the study allows the research question to be answered through the emersion in the data
Timing	**Concurrent Dependent**	The first two methods occur almost simultaneously and the third method is dependent on the analysis of the first two methods
Point of integration	**Analytical**	Two data sets from the first two methods are merged and also the use of multiple views of participants from different sub-populations
Design typology utilisation	**Convergent parallel**	The methods are carried out independently, and thereafter their results are brought together to converge into one overall interpretation
Typological vs interactive	**Interactive**	The five components proposed by Maxwell and Loomis (2003) are goals, conceptual framework, research question, methods and validity; this design of this study have been taken with the fit of these elements in mind.
Planned vs emergent	**Planned**	The design has been predetermined to allow for an audit trail
Complexity	**Complex**	The integrated dependency, the different sources of data and the multi-level ontological realities of the participants provide complexity to this design

Three strategies of the mixed-method methodology are identified: sequential, concurrent and transformative. The concurrent strategy converges both quantitative and qualitative data to develop an inclusive analysis of the research question (McNally 2013:644). This was the method implemented in this study and will be elaborated on.

Data was collected, analysed and interpreted both quantitatively and qualitatively in this study. Both qualitative and quantitative methods were employed, by means of using a questionnaire and NGDs to gather the required data from the academic staff of the FoHS and obtain feedback from management via VMs. The integration of survey data facilitated a holistic understanding of the phenomenon being studied (Baxter & Jack 2008:554).

Four basic types of mixed-method research can be identified, namely the embedded, explanatory, exploratory and the triangulation type. This study makes use of the triangulation type. Patton (1999:1189-1208; 2002:556-563) identifies four types of triangulation: methods; sources; analysts and theory. Harris (2002:65) also utilised the following types: data; investigator; methodological and interdisciplinary triangulation.

Methods triangulation examines the consistency of findings generated by different data collection methods and often encompasses qualitative and quantitative data (Plano Clark & Creswell 2008:21), as is the case for this study. Triangulation is grounded in the assumption that each method has different limitations and biases; therefore, by using multiple sources, the results are corroborated (Plano Clark & Creswell 2008:123); this increases the confidence in the findings (Yin 2013:324). These various methods then clarify complementary aspects of the same phenomenon and the points where these data diverge.

Mertens and Hesse-Biber (2012:8) advocate the use of triangulation in evaluation design studies and Yin in evaluation case studies (2013:234). This investigation aimed to elucidate the research culture and made use of multiple methods to validate the data, namely a literature review, a survey questionnaire, NGDs and VMs, described in section 3.4.

3.4 DESCRIPTION OF THE METHODS

Four methods were undertaken to complete this study; namely a literature review, a survey employing a questionnaire, NGDs and VMs.

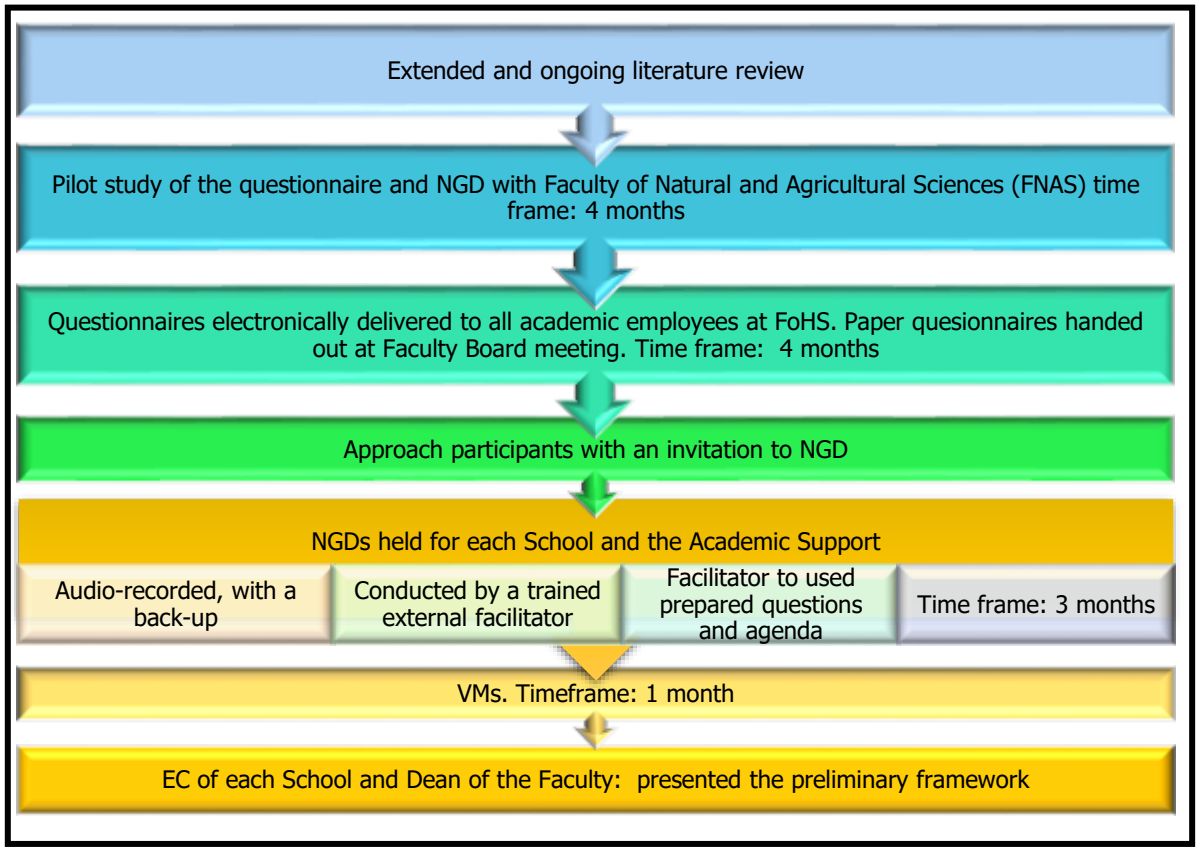

Figure 3.2: Overview of the methods

The steps given in Figure 3.2 indicate the process of the methods of data collection, before data analysis began.

3.4.1 Literature review

A literature review aims to contextualise a problem against related theory and research, while ensuring that the researcher is sufficiently informed on the subject of the research project (Singleton & Straits 1999:544). This is also called a systematic map for the researcher (Shaw & Holland 2014:65). In this study, the literature review provided the required background and context to the stated problem.

It was endeavoured to gain deeper insight into the understanding of research culture, both an overview of the topic and specifically to HE and health, the theoretical frameworks available on the factors that predicted or were associated with research culture and the benefits of a strong research culture to the departments, students, communities and stakeholders at large. As this study was contextualised within the theoretical framework of academics' perspectives of the HE research culture(s) of the FoHS at the UFS, readings

later focussed on HE in a health context. This provided the background information for the research project.

The literature review was undertaken by a word search using terms such as: research culture in HE; research culture in health; research climate; organisational culture in HE; organisational culture in health; systems of research; framework of research; research culture framework; research culture typologies, among others.

The databases utilised to access articles were Academic Search Ultimate; BioMed Central; Directory of Open Access Journals (DOAJ); Google Scholar; Medline; PsycINFO; SABINET and ScienceDirect through Google and KovsieKat search engines.

Departmental and Faculty documents were obtained from organisational websites; the Postgraduate School; the UFS online staff access to policy and other documents and the Heads of Departments.

The process of literature review spanned the entire duration of the study and a snowball approach to the literature search was used in order to eliminate biased reading. Another major purpose of conducting the literature review was also to inform the development of the questionnaire for the utilisation of data collection.

3.4.2 Questionnaire survey

Gay and Airasian (2003:10) state that survey research, also termed descriptive research, involves collecting data to answer questions about the present status of issues or topics, followed by a quantitative description given in the form of statistics and numbers. Surveys are also regarded as an effective method for investigating educational issues (Gay & Airasian 2003:277). For clarity, the *method* of survey is implemented via an *instrument* of questionnaire (Draugalis, Coons & Plaza 2008:1). The methods utilised to draft and distribute the survey are discussed below.

The researcher was loaded as a trainer on the software and drafted the questionnaire. As the questionnaire was drafted by the researcher, it is acknowledged, that as a novice questionnaire designer, there was the possibility of redundancy. The questionnaire was compiled using forced choice (Likert scale where only one answer may be selected) and open-ended questions as derived from multiple sources (cf. Appendix C2). Electronic copies

of the questionnaire were sent out via Evasys in one link password format, with an information sheet attached to the email (cf. Appendix C5-C6).

The questionnaire covered aspects in order to complete objectives ii and iii of the study (cf. 1.5). The questionnaire was administered in English, which was in line with the UFS language policy (UFS 2003:1). The electronic format selected allowed for participants to save and return to the questionnaire at a later stage.

Reminders follow the law of diminishing returns (Deutskens, Ruyter, Wetzels & Oosterveld 2004:23) and it is recommended that reminders should be sent one week after the initial delivery of the questionnaire. Three reminders are the maximum advised (Callegaro, Manfreda & Vehohar 2015:153). In this study, an early warning system was implemented. This was done whereby departmental meetings were arranged with the Heads of Departments (HoDs) and the researcher presented the aims and objectives of the study and informed the staff that the link to the questionnaire would be arriving (cf. Appendix B4). Thereafter, the HoD was emailed to ask that he/she remind the willing staff to complete the questionnaire.

These information sessions were requested with all departments in the SoM with 10 or more academic staff members, and the SoN and SAHP. Meetings were granted with Surgery, Internal medicine, Family medicine, Basic Medical Sciences, Medical Physics, Paediatrics and Child Care, Physiotherapy and Nursing. Some meetings were not logistically possible, in which case the HoD passed on the information letter with a motivating email to assist in recruiting staff for participating in the study. This was done by Occupational Therapy, Nutrition and Dietetics as well as Exercise and Sport Science.

After each of the information sessions, the links were sent to the specific targeted department. The Academic Support, having no HoD, did not have an early warning contact by the researcher. An email to the remaining SoM departments' HoDs were sent to ask the HoD to inform their staff that a link would be sent.

A waiting period of a week from date of delivery was given for participants to complete the questionnaire; thereafter, repetitive electronic reminders, one per week, were sent for a period of two consecutive weeks, by the Evasys program. Email questionnaires without reminders are expected to obtain an approximate 25-30% response rate (Fincham 2008:2).

Feasibility and cost implications required some consideration, for the dissemination of the questionnaire. It was not possible to personally hand out paper questionnaires to some individuals or have a copy delivered to their personal offices, as these individuals were not office bound, nor spend their time on campus due to the joint appointment arrangement.

However, paper questionnaires were handed out to participants in Surgery, Psychiatry, Ophthalmology and those who preferred a paper copy in Basic Medical Sciences. Paper questionnaires were distributed at the Faculty Board meeting in an attempt to boost the response rate. The cover letter (cf. Appendix C7) indicated that participants have up to one month to complete the questionnaire. Upon completion, questionnaire should be deposited in a designated box in the faculty's administrative office. This additional mode of questionnaire delivery gave a fair return as an additional 19 questionnaires were returned completed.

Response rates as low as 20% are able to yield more accurate results than in studies with higher (60-70%) response rates (Morton, Bandara, Robinson & Atatoa Carr 2012:107). A lower response rate does not inevitably produce low validity; however, does increase the risk of this (Morton, *et al.* 2012:107). It is reasonable to expect that a survey will incur some sampling error and some sample bias (Nulty 2008:307).

As it has been noted, due to the popularity of surveys, the response rate is declining (Anseel, Lievens, Schollaert & Choragwicka 2010:336; Morton, *et al.* 2012:107); methods have been investigated to ameliorate this trend. It is also acknowledged that non-response may not be linked entirely to motivation, but to workload prioritisation (Lewis, Hardy & Snaith 2013:346). The following measures were taken in an attempt to increase the response rate (Anseel, *et al.* 2010:337; Callegaro, *et al.* 2015:156-158; Deutskens, *et al.* 2004:23-25; Kaplowitz, Hadlock & Levine 2004:96, 100; Nulty 2008:303):

- Advance notice via presentation at Departmental meetings;
- Individualised URL sent to the participants and instructions on how to use it;
- Promotion by Heads of School or Departments;
- Follow-up reminders twice, a week apart;
- Extension of the availability of the survey via paper method and collection boxes;
- Monetary incentives (more effective than non-monetary incentives (Olsen, Abelsen & Olsen 2012:1)) were approved by the HSREC through amendment of the protocol;
- Selection of a relevant topic;

- Ensure participants that their opinions will be used;
- A cover letter to the participants stating what is being asked of participants; how and why they were selected; providing contact information;
- A personal signature by the researcher;
- Informing participants that they will remain anonymous; and
- Use of Internet technology via the Evasys system.

Monetary incentives that are smaller, with a greater chance of winning, are found to be the most successful in increasing response rate; this is opposed to one large lucky draw/lottery (Callegaro, *et al.* 2015:149; Deutskens, *et al.* 2004:32). Four vouchers of R250 from a local shopping mall were advertised in the email that carried the link for the questionnaire.

The completion of the questionnaire was not required to be selected as a recipient or winner of the lucky draw, as this is considered a more effective, non-biased way to implement a monetary incentive (Callegaro, *et al.* 2015:149). One recipient of the draw remarked on his lack of completion of the questionnaire, to which the researcher responded that all staff on the list were eligible, regardless of the participation in the study. Each recipient signed for the acceptance of the voucher and also was given the opportunity to donate the voucher to a charity of their choice (cf. Appendix C8). No recipients donated their vouchers.

Draugalis, *et al.* (2008:2-5) provide 10 criteria for a valid survey method; this is tabulated in Table 3.2 below and includes mitigating factors on how these criteria were addressed in this study. The approach of comprehensive sampling was used in this study. The criteria given in Table 3.2 requires a strategic and transparent sample selection. This was calculated using the recommended 95% confidence level (Nulty 2008:309), as a guideline of 69 individuals was considered to represent the population adequately. Should the 99% confidence interval have been selected, 99 individuals would have been calculated as sufficient for representativeness. For larger populations, lower response rates are still considered to be adequate; Internet surveys are considered satisfactory for populations over 100 people (Nulty 2008:309-310).

The comprehensive approach to sampling was selected to give opportunity to all academic staff to have a voice (Nulty 2008:307), by participating. This is in line with the philosophy of the constructivist paradigm (cf. 3.2).

Table 3.2: Criteria for valid survey method

CRITERIA	IMPLEMENTATION IN THIS STUDY	MITIGATING FACTORS
Defined research question: could a different method have been employed?	• Objectives were clearly identified	• Literature presents the questionnaire as the most often used method • This method provided equal opportunity to every person in the contactable target population to have their voice heard
Sampling considerations: • should approximate the population. • What sampling approach was used? • How did the researcher minimise sampling error? • Was the sample size process described?	• Comprehensive sampling • Estimated required sample for target population of 242 for 95% confidence level at 10% confidence intervals is 69 participants $n = \left[\frac{z_{\alpha/2}\sigma}{E}\right]^2$	• As the sampling method was comprehensive, no specific sampling calculation was required • The calculation merely indicated the required response rate to be reliable statistically for the target population
Balance between costs and errors	• Free emails sent by the Evasys system for reminders, with planned follow up for 3 weeks • Hybrid system lowers cost, as those who choose to complete the questionnaire in paper format print for themselves • Only 100 copies were made and handed out to members present at a Faculty Board meeting	• Not practical to hand deliver all questionnaires as the Faculty is not fully housed on the campus • Hand delivery to Psychiatry, Ophthalmology, Surgery, Basic Medical Sciences
Pretesting	• Reviewed by a panel of evaluators • Language edited • A comprehensive pilot (4 weeks) and follow up (2 weeks) was conducted	• Amendments made, upon recommendations • Disruptions on campus created a tumultuous environment, not conducive to staff responding
Quality control measures	• Statements that were negative items ensure that participants read the questions • Evasys allowed for progress made to be saved by the participant	• This was shown to be effective in the pilot responses
Response rates	• Clear flow of responses outlined	cf. 3.5.2.1
Reporting techniques: statistical and analytical	• Independent statistics reported by Evasys system and collated by the researcher and checked by an independent person	• Open-ended questions coded by researcher and outsider co-coder
Human subjects consideration	• Ethical approval from HSREC • Approval for pilot from Dean and Faculty Management (FM) of Faculty of Natural and Agricultural Sciences (FNAS)	
Transparency	• Questionnaire attached in addendum • Pilot clearly outlined	
Considerations of web-based surveys	• Clear guidelines given on the method and software program used	• Undeliverable emails were found in the list provided by the Office of the Dean staff list

It is evidenced by this Table that great lengths were taken to ensure the validity of the instrument used. The questionnaire asked questions relating to demographic data, individual attributes and skills, and roles of the individual. Participants were asked to define

and identify values in their research culture and a number of organisational questions (cf. Table 3.3).

Table 3.3: Overview of the content of the questionnaire

SECTION	DESCRIPTION	FACTOR
A	Demographic data	} A-E Individual factors
B	Research knowledge and skills	
C	Personal Attributes and motivation	
D	Roles	
E	Research culture (Perceptions) • Definition • Values • Emotions	
F	Institutional factors • Mission and objectives • Structures and systems • Resources, technologies and infrastructure	} F & G Organisational factors
G	Leadership factors • Mentorship • Collegiality • Managerial leadership	
H	External factors	

The questionnaire consisted of nine sections of forced choice, totalling 115 questions and six open-ended questions (cf. Appendix C1). Interestingly, the length of a questionnaire does not influence the quality of the responses given (Deutskens, *et al.* 2004:33).

The layout and structure of the questionnaire was selected to align with the factors identified in the literature that have been utilised in measurement of culture (Dobni 2008:545) and outlined in the theoretical framework of the study (cf. Figure 2.8).

3.4.3 Nominal group discussions

The second method of data collection in the study was NGDs, which is a recognised data collection method. Harvey and Holmes (2012:188) confirm that consensus methods used in qualitative research are able to gather greater amounts of information than in common statistical methods - particularly for research in medical and health services research. Other benefits are the anonymity of the private ranking, discussions in rounds allow participants to rethink their position; and controlled feedback (McNally 2013:643). Multiple groups' results can also be integrated and the method proves helpful in minimising power differentials (Varga-Atkins 2012:online).

Limitations to the technique are that only one topic can realistically be covered fully in a session; it can be considered time-consuming for participants (some discussions exceeding two hours); the facilitator requires to have had training or experience; the round robin sequence may staunch outbursts of inspiration (Abudullah & Islam 2011:87-88).

This method is also often used in education research (Abdullah & Islam 2011:81; Jones 2004:online; McNally 2013:644) and has been used in health HE (Potter, Gordon, Hamer 2004:129). The technique was developed to overcome the disadvantages of unstructured face-to-face interviews (Spies, Seale & Botma 2015:1496); it is more cost- and time effective and allows ideas to flow from person to person without one person dominating the discussion.

The process consists of a discussion session ranging from 30-120 minutes. Potter, *et al.* (2004:126) suggests the ideal of five to nine participants. Groups of four to six give in-depth and intense experiences with more time to provide a detailed description, whereas groups of six participants and larger allow for sharing of perceptions. McMillan, *et al.* (2014:98) ran series of NGDs ranging from two to fourteen participants.

Two related questions on the specific topic represented the focus of the conversation under the assistance of an experienced facilitator from outside the FoHS (Patton 2002:386) and followed a set agenda (cf. Appendix D3). This method was selected as it provides rich data, allows for interactive group dynamics and allows multiple views to be aired in one setting. This method is suitable for discussing sensitive topics, where answers may not be forthcoming in a one-on-one setting (Shaw & Holland 2014:25). Participants, upon hearing others, may also be encouraged to mention pertinent aspects that would not have been discussed in a one-on-one interview setting.

Standardised NGDs took place following the recommended guidelines (Abdullah & Islam 2011:83-84; Burrows, Findlay, Killen, Dempsey, Hunter, Chiarelli & Snodgrass 2011:3):

- Step 1: The discussion group was facilitated by an expert who welcomed all the participants. Informed consent was obtained before continuing further;
- Step 2: The question was posed to the group; the facilitator gave brief information about the topic or question and clarification if it was required;
- Step 3: The participants spent a few minutes writing down their views on the topic or question and were encouraged to write down as many ideas as possible. This was done

in silence and a time limit of five minutes was given for the writing down of views and ideas;

- Step 4: Each participant in turn contributed an idea to the facilitator who recorded it on the flipchart. Similar suggestions were grouped together if appropriate. Participants were also allowed skip a turn and then come back at a later round, which provided a feeling of 'safety';
- Step 5: The group discussed each of the contributions for clarification; it provided opportunity for elaboration, defending or disputing of the ideas and also the addition of ideas. Ideas were not allowed be removed but were condensed or joined together. The discussion proceeded with one item at a time and one person speaking at a time;
- Step 6: The participants ranked the ideas (1-5, 1 receiving 5 points and 5 receiving 1 point), in their own personal priority. This was written on index cards and handed in to the facilitator. It was tabulated and presented as a final ranking list, in order of the most points voted for by participants; and
- Step 7: Discussion on the selected ideas. This step was to consolidate the findings.

The participants were then asked to provide recommendations for the top five ranked statements, until all such suggestions or comments were exhausted for each of the five statements. The facilitator then thanked the participants for their time and contributions. Refreshments were provided throughout the discussion. The researcher was not present - in order to limit the likelihood of participants feeling their responses would be recognised, and thereby would not have spoken freely.

The participants of these groups were selected by the researcher in groups according to which School within the Faculty they were employed by. The researcher did contact all staff on the contact list via a Doodle invitation, to ascertain the most suitable date for the participants. Each Doodle invitation for each School offered three to four dates and included an information letter and the contact details of the researcher. The researcher then sent those who had completed the Doodle invitation a confirmation of the date, time and venue. The participants were also sent an electronic reminder to attend, one to three days before the group was scheduled.

The NGDs took place at four venues, dependent on the availability of the venues on the days that matched the suitability for participants and the facilitator. The other venues were the Medical Simulation Unit (MSU), in the debriefing room; Kine 8 alongside of the MSU; the teaching area of the Clinical Skills Unit (CSU); and the small committee room on the

ground floor of Idalia Loots building. Venues were also selected for convenience; for example, SoN has their own building a significant distance form SoM and SAHP, and thus the small committee room was selected for the participants of SoN. This was such that no participant required driving across campus to participate.

These venues were quiet and allowed for audio recording (Potter, *et al.* 2004:127). Video recording did not take place, to protect the identity of the participants, as far as possible. An audio recorder was used for all groups, and the back up in the debriefing room was the automatic feed; in other venues a cell phone application was used to record.

The chairs were arranged around a table (Abudullah & Islam 2011:83). The facilitator used a clockwise convention, whereby the participant closest to her, on her left side, was participant number one. As participants arrived, they seated themselves in no particular order; this prevented the facilitator from addressing a participant by name, merely by a number in a clockwise fashion, starting closest to the facilitator. The researcher was also blind as to which participant sat where and cannot put a name to a number in the transcription process.

For the purpose of the first question of the NGD, research culture first had to be defined. Participants were given a printed definition, with which to use a reference (cf. Appendix D4). The question asked in the nominal group was:

- *Which factors do you perceive to influence the research culture in the FoHS?*

This broad, open-ended question prevented the researcher from limiting the responses from what the researcher expected to hear, from what the researcher did not even think to expect to hear. Once the factors in the above questions had been ranked, the ranked items formed the focus of the final point of interest:

- *Please provide recommendations to enhance the current research culture*

Participants were then given the opportunity to bring up any aspect of the research culture they feel was not sufficiently asked or discussed with the structured questioning.

As the ranked statements are also simultaneously part of the data analysis, the rankings represent the primary aspects of importance of the participants. However, all the statements underwent coding and content analysis. Parts of the NGDs entailed lengthy

discussion (for clarification or additional comments) and this was transcribed verbatim. The transcription for each group was sent to the specific group's participants to ensure that the essence of their meaning was recorded in the discussion.

Participants were given one month to edit or add to the transcriptions; 22 participants validated the transcription by indicating their satisfaction with the transcriptions. The exception was the SAHP group 1 as, through human error, the recorder was inadvertently switched off; simultaneously the automatic feed at the debriefing room recorded static due to electric cables lying too close the recording cables. For this group, the facilitator wrote her recollections of the group and this was disseminated to participants; three participants (as included in the 22 reported above) responded upon the request for validation.

3.4.3.1 *Facilitator selection*

The selection of the facilitator by the researcher was deliberated from numerous considerations. This is discussed under the following three sub-sections: personal criteria, insider/outsider perspectives and bracketing.

Personal criteria

The researcher had criteria that she wished to be fulfilled by the person asked and tasked with the facilitation of the NGDs. These included the willingness and approachability of the person, as the researcher had to feel comfortable to make suggestions and communicate well with the facilitator. The availability of the facilitator for logistical reasons and also to give as much opportunity in creating an inclusive study, by offering numerous dates for the accommodation of as many participants as possible. Experience within the HE and health sectors were also important to understand the context of the study and be familiar with terminology used in the health sector.

The facilitator selected was a practicing radiographer who provides training to HE students and assists clinically in theatre weekly; she is a researcher with experience in qualitative data collection and analysis. She is further qualified with a Master's degree in HPE from the UFS. She has also published articles with qualitative methodology. She has undertaken Assessor and Moderator Training in HPE at the FoHS, UFS, and currently serves as moderator for the BTech (Diagnostic) qualification at Central University of Technology (CUT) and moderator for the BTech qualification (Radiography module) at the University of

Johannesburg (UJ). She has attended seminars in Undergraduate Medical Training, and Principles of Curriculum Reform in Medical Education. She has also served as research assistant and assisted with academic writing for Master's degree students in the Division: Health Sciences Education (DHSE), FoHS, UFS.

Insider/outsider perspective

Life experience of the facilitator was viewed positively, as she was a staff member within the FoHS three years ago. Insider research is conducted within a social group or organisation with which the researcher is also a member and shares characteristics (Greene 2014:1-2). The facilitator conducted the NGDs on behalf of the researcher, in order to minimise fear of victimisation and increase honest participation. Thus, the facilitator fulfills the role of data collection and can be viewed, in part, as the researcher's proxy.

This partial insider perspective takes into account the aspect of positionality, whereby the insider's identity is shared or aligned with the participants (Chavez 2008:475). These shared experiences (Kerstetter 2012:100) may relate to age, gender, sexuality, ethnicity, race, status and professional membership. As a former employee of the organisation under investigation, the facilitator has prior knowledge of the University as a whole and is able to project a more truthful understanding of the culture under study (Merriam, Johnson-Bailey, Lee, Kee, Ntseane & Muhamad 2001:411). This parallel of being both an insider as well as an outsider is recommended (Hellawell 2006:487).

However, as there are sub-cultures within different Schools and Departments, which the facilitator could not fully understand, this awareness of being in some instances a partial insider, can also be viewed in both a positive and negative light (Dwyer & Buckle 2009:55). Being considered an insider also allowed for easier access, as participants felt that they are understood. These aspects of being an insider add depth to the data collection process (Dwyer & Buckle 2009:56).

As the facilitator has for some years been involved in more than one HE institution, this extends greater objectivity to the process. Also, under consideration is the bias that the facilitator may have towards her former employee. This can never be fully excluded, although may be limited to the specific department in which she was once employed; having limited knowledge of the other Departments and Schools curbed this assumed knowledge. Similarly, as the technique included clarification as part of the process, this aided the

credibility of the data collected; this is further strengthened by the triangulation of data by way of questionnaires, in which no contact between the facilitator and the participants occurred.

Before the commencement of the NGD, the researcher and facilitator conversed reflectively about the ways in which they were similar or different to the participants, to recognise that their very social identities may influence the discussions. Social relationships are fluid and ambiguities and ambivalence are present in all research; thus, it should be acknowledged (Sherif 2001:446).

The facilitator, having been involved in HE, was familiar with the identities of the some of the participants. On completion of the NGDs, the total number of participants known to the facilitator was four; it is unknown if there were more than four participants who recognised the facilitator as this was never asked, nor commented on by the participants to either the research or facilitator. It is unknown how this insider/outsider perspective may have altered the relationship of facilitator to participant (and vice versa); although, due to the limitations of the criteria to be a facilitator for this study, this could not have been avoided.

The essence of the insider/outsider debate is continuous and this dichotomy is challenged by the concept of a continuum (Hellawell 2006:488; Mercer 2007:3-4) and the terminology ascribed to someone is dependent on the way the end points are conceptualised. This continuum is in flux and varied with the participants in each of the NGDs. Hellawell (2006:490) writes of not one continuum, but of multiple series of parallel ones. For each group has a different mix of individuals; the facilitator may be more an insider in one group than in another; as well as in different aspects brought up by the participants.

There are advantages and disadvantages to being both an insider and an outsider; the familiarity of an insider has a better understanding of the social setting but are more likely to assume their perceptions are held by others (Mercer 2007:6; Sherif 2001:438). The participants' familiarity with the facilitator varied from the School in which they were employed, and the newer staff was unknown to the facilitator. Effectively neither insider nor outsider, the facilitator was positioned in the "*space between*" (Dwyer & Buckle 2009:60). The value of both perspectives is only valid if the researcher and facilitator are open and authentic in their goal to represent the experiences of the participants accurately.

Bracketing

Bracketing refers to the methods used in qualitative research to lessen the potentially harmful effects of presumptions that flaw the research process (Tufford & Newman 2010:80). Fathered by philosopher Husserl, bracketing is based on phenomenological reduction: a researcher sets aside, or holds in abeyance their biases, theories, presumptions and previous experiences, to truthfully describe the phenomenon (Gearing 2004:1430).

This extends to the shelving of the researcher's hunches; bracketing should allow for other researchers to come to the same understandings when studying the data (Fischer 2009:583-584). Among these assumptions were the expectation that the participants would have a similar experience as herself and thus the statements would be similar between the groups. Also, the general viewpoint of the importance of research held by the facilitator was expected of academic staff. There were biases in the preconceived ideas or generalisations of who would be the most talkative, the most clinical or the most emotive; which sub-populations would be most likely to respond to participate and in instances where persons were known to the facilitator, the expectation of who in particular would (or would not) be participants. The assumptions of the facilitator were shelved.

More overarching beliefs and experiences of the 'being' of a health professional and the care prescribed to persons could not be fully put aside. This concept is further elaborated upon in section 3.7.8, from the researcher's perspective.

3.4.3.2 *Rules of the Nominal Group Discussions*

To obtain desired results from a NGD, the following rules are advised by Abdullah and Islam (2001:86):

- *No criticism of other's ideas:* no one should laugh or ridicule the ideas given; ideas that may seem outlandish can spur on better ideas;
- *No evaluation of other's ideas:* the votes will ultimately determine if the idea was inferior or poor. These two rules were clearly mentioned by the facilitator to each group, before brainstorming began;
- *Generate as many ideas as possible:* the larger the number of possibilities put forward, the greater likelihood of highlighting all relevant aspects and finding effective solutions;

- *Modifying and combining of ideas:* the combining to two or more statements into a new idea is called 'hitchhiking'. This was done during and after the idea generation sessions. More than two statements could have been collated in this manner; and
- *Anonymity of input:* the votes are collated into one pile and are thus anonymously added to the totaling.

Statements that were similar to previous were clarified as to how they were different or if they could stand alone sometimes occurred spontaneously from the participants during the recording of ideas and at other times at the end of the ideas generation. These collapsing or hitchhiking of ideas were part of the organic group dynamic and was not predictable in nature.

Ideas that were coalesced obtained group consensus; in some cases, up to four ideas were grouped as one statement at the end of the session. Although all attempts were made to have one person speak at time, to show respect, the excitement generated by the discussion did not always allow this to happen. Interjections and murmurs of agreement in between 'turns' did occur.

Once each of the NGDs had been completed, the final ranked factors for each school were compared and collated. Ranking was achieved through a weighting method (Van Breda cf. 3.6.2; cf. Table 5.18) and frequency ranking method (McMillan, *et al.* cf. 3.6.2; cf. Table 5.19). The ranked themes for the NGDs were also compared to the frequency of themes appearing in the open-ended questions thematic analysis. Each theme was viewed independently and holistically in relation to the data set (cf. 5.2-5.4). Higher ranked themes, which were thus deemed the most influential by participants, were larger with bolder borders within the preliminary framework schematic (cf. Figure 6.10). The analyses of both the questionnaire and the NGDs were scrutinised and compared to the theoretical framework. This served as the basis for the compilation of the preliminary framework to be presented at the VMs.

3.4.4 Validation meetings

A VM as defined in the perspective of this study is a method of formal review, the aim of which is to look objectively at the proposed framework if appropriate; recommend changes to enhance the preliminary framework; and holistically encompass viewpoints from a different set of stakeholders, namely staff in a managerial position within the FoHS. This is

also at the same time an academic validation, as the staff are academics. An academic validation is considered to be the "*highest authority for what counts as legitimate knowledge*" (McNiff 2013:138).

Requests were submitted to the EC of the SoM and the SAHP, the formal Management meeting of the SoN, and the Dean of the FoHS. These meetings were held at their usual times and venues as arranged by the chairperson. The prepared report presented at each meeting followed the recommended structure provided by McNiff (2013:149). This included a prepared text stating who the researcher was; outlining the aims of the study; indicating the methods implemented and how the analysis of the data collated informed the preliminary framework. A set description of the two diagrams was provided, by the aforementioned prepared text, to ensure that each meeting obtained the same information and to uphold consistency (cf. Appendices E1 & E2). In addition, for each meeting, an information sheet and a copy of the theoretical and preliminary framework were provided to each member. The recommended procedure for a VM is given by McNiff (2013:138):

- Step 1: Before the VM, distribute a report of the research, and say clearly what you are claiming to know and how this represents a development. In this study, the proposed preliminary framework was in an attempt to reach a conclusion to a research question. This is validity at the methodological level (McNiff 2013:140).

These meetings were audio-recorded and transcribed for triangulation and enrichment of the data to assist in the development of the final framework. This is also a method to obtain reporting from as many stakeholders as possible, advised by Neta, *et al.* (2015:50).

- Step 2: Members were asked if the report accurately describe what is happening, in their own opinion. members were asked to reflect on their lived experience of research culture, from a managerial perspective. This is validation via the social level as well as shared validity by one's peers (McNiff 2013:140;167). This assists in fulfilling the criteria of this form of assessment given by Habermas (1987) that the preliminary framework is comprehensible in that it makes sense to a reader or member.
- Step 3: Furthermore, members were asked if the evidence presented supports the claims being made by the researcher, in this instance the presentation of the preliminary framework. This done to , to determine if this preliminary framework is a true and fair representation of the factors that influence and can enhance research culture, from the management level perspective of research policies and the

implementation of factors represented within the preliminary framework. The preliminary framework is put forward as a truthful and authentic representation, by way of clear audit trail, in the data collection and analysis process. This meets the criteria of Habermad (1987) whereby the researcher produces evidence to show, how they have done what they say they have done, over time and through interaction with others. This is considered to be communication validity (McNiff 2013:167).

- Step 4: Look carefully at the claim and invite agreement with it. During the VM, agreement and disagreements for the preliminary framework were offered; this allowed for the preliminary framework to be amended to create the final framework. This meets the criteria described by Winter (1989:43-65) whereby the preliminary framework allows for it being a collaborative resource in which people act and learn as participants and it demonstrated as being a plural structure which accommodates a multiplicity of viewpoints.
- Step 5: Ask for suggestions about how the research might be modified and strengthened. In this study the last two steps were combined. New data in the form of strategies and recommendations, which were not mentioned in the prior methods by staff, were included in the compilation of the final framework.

3.4.5 Pilot study and exploratory interview

Pilot studies are undertaken to test the adequacy of research instruments and assess the feasibility of the study. It may also identify problems which might occur when using the proposed methods and evaluating the proposed data analysis techniques to uncover potential difficulties (Chenail 2011:257; Van Teijlingen & Hundley 2001:2).

A formal letter of request was sent in August 2016 to the Dean: FNAS; to ask permission to have staff in the Faculty participate in the pilot (cf. Appendix B3). This request was presented and approved at the Faculty Management meeting held ten weeks later.

A pilot study was undertaken replicating both methods of the planned data collection for this study. The pilot study was conducted before the data collection for the main study commenced, in order that changes could be made to data collection strategies of the two methods.

Through the liaison of the promoter of the study and the Teaching and Learning Manager (TLM) of the FNAS, two departments were identified: that of Chemistry and Agricultural

Economics. These departments were selected as staff are mostly research active and it was thus expected to have a vibrant research culture. However, staff members from these departments were not included in the main study as they were not part of the target population and therefore do not meet the inclusion criteria.

Through cross-checking positions posted online and the title registered on their email addresses on the staff address checker, 60 staff members were identified as academic posts within these two departments. These academic staff members were each sent an individual email with an information sheet and request to participate with a unique password electronic link to complete the questionnaire (cf. Appendix C3-C4).

The electronic link reminders were sent for three consecutive weeks, obtaining a response rate of 18%. Thereafter, one password links (for multiple use) were disseminated to the HoDs. This was to determine if the request came from a line manager, if the response rate would improve. These two methods have been shown to be effective to boost response rate from 20-23% to 21-47% in student module evaluation surveys (Nulty 2008:304). After a period of two weeks, it was seen that the HoDs had either not disseminated the multi-user password link or no new staff had chosen to participate.

It was felt that after three reminders and two methods of distribution implemented, that no new participants were likely to fill in the questionnaire. This was evidenced by two emails by the pilot target group to the researcher to be removed from the target list. The low response rate was attributed to two main reasons: the time of year was just after the academic year had commenced after disruptions from *#FeesMustFall*; and that the request was for a questionnaire set for a different faculty whose research usually does not take the form of questionnaires, but is more experimental in design.

Following the completion of the questionnaire, an individual email was sent out to ask for criticism and suggestions. As the response rate was very low, it was the opinion of the researcher that a personally addressed email might elicit a greater likelihood of response of the feedback. The email asked for feedback to the Research Culture Questionnaire. These staff members were asked to give their opinion on aspects relating to the following:

- The clarity of the questions;
- The amount of time needed to complete the questionnaire;
- Identify any bias that may be created by the questions; and

- To provide any other suggestions and/or recommendations.

Not all of the questionnaire participants replied to the feedback email. Those that did reply felt that no questions were unclear; that there was no bias created by the questions and that the questionnaire would take approximately 30 minutes without interruptions. The questionnaire was left unchanged, as the questionnaire had been language edited (and amended) by a registered language practitioner, prior to the pilot study.

Some staff members from the selected departments were also invited to attend a NGD, as planned for the main study. The appropriate date was communicated by the researcher to the TLM of the FNAS, who in turn selected suitable participants (n=9). Each of the respondents of the questionnaire who were not on the initial list were also invited separately (n=7).

A search through the two selected departments found six junior lecturer and lecturer level appointments, three were from the QwaQwa campus and thus excluded. The remaining three were also invited to the NGD. Due to non-response, seven additional departments were approached to attend the NGD pilot.

After a period of two weeks, additionally 35 research assistants and laboratory assistants were sent an invitation to the NGD. The total invites by the researcher to seven departments within the FNAS, numbered 54. The nominal group was held on the 7th of December 2016, and 11 staff members attended. Each member was provided with an information sheet and the facilitator an agenda (cf. Appendix D1-D2).

The positions varied from research assistants, newly appointed junior lecturers to longstanding senior lecturers. Participants were from Architecture; Chemistry; Computer Science; Geography; Microbial, Biochemical and Food Biotechnology; Agricultural Economics and Physics. This date was also dependent on the facilitator's availability. The agenda and questions for the NGD were provided to the facilitator for analysis and comments one month before the pilot discussion commenced.

All participants at the pilot discussion were given consent leaflets and assured that the data from the NGD was not for publication in this thesis. They were aware that the data would be disseminated back the Dean of the FNAS and were positive that the feedback should occur (cf. Appendix D9). The NGD questions were piloted to ensure the validity of the questions and the completeness of the questions. The role of the researcher at this time

was to determine the participants' satisfaction with the facilitation. Participants were asked for suggestions for changes to the NGD in order for them to be more effective. These recommendations were: a given definition of research culture at the beginning of the discussion and the removal of the word "*strategy*" from the recommendations questions. These two changes were implemented in subsequent groups.

3.5 SAMPLING

The sections below outline the population for the study, the sample size for the questionnaire and NGDs and how the samples were selected.

3.5.1 Nomenclature

Due to the mixed-method methodology research, differentiated nomenclature is utilised for the samples in the methods. A study sample is described for the questionnaire, as it is a quantitative method; a unit of analysis is outlined for the qualitative methods of NGDs and VMs (cf. 3.5.2.2). Not every committee member present at the VMs, was willing to participate, and therefore chose to be present at the meeting, but not to engage in the discussion. For this reason, a member is differentiated from a participant in this method.

3.5.2 Target study population

A target population comprises a group of individuals who possess and share specified characteristics (Plowright 2011:36). The population comprised the FoHS academic staff, by any form of appointment (permanent, joint) and at any working schedule (full-time, 4/8, 5/8, 6/8) from all three Schools: SAHP, SoM and the SoN and the academic staff of the AS. With the consent of the Vice-Rector Academic and Dean of the FoHS, the full list of staff names was provided by the faculty manager to the researcher. At the time of receiving the list (October 2016), the total numbered academic employees for the second academic semester were 323 staff.

A study completed in 2015 (Van Wyk 2016:100), numbered the academic staff at the FoHS at 288. This shows some alignment with a study done by Van der Merwe (2011:97) where the total number in the School of Medicine was 208 (sessional, unit lecturers excluded). As the list contained staff who were listed as unit lecturers, each department with such annotated staff were contacted to confirm their position as academic within the department.

After deletions of this nature, 40 names were removed. Affiliated and unit lecturers are required to fulfil only teaching and learning activities, and for this reason were excluded from this study.

Each email address was then verified individually using the staff outlook address checker and cross checked with the list advertised for each department on the UFS website. It was however, inaccurate, as the email address may be found on the system, but the employee is no longer at the institution. Through contacting departments and attempts at sending emails to the population, it was found that some participants had retired or resigned and that new staff members were hired for the 2017 academic year. Through this time period, is was noted through automatic email responses and communications with the heads of various departments that some staff were with long leave. This included maternity leave, recuperation leave from serious illness and also sabbatical leave. These staff were contacted and considered to be active staff and viewed as contactable.

Table 3.4: Target population

GROUP	SCHOOL OF NURSING	SCHOOL OF MEDICINE	SCHOOL FOR ALLIED HEALTH PROFESSIONS	ACADEMIC SUPPORT	TOTAL
Total academic appointments active during data collection	n=22	n=222	n=43	n=17	n=306
Number of undeliverable emails	n=0	n=60	n=2	n=0	n=62
Contactable staff	**n=22**	**n=162**	**n=41**	**n=17**	**n=242**
Number of departments	1 department	31 departments Range: 1-24	5 departments Range: 5-12	4 divisions Range: 2-8	37 departments and 4 divisions

Furthermore, 62 email addresses were found to be undeliverable, due to restrictions imposed by the administrator of the email or the email address no longer being in use. These staff were viewed as uncontactable, as any communications would not arrive in their inbox. The Outlook messenger provided the following delivery note in response to correspondence sent: *Your message wasn't delivered due to an e-mail rule restriction created by the recipient's organisation e-mail administrator (sic).*

Undeliverable emails were removed, in accordance with Deutskens, *et al.* (2004:27). This resulted in the total academic population being 306 and the total contactable population being 242 academic staff members. This represents the full academic complement and the target population for the duration of this study.

3.5.2.1 *Study sample*

The study aimed to include as many participants as possible; ideally, comprehensive sampling of the whole population. The data collection period spanned from December 2016 to March 2017. The final number who participated by completing a questionnaire were nine from SoN; 66 from SoM; 26 from SAHP; and 9 from Academic Support. The total number of responses numbered 111 out of a possible 242 (with a response rate of 45.86%); this meets with the requirements previously indicated of 69 participants (cf. Table 3.2).

3.5.2.2 *Unit of analysis*

Nominal groups may vary in size from 6-10 participants (Patton 2002:385) or be as few as three participants. NGDs took place for each sub-category (cf. 3.4.2.2), namely the SoN, SoM, SAHP and Academic Support. Academic-appointed staff in these sub-categories were electronically invited to participate, excluding the Heads of School and the Dean of the Faculty. There was not a prerequisite of completion of the questionnaire to be invited to attend a NGD. The possible participants were totalled as: SoN n=21; SoM n=162; SAHP unchanged at 41; as the Head of School is described as within Academic Support. Thus, Academic Support was reduced to 15.

3.5.2.3 *Description of the unit of analysis*

All staff members who agreed to participate were included through email confirmation. This was done according to two sets of dates, separated by the Easter break.

Table 3.5: Unit of analysis: Nominal group discussions

SCHOOL OF NURSING	SCHOOL OF MEDICINE	SCHOOL FOR ALLIED HEALTH PROFESSIONS	ACADEMIC SUPPORT	POPULATION
1 group	4 groups	3 groups	2 groups	10 groups
Group 1: n=7	Group 1: n=4 Group 2: n=5 Group 3: n=8 Group 4: n=5	Group 1: n=8 Group 2: n=5 Group 3: n=4	Group 1: n=4 Group 2: n=5	Average of 6 participants per group
Total: n=7	**Total: n=22**	**Total: n=17**	**Total: n=9**	**Total: n= 55**

Exhaustion of all willing participants took place. Nearly a quarter of the population participated (22.7%) in the NGDs.

3.5.3 Sample selection: Validation meetings

Primarily in order to obtain input and feedback from staff holding management positions and also to triangulate the data, VMs were held with relevant stakeholders, outlined below. Non-probability purposive sampling was done. The dates for these meetings were: SAHP on 14 September 2017; SoM on 26 September 2017; SoN on 18 September 2017 and AS on 20 September 2017.

3.5.3.1 *Target study population*

Meetings were held with the members of EC or School Management (SM) Committee of each School, the Dean of the Faculty; these members form the target population of this method. The total number of members per committee were: SAHP six members; SoM 10 members; SoN eight members. For each meeting, a formal point on the agenda was requested in advance.

Given that AS is comprised of different divisions and departments, the Dean of the Faculty was selected as the contact managerial person, due to many of the staff in these positions falling under the Office of the Dean. The Dean was also approached for a meeting due to his position as the head of the managerial staff of the Faculty.

3.5.3.2 *Unit of analysis*

The unit of analysis comprises all the members present at the VMs with the EC and Formal Management, as well as the Dean of the Faculty. There were six members present for the SAHP EC, eight for the SoM EC, six at the SoN SM and the Dean. The total members for this method were 21 managerial level staff of the FoHS.

3.6 DATA ANALYSIS

The completion of the literature review culminated in the conceptual framework (cf. Figure 2.8). This met the first objective, namely to conceptualise and contextualise the factors that influence research culture in a theoretical framework. Thereafter, the data collection from the specific samples and unit of analyses could take place. The methods for data analysis utilised after the three data collection methods that were completed are outlined separately.

3.6.1 Questionnaire results analysis

The Evasys system provided numeric data on all closed-ended questions. These, together with manually completed questionnaires, was captured into an Excel spreadsheet for each target population. An independent, paid assistant checked this. From this data, frequencies and means were calculated, using the SPSS v24 program.

Coding, also known as constant comparison method (Leech & Onwuegbuzie 2007:565), is the way the researcher labels chunks or sets of data with a descriptive title and compares similar chunks of data to be labelled under the same descriptor. This study made use of iterative inductive coding, on the basis of a word or words representative of the whole of the statement. Through this comparative method, themes emerge from the data. Data can also then more easily be contrasted by their groupings.

First cycle coding utilised primarily in vivo and descriptive coding; this is a basic method of open coding (Flick 2014:406). The use of "in vivo" indicates that the verbatim statement is taken as the code. In vivo coding is the practice of assigning a code to a section of data, with the aim of ensuring that concepts stay as close as possible to research participants' own words or use their own terms because they capture a key element of what is being described (King 2012:473). This was an immersion phase, to familiarise the researcher with the data. Second cycle coding followed an axial method, whereby the categories' relations to one another were drawn (Saldana 2016:291) and these links are classified (Flick 2014:407).

Coding was undertaken on open-ended questions that required more than a list of items. This was done iteratively with the co-coder to analyse the comments made thematically, as indicated in the flow diagram provided in Figure 3.3 on the following page.

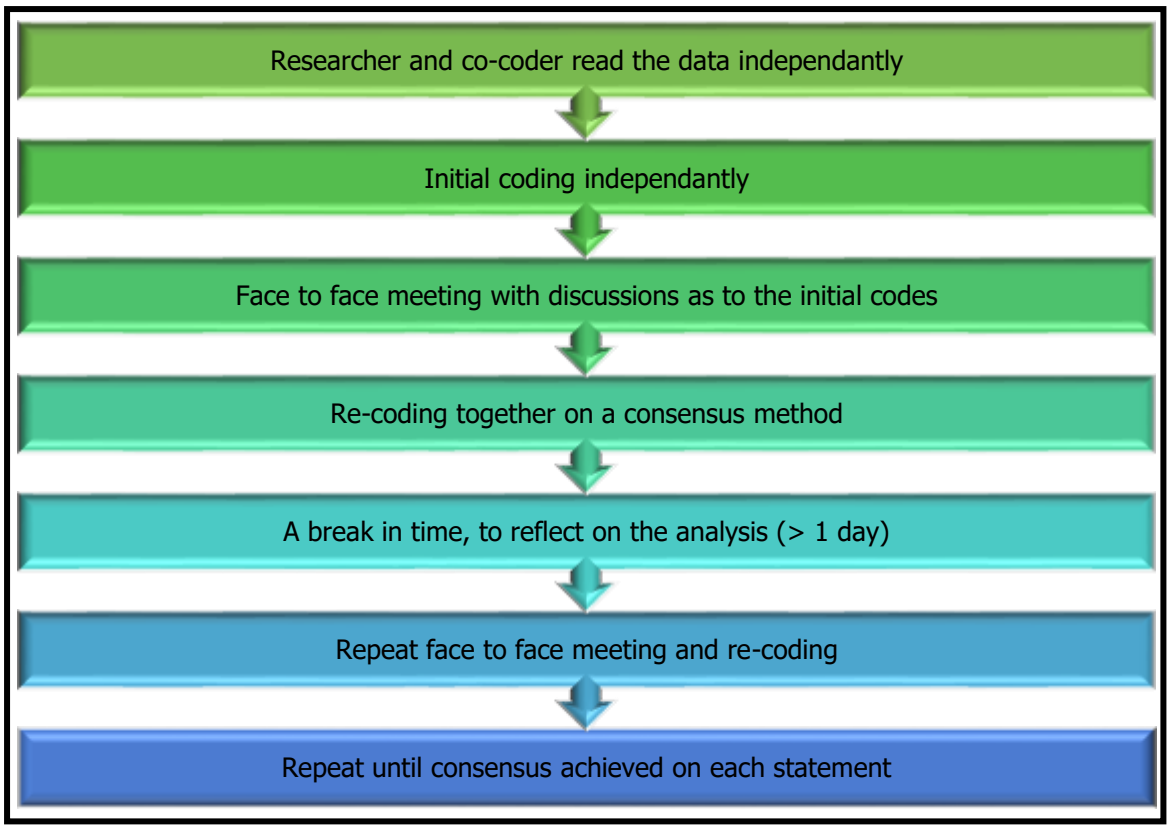

Figure 3.3: Coding method of the study

An example of the coding process is given in the table below, with an excerpt of the raw data. The statement provided by the participant in answer to their definition of a research culture is given:

> "*An environment that is conducive to research. It should motivate people in a positive manner to perform research. Resources e.g. Time, support, funding should be available or easily accessible. And as people's driving forces differ, there should be different motivational approaches*".

Table 3.6: Example of questionnaire coding

THEME	CATEGORY	CODE	STATEMENT PORTION
Individual	Attitude	Attitude	Attitude towards research, involvement in research.
Context	Environment	Conducive	An environment that is conducive to research. It should motivate people in a positive manner to perform research.
Support	Resources	Access to available Resources	Resources e.g. Time, support, funding should be available or easily accessible.
Individual	Motivation	Driving forces	And as people's driving forces differ, there should be different motivational approaches.

Some statements were re-coded three iterations and after reflection, some statements were re-coded as many as five times. Through this process, the explanations and answers put forward by the participants reflected their lived experience of the research culture. This met

with the second objective to identify the perceived, existing research culture by way of description by the participants (Questionnaire).

3.6.2 Nominal Group Discussions

The second method of the study is that of multiple NGDs; the researcher cares to be transparent in the steps taken to compile the analysis of the NGD findings. This section does not detail the findings, but merely how the analysis of the findings took place; this is also a method of an audit trail to assist with repeatability.

The process of coding in the NGDs varied slightly from that of the questionnaire. Due to the open-ended questions, responses were able to be broken into units that the researcher and co-coder felt were relevant. For the NGD, the recorded statement on the flipchart was taken as one entity and could not be dissembled, even if multiple factors were listed in one statement. Each code can be grouped into only one category, and likewise into one theme (Van Breda 2005:6).

Overarching themes were compiled from the categories. The researcher and the co-coder completed four rotations through the data over a period of three weeks, before the final thematic analysis took place. All statements were coded and allocated a category and theme. When there was uncertainty or ambiguity in the statement, the recordings were listened to, in order to determine the greater context of the statement. This was also the case where there was disagreement between the researcher and the co-coder, and in this manner consensus of the code was achieved.

Secondary data are the term used in this study for statements made that did not obtain a vote. The reason for using the secondary data are that by virtue of the statement being made, it is of value to the participant. Thus, all the statements are part of the participants' perceptions and are included. Columns in addition to the table above included the theme, the category within the theme and the code within the category. This was in accordance with Saldana (2016:14), seen in his adapted Figure on the following page (cf. Figure 3.4).

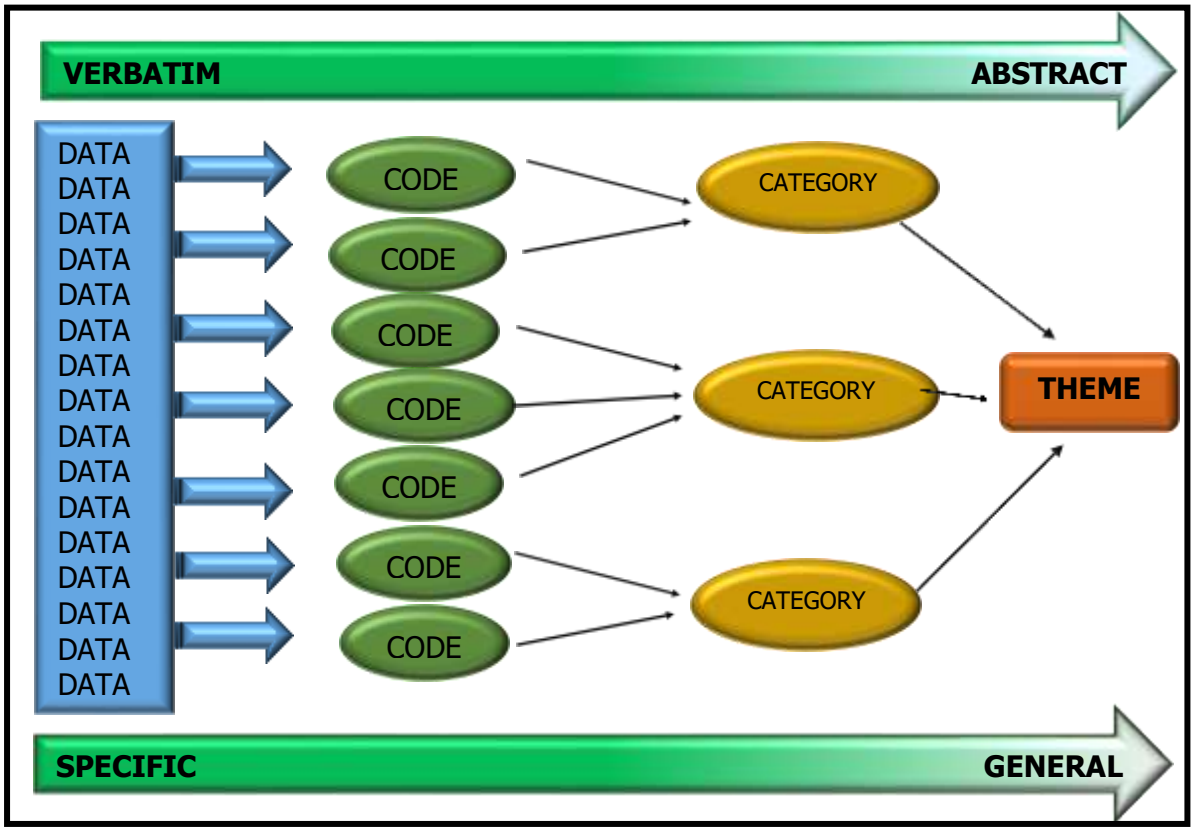

Figure 3.4: A streamlined codes-theory model for qualitative inquiry (Adapted from Saldana 2016:14)

An example of this process is provided, using raw data, given in the table on the following page.

Table 3.7: Example of coding in Nominal Group Discussions

STATEMENT	CODE	CATEGORY	THEME
Lack of funding from national sources (NRF)-positive regarding project-but no funding	Sourcing of funds	Funding	Support

As previously outlined (cf. 3.4.3) standardised data collection steps were followed. As the data needed to be analysed both holistically and according to groupings of Schools and Faculty wide, two methods were implemented. McMillan, *et al.* (2014:103-105) advocate that in order to analyse across groups, it is required to compare differences and similarities. This method of analysis was utilised in order to determine if inter-School similarities occurred. In this method all statements are used. The steps are the following (McMillan, *et al.* 2014:103-104):

i) Analysis of raw data to obtain codes from statements;
ii) Thematic analysis from code groupings;

iii) Analysis of coded data; and
iv) Qualitative analysis.

Each phase can now be clarified in detail. In order to combine all of the groups into one sample, it is recommended to utilise the method described by Van Breda (2005:1-14). The method by Van Breda describes the following steps:

i) Capture the raw data; ensure a column indicating the group number;
ii) Identify the top five rankings for each group;
iii) Perform content analysis:
    a. each statement may only fall into one theme;
    b. define each theme; and
    c. give each theme a number.
iv) Confirm the content analysis: discussion with facilitator and co-coder;
v) Calculate combined ranks of the different groups; and
vi) Report the data.

Steps i-iv can be summated in Table 3.8, thereafter step v will be elaborated upon in greater detail.

Table 3.8: Data analysis: Faculty-wide

GROUP	THEME	STATEMENT	SCORES	AVERAGE	TOP 5
Number of group	To be completed after quantitative analysis	Statements that obtained a score	Sum of votes for the statement	Total of scores/ number of participants in the group	Statements with equal scores ranked with the same number with a subscript letter, e.g. 3a, 3b

The calculation of combined ranks relates the relative importance of a theme for the whole sample. This is completed on a separate spreadsheet.

The Top 5 column represent the statements participants as a group felt the most strongly about. The number score indicates how often a theme is re-occurring. The average column allows for the highest and lowest scores for the different groups to be standardised, regardless of the size of the group.

Columns (cf. Table 3.9) labelled with a 1, are used to calculate values for the columns with a 2 in the heading. That is, columns 2, 4, 6 will determine 3, 5, 6. Columns 2, 4, 6 are now

ranking columns, with higher numbers reflecting more importance. Column 8 is the list of themes, for the whole group, listed first being the most important and in descending order to the lesser dominating themes. This final ranking column then represents the most holistic and multidimensional consolidation of all the statements generated and ranked by the participants (Van Breda 2005:10).

Table 3.9: Combined ranking calculation

1	2	3	4	5	6	7	8
THEME	**TOP 5 1**	**TOP 5 2**	**NUMBER 1**	**NUMBER 2**	**AVERAGE 1**	**AVERAGE 2**	**FINAL RANK**
Theme number	Frequency of theme being ranked in top 5 in ascending order	Ranked in order using data from column 2*	Number of statements in this theme	Ranked in order using data from column 4	Sum all Top 5 ranked statements in theme divided by the number of statements (Number 1 column)	Ranked in order using data from column 6	Summate columns 3, 5, 7. Record in descending order

**Compare Top 5 1 with Top 5 2. Should two themes in Top 5 1 have the same value, they will share ranking. E.g. ranked 3 and 4, then 3+4=7; 7/2=3.5, each theme will be ranked 3.5.*

The method of NGD extended for four months from February to May, inclusive of the invitation (Doodle, with a request, cf. Appendix D8) and reminders. The thematic analysis started once raw data were completed for all groups.

In acknowledgement of the holistic intention of the study, a note was made of the frequency of the themes in each group whether ranked or not; this is the crux of the method described by Van Breda (2005:1-14). In the study by McMillan, *et al.* (2014:104-105), whereby the various methods of thematic analysis were compared, it was found that secondary data prioritisation may alter the overall ranking of themes. This is important, as without the secondary data being analysed in this manner, there is a lack of all-inclusive analysis. This method accounts for the prioritisation of a theme, even when the ranking of the specific aspects of the theme may vary. Thus, this analysis reflects the predominance of a theme more truthfully. It can be seen that these two methods are similar, yet yield a different emphasis on the analysis of the data.

Through this method, which asked the participants to identify factors influencing their research culture, their perceptions were noted and analysed as described. This answered the third objective of the study: to determine the staff perceptions and views on the factors that influence research culture.

3.6.3 Framework analysis from Validation meetings

Validation is defined as (Dictionary 2017:online):

- The action of checking or proving the validity or accuracy of something.
- The action of making or declaring something legally or officially acceptable.
- Recognition or affirmation that a person or their feelings or opinions are valid or worthwhile.

Bygstad and Munkvold (2007:5;7-8), in an interpretative stance case study, identify three levels and functions of validation with stakeholders:

- At the lowest level of abstraction, such as data summaries, validation is used to check facts;
- At the level of thematic analysis, this method allows for stakeholders to construct the case narrative by commenting on the interpretations made by the researcher;
- And at the highest level of abstraction, whereby stakeholders engage in informed discourse, the method is an opportunity for learning from both sides and impact on the implications of the findings shared by the researcher.

This method allowed for the action of checking, or in qualitative research terms triangulating, and indirectly affirming opinions, by virtue of similar opinions being voiced as well as verification of the themes and generating suggestions for the framework through critical discourse (Bygstad & Munkvold 2007:5;7-8).

The VMs were transcribed verbatim and this allowed the researcher to carefully refer back to the points made by the meeting members. After the analysis of the data, there were additions made through recommendations and criticisms of the preliminary framework. New information was also garnered and it was found that some of the comments were natural extension of the existing themes. Through the feedback of the VMs, the framework was adapted to its final format. As many times the preliminary analysis allows for a preliminary

framework (Srivastava & Thompson 2009:76), which can be refined many times, this involves intuitive thinking and the relevance of important issues.

Srivastava and Thomson (2009:77) give key features of framework analysis:

- Driven by accounts of participants, in many cases the managers' comments corroborated the existing data that was the perceptions of the participants;
- Is open to change. Members gave recommendations of additional input into the framework;
- Is systematic and allows for the methodological treatment of all similar units of analysis. As each meeting followed a consistent approach, the data collected was comparable;
- Allows for full and comprehensive review of the material collected. Due to the availability of the recording, the transcriptions could be expansively analysed and compared among the four meetings;
- Allows for within and between case analyses - which was applied, as described in the point above; and
- The derivation of the framework is transparent. The descriptive prepared text allowed for the members to compare the theoretical framework, to the preliminary framework. Questions of clarification were permitted and an explanation of the findings of the prior methods was indicated by the visual display of the preliminary framework. Clear and stepwise amendments were made to the preliminary framework, elaborated upon in Chapter 7 (cf. 6.4; 7.2.1-7.2.4).

These guidelines were further carried out by way of inclusion of the analysed comments given in the meetings (cf. Table 3.10 on the next page). This included the feasibility of recommendations and additions of recommendations; review and mention of policies and documents not known to the researcher; new information pertaining to the historical context of the Faculty, formerly unknown to the researcher.

The analysis of the new data collected through this method, alongside the analysis of the prior methods informed the creation of the final framework, presented in this study. This met the last objective of this study. This was to develop and refine a framework, based on theoretical readings and the findings of the study, to enhance the existing research culture.

Table 3.10: Framework analysis in this study

KEY FEATURE	APPLICATION IN THIS STUDY
Participant (original) account	Transcribed NGDs and VMs Questionnaires electronically submitted with open-ended questions
Openness to change	Additions and amendments made through the process of analysis through iterative coding of the data to complete the preliminary framework and then further changes with additional data from VMs
Systematic	Coding structure with researcher and co-coder ensure that all data were treated the same
Retrieval	Use of Excel and data filtering function to save tables by theme or School, provides quick access to different aspects of the analysis
Analysis of between case and within case	Compared to literature through the review of theoretical framework Within case School comparisons made by way of thematic comparisons
Accessibility	Clear descriptions of data analysis and further information available on approved request

3.7 ENSURING THE QUALITY OF THE STUDY

In quantitative studies, reliability, validity and objectivity are used to ensure rigour, while Klopper (2008:69) indicates that an alternate construct for validity and reliability in qualitative research can be trustworthiness. Guba (1981:80) established four criteria for trustworthiness in qualitative research, namely credibility (truth value), transferability (applicability), dependability (consistency) and confirmability (neutrality).

Trustworthiness is best defined as the "*believability*" of a researcher's findings (Maykut & Moorhouse 1994:64). The term 'trustworthiness' refers to the way in which the researcher is able to convince the audience that the research is of high quality and worth paying attention to (Golafshani 2003:597). When applying a mixed-methods design, the accuracy of data should include various areas discussed under both the quantitative and qualitative approaches. Klette succinctly writes (2012:17):

> "*A key reason for combining quantitative and qualitative data sets is that it may test validity of the methods and strengthen confidence in the results*".

Table 3.11, on the following page, indicates the criteria to be measured for qualitative and quantitative research studies.

Table 3.11: Quality criteria in qualitative and quantitative research designs

QUALITATIVE DESIGN	CRITERIA	QUANTITATIVE DESIGN
Credibility	Truth value	Internal validity
Transferability	Applicability	External validity
Dependability	Consistency	Reliability
Confirmability	Neutrality	Objectivity

Each of the criteria and the methods imposed to achieve them in this study is discussed in turn below.

3.7.1 Truth value

The term credibility in qualitative research is correspondent to internal validity in quantitative research and as such means the degree to which methods that are used to generate the findings of a study can be trusted or ensure their quality (Delport & Fouché 2005:353).

3.7.1.1 *Credibility*

De Vos (2005:346) describes credibility as ability to demonstrate that the research was conducted in such a manner as to ensure that the topic was accurately identified and described. In this study, the topics were accurately identified and described in the literature review.

In this study, credibility was established by providing a detailed outline of how qualitative data were collected and analysed, the iterative nature of engaging with the data and, thirdly, the interpretation of the data in the final research report. This is also, in part, addressed by the careful planning in the "planed" dimension of the mixed-methods design, which is carried out in the inductive theoretical drive of the mixed-methods design (cf. Table 3.1).

Credibility can be maintained by being a careful listener, recording accurately during the data gathering session, seeking feedback and writing accurately, as stated by Walcott in Key (1997:online). Systematic recording of data were set forth for the participants' written statements on the flipcharts and audio recordings of the NGDs, and the VMs were transcribed verbatim.

Feedback is also called respondent validation by Illings (2013:619). The clarification process during the NGDs to determine the participants' intended meaning of the recorded statements is a form of member checking and integral to the method. Transcriptions were provided to participants to ensure the accuracy of the recorded discussions and was another method of member checking imposed.

Another method of gaining perspective is that of triangulation of the data (cf. 3.7.1); this occurred through the comparison of the themes across the NGDs and the questionnaire. Triangulation can be achieved through the use of more than one method to collect data; in this study, the questionnaire, NGDs and VMs were methods to describe the same phenomenon or research question. This method of triangulation is described as part of the "purpose" dimension of mixed-methods in the design of this study (cf. Table 3.1)

Credibility of the results can be established by connecting the findings and conclusions to both data and theory (Westphal 2000:1). This way of creating trustworthiness of the results was used by connecting the findings and conclusions made in the empirical investigation with the theory as found in the literature study.

3.7.2 Applicability

Applicability may also be likened to the generalisability of a study.

3.7.2.1 *Transferability*

Transferability refers to the extent to which findings can be transferred to other settings and the probability that the study findings have meaning to those settings (Polit & Beck 2006:511; Speziale & Carpenter 2007:49).

The study aimed to ensure transferability through thick description of the data and attempts at data saturation of the NGDs. As the sample was of reasonable size to be representative of the FoHS at the UFS, results should be transferable to the FoHS as an entity but could not be generalised to other settings.

3.7.2.2 *External validity*

An Evaluation Committee consisting of seven persons (four holding PhD qualifications, two full professors and a biostatistician) ensured the external validity of the questionnaire, in

terms of face validity. The analysis of the questionnaire included readability and was assessed by a language editor. Changes occurred through the adaption of the questionnaire and deletion of items due to redundancy.

Thereafter, the questionnaire was approved by the HSREC and submitted for piloting (cf. 3.4.5). The pretesting of this instrument through the pilot process was completed and no changes to the instrument were indicated by the pilot respondents.

The distribution of the electronic link to the questionnaire, provided to as many as possible academic staff members, protected the sampling technique from researcher bias and to the largest extent possible allowed for the generalisability to the population. This comprehensive method of sampling met the required sample size for a for 95% confidence level at 10% confidence intervals as previously mentioned (cf. Table 3.1).

It is up to the reader to determine the generalisability of the adapted validated questionnaire (Neta, *et al.* 2015:52), dependent on the context at hand, whether or not the items validated are applicable to be used.

3.7.3 Consistency

Dependability and reliability are measures of consistency.

3.7.3.1 *Dependability*

Dependability is a manner of indicating that the interpreted findings are consistent with the data obtained. Clear guidelines and thick descriptions assisted in this: detailing how recruitment took place, the questions that were asked of the participants and how the analysis was conducted (Illings 2013:620).

The pilot study provided an aspect of consistency of the questionnaire and NGDs in this study, as well as the clear descriptions of the outcomes. The dependability of the data collection methods was further enhanced by the use of structured questions and an agenda for the NGDs. An external, trained facilitator facilitated the NGDs, which limited the influence of the facilitator on the participants.

Dependability was applied with thick and rich descriptions of the findings, which were independently co-coded, iteratively.

3.7.3.2 *Reliability*

Reliability is defined as the extent to which the measurement instrument yields consistent and stable results, when repeated (Goodwin 1995:96) or a manner of auditing, that allows another researcher to see that proper procedures were followed (Illings 2013:620). Reliability is also increased through the use of different methods to obtain data (Srivastava & Thompson 2009:73). Three methods were utilised in this study; this is also in part to assist in the secondary dimension of mixed-methods, whereby multiple methods are utilised (Schoonenboom & Johnson 2017:109).

3.7.4 Neutrality

Confirmability refers to the neutrality of the analysis and interpretation of data whereas objectivity refers to the appropriate distance between a researcher and participants that lessens bias (Polit & Beck 2006:497).

The neutrality of the study was also assisted by the planned mixed-methods design of the study (cf. Table 3.1), whereby the researcher had set out a directive, that was not swayed by any unexpected happenings in the data collection or data analysis processes.

3.7.4.1 *Confirmability*

This objectivity or neutrality of data can only transpire if documentation of research findings leaves an audit trail. This trail should consist of a recording of activities over time that others may follow. In this way, the evidence and thought processes that lead to conclusions can be demonstrated (Speziale & Carpenter 2007:49).

Each of the processes was explained in detail. Original transcripts of the NGDs, VMs and the open-ended sections of the questionnaire are available upon an approved request.

3.7.4.2 *Objectivity*

The objective researcher is removed from the participants so that the researcher is not prejudiced by the participants and does not influence the study. It was for this reason that electronic links were sent to participants to complete the questionnaire.

3.7.5 Disclosure of the researcher

Over the past few decades, there has been a trend towards educationalists performing research within their faculties, on education (Mercer 2007:2). Due to this, the reflexivity of the researcher has drawn attention. In addition, Fischer (2009:584) stated:

> *"We are not able to view from nowhere, the aim is to be aware of where the somewhere is, that the researcher views from".*

Each individual as a summation of experiences, thoughts and emotions brings into play their own attitudes and bias into a topic. This precis of the researcher's background, experiences and interests was given in Chapter 1 (cf. 1.7). We can only perceive from perspective (Fischer 2009:584) and it is with this that an attempt is made to be open to these perspectives (cf. 1.7).

This discussion reflects on the researcher's attempts to recognise and minimise personal bias that could have had influence on the study. Reflexivity provides for self-awareness; this includes how one has participated in developing specific understandings (Fischer 2009:588).

This practice is also in line with the fundamentals of the theory of Bourdieu (1986; 1989; cf. 2.2.4), whereby the author or researcher explicitly positions themselves in relation to the objects in their study. This is such that the readers may then assess the knowledge claims in relation to the situated aspects (Maton 2003:53-54). The researcher also acknowledges that at no point is anyone fully consciously self-aware of every personal facet of their inherent biases, and therefore it is nigh impossible to render bias demolished.

To aid the reader in transparency Table 3.12 (on the following page) was drafted. This Table indicates the researcher's thought process about the study and the reference of the readings that are covered in the chapters of the thesis. This indicates that the study was carefully designed, with the intention of qualitative rigour put forward with this forethought. The Table serves to give an overview of the process of bracketing, as sections of this information may span many pages and the context of the content may be lost. It also serves to indicate the approach intended by the researcher.

Thus, the purpose of the reflection, throughout the study, is to keep an open mind. The awareness of one's perceptions provides insight into potential pitfalls in the implementation and analysis of the study; to scrutinise oneself deliberately (Hellawell 2006:483). Maton,

through a critique of Bourdieu's concept of epistemic reflexivity, presented three types of reflexivity: sociological, individualistic and narcissistic (Maton 2003:55). The researcher identifies with the sociological (in order to assist methodologically with the study) and the individualistic (an effort to overcome personal bias).

Table 3.12: Researcher's thought process (Adapted from: Gearing 2004:1435,1437-1438)

PHASE	ELEMENT	FOUNDATION/ SUB-SECTIONS	IN THIS STUDY	REFERENCE
Abstract formulation	Orientation standpoint	Epistemological and ontological viewpoints	Constructivist relativism	Researcher's personal research paradigm cf. 3.2
	Theoretical framework	Descriptive, interpretative, various qualitative approaches	Phenomenological, based on Heidegger's hermeneutical approach	The use of theory to interpret the context cf. 2.2
Research praxis	Foundational focus	Render explicit specific or underlying phenomenon	Researcher sets aside Some suppositions	Personal assumptions and opinions cf. 3.7.8
	Internal (researcher) supposition	Personal beliefs, values, assumptions and experiences	Values, judgements are identified and made transparent	Researcher's beliefs of tolerance, inclusivity and equity
	External (phenomenon) supposition	The larger environment	Unable to set aside	Researcher being a UFS FoHS employee
	Temporal structure	Duration of bracketing	During preparation; awareness in analysis phase	Open declaration of when bracketing occurred cf. 3.4.3.1; 3.7.8
	Parenthesis	Ideal, natural and designed	Designed	Choice of researcher Bracketing before data collection took place
Reintegration	Unbracketing and Investment	Reintegration of data into the larger research	Integrated after identification in an attempt to minimise impact	cf. 8.5

There exist distinct phases of bracketing and a formalised typology of bracketing, dependent of the research paradigm and methodology of the study. Reflexive bracketing is

suitable for research in the fields of ethics, transparency and cultural review (Gearing 2004:1444) and therefore undertaken in this study. External phenomena are not bracketed as it is impossible to remove the context, the culture, and the environment from the phenomena. However, the internal phenomenon, that of the researcher and in this study also that of the facilitator, are made known to the reader. This transparency of the personal values, experiences and suppositions, identified prior to the research process, reduces the impact of the influence of these on the phenomenon under investigation.

To expand on the elements of research praxis, in this study, the researcher admits to assumptions of a broad nature and in more specific terms. One such assumption was that of the negative perceptions of staff of the research-based promotion criteria, and that the emphasis of this is variable depending on the appointment structure. That to perform research is very much a matter of an internal locus of control, and not primarily of the working environment.

The assumption was also that joint-appointment staff would have less motivating factors to be positive about the research culture, not only due to mandates of patient care above research, but simply due to university staff being able to take more vacation days: leaving joint appointment staff to 'pick up the slack'. Likewise, more specifically, the researcher personally feels that the SoN promotes research vehemently, evidenced by a research laboratory built recently on the campus, which does not happen to that extent in the other two Schools within the FoHS. So too then do environmental aspects influence the perceptions held by the researcher. One often listens to the staff bemoaning the lack of funding, resources and infrastructure involved in research implementation.

Based on the preliminary literature review, the researcher is jaded in thinking that there was unlikely to be any harmony in the cultures of the Schools that consist of smaller departments. This provides a keyhole insight into the many assumptions that were present before the research study was undertaken.

3.8 ETHICAL CONSIDERATIONS

The intent of the study is in no way to impinge on the rights of the participants, but merely to increase the body of knowledge, such that future staff could be assisted with the information gathered. The research study did not cause harm to any participant. The participation was voluntary and each participant was treated equally. The risk analysis of

the study indicated a low risk, where the benefits of the study outweigh the negative aspects of the study.

The researcher upheld the ethical values of research at all times and respected the guidelines provided by the HSREC.

3.8.1 Approval

Approval to execute the research was obtained from the Vice-Rector (Academic) and the FM of the FoHS, UFS prior to submission to the HSREC. Approval was also obtained from the HSREC (109/2016) before commencement (cf. Appendix B1). Amendments to the study were approved, after implementing mitigating factors to the response rate of the questionnaire, by way of four vouchers as monetary incentives (cf. Appendix B2). Approval for the piloting of the methods in the FNAS was obtained at the Faculty Management meeting and with acknowledgement of the Dean of the FNAS (cf. Appendix B3).

3.8.2 Informed consent

Before the staff started the NGD, an information letter (cf. Appendix D5) and an informed consent letter (cf. Appendix D6) were provided to the staff that explain the purpose of the research.

3.8.3 Right to privacy and confidentiality

Participants in the study were guaranteed that all information would remain confidential. No respondent's name appeared on any document, except where they themselves have written it on a consent form. The researcher maintained privacy at all times. Any names recorded in the audio were deliberately removed in the transcriptions and replaced by initials only. Transcriptions are available upon an approved request, whereby each participant and the HSREC grant approval.

3.9 CONCLUSION

The chosen design of the study was selected in line with the beliefs and research paradigm of the researcher. This chapter provided a detailed overview of the methods employed, step- wise descriptions of the data analysis, with the view of transparency and leaving a

clear audit trail. The intentions of the rigour of the study are laid bare in the selection of the facilitator, the bracketing of both the researcher and the facilitator, careful planning and consideration given to the quality of the study and the ethical implications.

The following chapter, entitled Chapter 4, **Participant perceptions of the existing research culture**, will highlight the findings of both qualitative and quantitative data that meet the second research objective.

CHAPTER 4

PARTICIPANT PERCEPTIONS OF THE EXISTING RESEARCH CULTURE

4.1 INTRODUCTION

This chapter will report on the findings which address the second objective (cf. 1.4), to identify the perceived, existing research culture by way of description by the participants. The theoretical foundation for this question was derived from the aspects seen to relate to research culture, as seen in the literature (cf. Figure 2.3). Sub-sections in the questionnaire (cf. Table 3.3) are linked to these aspects and were derived from previous literary sources (cf. Appendix C2).

As the results are reported in alignment with the research objectives, findings from both the questionnaire and the NGDs are presented here in an integrated manner. The participants were asked both open-ended questions and Likert scale questions related to their perceptions, (cf. Figure 2.3):

- Expectations of/for research culture in the workplace environment (cf. 4.3).
- Experiences of the current research culture in their workplace environment and how it could be enhanced (cf. 4.4).
- Perceptions relating to their own personal construct within their perceived context of research culture (cf. 4.5).
- Perceptions of the societal construct on within their perceived context of research culture (cf. 4.6).

In addition to the abovementioned aspects, participants were asked to provide recommendations (cf. 3.4.3) to enhance the existing research culture (cf. 4.7). These recommendations highlight the perceptions participants have of shortcomings of the existing research culture. The way in which this chapter is structured is given in Figure 4.1, on the following page.

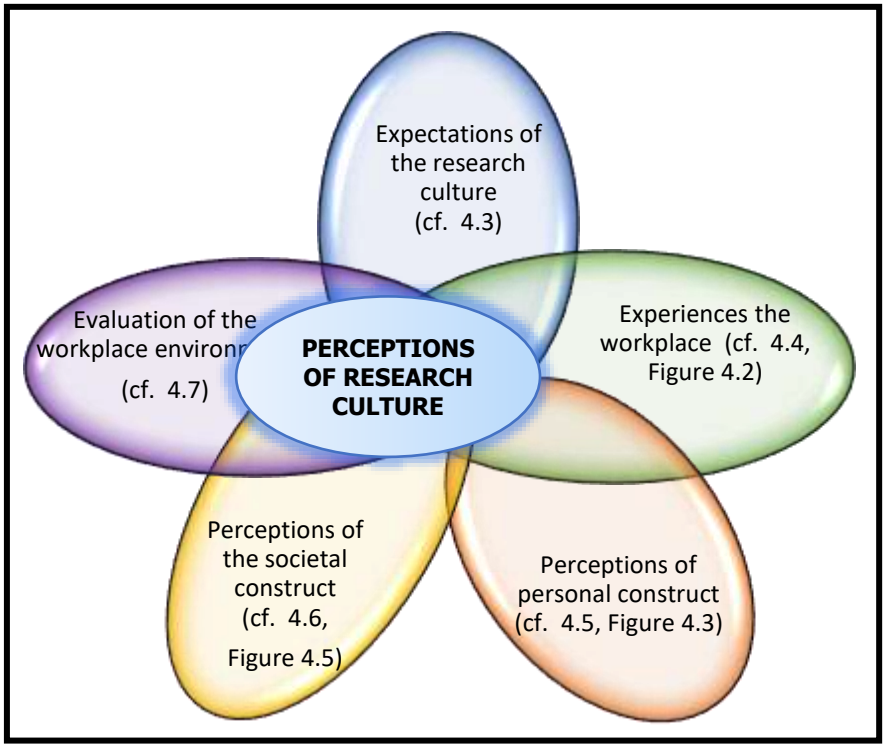

Figure 4.1: Overview of the results of the perceptions of research culture

Demographic data are provided to describe the sample, in order to relate to the data to the given context. Where possible, the sample size is indicated in the tabled results, however with the open-ended questions, Evasys compiles a combined list of all the responses given. From this compilation, it is not possible to determine the number of participants who chose to answer the open-ended questions, and therefore tables relating to such data, cannot provide a sample size. Quantitative aspects of the questionnaire are utilised to substantiate the nuances of the thematic analysis of the open-ended questions.

4.1 DEMOGRAPHIC INFORMATION

The response rates from the questionnaire varied across the sub-populations as follows: SoM 40.74% (n = 66); SAHP 63.41% (n = 26); SoN 40.90% (n = 9) and AS 58.82% (n = 10). Thus, giving an overall response of 45.86% (n = 111). This is acceptable as per the criteria laid out previously (cf. Table 3.1).

4.1.1 Age

Ages ranged from 27 to 68 years (n=100). Table 4.1 indicates the spread of the ages in the four sub-populations. Ages of participants showed a normal distribution, which provided

input from multiple generations, without the data being skewed. Illogical responses were classified as missing data.

Table 4.1: Age distribution across sub-population (n=111)

AGE	SAHP n (%)	AS n (%)	SoM n (%)	SoN n (%)	Total per age
20-29	3 (11.54)	1 (10.00)	2 (3.17)	0 (0.00)	6
30-39	13 (50.00)	3 (30.00)	11 (17.46)	1 (11.11)	28
40-49	4 (15.38)	1 (10.00)	20 (31.75)	1 (11.11)	26
50-59	3 (11.54)	4 (40.00)	19 (30.16)	1 (11.11)	27
60 and older	1 (3.85)	0 (0.00)	11 (17.46)	1 (11.11)	13
Chose not to answer	2 (7.69)	1 (10.00)	3 (4.76)	5 (55.56)	11
Total (n)	**26**	**10**	**66**	**9**	**111**

4.2.2 Gender

The majority (n = 67; 60.3%) of the respondents were female. Table 4.2, provides the breakdown of gender in the four sub-populations.

Table 4.2: Gender of respondents (n=111)

GENDER	SAHP n (%)	AS n (%)	SoM n (%)	SoN n (%)	Total per gender
Male	5 (19.22)	4 (19.23)	35 (53.03)	0 (0.00)	44
Female	21 (80.78)	6 (80.77)	31 (46.97)	9 (100.00)	67
Total	**26**	**10**	**66**	**9**	**111**

4.2.3 Nature of appointment

As to the nature of appointment, the majority (n = 22; 84.62%) of respondents from the SAHP and all respondents from AS (n=10; 100%) and SoN (n=9; 100%) were permanent and full-time employees of the University, while more than half of respondents from SoM were employed in joint appointment permanent full-time position.

The only option provided with no responses was the University full-time contract position. Table 4.3 indicates the different frequencies of the appointment structure of the respondents.

Table 4.3: Appointment structure of respondents (n=111)

APPOINTMENT STRUCTURE	SAHP n (%)	AS n (%)	SoM n (%)	SoN n (%)	Total per appointment
University permanent: Full-time	22 (84.62)	10 (100)	22 (33.33)	9 (100.00)	63
University permanent: Part-time	1 (3.84)	0 (0.00)	1 (1.52)	0 (0.00)	2
University Contract: Full-time	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0
University Contract: Part-time	1 (3.84)	0 (0.00)	1 (1.52)	0 (0.00)	2
Joint Appointment: Permanent Full-time	2 (7.69)	0 (0.00)	36 (54.55)	0 (0.00)	38
Joint appointment: Permanent Part-time	0 (0.00)	0 (0.00)	1 (1.52)	0 (0.00)	1
Joint Appointment: Contract full-time	0 (0.00)	0 (0.00)	4 (6.06)	0 (0.00)	4
Joint Appointment: Contract Part-time	0 (0.00)	0 (0.00)	1 (1.52)	0 (0.00)	1
Total	**26**	**10**	**66**	**9**	**111**

These tables identify through the quantitative data, the demographic information that informs the sample of this study. The next sections bring forward the perceptions of the participants pertaining to their definition and lived experience of the research culture in their working place.

4.2 PARTICIPANTS' PERCEIVED EXPECTATIONS OF RESEARCH CULTURE IN THE WORKPLACE ENVIRONMENT

Participants were asked to define what they understood by the concept of research culture in their own words. This provided a baseline of the participants' expectations of this concept from their own frame of reference, and what each participant used to compare their perception of the existing research culture with. Below are excerpts from the answers given. Table 4.4 indicates the themes, categories, codes and a few short excerpts to indicate the subjects of the code for this specific question. This is not an exhaustive list, merely an indication of the various elements of meaning derived from the full data set.

Table 4.4: Participants' perceptions of the expectations of the research culture in the workplace environment

THEME	CATEGORY	CODE	VERBATIM EXCERPT
Accepted norms	Actions	Daily doing	Research culture in my mind refers to the way in which research is 'part of daily doing' within an institution. It refers to how people talk about research, how they go about doing research, how they work towards promoting research and how they are supported in research.
	Assumptions	Individuals follow in the process	According to my understanding research culture will be the manner "norm" in which individuals follow in the process of carrying out their research. More like unwritten guidelines that are there yet not formally communicated but people have that sync relationship towards it.
Context	Climate	Atmosphere of continuous research	An atmosphere of continuous research.
	Environment	Enabling	An enabling and supportive environment that stimulates research through critical thinking, questioning, curiosity, finding solutions to problems, trying something new, encourages research.
Individual	Motivation	Love for doing research	A love for doing research - motivating people to do it not because you are forced to, but because you enjoy it.
	Personal attribute	Curiosity	The continuing curiosity to ask questions answerable by the scientific method.
	Skill and knowledge	Ability	The ability to ask a question, investigate, research (sic). And get an answer.
Inter- and intra-personal interactions	Collegiality	Teamwork	Working together to achieve a team goal and within the team framework achieving personal goals.
	Mentorship	Support of novice researchers	Positive environment where novice researchers are supported and developed by experienced researchers; continuous process until novice is experienced and process as mentor begins.
New knowledge	Discipline/ profession	Advocacy of new knowledge	Research culture refers to the environment in which academics attempt to advocate the active increase of scientific/academic knowledge. This environment or culture is dependent on factors, which may adversely affect, or positively encourage the undertaking of research by individuals and entities within a larger context.
	Distribution of knowledge	Intellectual exchange	The collective actions of formal and informal social structures that directly or indirectly stimulate the expansion of knowledge through intellectual exchange; and maintain the infrastructure and processes that underlies the development, refinement and communication of new knowledge.
	Results	Change practice	A research culture exists when persons willingly continue to engage with applicable research work with resultant outputs in the form of for e.g. Publications in journals, book chapters and even change in professional and educational practice.
Philosophy	Importance of research	Priority	Not easy to define -depends on what is meant. Broadly, a research culture is required if research is to be a priority. For me it would mean that research is considered important and that the concept of research is nurtured and researchers are considered as skilled scientists with ethical principles.
	Values	Set of values	A way of conducting research that is determined by an ever-changing expanding set of values, attitudes, norms and interpersonal factors. It is an abstract concept that is dynamic and is defined and determined by the research.
Support	Training and development	Opportunities	From opportunities to teach, develop your skills, and present your work, to networking and social events, alongside dedicated research student support facilities, you can find the resources to help you make a distinct and significant contribution to your field.

4.3 PARTICIPANTS' PERCEIVED EXPERIENCES OF THE RESEARCH CULTURE IN THEIR CURRENT WORKPLACE ENVIRONMENT

This section will cover the lived experiences of the existing research culture, as provided in Figure 4.2. Four main aspects of perceived experiences are reported on:

- Lived experiences of the existing research culture in their work environment (cf. 4.4.1)
- The communication of the importance of research through the mission, vision and objectives of the university (cf. 4.4.2);
- Perceptions of participants' experiences with the research environment through the research structures, systems (cf. 4.4.3) and policies (cf. 4.4.4).

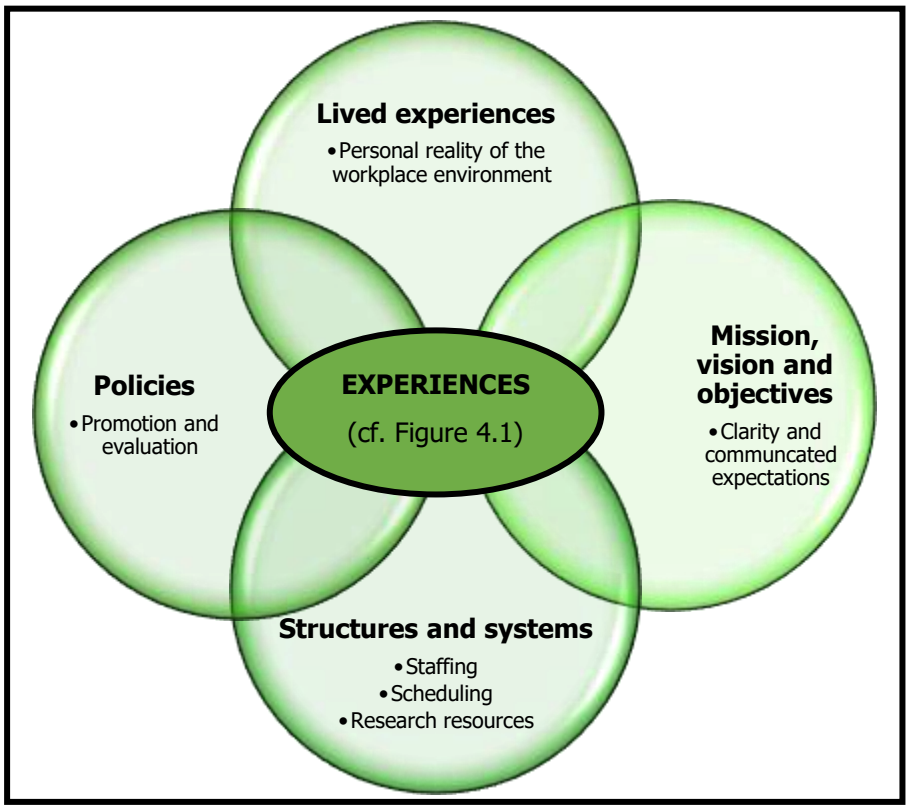

Figure 4.2: Overview of the results of the perceived experiences and the evaluation of the research culture

4.3.1 Participants' perception of their lived experience in their work environment

Participants are aware of the concept of research culture, as given by their own definition of this concept (cf. 4.3). Their definition of the concept and their lived experience of the research culture are not in all instances an identical reality. This led the participants to provide the perceptions of their perceived reality of the current research culture. Once

again, these statements were thematically analysed and examined in its entirety and iteratively. These findings are tabulated in Table 4.5 on the following page.

Many new themes emerged, with the emphasis on the Philosophy; Policies; Research Process; Staffing and Time. A new category was developed in the theme of Context, namely Research autonomy and accepted forms of research. The theme of Philosophy added a category: Inertia and resistance; this speaks to doing things as they have always been done and a resistance to change, particularly in the appreciation of various styles of research.

Table 4.5: Participants' perceived experiences of research culture

THEME	CATEGORY	CODE	VERBATIM EXCERPT
Context	Climate	Sharing	The UFS should encourage the enjoyment of research, rather than just counting research outputs.
	Research autonomy & accepted forms of research	Pressured	Not to be pressured to engage in research that you have no interest or expertise in.
Perceptions & emotions	Negative	Frustration	Scholars should be encouraged to develop their own area of interest and not be expected to know everything about all types of research.
Philosophy	Inertia & resistance Workload	Educational research	Not enough value placed on educational research.
Policies	Combined establishment	Conflict	There is a conflict between the two institutions regarding research culture despite the fact that both institutions support research on the face of it.
	Job description	Separation of roles	Make it voluntary. Acknowledge and promote people on teaching and learning - without research forced onto them. Make research a full-time responsibility of researchers, without lecturing responsibilities. Separate teaching and learning from research.
		Some people are "natural" researchers	Some people are "natural" researchers, should be provided the opportunity to mostly engage in research, while others are better at teaching and learning, and should be allowed to follow that career path.
	Remuneration, recognition & rewards	Recognition	The university should place the same value on people who do research and those who have a high academic workload. Lecturers should be promoted on the basis of their teaching abilities as well, and not only on the basis of their research abilities.
Research process	Ethics committee	Approval	Process of protocol approval too exhaustive and stringent.
Staffing	General	Manpower	Appointment of more staff so that everyone can have time to devote to research assistants, maybe shared between small departments - experienced research assistants in health care.
Stakeholders	Leadership	Accountability	FSHD and UFS to "do" what they "say".
Support	Management	More support and interaction	More support and interaction from management.
		Leadership	Better research leadership from management is needed.
	Resources	Medical writer	Make medical writers available for assisting with writing, not just references and sending to publishers.
	Training & development	Research grants	We should be taught how to apply for research grants.
Time	Allocated time	Dedicated research time	Dedicated research time.
		Need adequate time	Research takes time, and lots of it. We need to be able to have adequate time, without any interruptions in order to work on research. As an academic appointment it is very difficult to do an excellent job of it and do research.

Sub-sections that follow speak to the descriptive data relating to the experiences of the existing research culture in the workplace environment. Results where participants agreed, reported in the tables with a green shaded block indicates that the responses were given by two-thirds (66.67%) or more of the participants; a green text in a data block indicates that the majority (>50%), but not as many as two-thirds of participants responded as such. Similarly, this applies to data reported in a red shaded block and red text, for that of disagreement.

4.3.2 Mission, vision and objectives of the workplace environment

The philosophy of the University is communicated through its vision and mission statement. The participants did identify that research is to be prioritised for a research culture to be present (cf. Table 4.4). Forced choice questions of the questionnaire pertaining to the mission of the University are seemingly in line with the prioritisation of research. These quantitative findings are shown in Table 4.6.

Table 4.6: Participants' perception on the University's philosophy on research

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
The vision of the university as it relates to research is clear	84.62	15.38	80.00	20.00	68.18	31.82	100.00	0.00
The mission of the university as it relates to research is clear	84.62	15.38	80.00	20.00	59.38	40.62	88.89	11.11
I know what is expected of me in my position as an employee and it is in line with the research objectives of the university.	88.46	11.54	60.00	40.00	68.18	31.82	77.78	22.22

The majority (50% or more) of all participants from the four sub-populations agreed that: *the vision of the university as it relates to research is clear; The mission of the university as it relates to research is clear; I know what is expected of me in my position as an employee and it is in line with the research objectives of the university.* Stronger agreement was noted by the SAHP and SoN sub-populations.

4.3.3 Participants' perceptions of research structures and policies at the UFS

Participants answered questions relating to the policies of promotion; this is similar to the category of Remuneration, recognition and rewards. Participants from all four sub-

populations had a two–third or more disagreeing with items: *research goals for promotion within the university are realistic; research evaluation metrics for promotion within the university are motivating.* I addition, majority (50% or more) of participants from all four sub-populations disagreed that: *Research goals for promotion within the university are fair; research goals for promotion within the university are motivating; research evaluation metrics for promotion within the university are fair.*

Participants from the SoN tended to buck the trend by agreeing with the statements or items: *research goals for promotion within the university are clearly communicated* (88.89%); *research evaluation metrics for promotion within the university are clearly communicated* (88.89%) and *research evaluation metrics for promotion within the university are realistic* (55.56

Table 4.7: Participants' reflection on the Universities' policies regarding research goals for promotion and evaluation of research

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
Research goals for promotion within the university are fair	42.31	57.69	20.00	80.00	33.85	66.15	44.44	55.56
Research goals for promotion within the university are clearly communicated	57.69	42.31	40.00	60.00	48.48	51.52	88.89	11.11
Research goals for promotion within the university are realistic	30.77	69.23	20.00	80.00	24.62	75.38	44.44	55.56
Research goals for promotion within the university are motivating	38.46	61.54	20.00	80.00	24.24	75.76	33.33	66.67
Research evaluation metrics for promotion within the university are fair	42.31	57.69	20.00	80.00	26.15	73.85	44.44	55.56
Research evaluation metrics for promotion within the university are clearly communicated	50.00	50.00	40.00	60.00	32.81	67.19	88.89	11.11
Research evaluation metrics for promotion within the university are realistic	30.77	69.23	33.33	66.67	27.69	72.31	55.56	44.44
Research evaluation metrics for promotion within the university are motivating	38.46	61.54	11.1	88.89	22.58	77.42	44.44	55.56

%). Note that for these last two questions, responses were left blank by SoM participants (n=64; n=65 respectively). These quantitative findings align with the statements pertaining

to policies made earlier by participants (cf. Tables 4.5; 4.6). The responses for this set of questions are given in Table 4.7. Uncertainty is indicated in the table by blue text, where a 50%/50% split in responses for a sub-population occurred.

From the perceived aspects of Staffing, Support and Time, the following quantitative data strengthen the legitimacy of this being important in the perception of the current research culture (cf. Table 4.4). Colours of shaded data boxes and text remain as previously described (cf. 4.4.1).

The majority (70%) of all four sub-populations disagreed that there is sufficient support in the form of *scheduling of clinical duties* - whereas all sub-populations indicated a two-third or more agreement for sufficient level of research support at the departmental level. Congruently, members of the SoM and SAHP disagreed that there are *sufficient administrative structures to support research activities.* This is similar to the previously noted need for research assistants (cf. Table 4.5).

Table 4.8: Reporting on the perceptions of the research related support structures

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
Manpower	42.31	57.69	70.00	30.00	27.27	72.73	33.33	66.67
Scheduling of clinical duties	46.15	53.85	40.00	60.00	29.51	70.49	44.44	55.56
Scheduling of academic duties	61.54	38.46	50.00	50.00	36.36	63.64	33.33	66.67
Scheduling of administrative duties	57.69	42.31	30.00	70.00	27.69	72.31	44.44	55.56
Allocated research time	30.77	69.23	60.00	40.00	22.73	77.27	22.22	77.78
Administrative support	46.15	53.8	70.00	30.00	29.23	70.77	44.44	55.56
Research administrative support	30.77	69.23	70.00	30.00	18.18	81.82	33.33	66.67
Research experts in my field	76.92	23.08	80.00	20.00	30.30	69.70	77.78	22.22
Research equipment in my field	57.69	42.31	80.00	20.00	32.31	67.69	100.00	0.00
Research funding	38.46	61.54	50.00	50.00	27.69	72.31	44.44	55.56
The department has sufficient administrative structures to support research activities	23.08	76.92	80.00	20.00	18.46	81.54	55.56	44.44
The department ensures staff career pathways are available in research	57.69	42.31	80.00	20.00	28.79	71.21	66.67	33.33

Furthermore, participants from the SAHP only agreed with sufficient support for the *scheduling of administrative duties* (61.54%), while the majority of the participants from AS agreed with sufficient *manpower* (70.00%); *administrative support* (70.00%), but were

uncertain about the *scheduling of academic duties* (50%/50% split). The only sub-population satisfied with the *research administrative support* and *allocated research time* was the AS. *Allocated research time* received the most vehement of all items with the most SoM respondents indicating *disagree* more than any other items asked in the questionnaire. The majority of the participants from the SoM disagreed with the sufficiency of: *research supervisors* (81.82%); *research experts in my field* (69.70%) and *research equipment in my field* (67.69%).

No sub-population was satisfied with *research funding*, the most positive response, with a 50%/50% split was the AS participants. This is in agreement with the noted constraints relating to research funding (cf. Table 4.17). The SAHP as well as the SoM participants disagreed with the item: *department has sufficient administrative structures to support research activities.* In addition, the majority (71.21%) of participants from the SoM disagreed about *the department ensures staff career pathways are available in research*.

This brings to a close the results describing the perceptions of the workplace environment and following section present the results, as pertaining to participants' perceptions of their personal construct (cf. Figure 4.1).

4.4 PARTICIPANTS' PERCEPTIONS OF THE PERSONAL CONSTRUCT

Personal construct (cf. Figure 4.1) pertains to a person's belief and value system, their self-efficacy and motivation, the way in which a person identifies themselves within their context and the feelings that they have (cf. Figure 2.3). The schematic below indicates the sub-sections covered pertaining to the perceptions on the personal construct (cf. Figure 4.3).

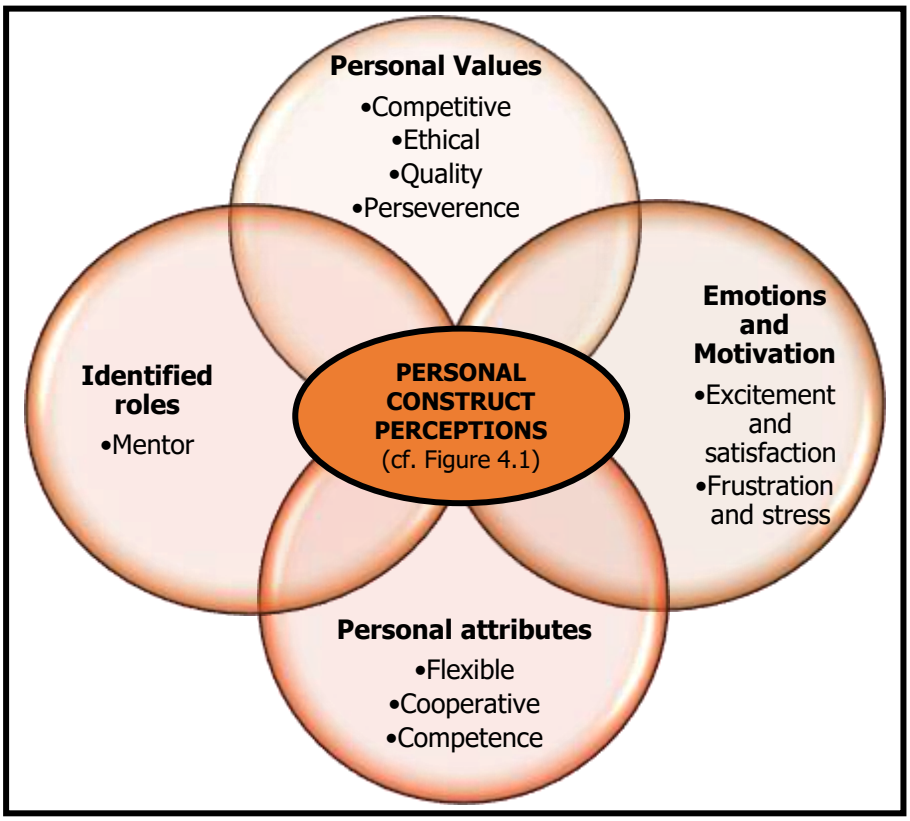

Figure 4.3: Overview of the results of the perceived personal construct within the research culture

4.4.1 Participants' perceived values of the existing research culture

What personal values a person holds, are an outcome of your own personal construct (cf. 2.4.3, Figure 2.3). Participants provided a list of the values they perceived as being present in the research culture within their workplace environment. A "set of values" are one of the expectations held by participants (cf. Table 4.4). Table 4.9, on the following page, indicates the word counts for groupings of words of similar meaning. Values that appeared in all four sub-populations are indicated in bold text.

Ethical, Support, Competing/Competitive are values that are mentioned in all four cases; as well as the idea of Excellence or Quality or Rigour in research and the concept of tenacity in Perseverance; Dedication; Commitment; Resilience and Determination.

Table 4.9: Word groupings for values

GROUPING	WORDS	SAHP	AS	SoM	SoN	Total
Competition	**Competing; Competitive**	**1**	**2**	**1**	**1**	**5**
	Driven; focused; exclusivity; superiority	1		1	4	6
New knowledge	Innovation; creation; creativity; ideas; original	2	7	2		11
	Knowledge	1	1	4		6
	Results; results-driven; throughput; impact	3	3	3		9
Autonomy	Independence; autonomy	1		1	1	3
	Intellectual; intellectual freedom	1			1	2
Principles	**Ethical; moral**	**2**	**2**	**4**	**2**	**10**
	Honesty; Integrity; accountability; transparency			11	2	13
	Respect		1	1	1	3
	Rigour; quality; excellence; best; outstanding	**5**	**1**	**1**	**3**	**10**
	Consistency; meticulous	1		1	1	3
	Perseverance; dedication; commitment; resilience; determination	**5**	**5**	**1**	**1**	**12**
Support	Encouragement		1	3	1	5
	Support	**4**	**1**	**4**	**1**	**10**
	Motivating	2		1		3
Significance	Important; necessity; priority; significance	3	2	5		10
	Reputation; recognition; reward; personal gain	2	1	5		9
	Reliability; authenticity; accuracy	2		5		7
Relationships	Cooperative; inclusive; openness; willingness	1		1	3	5
	Professionalism; professional diversity; diversity	4		2		6
	Collaboration; teamwork		1	5		6
	Mentorship			1		

Figure 4.4, on the following page, is a reflection of the most frequently reported word responses for the perception of values. The word cloud indicates by size a level of importance due to the frequency of which a word occurred in the responses.

Figure 4.4: Word cloud of the perceived values

It can be seen through the sizing of the words displayed that although "*integrity*" and "*results*" was frequently reported by the participants, it was not reported throughout the four sub-populations (cf. Table 4.9).

4.4.2 Participants' perceived emotions relating to research

The participants were asked to list emotions invoked by the research culture where they work. Table 4.10 provides a list of emotions, which were the most commonly reported, and the frequency with which they were found in the text, as well as the source and overlaps in the sub-populations.

Emotions present in all four sub-populations is Satisfaction, Excitement, Frustration and Stress are presented in bold. *P* and *N* stand for positive and negative, respectively. The arrow reflects the continuum of emotions and that some stated words may have similar meanings to others.

Table 4.10: Most commonly reported emotions

EMOTION	P/N	SAHP	AS	SoM	SoN	Total
Satisfaction	P	3	2	1	3	**9**
Proud	P	1		5		6
Joy	P	1		2	1	4
Fulfilling	P	1		2		3
Excitement	P	4	2	7	2	**15**
Enthusiastic	P	2		3		5
Energising	P	1		1		2
Positive	P	1		3		4
Motivated	P	1		2		3
Determined	P		1	2		3
Caring	P	1		1		2
Trust	P	1		1		2
Hope	P	1		2		3
Curiosity	P	1		3		4
Uncertainty	N	1		2		3
Competitive	P/N	1		3		4
Judgemental	N	1	0	1	0	2
Distrust	N	1	0	0	1	2
Loneliness	N	3	0	0	1	4
Sadness	N	0	0	1	1	2
Neglected	N	1	0	0	1	2
Despondent	N	1	1	2	0	4
Depression	N	0	0	2	1	3
Apathy	N	0	1	2	0	3
Frustration	N	5	2	15	3	**25**
Stress	N	1	1	3	1	**6**
Pressure	N	0	2	3	0	5
Conflict	N	1	0	2	0	3
Anger	N	3	2	3	0	8
Apprehension	N	0	0	1	1	2
Anxiety	N	2	2	1	0	5
Daunted	N	1	1	2	0	4
Panic	N	0	1	0	1	2
Fear	N	1	2	0	0	3

Frustration is the most reported negative emotion; this was mentioned previously (cf. Table 4.5). Excitement the most commonly reported positive emotion.

4.4.3 Participants' perceived motivators to perform research

The quantitative aspect of the questionnaire that addressed motivation asked "*I perform research …*" and each respondent had to choose between not applicable, somewhat applicable and very applicable. The highest scoring motivator for SAHP was to *perform*

research for career advancement. The AS felt the most applicable was to *perform research to change a situation;* SoN were mostly motivated to *perform research to develop my skill set;* each of these motivators achieving more than a two-third response. SoM achieved a majority (62.12%) with the motivator *to improve patient care.* Unexpectedly, a few participants (15.15%) from SoM indicated that performing research *for patient care* was not applicable to them; indicated by a yellow shaded data box in Table 4.11, below. Furthermore, participants from the SoM and SoN, respectively, indicated *improving self-reputation* is not a motivator for performing research.

Table 4.11: Motivators to perform research

	SAHP			AS			SoM			SoN		
	NA	SA	VA	NA	SA	VA	NA	SA	VA	NA	SA	VA
I perform research to develop my skill set	7.69	50.00	42.31	10.00	20.00	70.00	13.64	46.97	39.39	0.00	33.33	66.67
I perform research for career advancement	3.85	19.23	76.92	10.00	40.00	50.00	20.00	38.46	41.54	22.22	55.56	22.22
I perform research to improve my reputation	7.69	50.00	42.31	10.00	40.00	50.00	32.31	47.69	20.00	66.67	33.33	0.00
I perform research to change a situation	3.85	46.15	50.00	0.00	20.00	80.00	18.18	34.85	46.97	0.00	44.44	55.56
I perform research to improve patient care	7.69	50.00	42.31	10.00	30.00	60.00	15.15	22.73	62.12	0.00	66.67	33.33
I perform research for the development of my profession	3.85	26.92	69.23	0.00	30.00	70.00	9.23	35.38	55.38	11.11	55.56	33.33

Motivation is seen by participants to be a requirement for a research culture and the need to "*get an answer*" (cf. Table 4.4).

4.4.4 Participants' perceived personal attributes

The quantitative aspects of individual attributes attest to the meticulousness required to perform research and the requirement of a cooperative nature, both of which were reported of the perceived research culture. This is enforced by the personal attributes that participants felt they had. Questions relating to the perceived personal attributes of the participants are tabulated in Table 4.12, on the following page. Lighter grey questions

indicate the question was negatively stated or a reversed response question, thus disagreement responses are marked in green, in this instance.

Table 4.12: Reporting on perceived personal attributes

	SAHP		AS		SOM		SON	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
I am organised	96.15	3.85	90.00	10.00	93.94	6.06	100.00	0.00
I don't work well in demanding situations	34.62	65.38	40.00	60.00	24.24	75.76	11.11	88.89
I am confident that I am good at my allocated job tasks	96.15	3.85	100.00	0.00	98.48	1.52	88.89	11.11
I am a cooperative person	100.00	0.00	100.00	0.00	98.48	1.52	100.00	0.00
I work well in a team	100.00	0.00	100.00	0.00	95.45	4.55	88.89	11.11

There was a two-third or more agreement response by the participants from the individual sub-populations that indicated that they possess individual attributes or skills such as *being organised; switching between tasks* (adaptability); *feeling confident at their required job tasks; being cooperative* and *working well in a team*. Participants did also mention curiosity as a prerequisite to perform research (cf. Table 4.4).

Please note that *working well in demanding situations* was a negatively phrased or reverse order question. All sub-populations achieved a majority (SAHP 65.38%; AS 60.00%; SoM 75.76%; SoN 88.89%) in the positive for this item. These attributes are in alignment with the autonomy values of the current research culture perceived by the participants.

4.4.5 Perceived identified roles within the context of research culture

With relation to participants identifying themselves in the contextual roles of research, the most agreement, more than two-thirds of all sub-populations, was for the role of *being a mentor to students.* These results are given in Table 4.13.

Table 4.13: Reporting on perceived identified roles

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
I am a mentor to staff	80.00	20.00	60.00	40.00	90.91	9.09	100.00	0.00
I am a mentor to students	100.00	0.00	90.00	10.00	96.92	3.08	100.00	0.00
I am a research publisher (articles or books)	73.08	26.92	60.00	40.00	61.61	39.39	66.67	33.33
I am a research presenter	73.08	26.92	60.00	40.00	65.15	34.85	77.78	22.22

The majority of participants within each sub-population agreed to *being a mentor to staff* (SAHP 80.00%; AS 60.00%; SoM 90.91%; SoN 100.00%); *a research publisher* (SAHP 73.08%; AS 60.00%; SoM 61.61%; SoN 61.61%) and a *research presenter* (SAHP 73.08%; AS 60.00%; SoM 65.15%; SoN 77.78%).

These findings gave the participants' perceptions of the personal construct of the research culture; the next section will describe the findings of the participants' perceptions of the societal construct, as it pertains to their perceptions of the research culture.

4.5 PARTICIPANTS' PERCEPTIONS OF THE SOCIETAL CONSTRUCT

Societal construct included questions pertaining to the systems of knowledge; relationships and power differentials (cf. Figure 2.3). The following aspects are reported on:

- Research knowledge and skills,
- Feeling valued by colleagues,
- Research relationships of mentorship and collegiality,
- Research leadership within the workplace environment.

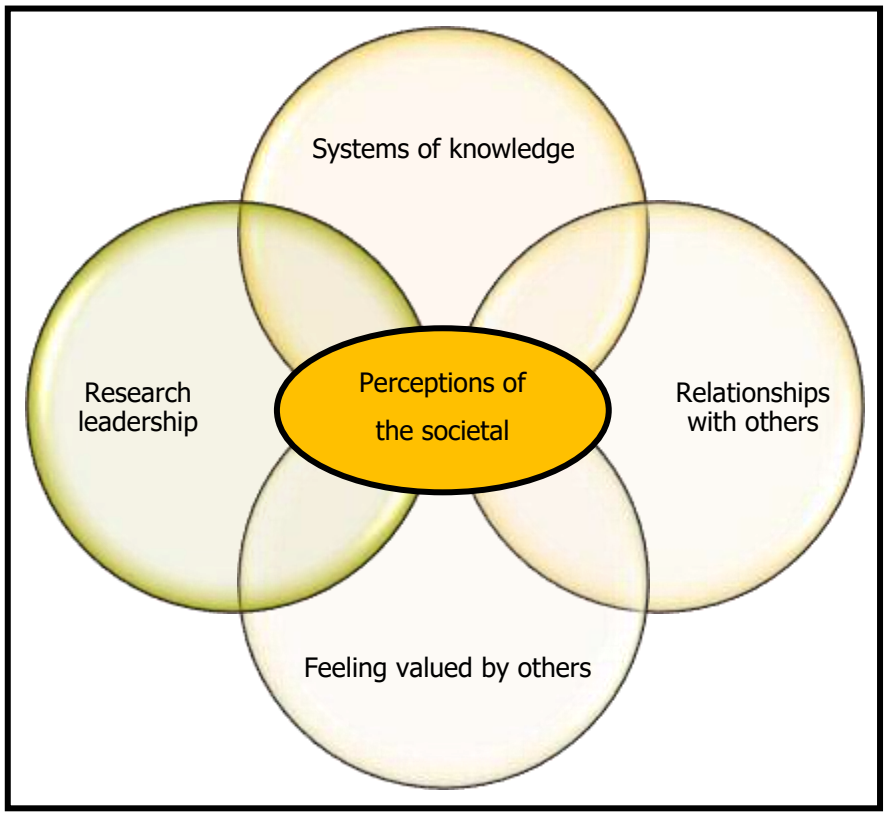

Figure 4.5: Overview of the results of the perceptions of the societal construct within the research culture

The schema, Figure 4.5, indicates the layout of the sections that follow.

4.5.1 Self-reported research knowledge and skills

The level of research skills and knowledge possessed by participants within each subgroup or sub-population was assessed. Participants were asked to indicate their response on a Likert scale with the options; *No knowledge, Little knowledge, Some knowledge, Moderate knowledge* and *Extensive knowledge*.

For the purpose of this study, a participant is considered to have **sufficient** research skills and knowledge if *Moderate* or *Extensive* knowledge was selected as response, these results are recorded in green. **Insufficient** knowledge is indicated as the combined percentages of the responses, marked in red. The sufficient (moderate; extensive) and insufficient (no knowledge; little knowledge; some knowledge) combined percentages of these responses are tabulated in Table 4.14, on the following page.

Table 4.14: Self-reported research knowledge and skills

	SAHP		AS		SOM		SON	
	Insufficient	Sufficient	Insufficient	Sufficient	Insufficient	Sufficient	Insufficient	Sufficient
Applying for research funding	76.92	23.08	50.00	50.00	65.15	34.85	100.00	0.00
Designing a questionnaire	50.00	50.00	30.00	70.00	43.94	54.55	55.56	44.44
Using qualitative research methods	69.23	30.77	30.00	70.00	66.67	33.33	11.11	88.89
Using quantitative research methods	19.23	80.77	30.00	70.00	31.82	68.18	55.56	44.44
Analysing and interpreting qualitative data	68.00	32.00	33.33	66.67	72.31	27.69	11.11	88.89
Analysing and interpreting quantitative data	34.62	65.38	40.00	60.00	42.42	57.58	77.78	22.22
Integrating research with clinical activities	57.69	42.31	60.00	40.00	46.15	53.85	22.22	77.78

In the case of *applying for research funding*, as AS was the only sub-population that reported only 50% having knowledge in applying for research funding. This was a perceived aspect previously noted as being insufficient (cf. Tables 4.8; 4.17). The participants from the SoN reported overwhelmingly (100%) an insufficient knowledge with this area.

Participants from the SAHP reported the least knowledge of all four sub-populations for the item *using qualitative research methods;* SoM similarly reporting the lowest score for *analysing and interpreting qualitative data* and AS for *integrating research with clinical activities.* However, SoN reported the highest (moderate knowledge 44.44% and extensive knowledge 44.44%) on *using qualitative research methods,* but the lowest of the four sub populations for *analysing and interpreting quantitative data* (no knowledge 22.22% and little knowledge 55.56%). SoN also reported the highest for *integrating research with clinical activities* (moderate knowledge 55.56% and extensive knowledge 22.22%).

In contrast SAHP reported the lowest in the item *using qualitative research methods* (no knowledge 15.38% and little knowledge 53.85%); similarly reporting the lowest score for *analysing and interpreting qualitative data* (no knowledge 16.00% and little knowledge 52.00%) and *integrating research with clinical activities* (no knowledge 3.84% and little knowledge 53.85%).

4.5.2 Participants' perceptions on relationships and power differentials

For SAHP, SoM and SoN, these sub-populations believed overall that their *opinion is sought on research matters*. Please note this was a reversed question, presented in lighter grey in Table 4.15 reflects the question: *my opinion is not sought on research matters*. Shading and text colours for data boxes thus reflect this reversal. This was in contrast to SAHP and SoM not believing their opinion on impacts research policy, whereas 60.00% of the AS sub-population agreed with this statement.

Table 4.15: Reporting on perceptions of feeling valued, mentorship and collegiality

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
My opinion is not sought on research matters	38.46	61.54	70.00	30.00	48.48	51.52	33.33	66.67
My opinion will impact research policy	30.77	69.23	60.00	40.00	42.42	57.58	55.56	44.44
I feel comfortable to debate with my colleagues	65.36	34.62	80.00	20.00	77.27	22.73	77.78	22.22
I have a formalised research role model or mentor with whom I communicate	53.85	46.15	80.00	20.00	29.23	70.77	22.22	77.78
I have an informal research mentor	76.92	23.08	80.00	20.00	47.69	52.31	100.00	0.00
There are clear guidelines to orient new staff to the research procedures	44.00	56.00	70.00	30.00	37.46	61.54	33.33	66.67
I have a developed research network in my field to guide and assist me	53.85	46.15	70.00	30.00	34.85	65.15	66.67	33.33

The SoM sub-population did not respond positively to the aspects of mentorship and collegiality. SoM respondents answered in the majority disagreeing with the statement: *I have an informal research mentor* (52.31%)*; I have a formalised research role model or mentor with whom I communicate* (70.77%) and *I have a developed research network in my field to guide and assist me* (65.15%). This is in stark contrast to the SoN who agree that to all the above-mentioned questions. Participants perceived collegiality as an expected element of research culture (cf. Table 4.4). There was general disagreement by SAHP, SoM and SoN to: *there are clear guidelines to orient new staff to the research procedures.*

Support in terms of management or leadership was also an area perceived to need some improvement, although from the quantitative data, it appears to be lopsided to the SoM

and may not truly represent the uniform perception of the participants, as the SoM are mostly joint appointments. Two-thirds or more respondents from each SAHP, AS and SoN were in agreement with all the items. The majority of the participants from the SoM agreed that: *my line manager is goal-directed in line with the UFS research objectives* (62.12%); *my line manager is research oriented* (62.12%) and a 50%/50% split with the last item *there is strong research leadership within my School*. This is given in Table 4.16.

Table 4.16: Reporting on perceptions of leadership

	SAHP		AS		SoM		SoN	
	Agree	Disagree	Agree	Disagree	Agree	Disagree	Agree	Disagree
My line manager is goal directed in line with the UFS research objectives	92.31	7.69	100.00	0.00	62.12	37.88	88.89	11.11
My line manager is research oriented	88.46	11.54	100.00	0.00	62.12	37.88	88.89	11.11
My line manager creates an environment that brokers research opportunities	76.92	23.08	90.00	10.00	48.48	51.52	77.78	22.22
There is strong research leadership within my School	80.77	19.23	100.00	0.00	50.00	50.00	77.78	22.22
The expectations the School has for my research role are clearly communicated to me.	73.08	26.92	90.00	10.00	36.36	63.64	66.67	33.33

The SoM in the majority disagreed that: *my line manager creates and environment that brokers research opportunities* (51.52%); *the expectations the School has for my research role are clearly communicated to me* (63.64%). It should be noted that as many of the participants within the SoM are joint appointment staff, this may reflect a line manager that is not a UFS employee.

This brings to a close the presentation of the findings on the societal construct. The following sections provides the results of the participants' evaluation of their perceived research culture in their workplace environment.

4.6 PARTICIPANTS' PERCEIVED REQUIRED IMPROVEMENTS IN THE EVALUATION OF THE RESEARCH CULTURE IN THEIR CURRENT WORKPLACE ENVIRONMENT

Participants were asked to provide recommendations to enhance the current research culture. This is an indication of their perception of what changes may improve or enhance

the existing culture. These recommendations are given in relation to the theme in which the statement was coded. The recommendations are provided as close to verbatim as possible; however, the grammar has been adapted for readability. For a full list of the recommendations given by participants (cf. Appendix D11).

Table 4.17: Participants' recommendations to enhance the perceived research culture (Continues of the following few pages)

CATEGORY	THEME: CONTEXT
Workload	• Structured time (away from work setting) allocated to research. • Work 'smarter' make use of admin support structures available e.g. Centre for Teaching and Learning (CTL). • Enhance communication with clinical colleagues- hold the DoH accountable for difficulties. • Acknowledgement of clinical workload (in terms of points allocated in the workload model) to justify time spent on the clinical workload. • Splitting clinical, research, and academic responsibilities would help. • Address staff shortages in DoH to allow academic research to be done by academic staff • Use scaling back of the dual-medium language (policy) as an opportunity to use time for research activities and optimally in a structured way • Separation of tasks-emphasis of teaching/research divided-criteria for promotion must then be adjusted accordingly • Personality testing. Use individuals' strengths • Dedicated writing retreats • Streamline undergraduate modules to avoid repetition
Research autonomy and accepted forms of research	• Start-up research funds- even an IOU • Establish interdisciplinary research institutes
Uniqueness of Health Sciences	• To thrive we need more appointments, for research to happen
	THEME: INDIVIDUAL
Attitude	• Create platforms for sharing research interdepartmentally, within the Faculty. • Adequate training of new researchers regarding 'the research process'. • Invite researchers with different research methodologies to address, through interesting research workshops with a fresh approach. Out of the box
Personal context	• Flexi-hours
	THEME: PHILOSOPHY
Inertia and resistance	• Mentors should be identified to help students. These mentors should be remunerated for services, as in other institutions. • Silos in collaboration with other stakeholders/outside researchers. • A need for 'value' clarification. A process of clarifying what we 'value' and what directions we strive for: acceptance of other who think and do things differently. Respect for others • Specific opportunities must be created to create a sharing of ideas, a space created to address the mismatch, forae where best practices can be elucidated
	THEME: POLICIES
Job description	• Stimulate and motivate researchers through workshops. • More flexibility/fluidity regarding the weighting per annum: didactic; research; clinics. • Acknowledge different career paths, as not everybody leans towards research

	• Review promotions criteria. Promotion criteria should include rewarding teaching. Not only research • Allow staff to choose a path of development. Individuals should be able to choose an area of expertise without being penalised
Remuneration, recognition and rewards	• Recognise M and PhD outputs
Sustainability and succession planning	• Losing top researchers at 60 makes no sense; reconsider the retirement age • Proper succession planning should be put in place • Identify expertise from the top down, such as retired scientists, to kick-start young researchers' outputs • Head hunting researchers with NRF ratings • Grant writing deficits needs to be addressed • Guidance as to where to source funding successfully
	THEME: RESEARCH PROCESS
Execution	• Expanding the research office, as it currently stands in FoHS. Administrative staff and whole staff complement act as a support structure for researchers. Co-ordination of research. A financial co-ordination of entities to be managed
Misalignment	• Identify research assistance at the time when participants are available in the clinical setting.
	THEME: SUPPORT
Funding	• Seed money for younger researchers. • Needs analysis on the proper structures to be put in place (e.g. Postgraduate school), decentralise functionalities • Bottom up fit is needed in the planning phase and in functionality • Research director for Faculty, or one for clinical research/another for other research
Resources	• A research hub would help. • More medical writers. One per School. • Dedicated research office could include space for seeing clinical patients. Administrative support for this clinic including lab(oratory) equipment • Co-ordination of research office with institutional research facilities/as well as within Faculty students/labs available/equipment/space etc. • Sequencing unit in FoHS and other specialised labs on campus could be used collaboratively. • A research vision for FoHS
Training and development	• Interprofessional postgraduate research opportunities and training. • Supervision training to be part of the newly appointed lecturer training • Mentoring must be clarified by identifying person's needs and addressing these need • Retired professors are mentors and enrolled PhDs should have access (to them)

This brings to a close the results pertaining to the participants' recommendations in their evaluation of their workplace environment.

4.7 SUMMARY OF THE PARTICIPANTS PERCEPTIONS OF THE EXISTING RESEARCH CULTURE

Research culture, as understood by participants as expected to follow certain accepted behaviours and norms (cf. Table 4.4), communicated by the institution through a mission and value statement (cf. 4.4.2); the stated importance of research is enacted through a resourced and supportive environment. This leads to the generation of new knowledge through capable and curious researchers. There is an agreed communication of the importance of research transcribed in the vision, mission and objectives (cf. Table 4.5) of the UFS.

Research culture is perceived by participants to be a workplace environment that provides an ethical and competitive culture (cf. Table 4.9) with value placed on being supported. The research culture is emotive and is felt by participants to be both exciting and frustrating (cf. Table 4.10), with a sense of being valued by others and having collegial and some mentor-related relationships (cf. Table 4.15). Various motivators inspire participants to perform research (cf. 4.5.3). Participants perceive their role to be mentors (cf. 4.5.4) and the policies of promotion and evaluation are demotivating them (cf. 4.4.3). There is a perception of research being forced onto participants, but the participants feel competent in their research knowledge and skills (cf. 4.6.1), however feel that their dedicated time for research is inadequate. Staffing, funding and time are three aspects perceived as lacking and there is consensus that leadership for research is present (cf. 4.6.2).

Recommendations to enhance the existing research culture were given by participants. These recommendations (cf. 4.7) ranged from allocating time or flexi-hours, addressing staff shortages to reviewing the promotion criteria. Training and development initiatives included workshops particularly that of accessing of funding, grant writing and identification of mentors. In addition, the establishment of interdisciplinary teams, the expansion of the research office and a policy on the succession of researchers. A change to a culture of sharing and collaborative research was mentioned.

A summary of the main elements of the four areas tabulated in these results in given in Figure 4.6, on the following page. The next chapter reports on the third objective of the study, Chapter 5, **Staff perceptions and views on the factors that influence research culture**, follows.

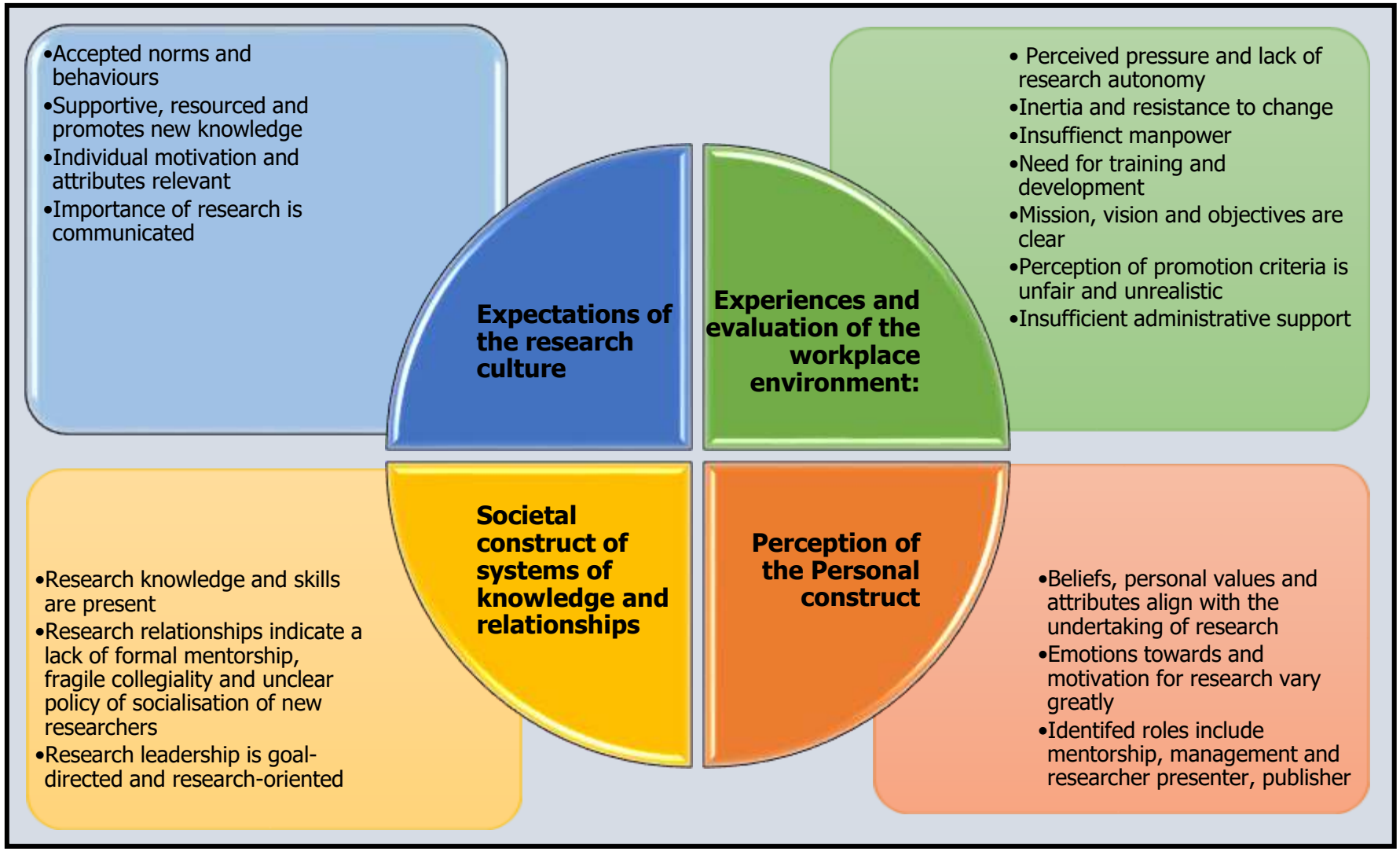

Figure 4.6: Summary of the perceptions of the existing research culture

CHAPTER 5

STAFF PERCEPTIONS AND VIEWS ON THE FACTORS THAT INFLUENCE RESEARCH CULTURE

5.1 INTRODUCTION

The results pertaining to the third objective (cf. 1.4) are given in this chapter. The theoretical underpinning of the factors influencing research culture was described in the literature (cf. Table 2.5; 2.9; Figure 2.8) and outlined for this study (cf. 3.4.3; 3.6.2).

The methods utilised to meet the objective of determining factors, were a questionnaire and NGDs. The factors which were outlined in the questionnaire data (n=111), were labeled under the aspects of organisational and external influences. The NGDs (n=55) allowed for any perceived influence to be mentioned, as decided upon by the participants in the groups. This permitted the participants to voice their realities. To begin the NGDs and to gain deeper insight into factors staff members perceived to influence the research culture in FoHS, the following lead question was posed:

- *Which factors do you perceive to influence the research culture in the FoHS?*

The ten NGDs were hosted and analysed alongside the co-coder. The following sections highlight the seven themes; each theme is presented with two tables, one reporting the statements recorded on the flipchart, and another reporting corroborating verbatim quotations made by the participants.

Verbatim quotations from the discussions of the participants amongst each other, which were not formalised on the flipchart, are given in order to openly affirm that the interpretation of the themes identified were done to honour the honesty and truth of the participants' perceptions; and not the biases held by the researcher and co-coder. These comments are intended to provide substantiation to the themes and categories' *nomenclature*, as a true reflection of the context and content of the statement as evidenced by the corresponding excerpts. What is presented is for representation of the range of views and the exhaustive list of all recorded statements in the NGDs are available in Appendix D10. Categories are listed within the tables in alphabetical order. Thereafter, a quantitative analysis of the NGDs is provided (cf. 3.6.2).

As statements are given voluntarily, combined and agreed upon by the group, no indication of the unit of analysis is given for the tables provided; data is available on the voting given by participants to each statement in Appendix D10.

Four broad overarching groupings of factors were found: Contextual (cf. 5.2); Organisational (cf. 5.3); Individual (cf. 5.4) and External (cf. 5.5). The results will be provided in turn.

5.2 CONTEXTUAL FACTORS INFLUENCING RESEARCH CULTURE

Contextual factors are in relation to the specific interaction between the FSDoH, NHLS, UFS and the FoHS (cf. Figure 2.8). Contextual factors perceived to be influencing the research culture are discussed under the following themes: Context; Philosophy and Research process.

5.2.1 Participants' perception of the context of the research culture

Context as a theme in the NGD data analysis speaks to the perceived Research autonomy (or lack thereof) and the accepted forms of research within the Faculty; the Workload of the staff and lastly the uniqueness of the Health Sciences as professions. The context is defined in part due to clinical load in training a health professional and in part due to reliance on the government sector for training platforms.

Table 5.1: Statements relating to the theme: Context

CONTEXT	
CODE	**STATEMENT**
CATEGORY: RESEARCH AUTONOMY AND ACCEPTED FORMS OF RESEARCH	
Supervisors have 'niche areas'	Supervisors have 'niche areas' and expect students to fit it in. Researcher moving research out of the faculty or even out of the institution are discouraged or considered rogue. Vision for research are hampered if supervisors don't share interests in area of research
Funding determines topics researched	Availability of funding limits research choices. Interesting research possibilities limited by lack of funds. Topical topics chosen because funding is available. Research is influenced by speciality, how funding is sources (NRF). Strategic moves needed to be successful
Appreciation for qualitative research	A focus on quantitative research, although a growing appreciation for qualitative research too
Researchers must choose other field to current interest fields	Academic progress and promotion stimulate research-planning; researchers must choose other field to current interest fields; and may be successful and may create further research. PhD given more time could direct young researchers. Sometimes promotions not limited to research
Supervisors expected to be "jack of all trades"	Supervisors expected to be "jack of all trades"- knowing all methodologies and topics- hampers their progress to become experts-can be demoralising
Research direction	Hierarchical position of research influences direction of research and its implementation
Contract research	Contract research-collaboration with outside entities-cannot be 'published' or 'affect' academic research outputs
CATEGORY: UNIQUENESS OF HEALTH SCIENCE	
Time management	Time management- unique to medical faculty-joint responsibilities clinics etc. Dual appointments. Top-down approach by UFS is positive. Compulsory research by MMed students is positive, but it is difficult for them to make time for research
Cannot be compared	As a faculty training professionals' outputs cannot be compared to "pure" science faculties in terms of 'focus' (NRF rating) and audits
Complex and unique funding model	Funding model for FoHS is complex and unique
CATEGORY: WORKLOAD	
Clinical workload	High workload and thus time constraints related to research. A toss-up between the two. Including no admin staff in DoH. Clinical workload is very time-consuming-impacts time for research. Not well understood by all on campus
Overwhelming demands	Competing and overwhelming demands from teaching and service delivery, admin duties
Juggling	Environmental factors-juggling service delivery, teaching and research
Fairness	Workload model to be reviewed- whoever is supervising post-grad students and publishing etc. Should have a lesser workload

Comments from the discussions of the participants amongst each other, which reinforce the selection of Context as a theme are provided in Table 5.2 on the following page.

Table 5.2: Excerpts relating to the theme of Context

CATEGORY	VERBATIM COMMENTS
Research autonomy and accepted forms of research	People have niche areas, so if you want to do research, then you need to fall into their niche areas. So especially if you are younger and then the senior personnel and supervisors, they will have certain areas, so you need to take your research underneath them, because they already have in any case, the funding. PARTICIPANT: So, you cannot do what you actually want to do, because it must fit in with some other people.
Uniqueness of Health Sciences	Education and medical, educational faculties are completely different from health education.
	Ja I am just thinking our faculty is different than let us say another faculty.
	Ja and the faculty always is different.
	So, we have got another primary responsibility and it's not only to the University. It is actually to the province.
	I just think specifically apart from the workload in ours, we have got a clinical field - so we deal with practical hands-on, you teach the technique. So that includes a heavy workload and its time-consuming. Ja it is not just lecturing in the class. It is really a clinical workload.
Workload	Sometimes your workload affects the opportunity for your own research. Thus, even though my boss and myself had a perfect plan on the table, its March and I haven't touched anything.
	The one negative that I have when I mentioned that in the first case was just also workload again. You know some people just refuse to assist in research students, then another person will get more students.
	It really affects the research quality because just in my own PhD, there were a few departments that could not participate in my project because they were too busy focusing on service delivery and did not have the opportunity to take part even in the academic research project. The same thing is happening now with my own student.

5.2.2 Participants' perception of the philosophy of the research culture

Philosophy as a theme, pertains to the belief structure and accepted behaviour that are perceived. This encompassed the Mission and objectives and Inertia and resistance. Departmental vision will affect research culture, overriding the intended culture through the mission statement. There is a perceived resistance to change and willingness to continue to do things as they have always been done.

Table 5.3: Statements relating to the theme: Philosophy

THEME: PHILOSOPHY	
CATEGORY: INERTIA AND RESISTANCE	
Code	Statement
Traditional way of thinking	Research culture of a particular department: historical, mentorship, social support. A very traditional way of thinking about "as academic". Shift to creativity and strategic management and construct workloads to highlight personnel strengths. Clinical/teaching/research
Historical inertia	Historical inertia limits what we can do as researchers
Isolation	Historical conditions-isolation- in terms of student selection research collaboration, inter-professional co-operation
My way or the highway	Rigid beliefs related to research- my way or the highway
Quality of research	There are very few big questions that we try to answer in FoHS
Acceptance of alternative thinkers	Acceptance and non-acceptance of 'outliers' and 'alternative thinkers'
Don't fit the norm	Challenges of research structures that don't fit the norm
CATEGORY: MISSION	
Manager's research vision	University goals and objectives: is research a priority. Limited to departmental environmental visions on research. Departmental managers' attitudes or priorities, vision towards research.
Research clusters	Research clusters of institution did not include health sciences
CATEGORY: VALUES	
Perfectionism	Perfectionism-ways to explore and think

Inertia and resistance is described as "*traditional way*" of thinking; that this inertia is to the detriment of the research culture, as it limits what researchers can do. The manifestation of the managers' prioritisation and vision of research affects research culture. Observations made by participants on Values highlights what participants felt about the value placed on certain types of research. Comments that validate this theme are given in Table 5.4.

Table 5.4: Excerpts relating to the theme of Philosophy

CATEGORY	VERBATIM COMMENTS
Inertia and resistance	And that's one of the things with staff development as well. I do not know. We always see the same people all the time. You never see new people. And it's the same people driving all the processes all the time. Here and there, you will get somebody that comes to the party.
	PARTICIPANT: I call it 'resistance to change'. PARTICIPANT: But it is rigid beliefs, you know. Ja but research related things.
	It is that I think the historical environment and habitual behaviours, which have been in place for many years governing the way we do things here, and the desire to stick to certain tried and tested and methods certainly limits the variety of research that we could do.
	But that's why I said, we work within historical inertia. We have a particular way of doing things, which sometimes is not well accepted in other environments and so yes, we have to do it this way and that's how we do it and so we have to have our title before we get our 'everything else' done and actually some people think that we should only do our title at our end so the registration of the title at the beginning is like a bit of confusion and that's part of it. What we describe there is part of the historical inertia.
Mission and Objectives	The first time I looked at the university goals and objectives as regards to research…so is the university making research a priority?
	The thing that influences for me the research culture is also the objectives of the organisation. Which is research outputs. So, I think that's it.
Values	The diversity of research approaches should be actually seen as a strength, because the faculty is very broad, from very clinical to more social science type of approaches and that is actually a positive. But unfortunately, I experience that as a little bit of a negative aspect because those, that diversity of approaches is not really valued by all…

5.2.3 Participants' perception of the influence of the research process on the research culture

The Research process theme contained the categories of DoH; Ethics committee; Execution; Misalignment and Outputs. The flipchart recorded statements made by participants relating the theme of Research process are given in Table 5.5.

Table 5.5: Statements relating to the theme: Research process
(Table continues on the next page)

RESEARCH PROCESS	
CATEGORY: DEPARTMENT OF HEALTH	
Code	Statement
Collapsing DoH	Working with a collapsing DoH influences research on all levels
Access to populations	Heavy dependence on DoH when using patient populations slows research down, barriers from DoH
Harmful effects of DoH	Harmful effects of DoH politicised appointments as head/CEO blocks research
CATEGORY: ETHICS COMMITTEE	
Protect authorship	Ethics committee should protect authorship
RIMS	RIMS-new paperless system-perceived negatively. Time consuming and difficult to use. Mistakes-wrong docs going through to Ethics Comm
Well-functioning	A well-functioning research ethics committee

Approval process	Structures such as Ethics Comm are rigorous in FoHS but can be rigid and slow down research process
Ethical approval process	RIMS ethical approval system not user-friendly-it is taking time to learn new system. A feeling that ethics comm appointments should be done according to their competence. Ethical issues vs experimental approaches a disparity and there can be a fine line methodology. Approval needs to be dual (or more) getting approval from DoH and UFS etc., many delays
CATEGORY: EXECUTION	
Time consuming	Research in DoH and generally in institution very hinder some/takes time
Hierarchy face fewer challenges	Tenure- hierarchy impacts. Senior personnel face fewer challenges than juniors
Ethical research culture	An ethical research culture is found at FoHS
Time constraints for use of funding	Time constraints for funding (NRF) per year
CATEGORY: MISALIGNMENT	
Time and data mismatch	Time frame vs participant and data gathering and research process mismatch
Inconsistencies	Inconsistencies in research methodologies across all disciplines
Mismatch in expectations	Mismatch between researcher(s) themselves and supervisors' expectations
Dissertation quality	Discrepancy in terms of quality outputs of dissertations across faculty. (250 pages vs 100 pages).
Quality research	Focus from institution to produce higher number of postgrad students could be affecting the quality of research
Student selection	Underprepared postgrad students need extensive assistance-selection process should be rigorous
Perceptions of responsibilities	Perception and responsibilities regarding research differs among people
CATEGORY: OUTPUTS	
Difficulty publishing	Exceptionally difficult to publish in accredited journals, also very expensive to publish
Lengthy delays in publishing	Lengthy delays in publishing-linked to performance evaluation-frustration due to 'aging information'
Where to publish	Where to publish also a problem- locally specialty journals are limited (international journals competitive-hard to publish) inter-institutional bias appears to play some role in some specialities
conference attendance limited	Professional bodies and their conferences would benefit, but time/workloads and financial constraints limit participation in these. These conferences could increase motivation.

The DoH has great influence as stated: "*Working with a collapsing DoH influences research on all levels*". The category of Execution of research, whereby the time-consuming nature of research was acknowledged as well as the time taken to perform research, became more prominent.

The Misalignment category speaks to the perceived reality not aligning with the perceived expectations. This category pertained also to the quality of postgraduate students being accepted in order to increase student numbers; and inconsistencies on research

methodologies and dissertation quality, among others. The comments made by the participants that enrich this flipchart-recorded data are presented in Table 5.6.

Table 5.6: Excerpts relating to the theme of Research process

CATEGORY	VERBATIM COMMENTS
DoH	I will come back now again on what I have seen especially with the doctors, they cannot do a lot of their research because it's not supported by the DoH. So, if we could find a joint strategic vision for research with our faculty and with the DoH that would go a long way for our research.
Ethics committee	I think that the RIMS submission process is currently putting that strain on researchers. I heard a colleague saying that she is not delivering a protocol again due to RIMS.
	Getting it through the UFS systems is just as difficult. DoH is a little bit more difficult but getting it through both of them is hindersome (sic).
	So, for instance I tried to, I couldn't submit a research proposal on the RIMS system because the system didn't make provision for the type of research, or the type of project that you have to submit to the ethics committee.
Execution	I think the other thing we have here is a lot of structures and systems, so we have got evaluation committees, ethics committees. Some other faculties do not have those in place, so a lot of them can just do research without going through this. So, in one hand it's good, I think the quality of our research is much better, because of that, but, in a way, it slows down the process of research. I do not know how to say it.
Misalignment	Yes, those we are getting students you have to learn or teach them how to read and write.
	They have got to pay themselves so that just leads to everybody, anybody applying for that, who stands a chance for a bursary, they all apply for full dissertations but yet they don't have the proper foundation for it. And that is hampering the research. Meaning that some researchers have to go to great lengths to assist their students in completing…their studies.
Outputs	…we really have one South African Journal and so where to publish is also a problem. And often our research is TB, HIV which really other countries* couldn't be bothered about, so ja that and it seems like with the pressure now, everybody is having to publish, we don't even get into our own journals.

This category focused on the pressure to publish and the difficulty of specialty journals and the context of local studies, five of the ten groups mentioned statements pertaining to Outputs.

5.3 PARTICIPANTS' PERCEIVED ORGANISATIONAL FACTORS INFLUENCING THE RESEARCH CULTURE

Organisational factors that influence research culture are broadly discussed under the themes of relationships (Inter- and intra-personal); the policies of the institution and support and resources.

5.3.1 Participants' perception of the influence of inter- and intra-personal interactions on the research culture

Inter- and intra-personal interactions were the lowest ranking theme of the NGD method (cf. Table 5.19; Appendix D10), with categories of Collaboration, Collegiality and Students and Supervision. The collegiality ethos within the sub-populations varied dramatically in its perception by the participants. The statements pertaining to this theme are given in Table 5.7, on the following page.

Table 5.7: Statements relating to the theme: Inter- and intra-personal interactions

THEME INTER- AND INTRA-PERSONAL INTERACTIONS	
CODE	**STATEMENT**
CATEGORY: COLLABORATION	
International collaboration	International researcher poach data resources in our country and want collaboration with a local researcher. Funding funding funding.
Lack of cross pollination	Isolation in terms of research perceived or real. Lack of cross pollination
Inter-disciplinary research in exploratory phase	More inter-disciplinary research-even between different faculties. Currently in an exploratory phase
International collaboration	International networking for research is limited (national networking is also affected)
CATEGORY: COLLEGIALITY	
Lack of collegiality	Diversity of approaches to research in FoHS is positive, although not always valued. To the point of lack of collegiality/overt signs/value colleagues/positivity
	Optimal communication and collaboration between individuals. Lack of collegiality
Competition and lack of communication	Communication gaps. Researchers work in silos. Interdisciplinary and personal lack of communication. Competition between colleagues-secretiveness, professional jealousy, young talent not always aided by seniors who don't facilitate 'upstarts'
Lack of interaction	Assumed professional autonomy-a fear of critique/lack of interaction, 'an achievement ideology'
Competitive attitude can be positive	Competitive attitude can be positive : FEEDBACK-COMMUNICATION-COLLABORATION
Competitive attitude	A highly competitive attitude between researchers-publications/promotions etc. Throughout schools and/or faculty
Regular discussion	Regular discussion within the school regarding research
CATEGORY: SUPERVISION AND STUDENTS	
Supervisors must adhere to agreements and policies	Quality supervision would help improve research culture. Supervisors must adhere to agreements and policies
Exposes study leaders to new ideas and is inspiring	Undergraduate students doing research exposes study leaders to new ideas and is inspiring

Collegial relationships are overshadowed by the apparent competitive behaviour; international collaboration is limited and often engaged in due to the funding that is available. There is an inadequate number of suitably trained and experienced supervisors. Confirming comments for this theme are provided in Table 5.8, which follows.

Table 5.8: Excerpts relating to the theme of Inter- and intra-personal interactions

CATEGORY	VERBATIM COMMENTS
Collaboration	I think you actually experienced firsthand, how little interdisciplinary collaboration there is.
	… What I find very difficult is collaboration between departments in the faculty when it comes to research.
	You can understand what I mean, so that's the thing, and it's amazing that they then get this data and take it abroad* and publish it, and we have people here, that can do exactly what they are doing, but we are not collaborating with them.
	I mean we do not; there is no, very little networking. I mean there is funding been written out for R200 000-00 for a project for networking, for collaboration. Let me rather, I cannot say it in that way, but it means there is funding available, but they do not know how to spend it, and it doesn't reach the people it's supposed to reach.
	It is basically personnel, size, the fact that we just do not have the size to develop laboratories, so we have got to collaborate outside our universities.
Collegiality	Because I am not always in the mood to help out a colleague but you know what, I will help you today and tomorrow and next time you help me.
	I just want to say I must say that at School of Nursing, I really think most of our colleagues here; senior colleagues are really available and always helping as mentors.
	If you are going to talk about lack of collegiality you cannot just say in general there is a lack of collegiality and I don't think in my life and in my working experience it's been very minimal that.
Supervision and students	In my experience it came down to supervisors who did not feel comfortable stretching…It comes back to, I am really overextended, I cannot possibly still help you, you better just fit in with my job.
	I think there must be a set rule that you first have to go through training before you actually are given a group that you must now supervise. Actually, you have no idea what you are doing, but you must now supervise this group.
	I think to my personal experience that matches up with that is that, because I was insistent on my research topic I actually had to go outside to another university* for a supervisor.
	If I am 60 and I get a job at another university, I take my students with me.

*indicates the removal of any identifying country, institution or person.

5.3.2 Participants' perception of policies influence on the research culture

Policies, as a theme, were categorised as Combined establishment and the staff members' perception of their Job description; Remuneration, recognition and rewards; Sustainability and succession planning.

The combined establishment employment policy related to the lack of incentives for research and the lack of critical mass for research due to a lack of resources and personnel.

Job description related to the aspects that participants felt that excellence is demanded in all the areas of the trifocal role of academics; participants mentioned that one's job description dictated the type or field of research. A number of participants felt research was undertaken due to it being a job requirement and although participants have a passion for teaching, they are forced to do research. It was felt that research is achievement driven, particularly by an NRF rating. Participants perceive that not enough recognition is given for postgraduate students' throughput and national publications are not recognised for promotion levels.

The category of Sustainability and succession planning related to the perceived loss of staff in the FoHS that hinders the development of research culture, caused by a lack of continuity. It is felt that the reason there is a perceived lack of supervisors and mentors is due to the retirement of irreplaceable senior researchers. These findings are summated in Table 5.9.

Table 5.9: Statements relating to the theme: Policies
(Continues on the following page)

POLICIES	
CATEGORY: COMBINED ESTABLISHMENT	
Code	Statement
No promotional incentives	Joint-appointment staff doing research do not have any promotional incentives
DoH employees' promotion	Nature of faculty- DoH employees' promotion not dependent on their research outputs (as opposed to institutional employees)
Two bosses syndrome	Two bosses syndrome- very difficult for clinicians/laboratories. Education vs health/NHLS
CATEGORY: JOB DESCRIPTION	
Now research is 'required'.	How research is 'framed'-very much based on outputs. Publish or perish. Pressure factors from management. In the past, research done because of a passionate interest in topic. Now research is 'required'.
Requirement	Research has become or is a requirement-not a desire, not the urge to find new knowledge
Requirement	Research is a requirement of job description-no joy of research. Lack of freedom of choice 'to do' or not to pursue research.
Passion for teaching	Educators passionate about teaching-but also forced to do research-a challenge
Promotion opportunities require a research 'output'	Job description/promotion opportunities require a research 'output', not necessarily inspiring 'research', passion for research
Job description dictates type or field of research	Job description dictates type or field of research
CATEGORY: REMUNERATION, RECOGNITION AND REWARDS	
Driven by achievements	Research becomes driven by 'achievements' (NRF rating, etc.) Rather than a passion for research
Throughput of postgraduate students	No recognition for M and PhD throughput and output. No scholarliness is recognised

Criteria for recognising research outputs	Criteria for recognising research outputs-local national publication not always recognised at a particular institutional level for promotion. Expectation to publish internationally, although challenging. Where researcher publishes is of paramount importance. National publication almost perceived to be 'less' valued. An international reference is required.
Allocation of authorship	Authorship-should be clearly allocated-hierarchy a possible problem
Demotivating goals	Institutional research output goals can be demotivating
Lack of incentives	In comparison to other faculties-lack of incentives, to motivate staff to do research after-hours
CATEGORY: SUSTAINABILITY AND SUCCESSION PLANNING	
Lack of specific knowledge supervisors	Lack of specific supervisors and mentorship and clusters and themes
No depth- one man shows	No depth-one man shows. Lack of staffing makes research hard to get off the ground. Fragmented research for registrars, no continuity in themes of research
Forced retirement	Senior researchers are made to retire at their research peak. Hampers transfer of skill, mentorship, knowledge
Salaries reviewed	Salaries must be reviewed. Academics in FoHS have heavy responsibilities. Loss of staff members with capacities-how to attract new staff?
Lack of capacity	Few mentors and lack of capacity/training/knowledge
Loss of echelon senior researchers	Loss of an echelon of senior researchers no top researchers to replace them. Lack of experienced supervisors. Attracting top researchers to FoHS whilst DoH is crashing hard and challenging

Table 5.10, provides the supporting comments for the selection of Policies as a theme.

Table 5.10: Excerpts relating to the theme of Policies
(Continues on the following page)

CATEGORY	VERBATIM COMMENTS
Combined establishment	The University is not putting down its foot and saying we need to create the space for our joint appointees.
	Due to joint appointment yes, limited time to completing duties.
Job description	PARTICIPANT: And a PhD is actually a job description. If you look at the… PARTICIPANT: A job requirement. PARTICIPANT: A job requirement. PARTICIPANT: Ja. PARTICIPANT: It is a job description, that you must get a PhD. PARTICIPANT: Ja it is, you are nothing if you do not have it.
	Because sometimes it feels like I am now forced to do something I do not love and know I am spending less time on what I really love. I have been in the hospital with the students there all day. Its, ja, what makes me tick.
Remuneration, recognition and rewards	I also think that maybe it should be said there should be reasonable expectations, I mean they are not going to change the staffing, and then there should be reasonable expectations. And I am talking particularly about things like promotions. Most people on the School of Medicine will never get promotion now on the new guidelines.
	Ja, academics are 'stunted' in their promotion because of an NRF rating, versus a support staff member.
	But surely, we (as women) want to be recognised, encouraged and recognised as well. That recognition as well.
	I think which plays a big role is your academic progress and promotions for yourself, that helps to promote the culture in the department.

	I do know that internationally they do have promotion criteria that's either linked to your teaching, or to research and so I am actually saying exactly what the other people are saying that we should consider promotion criteria, not only linked to research output but also to teaching output.
	Ja well just promotional criteria should consider the whole workload and not only NRF ratings or ratings.
Sustainability and succession planning	And then the important thing there, the very important thing there is that when we are looking at retirement age turnover rate of the staff. I have never ever seen an institution advertising such a lot of positions. The retainment (sic) of staff. They do not, cannot retain staff.
	Ja some other universities its 65. Overseas they moved it up to 67. I do not really think they should have anything like retirement age.

5.3.3 Participants' perception of support structures influence on the research culture

The theme of Support contained five categories, namely, Existing support; Funding; Management Resources; and Training and development. Existing support was praised, such as the library resources and the assistance by the Department of Biostatistics. Funding was mentioned and ranked in the top five, five times, by five of the groups (cf. Appendix D10). A lack of funding from the NRF, page fees and transparency, were concerns. Some participants felt there was a lack of co-ordination and others felt an overall lack of funding and access to funding. Resources comments spoke of the lack of administrative resources, time to perform research, allocation of postgraduate students and physical space to undertake research. Training and development of staff highlighted the need for supervisor training; also mentioned were article writing workshops and mentorship needs.

Table 5.11: Statements relating to the theme: Support
(Continues on the next page)

SUPPORT	
CATEGORY: EXISTING SUPPORT	
Code	Statement
Availability of support systems	Availability of support systems. Positive or negative. Positive: biostatistics. SON management perceived to be practically supportive. Negative: lack of a medical writer. Library resources available, both medical library and main library are to be commended. Excellent services provided/help sourcing articles etc.
Writing retreats	Support in terms of writing retreats etc. from faculty and postgrad school
Workshops	Expansion of Post-Grad school- workshops and opportunities have increased and support is positive. Clinical workload can prevent attendance
Research forum	Dissemination of results - a 'brag' session in the form of a research forum enhances research culture. Faculty members poorly attend DoH research days in Oct/Nov. A platform not well utilised.
Support in place	Support structures are acknowledged to be in place-biostatistics for example, medical editors. Research forum is an advantage. Research clinics. Financial support has improved. Medical library.
CATEGORY: FUNDING	
Page fees	Page fees- challenges to find funding-entity pays some-but help with funding would help. Perception is that FoHS has more challenges than other faculties (conference attendance has been curtailed) vicious cycle. Faculty funding model is a hurdle to publication
Sourcing of funds	Lack of funding from national sources (NRF)- positive regarding project-but no funding
Transparency of funds	Lack of incentives to publish. Where is funding going? In this faculty where does the money go? Other faculties are more transparent- it could be motivating to know. Motivation to pay to attend world conference. Funding and lack of funding. Limits research
Seed money	Availability of funding and access to funding- should funding allocations be de-centralised to faculties? 'Seed' money incentives for junior researchers as encouragement for junior researchers as applied by other institutions
Software	Software not funded by institution
CATEGORY: LEADERSHIP	
Acknowledgement	Acknowledgements from line managers- in terms of encouragement/finances etc.
Celebrated not facilitated	Research endeavours/outputs in SAHP are celebrated- more than facilitated
CATEGORY: RESOURCES	
Administrative support, research assistant	Resource support from the department and university: administrative support, research assistant, time to do research. Time to do research: technology, programmes, mentorship. Research hub in FHOS for post-grad and undergrad students to work and get guidance, access to librarians etc. FoHS has an excellent medical writer-we need more medical writers/editors in faculties.

Lack of a dedicated research office	research opportunities more widely publicised-interdepartmental research groups-niches-with support staff to do admin-a dedicated research office-STRUCTURE
Resources and platforms	Financing for research- resources: personnel, labs, forced to collaborate outside. Platforms challenging running hospital-non-functional, suspect, finances and statistics, lack of specialised labs, statistics, support. Posts not filled impact on research
Access to resources	access to resources-finances, labs, students (post grad) and physical space for research
Lack of resources	Lack of resources- software available, researchers lack support with FHS
Literature access	Access to body of literature no longer available- cost are considered too high
Selection of journals	Selection of journals-assistance for super-specialised areas by FoHS
Category: Training and development	
Supervisor training	Research training-supervisors must be trained. Atlas training should be more regularly presented. RIMS always changing-very frustrating-ethical application difficult. Wonderful workshops have been presented. SATRUST model with blocks of time dedicated to training was appreciated and generated outputs. Article writing workshops should be a priority.
Lack of PhDs and profs within department to guide	Research silos could help junior researchers progress and help them find own area of interest rather than being given an area. Would help if study leader was within institution. Lack of PhDs and profs within department to guide does have an impact. To mentor a career path for new academics.
Lack of research information	Lack of knowledge with regard to research support-funding/staff development/replacement of staff etc.
Mentorship	Lack of mentorship for young researchers

The confirming comments made by participants relating to Support are presented in Table 5.12 below.

Table 5.12: Excerpts relating to the theme of Support

CATEGORY	VERBATIM COMMENTS
Existing support	There is support structures in place, but they just do not have the time to attend stuff.
	There is a lot of support structures actually in place for research, and that definitely helps to elevate our research or the research culture, at least in our faculty. I cannot compare it really to other faculties but if you think we have got the research clinic, we have got paths to funding, we have got leadership, research leaders where we can go to for help and so on, in our practice so I think.
	I am luckily in the position where I am. I have flexi hours. That is vital. Yes. To support women in academia.
	I think there has been significant changes and improvements of resources, financing students and motivating students and so I think you know, I think there has been development.
Funding	You give me support to write an article. You give me support on a way to reference the whole article but you don't give me the start up to actually start the research, so that I can go write up the research so if financial support can also be there as well, for startup, junior lecturers.
Management	… A good manager actually helps departments with strategies regarding research.
Resources	…sometimes you just do not have time, sometimes you do not have resources.
	The skills unit in our department have a small section but if the post grad(uate) students use it, the undergrad students can't use it so it's a space thing, but also a technology and support and resources thing.
	Lack of, we have not enough personnel and resources like instrument, analysers and stuff you can use to do research. We are a dysfunctional department.
	At the moment I bounced between two different places, to just to get someone to help a postgraduate student to write academically.
Training and development	We lost a lot of young staff, just because of the fact that things are not in place. Mentorships. Not support. They leave also because of job pressures that is being placed upon them, by vacancies not being filled, so they just have mental burnout. And the last thing on their mind is research.
	I know there is a mentorship program that X University* has. They identify mentors. It might be from their own university, it might be from a different university and that mentor say a student, PhD student gets a mentor at the University of the Free State. Then this mentor at our university gets remunerated by X university, to be a mentor, but to my knowledge we do not have such a structure within our faculty.
	But that also comes down to support. There is not always support for your vision for your career. Because your PhD becomes your expertise.
	I must wait 6 months to get training in Atlas TI so now I am sitting in front of You-Tube and trying to understand it with my colleague's notes.
	What I want to say is that the software was in place, the EVASYS, the Atlas but at some point, the researchers, the support of utilising it, was lacking.
	If we could integrate all of the school' research, research development, research training individual and as combined sessions. That is something we do not do, not at postgraduate level.

*indicates the removal of any identifying country, institution or person.

5.3.4 Additional data pertaining to the perception of organisational factors influencing research culture

In order to meet the third objective, through the integration of the methods, open-ended questions were also asked in the questionnaire, pertaining to the organisational aspects perceived to influence research culture. There emerged new themes and additional categories to the existing themes delivered in the other open-ended questions in the questionnaire (cf. Tables 4.4; 4.5). New themes were Inter- and intra-personal interactions; Other; Perceptions and emotions; Policies; Staffing; Stakeholders; Support and Time.

Underlying issues relating to the joint or combined appointment system emerged; participants felt that they were unable to satisfy their "two bosses" and that there was conflict in the culture of the two institutions. The perception of being misunderstood and unappreciated by top management featured in emotive ways. Most glaringly: "*I am burning out and nobody cares*". There were definitively positive aspects in terms of management, and the support of line managers that motivate and have open-door policies. These findings are given Table 5.13, which follows in the next two pages.

Table 5.13: Thematic analysis results of the organisational factors excerpts
(Continues on the next page)

THEME	CATEGORY	CODE	VERBATIM EXCERPT
Inter- and intra-personal interactions	Collaboration	Everyone is for himself	Collaboration. Everyone is for himself.
Perception and emotions	Negative	Feeling unappreciated	My research contribution is not valued.
		Feeling unappreciated	Research does not get enough recognition from the university. I do not think I have ever had a letter from UFS to say well done and nice to see articles being published or presented at congresses, my HoD yes but higher than that nothing.
		I am burning out and nobody cares	In some departments, it might be better. But in my department - zero research effort or interest. I drive everything and that is on top of doing the work of three other doctors. I am burning out and nobody cares - the university just want more research to miraculously fall from the sky.
Policies	Remuneration, recognition and rewards	Workload model not fair to heavy academic workload	The university wants to categorise everybody as the same with regards to research. However, some of us have very heavy academic workloads with regards to teaching large classes, student appointments, lectures, practical sessions and tutorials and assessments. This must be taken into consideration if they want to compile expectations with regard to research. If you do research, you are credited more on the workload model and receive more marks. It is not fair towards those with a large academic workload.
	Sustainability and succession	Increasing student numbers	I also have a concern about just increasing student numbers or accepting just anyone into a postgraduate programme - in my opinion there should be formal structures in place to take in students with potential or those that are at the level that they should be to successfully complete the next level. Being forced to take on so many additional students but then spending many hours after work to develop basic required skills in some postgraduate students is overwhelming.
	Combined establishment	Two bosses	Being in a joint staff establishment effectively makes me subject to two bosses. In this case, both bosses do not work well together. So, you cannot without conflict utilise service delivery resources for research and vice versa, the research orientated university prohibits you from utilising their resources for service delivery and yet all agree that the service delivery activities occur concurrently with research activities...
		Two bosses	The fact that we have more than one boss makes it difficult to create a positive momentum in the research culture.
		RWOPS	RWOPS (*Remunerated Work outside the Public Service)* is an evil practice. It saps the energy that could have been spent on research.

Staffing	Support staff	Performing administrative work	A lack of administrative support. I perform secretarial work.
			I perform more duties that could have been allocated to admin personnel; therefore, I have much less time to explore my research potential.
	General	in vivo	Too few staff and too much work. As simple as that.
Stakeholders	Leadership	Ongoing conflict between employers DoH, UFS	Ongoing conflict between employers DoH, UFS and clinical work overload does not create conducive environment in which to conduct research.
Support	Management	Confrontational management style	The management style is confrontational and does not create an enabling environment for research.
		In vivo	The UFS research management has no idea of the service delivery environment in which the school of medicine operates. Hopefully X, being a X, will have a better comprehension of the healthcare Contexts than X*.
		Open door policy	My line manager has an open-door policy, is constantly motivating and monitoring our progress in research, and provides constructive feedback and positive advice all the time.
		Our manager really focusses on potential research	Our manager really focusses on potential research. Most staff are positive towards potential research in our department.
	Resources	Study leaders	Good quality study leaders are scarce.
		Research development office	The research development office really motivates a research culture at our university.
	General	Contract research	With very few incentives to do research and almost no finances, the challenge is to find projects that cost very little. When we still did international contract research, the university took a cut for itself with less money getting to the person who did all the work and sacrificed their leave to attend research meetings.
Time	Allocated time	No protected time to attend research development opportunities	No time to do research. Lack of staff and no protected time to attend research development opportunities or for developing in research field.
		Time for my own research	Time for my own research and building a research career always take the back seat for students' research that I supervise. The pressure to take in increased numbers of postgraduate students and at the same time advance throughput and output is overwhelming.

*Indicates names and titles have been omitted

5.4 INDIVIDUAL FACTORS PERCEIVED TO INFLUENCE THE RESEARCH CULTURE

The theme of Individual had categories Attitude and Personal context; that one's history and context influence the research culture and that this can be positively or negatively. Different interests motivate people. Insufficient understanding of the role of women in academia is noticed. Family support and responsibilities weigh heavily on those without allocated research time during working hours. Attitude towards research and self-directedness was most valued by the SoN; being a caregiver in gender-based roles prevents research from being a priority was important to the sub-population of AS. Tables 5.14 and 5.15 relate to the NGD statements and corroborating comments, respectively.

Table 5.14: Statements relating to the theme: Individual

INDIVIDUAL	
Code	Statement
CATEGORY: ATTITUDE	
Attitude	Positive or negative attitudes of personnel towards research. Valuing research outputs. Making time for it. Self-directedness.
	A negative attitude does hinder research
Ethos	Ethos "to do or not to do" research -time constraints
CATEGORY: PERSONAL FACTOR	
Caregiver	Gender plays a role. Caregivers do have less time for outside hour's research. Reduces work performance/vital tasks first. Research is not always a priority
Social contexts	Personal factors, the individual, hierarchy, socio-economic factors, motivation
	Individual personal factors/social contexts/intrinsic motivation/language proficiency

Table 5.15: Excerpts relating to the theme of Individual

CATEGORY	VERBATIM COMMENTS
Attitude	I think the last thing I want to say, is just you need to look at the attitude of the academic, I mean the academics in the University are they are interested in research? I mean that is the thing. Is research part of them? Or is it a job description for them? So those two things need to be clarified. If it is part of you, you will always want to do it.
	Personally, I think that the positive or negative attitude could immediately be influenced, if we already address the key areas of responsibility, because people will feel more positively inclined, if they just feel this is palatable.
	I just want to add that these mentoring needs to not necessarily be aligned, but it needs to be running simultaneously with the attitude of this person…
Personal context	Just looking at female staff members generally, I am generalising, but generally, they tend to be the primary caregivers of their children. I see a lot of ferrying children to and from school. It is just really does not, it has a dire impact on your time to do research, a dire impact.
	And we spend hours and hours after hours, away from the family, trying to write out a research proposal or funding proposal and then it's turned down.
	For example, it is outside the control of the university but it does impact the research culture, so individual personal factors, values, I suppose and priorities and personal goals.

5.5 PARTICIPANTS' PERCEPTION OF THE INFLUENCE OF EXTERNAL FACTORS ON THE RESEARCH CULTURE

The final question asked in the open-ended section of the questionnaire was intended to determine factors, which participants feel, influence their research culture, but are not necessarily within the scope of the UFS or the FoHS.

Numerous new category additions were made to the existing themes, such as the category of Family to the Individual theme. The Stakeholders theme added the category of Barriers to research. This question elicited the most statements of *none*, whereby participants indicated that there were no external factors relevant to them in the context. This was allocated the theme of *Other*, and was most the frequently reported, more so than in any other question. The dominant themes are provided in Table 5.16.

Table 5.16: Thematic analysis results of perceived external factors excerpts
(Continues on the next page)

THEME	CATEGORY	CODE	VERBATIM EXCERPT
Context	Climate	In vivo	Racism, gender bias, ageism, professional jealousy, backstabbing, undermining, professional assassination.
	Environment		Currently the national NHLS promotes research, but with current undercurrents, there is a danger that operations, service delivery, will again squeeze it (sic).
	Research autonomy and accepted forms of research	In vivo	Research focus of university being research for the sake of research and not contextually connected to environment, context or the agenda of transformation.
	Uniqueness of Health Sciences	Our patients come first all other activities second	We are on joint staff establishment we have patient care, teaching and research activities in descending order of importance. Our patients come first all other activities second…clinical workloads and administration are increasing while staff is not which makes time even more limited.
Individual	Family	Single parent	I am a single parent. My time over weekends that I can spend on research related activities are therefore limited.
		Family demands	Family demands affect research time greatly, as well as the impact of a struggling economy and reality of needing to add to our family income.
		Being a single mom	Having children in school being a single mom is not easy doing research extra than my work. Faculty does not understand it. Having a full academic load doing a PhD "full time" while it should be regarded as "part time studies".
	Personal context	Paying off study loans	Most doctors are relatively young and are busy raising families and paying off study loans.
Inter- and intra-personal interactions	Collaboration	International collaborations are needed	International collaborations are needed to enhance research culture in an institution.
Other	None	None	None of these are a problem in our department.
Philosophy	Inertia and resistance	Little cross pollination	The local cultures and the longstanding tendency to grow our own timber, this means there is little cross-pollination and the staff turnover is small, with little international input. This is limiting and our culture is rather parochial and inward looking. But, we try and I think things are improving.

		The ethos has begun to show fruit	The research priority has been developing stronger over the years and the ethos has begun to show fruit. I think that the next generation will take to it much more easily as part of their work rather than an add on it has been for many of us with huge clinical and administrative responsibilities initially.
		The very same old concept still seems to dominate	The persistent focus on ethnicity, 'race'. Rather than intellectual capacity, moral integrity and academic performance does not do any good to the research culture. The fact that the preferred ethnicity has changed does not imply that the underlying paradigm has changed. In the contrary, the very same old concept still seems to dominate: people are appointed and promoted because of their ethnic attributes, political affiliation and personal contacts. There is a growing ethnic polarisation and confrontation, and institutional leadership is lacking in dealing with this.
Policies	Combined establishment	The possibility of doing research by both bosses is lacking	Administrative support and the possibility of doing research by both bosses is lacking. There are many stumbling blocks put in the path for us. Many administrative, others financial.
Stakeholders	Barriers to research	Absolutely negative and non-supportive	Attitude of FSHD plays a major role in research: absolutely negative and non-supportive researchers are not acknowledged or recognised and essentially self-driven and self-supporting.
		No support from hospital management	Increased pressure due to joint appointment with no support from hospital management as research is clearly not a priority.
		Culture of the two institutions is not aligned	The fact that our department in influenced by two institutions is also affects research culture. The culture of the two institutions is not aligned.
Support	Training and development	Limited exposure to international training opportunities	Limited exposure to international training opportunities.

5.6 QUANTITATIVE ANALYSIS OF THE FACTORS FOUND IN THE NOMINAL GROUP DISCUSSIONS

For each sub-population, an analysis was performed in order to establish similarities and differences between the populations ranking of the themes of the NGDs more readily (cf. 3.6.2). McMillan, et al., proposes this method (2014:103-104). This was done by the method of relative importance and the frequency of votes (Tables 5.17, 5.19). Thereafter, in order to view all the statements as one set of combined data, the method proposed by Van Breda was employed (cf. 3.6.2; Table 5.18). This was to establish the importance of the themes through a secondary analysis.

5.6.1 Analysis of the sub-populations ranking of the themes by relative importance

McMillan, *et al.* (2014:103-104) provide a method of relative importance and the frequency of votes. The relative importance is determined by a calculation:

Relative importance = [(score for the item) / (maximum point for the group) x 100]

Maximum points for the group = number of participants x 15
(The total number of votes by each participant 1+2+3+4+5=15)

Table 5.17: McMillan analysis per group

GROUP	THEME	CATEGORY	VOTES	SUM OF VOTES	INITIAL RANK	RELATIVE IMPORTANCE	RANKED PRIORITY	FREQUENCY OF VOTE	FINAL RANK
AS 1	Policies	Remuneration, recognition and rewards	5,5,4,4	18	1	30.00	1	4	1
AS 2	Policies	Job description	5,4,4,1	14	1	18.67	1	4	1
SAHP 1	Context	Workload	4,5,5,5,5,5,5,5	39	1	32.50	1	8	1
SAHP 2	Context	Workload	5,5,5,3,2	20	1	26.67	1	5	1
SAHP 3	Context	Workload	5,4,3,2	14	1	23.30	1	4	1
SoM 3	Context	Workload	5,5,5,5,5,5,5,1	36	1	30.00	1	8	1
SoM 2	Policies	Combined establishment	4,5,5,5,5	24	1	32.00	1	5	1
SoM 4	Support	Resources	5,5,5,3,2	20	1a	26.67	1	5	1
SoM 4	Context	Uniqueness of Health Sciences	5,5,4,4,2	20	1b	26.67	1	5	1
SoM 1	Research process	DoH	5,4,4	13	1	21.67	1	3	1
SoN	Policies	Job description	5,5,4,4,3,2	23	1	21.90	1	6	1

5.6.2 Analysis of all statements faculty wide

The analysis of the whole sample was undertaken by the scrutiny of the importance of the themes through a secondary analysis (Appendix D7). This meant that although a statement received no vote, the theme allocated to the statement was still counted (Column Number 1); for statements that did receive votes, regardless of rank, their group averages were summated (Column Average rank). The sum of these ranks determined the final ranking of themes, from every statement in all 10 groups (cf. Appendix D10). The theme of Support carries the greatest weight, according to this method.

Table 5.18: Van Breda final ranking of themes

THEME	TOP 5 #	TOP 5 RANK	NUMBER 1	NUMBER RANK	AVERAGE	AVERAGE RANK	SUM OF RANKS	FINAL
Support	14	2.5	43	1	31.47	2	5.5	1
Context	14	2.5	32	2	29.35	3	7.5	2
Research process	7	4	31	3	34.89	1	8	3
Policies	18	1	30	4	28.15	4	9	4
Individual	3	6	14	5	9.05	5	16	5
Inter- and intra-personal interactions	2	7	10	6	8.16	6	19	6
Philosophy	5	5	7	7	7.08	7	19	6

In order to determine whether there is any similarity in the weighting of the themes, Table 5.19 was compiled for a combined overview of the four populations and the Faculty at large.

Table 5.19: McMillan faculty overview of the sum of relative importance by theme

THEME	TOTAL	RANK OVERALL	SoN RANKING	SUM OF RANKING OF SCHOOLS	SUMMED RANIK	PLACEMENT IN VAN BREDA ANALAYSIS
Context	**265.88**	**1**	3	9	2	2
Support	**257.64**	**2**	1	7	1	1
Policies	**255.9**	**3**	2	8	3	4
Research process	**81.29**	**4**	7	**20**	**5**	3
Philosophy	**59.79**	**5**	5	**19**	**4**	6
Individual	**36.83**	**6**	4	23	6	5
Inter- and intra-personal interactions	**33.33**	**7**	6	26	7	6

Through the summation of the "relative importance" for each theme, for all 10 groups, the most important theme is Context; second is Support. This is similar to the analysis by way

of the Van Breda method - where these two themes occupy the top two placements, but in opposite order.

5.7 SUMMARY OF THE FACTORS INFLUENCING THE RESEARCH CULTURE

Through the analysis of the factors that participants viewed to influence research culture, the schema on the following page (cf. Figure 5.1) provides an overview of the themes, comprising the overarching factors. These themes identified did show consistency with the themes present in the questionnaire (cf. Tables 4.4; 4.5; 4.17).

Four main themes comprised of the Contextual factor (cf. 5.2.1). Context pertains to the faculty (FoHS) and the university (UFS), its members and the workplace environment. The Context speaks to the perceived climate; workload; the opinion of the Uniqueness of the Health Sciences and the research autonomy and accepted forms of research. Philosophy (cf. 5.2.2) is the crux of the institution's research culture and stems from historically accepted customs, behaviours and the espoused values of the value statement; as well as the objectives communicated. Research process (cf. 5.2.3) viewed by participants as a factor contributing to research culture, included the aspects of the Ethics Committee, the DoH, as well as the execution, outputs, and observed misalignments.

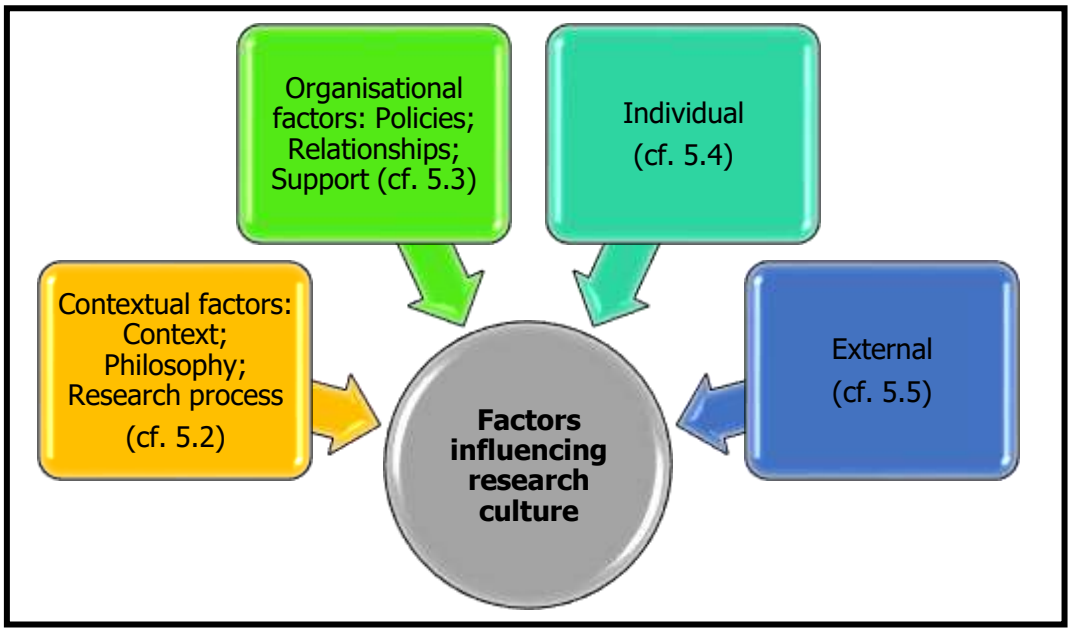

Figure 5.1: Schematic of the factors influencing research culture

Organisational factors (cf. 5.3) included factors of Relationships, Policies and Support. Inter- and intra-personal interactions (cf. 5.3.1) were categorised in the form of mentorship;

collegiality; collaboration; and networking; being a supervisor to or being supervised as a student. Policies (cf. 5.3.2) included rewards, recognition and remuneration; job description; sustainability and succession planning, as well as combined establishment. The combined establishment (cf. 5.3.4) policy of staff with UFS and either FSDoH or NHLS was found to create complexity and challenges, as coded "two bosses" and it was felt that research suffers due to RWOPS. Support (cf. 5.3.3) comprised many aspects - including management assistance; collaboration and networking; collegiality; mentorship; students; and supervision. The other aspects of support are resources, including funding; training and development. There was also an acknowledgement of existing support structures in place.

The Individual (cf. 5.4) as a factor comprised of two categories, that if attitude and personal context. These speak to the variability, positive or negative, of the participants' attitude towards performing research. This is a determining element in the prioritisation of research, motivation for research and the research goals of the individual. Being a caregiver, often a role of the female gender, limits time for research. Socio-economic aspects and language proficiency were also considered to be influencing an individuals' impact on the perceived research culture.

External factors (cf. 5.5) included the national research culture was perceived by participants to link commonly with the NRF. The International and National HE environment was not frequently addressed directly by participants. Other factors were mentioned by participants; beyond the full control of the UFS were categorised as Stakeholders, examples of which may be the FSDoH or the NHLS.

Different rankings of the themes presented in the quantitative analysis (cf. Tables 5.18; 5.19) of the NGDs (cf. 3.6.2) via the McMillan *et al.* (2014:103-104) method of relative importance and the Van Breda (2005:1-14). This chapter indicated the perceived factors that participants felt influenced their research culture. The **Discussion of the findings** follows in Chapter 6.

CHAPTER 6

DISCUSSION OF THE FINDINGS

6.1 INTRODUCTION

This chapter introduces a critical review of the findings. The identification of overlaps and linkages with other studies, of a similar context, add value in the form of analytic generalisation of the findings (Yin 2013:325-326); these are indicated by the referral back to the literature (cf. Chapter 2). Similarities of this study can be compared to the findings of other HE and health literature reviewed and compiled in Appendix A1 and discussed in Chapter 2 (cf. 2.3.3). Through these discussions it illuminates how the data triangulated as well as how the methodological triangulation (Harris 2002:65) took place via discussion quotation excerpts. This is evidence of the rigour of the study (Yin 2013:324); and strengthens the validity of this evaluation of research culture at the FoHS at UFS.

The discussion will take account of aspects of the results: biographical data (cf. 6.2); the individual and personal constructs (cf. 6.3); the societal construct (cf. 6.4); organisational (cf. 6.5), contextual (cf. 6.6) and external (cf. 6.7) factors. Thereafter a short commentary on the processes that could enhance the research culture is provided (cf. 6.8), followed by the development of the preliminary framework (cf. 6.9).

6.2 BIOGRAPHICAL DATA

An interesting occurrence was noted in the participants' reticence to give their age; primarily due to fear of being identified. This was highlighted as a concern, particularly by the SoN at the introductory information session of the study held at a staff meeting (cf. 3.4.2). Five of the nine participants from SoN chose not to provide their age (cf. Table 4.1); and at least one participant from each of the other sub-populations left this question blank. It is unknown if the fear of identification was the reason for omission in the other sub-populations.

The only sub-population to have male participants outnumber female participants was the SoM; this may contribute to the differences in the perception of the SoM participants to various questions within the questionnaire - although the extent of this is undetermined.

Similarly, the SoM had the highest proportion of joint appointed staff (54.55%; cf. Table 4.3), which could also contribute to the differences in the responses of this sub-population.

The discussion follows, as summated in the schema, Figure 6.1, given below. This figure represents the organic process followed by the researcher with the integration of the results presented (cf Chapter 4; 5) with the theoretical conceptualisation (cf Figure 2.8).

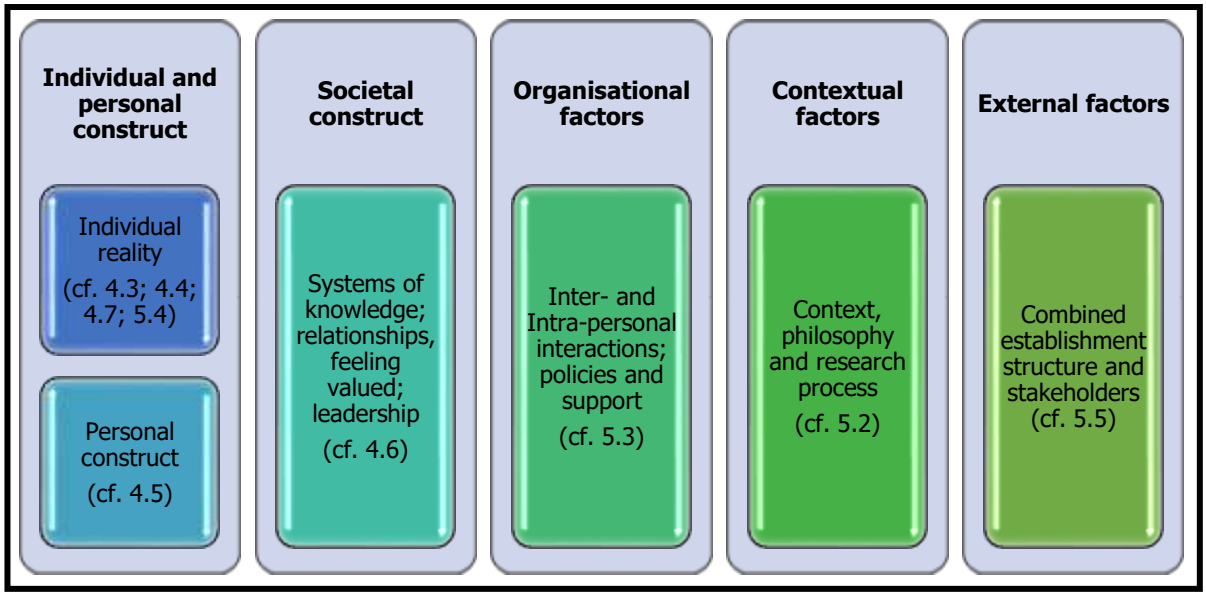

Figure 6.1: Overview of the discussion of the results

6.3 DISCUSSION ON THE FINDINGS OF THE INDIVIDUAL AND PERSONAL CONSTRUCTS

The individual and personal constructs are comprised of multiple facets, outlined in the schematic, Figure 6.2, on the following page. A person is a more than a sum of parts (Mele, *et al.* 2010:127), and each person is a collective of the impact of their society and the systems in which they orient themselves.

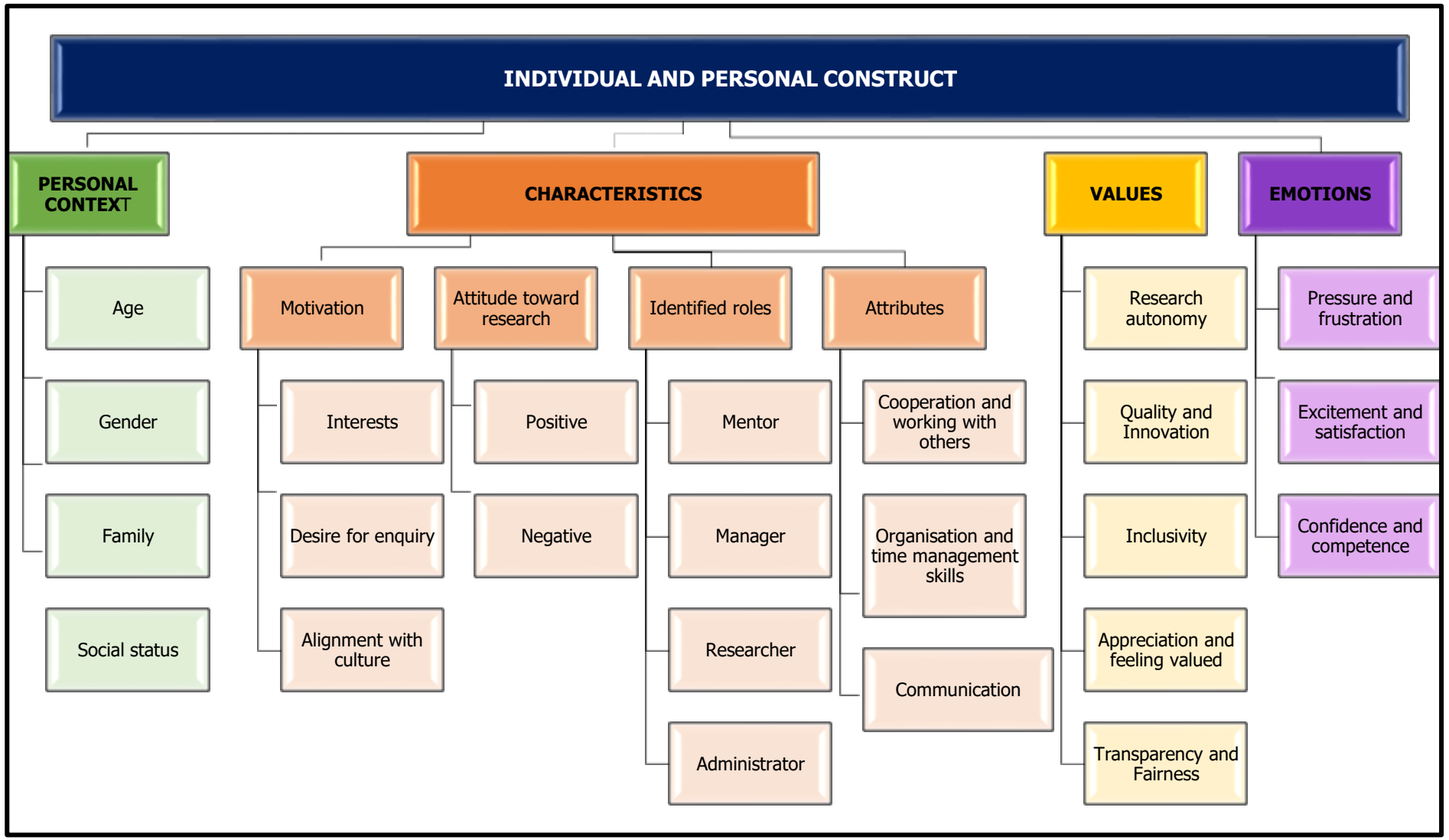

Figure 6.2: Individual and personal construct organogram

As it is apparent that individuals that participated in this study have varying willingness and interest to perform research, some being driving forces and others not identifying research as part of their roles, it can be noted that these perceptions indicate the presence of sub-cultures in the FoHS. Individual factors have been found to be relevant to research cultures in previous literature (Kiel, *et al.* 2015:41). Each of the sub-elements of the individual and personal construct depicted in the Figure 6.2 will in turn be discussed in the sub-sections 6.3.1-6.3.6.

6.3.1 Personal context

The Individual theme is comprised of their own personal context of age; gender; family and community responsibilities (Yates 2010:28); and social status as their supposed social standing in academia (cf. 2.2.4); and the observed respect they garner with their peers, management and the greater academic community (cf. Tables 4.17; 5.14-5.15). This study indicates similarity with previous findings where gender, research abilities and personal contexts influence the research culture (Schick Case & Richley 2013:327-349; Yates 2010:29). The personal context is influencing the research culture in that some women (cf. 2.4.3; 2.4.2) notice or feel that being a woman affects the perceived value of their contribution in terms of research. This perception requires change in order for the fulfilment of the objective to increase the number of women in academia (cf. 2.8.3). The support to women was perceived to be only partially addressed and calls for the UFS to be patient:

> "*Even though you may take maternity leave, even though you may need flexi hours, it doesn't make you less of an asset to academia. You can still make valuable research output. It might take longer and also to bear with us with that. It might take us a bit longer to get there*".

> "*It goes even deeper. It goes almost to the culture of academia is extremely patriarchal.".*

6.3.2 Characteristics: Motivation and attitude

Holligan, *et al.* (2007:724) found qualities include such as the motivation to perform research integral. Further studies also found motivation (cf. Table 4.11) and attitude (cf. Tables 4.17; 5.3; 5.7; 5.14-5.16) to be notable influences on a person as a researcher (Corchon, Watson, Arantzamendi & Saracibar 2010:224; cf. 2.4.2). The motivating factors to perform research in this study stemmed from an internal focus the desire to improve oneself, either for career development, as is the case for SAHP participants or developing skills sets, for the SoN. Whereas the chief motivator to AS and SoM sub-populations were

more external forces; to bring about change in a situation and for patient care. This can be construed as their agentic influence (cf. 2.2.3), whereby they have the belief that their contributions are able to bring influence to bear on the environment and that one's actions will have positive consequences.

These motivators are synergised (or hindered) by an alignment (or mismatch) of cultural fit or agreement between the person and the institution (cf. 2.2.1). Once again, the configuration of the values of the UFS and that of the individual require alignment to motivate one to perform research.

> "*You have to see that this valuable, because you are investing your time in it, so it's got to be meaningful for you in a personal capacity".*

6.3.3 Characteristics: Identified roles

The identified roles revealed that participants do feel they identify with the roles related to being a researcher, but some less so with the role of being an administrator or manager of people. Very strong agreement was given (80-100% response rate) to the identified roles (cf. 4.5.5) of all sub-populations to being a mentor to students; and among SAHP, AS and SoN participants to being a mentor to staff as well as being a healthcare professional. SAHP and SoN participants both showed strong (two-thirds or more) agreement to being a research publisher and presenter. Contrastingly, some participants viewed research as outside of their designated role:

> "*But I look at my job and I say my job is to teach students and research it's something extra and therefore I want something extra*".

Martinson, *et al.* (2013:817) propose in their model for a research organisation that the roles and responsibilities of the staff member are an influence (cf. 2.2.2); roles are also a dimension of the model by Chaffee and Tierney (1988:7-9) (cf. 2.2.3). Similarly, specific disciplines (Smerek 2010:410) were a relevant contextual indicator for research culture as some specialities have often small departments (cf. Table D10.7) and specific requirements needed to perform research (cf. Table D10.9).

6.3.4 Characteristics: Personal attributes

Salazar-Clemena and Almonte-Acosta (2007) as well as Johnson and Louw (2014) in a South African context found personal attributes to be of influence in a research culture.

Personal attributes (cf.4.5.5) of teamwork; being cooperative and communicating well were aspects that the participants felt they do well at. Agreement responses (cf. Table 4.12) to the statements of: *I am organised; have good time management skills; the ability to switch between tasks effectively; communicate effectively with people from various sectors; am confident that I am good at my allocated job tasks; am a cooperative person; work well in a team.* This indicated the participants perceived themselves to hold these particular attributes or characteristics.

This could be investigated further through the CVF to determine if this indeed is the case (cf. 2.6), where these attributes would define the overall culture as 'clan'. This would not be a unique finding, as in two-thirds of American colleges and universities; 'clan' is the dominant culture (Berrio 2003:8).

6.3.5 Personal values

Schein described values are being an element in the development of a culture (1996:229-240), which are communicated to individual through accepted behaviours and in tangible form by way of the value or mission statement. Values within the university philosophy that participants considered a necessity for an enabling research culture were: quality; autonomy; inclusivity; innovation; transparency; and respect (cf. 4.5.1). Prominent values identified in the existing research culture by participants were (cf. 4.5.1): Ethical, Support, Competitive; as well as the idea of Excellence or Quality or Rigour in research and the notion of tenacity (Perseverance; Dedication; Commitment; Resilience and Determination). This shows good alignment to the value statement advertised by the UFS for Superior scholarship. Trust, honesty and integrity are similar values found to be important in previous studies (Wilkes, *et al.* 2013:7). Another similarity is that nurses were found to value ethical practice (Wilkes & Jackson 2013:31).

Values espoused by the UFS include Human embrace; Institutional distinctiveness and Emergent leadership (UFS 2017:online). Table 6.1 summates these mismatching conflicts. Each of the perceived differences will be discussed in turn. They are: research autonomy; aspiration to quality; innovation; feeling appreciated; fairness and transparency.

Table 6.1: The dissonance of the espoused values and perceived enactment thereof

ESPOUSED VALUES	EQUIVALENT VALUE IN THIS STUDY	PERCEIVED MANIFESTATION
Superior scholarship	Quality	• Intake of poor-quality postgraduate students • Supervision of students outside of expert scope • Retrospective studies the norm; No asking big questions • Forced to perform research • Forced to choose specific topics
	Research autonomy	
Human embrace	Respect Feeling valued Appreciation	• Types of research not equally respected • Nobody cares • No appreciation or recognition for efforts made • Unequal distribution of time, resources, workload
	Fairness	
Institutional distinctiveness	Innovation Lack of agility	• Ideas are shot down • Inertia and resistant to change • Poor retention of senior research staff • Clinical medicine not a research cluster
	Niche researchers	
Emergent leadership	Development of staff	• Limited career guidance for new staff • Patriarchal culture • No perceived transparency, particularly in funding for research • Irregular promotions and staff appointments
	Inclusivity	
	Transparency	

6.3.5.1 *Research autonomy*

There is a feeling of research being forced onto the staff; an almost stripping away of choice. It is noted in every one of the nine groups who had an audio recording, and this was the atmosphere in which research is perceived by staff. This is overwhelming in its unanimity and does reflect an aspect that has not been previously associated with research culture in the literature.

There is a pervading culture of forcefulness and this goes against the whole philosophy of the value attached to research autonomy an academic should have (cf. 2.3; Tables 2.3; 2.5; 2.4). Excerpts emphasise this feeling:

> "*It's not in everybody's personality, talent or interest. There is (sic) people that is burning, that is burning just to do clinical work in our department and that would do extremely, extremely well and for example I would love to do just research but I am not allowed to do that*".

> "*In the past you did research because you were passionate about. Now you do research because you have to do it, as opposed to doing it out of passion*".

> "*So, we need to have people who want to do this. We shouldn't be blackmailed and coerced to do it".*

> "*Because sometimes it feels like I am now forced to do something I don't love and know I am spending less time on what I really love*".

This creates a personal dissonance and a lack of cultural fit (cf. 2.2.1; 2.3.2) with the values manifested in the FoHS. The feeling of being compelled to perform research does not align with the participants' identity. This is also in juxtaposition to the expectations of a healthcare research culture (Smith-Merry, Gillespie & Leeder 2007:19)

> "*You can't just merely enforce stuff from the top down, because you it's a non-fit*".

> "*Now if you enforce there is one article per person every year necessary, and you know, I ask myself, what is the motivation behind that with myself? If I am not interested in something, just to fall in with another project, just to publish. That's the idea that I get from some. And that's not me, I am really an honest and true person towards myself, I can't go with that. If I am interested, yes, I will do it. To make a difference*".

As the intention of the UFS is promote superior scholarship, it would surely be in the interest of the institution to have an atmosphere of enjoyment of research; of professional research autonomy (cf. 2.3). If an academic is to generate quality research, an interest in their field will stimulate greater motivation to stay with the topic to the level of expert researcher.

6.3.5.2 *Aspiration to quality*

Superior scholarship implies that researchers of a high calibre strive to be experts in their field, producing research outputs of an optimal standard, perform the research. This value of quality is research is imperative to a research culture (Zeelen 2002:136) and an institution should aspire to inspire quality research Schulze (2008:651). The perception is that this goal is not being supported, even though the UFS desires quality outputs and rated researchers ("*At the Faculty of Health Sciences, we place a high premium on the quality of research, and quality research is conducted on an on-going basis"* (UFS Website 2017:online)). The excerpt below describes the perception by participants that little is being done to achieve the intended objective. Limited intervention is perceived to support moving the Faculty forward, towards quality, towards a thriving research environment:

> '"*Beyond survival to thriving'. You see what happens, they just appoint enough people to do the basics, but if you really want to add research and if you need to be 'thriving'…we are not half as staffed as we should be. Of course, it's 'pie in the sky' and nobody is going to do that but it's not just staffing. It is you have to get to a point of 'thriving'".*

> "*The University of the Free State constantly have people moving out, coming in, going out. They don't retain their staff. So, if you don't retain staff, you can't build capacity and you lose all the expertise that's been built up in a couple of months, or a couple of years*".

Although this desired value of scholarship is broadcast, the perceived lack of assistance is viewed as an obstacle to implementation.

6.3.5.3 *Inclusivity*

In order to create institutional distinctiveness and to embody the human embrace espoused by the values of the UFS (cf. Table 6.1), there is a prerequisite for innovation and inclusivity (Wilkes & Jackson 2013:31). Only through new and unique niche research areas can a research institution be competitive and distinct (cf. 2.2.1; 2.4.2). The feeling of innovation appears to participants to be wrought with an immobility - a lethargy to incorporate these principles of innovation. Inertia and resistance was by far the most obvious of the perceptions of participants regarding the philosophy of the Faculty. It is the longstanding 'way it is'; there is a traditional way of doing things; certain types of people are viewed to be up-starts (cf. Tables D10.1; D10.3; D10.4; D10.6-D10.8; D10.10). Even in the open-ended questions (cf. Tables 4.5; 4.17), staff perceived a resistance to change, to innovation, to new ideas:

> "*I feel an inertia, because you are being told to do it in a certain way because that's what we do*".

> "*You think okay well let's do this and then you all get excited and then they throw cold water over it, say 'ah nee' this is not the way we do it. Then we ask, 'so what do you want'?"*

> "*…start in being inclusive in accepting alternatives and accepting directions that are foreign, directions that are foreign*".

6.3.5.4 *Appreciation*

When participants responded to forced choice questions pertaining to feeling value it revealed that participants did not feel their opinion were valued, yet they did feel their opinion will affect policy. This indicates that there is a belief that their contribution to policy updates or creation will not be utilised or implemented; through this belief system, it is possible that there is a level of inaction by these participants - which may then be interpreted as organisational controllability within the research culture (cf. 2.2.3).

When benchmark against the intended value of the UFS value statement, the value of human embrace, this is again perceived as lacking. Participants feel unappreciated, undervalued and that nobody cares (cf. Table 5.16). A perception of feeling valued has been seen to be an important aspect of an enabling research environment (Wilkes & Jackson 2013:32; cf. Table 2.5). The opinions of staff indicate that they felt distinctly unembraced:

"*…the whole University culture and that the focus is being so it's being a student focus and not a staff focus…. I think everybody it goes back again to the overworked feeling…Yes the staff certainly don't feel valued*".

"*It's that they don't value one another's paradigms and if you even push this further, you will get another little point I have got here, is that people don't tend to like to celebrate one another's successes…*".

6.3.5.5 ***Fairness***

Leadership as envisioned in the research objectives (cf. 2.5.4) should allow that staff can:

"*Bring problematic areas to the attention of the leadership of the University, EM (Executive Management), EXCO (Executive Committee), Deans"* and that there ought to be "*a culture of sympathetic leadership and support by the concerned University authorities…*". (UFS 2015, Objective 1, Strategy 4)

For this to be made possible, leaders should be approachable, and conduct themselves fairly and with transparency (Ardichvili, *et al*. 2009:448) The dissonance reflected by the AS and SAHP from the informal discussions also portrays that there are unfair promotion procedures; there is unfairness in that the goalposts are moved, and without clear communication thereof. The applicability of the workload model for evaluation (cf. Tables 4.17; 5.1; 5.13) was also a feature. Other comments also speak to fairness (cf. Table 5.1); a sense of ever-changing goalposts, with no communication of the amendment of the policy.

"*The environments within the supporting administration structures are ever changing. So, by the time that you have agreed upon, if I achieve this goal this will be the outcome, then the regulations are changed. And now I need to publish 5 more articles. In the eight years I have been here, it has changed three times*".

"In other words, currently as it stands, you can be as best as you can be, you can do everything you want to, if you don't have an NRF rating you can't be promoted. Which means the promotion criteria is not reflective of a person's potential, you can call it that".

"*You know that you only become a professor or adjunct professor if you have an NRF rating have done enough writing and whatsoever and then left, right and centre you see 'adjunct professors' popping up. Adjunct professor is now an 'academic promotion', whose regulations are those ones who do not qualify, but the university still feels they must make them professors".*

When people feel part of an organisation, feel valued and fit with their values, they are more likely to work for that organisation for a longer time. Fairness is considered a requirement (cf. Table 2.5) in an ethical research culture, along with transparency, which will be discussed in the next section (cf. 6.3.5.6).

6.3.5.6 *Transparency*

Taboo questions regarding the transparency of the awarding of the article subsidies - are contrary to what emergent leadership should be (Nosek 2018:online cf. 2.4.2, Table 2.3). This was commented on at three levels: Department, Faculty and University and as well as externally, pertaining to the NRF funding timelines.

> "*Since I have been here nine years ago, when I started here, we have enquired about how the cake is cut when there is funding received for an article. Its nine years later we still haven't received that so there it's not transparent as to what happens...It's not transparent funding. It's not transparent. No one knows where that money goes."*
>
> "*Can I ask something about, I know in our Department it's been a very often discussed topic is the funding that the University gets for the articles, the researcher or the author gets about R3 000 to R6 000 in our department for an article, but where does the rest of the funding go?... you mustn't ask about it, it's not an open thing".*
>
> "*…but it means there is funding available, but they don't know how to spend it, and it doesn't reach the people it's supposed to reach*".

These dichotomies of the communication and experienced values are different from the mystification, de-mystification and re-mystification proposed by Hill (2002:17), whereby the clarity of purpose by the University is not clearly communicated. In this study, there is a clear, communicated vision from the University, but the behaviours and norms experienced are at odds with the vision itself.

6.3.6 Emotions

The theme of Perceptions and emotions, which emerged from the questionnaire data, was captured under this umbrella theme. Similarly, the individual's perceptions of themselves and emotional states felt in the workplace, having confidence in their capabilities and being able to act autonomously (cf. Tables 4.5; 4.9; 5.1-5.2). In terms of competence, it was felt that the members of the Ethics Committee should be selected on competence (cf. Table 5.5); there was pressure felt to publish (cf. Table D10.2); frustration is felt towards the time it takes to publish and the submission to the Research Information Management System (RIMS) (cf. Tables 5.5; 5.6). This is in line with other studies (Deem & Lucas 2007:122; Hermanson 2008:53; Kamler 2008:283-294; Manathunga 2006:2).

6.4 DISCUSSION OF THE SOCIETAL CONSTRUCT

The societal construct consists of knowledge systems and the knowing of knowledge; power differentials such as in relationships of leadership; other relationships related to being an academic and a researcher. These are elements of the socialisation process of new academics and how each personal understands what the expected behaviours are within the academic domain. Hill (1999:1-2) termed this the observable behavioural regularities are when people engage in research, which include the language and rituals. Behaviour is learned from the environment by way of observational learning (McLeod 2016:online). By understanding the values that reinforce behaviour, the emphasis of daily tasks relating to research can be learnt; and the transfer of using these accepted behaviours can be applied to implement research (Scott-Findlay & Golden-Biddle 2005:365).

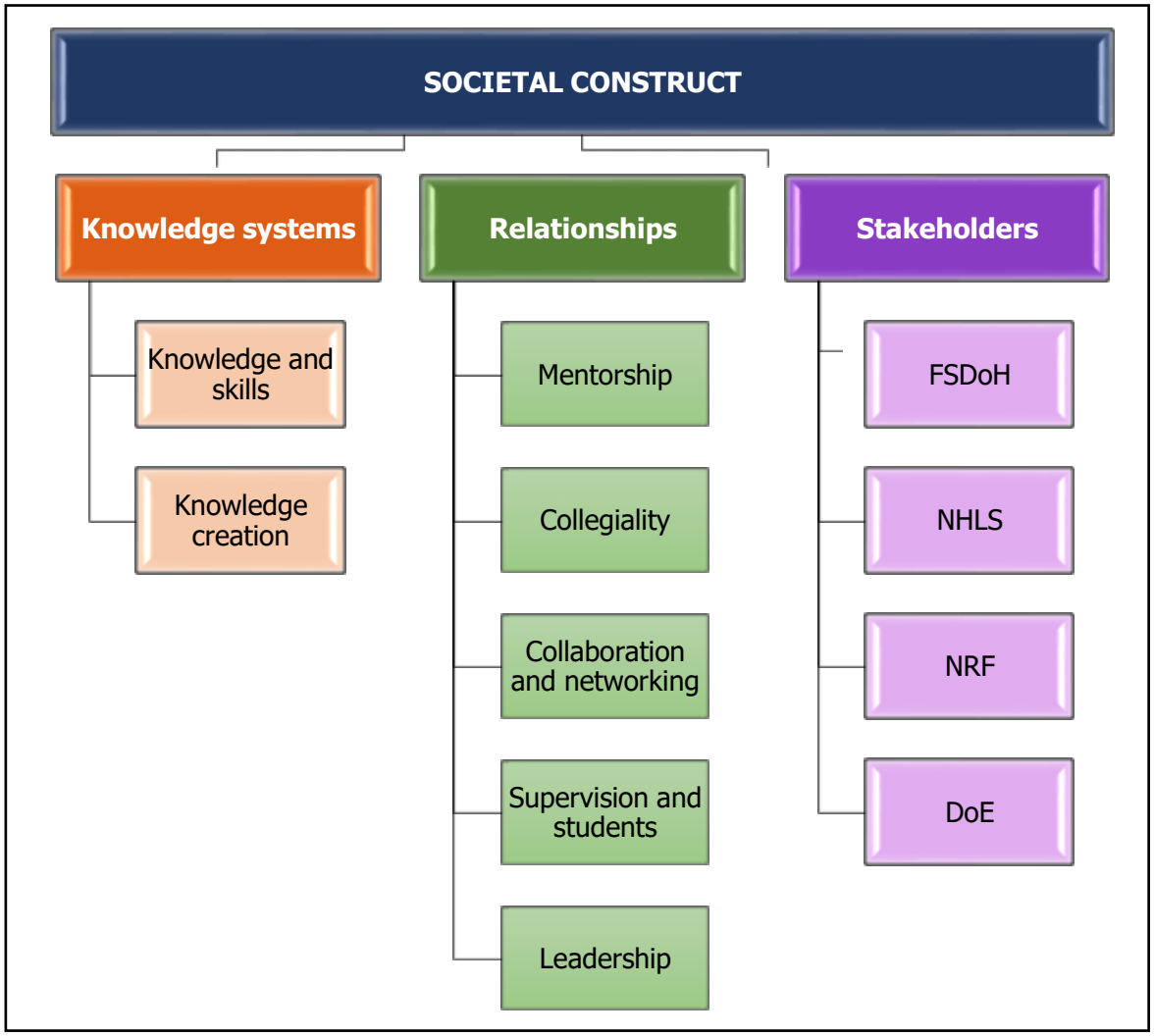

Figure 6.3: Societal construct organogram

The sub-elements that are presented in Figure 6.3 are each discussed in the following sub-sections (cf. 6.4.1-6.4.3).

6.4.1 Knowledge systems

Bourdieu (1986:51) described social capital as "*the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition*". Social capital are resources grounded on group membership, relationships, networks of influence and support. Cultural capital (Bourdieu 1986:242) demarcated as the systems of knowledge, skills, education, and other advantages that people possess, which give them a higher status in society. Petersen (2007:477) described this in a more modern way as the "coming to be" of an academic: "*how to know how to act, speak, think, write and feel as an academic*".

6.4.1.1 ***Research knowledge and skills***

The particular skills and knowledge (cf. 4.6.1; Table 4.14) as it relates to their job description and their perceived research abilities has been acknowledged as a factor in previous studies (Johnson & Louw 2014:163; Thomas 2011:76). The staff are commended on the overall research knowledge and skills, particularly their ability to *generating research ideas finding; relevant literature; critically review literature; and submit a protocol to ethics for review; publishing research; and writing a research proposal and report* (cf. 4.6.1); although further development of these competences may enhance the research culture (cf. 2.4.2).

There is a need to receive training on the availability and processes of research project funding, as indicated by the number of participants admitting to insufficient knowledge in this skill. Training would be beneficial to the sub-populations of the SAHP and SoM for qualitative methodologies and analysis and interpretation thereof. The SoN participants would benefit from courses on the use of quantitative research and the analysis and interpretation thereof. The SAHP, SoM and SoN participants indicated a lack of knowledge to design a questionnaire and relevant workshops or skill development in this area would be advantageous. The participants of the AS indicated insufficient knowledge on *integrating research with clinical activities;* as these are participants that fulfil academic support posts, this may account this paucity, due to not being as active in the clinical field.

6.4.1.2 *Creation of knowledge*

Participants understood that New knowledge stimulates and sustains disciplines (Henson, Hull & Williams 2010:334) or professions and that much new research is implementable to improve patient care (cf. Table 4.4), and vital to meet South African needs (DHET 2014a:5; *"…universities are the dominant producers of new knowledge* (NDP 2011:322), *and they critique information and find new local and global applications for existing knowledge. South Africa needs knowledge that equips people for a changing society and economy")*

Knowledge creation, exchange and dissemination were encouraged by various motivators (cf. Table 4.4) and participants believed it to be the basis of a research culture (cf. Table 4.4). Contrastingly, it was not necessarily felt by participants to be the impetus to perform research in the FoHS (cf. Table D10.6: "*Research has become or is a requirement-not a desire, not the urge to find new knowledge*"). Participants did remark that the creation of New knowledge could change a situation or generate change (cf. Table 4.4).

> "*Ja but we also need to understand that our disciplines especially the small ones are going to die without research*".
>
> "*The collective actions of formal and informal social structures that directly or indirectly stimulate the expansion of knowledge through intellectual exchange; and maintain the infrastructure and processes that underlies the development, refinement and communication of new knowledge".*

6.4.2 Relationships and power differentials

Relationships in this study refers to both inter-personal and intra-personal interactions. The term inter-personal is the communication and interaction between two or more people; tasks relating to this are supervision of oneself or of students, collegiality and collaboration, and discussions relating to research. Intra-personal is related to the self-concept; it ascertains the way in which an individual orients him/herself towards others. Intra-personal interaction is the inner voice of a person influenced by belief, attitude and values (cf. 2.2.2); it is what is felt or thought when thinking about their relationship with others in the research context. This was identified in statements retaining to their relationships with others as pressure to confirm to the perceived achievement ideology, feelings of isolation, not feeling valued and competitiveness (cf. Tables D10.1; D10.5; D10.8-10).

6.4.2.1 *Mentorship and collegiality*

The need for collegiality, networking and paucity of mentorship has had mention in a few studies (cf. 2.3.2; O'Brien 2013:7). The need for the training of staff to be mentors has been identified in literature (cf. 2.2.2; 2.4.3) and by the UFS (cf. 2.8.4.1). A notable lack of mentorship and specialised supervisors to assist and guide staff (cf. Tables D10.1-D10.4; D10.7; D10.9-D10.10) is perceived by the participants in this study. There is a perceived lack of collegiality; particularly within the SoM participants (cf. Table D10.9).

> "*It also has to do with collegiality and so I think bringing in the importance of acceptance of collegiality, even if people think and do 'other things*".

> "*And it was started with it a while ago, but it fell flat. I can't have a relationship with someone, if you don't think the same, you can't communicate in the same way so if you actually meet someone with the same interests and you will communicate well and he can teach you in the manner that you would like to be taught, why not choose that person as a mentor? Because we all differ, we all learn and teach in differing ways and sometimes you get someone who grasps the same idea as you*".

> "*The ability to screw over your colleagues before they screw you*".

Although most participants did feel that there is some collegiality, and sufficient avenues of mentorship (cf. 4.6.2), SoM felt lacking in a network of research peers. This, for the SoM, pertains to a formal or informal mentor as well as the assistance that a research network provides (cf. Table 4.15). The strong feelings of trust and being valued open communication and constructive feedback given by colleagues (cf. Table 4.15) indicates a conducive collegial research culture as described by Wilkes and Jackson (2013:32). SoN had very positive comments that substantiate this descriptive data, from the open-ended questions of the questionnaire:

> "*You can walk into anybody's room in our school and they will assist you*".

> "*You can go to most of the people here, anybody and you can ask can you please help me with this, I don't understand this and I must say I think that is actually a very good thing from our research, within the school, research quality or our colleagues, senior colleagues you know*"

Mentorship should be formalised and structured (Mullen & Hutinger 2008:182); iterative by way of allowing for a mentorship cycle whereby mentees become mentors (Hanover Report 2014:13; Tynan & Garbett 2007:413).

6.4.2.2 *Collaboration and networking*

Literature states that collegiality should have collaborative inclinations (Wilkes & Jackson 2013:29); in this study there are impressions of various levels of collaboration (cf. Tables D10.1; D10.4-D10.5; D10.8; D10.10). Many felt that there were some avenues being followed to create and generate more collaboration. Others felt that the competitive nature of research (cf. Table 4.10) created by the reward system negates the likelihood of collaboration. International collaboration is viewed or sought as last resort, due to international researchers keen to use the abundant and diverse data on conditions prevalent in the patients in South Africa; and have the money to fund the studies. Many felt that if there were better communication, or pooling of research data, that collaboration would improve. This would be to the betterment if the research culture (cf. 2.2.1; 2.4). Collaboration is viewed as a spin-off of larger projects: that there is a need for existing projects to spark the interest of other staff to get involved and that collaboration can stimulate motivation in others.

> "*So, we all negative because we all get nowhere by ourselves and we don't form the, each of us might have a skill that would be very useful in that group, but we don't know other people with other skills, or we don't even know what their skills are, so. We mustn't focus so much on individual, on an individual to do research, but rather to have 'group research'*".

> "*…I think people have within a specific department they may be doing a type of research. But if you are not in the department you don't have access to that information and you don't know what to look for, they don't know about each other*".

> "*So that's why we need this thing where we need to have groups that's already doing it then perhaps, I might change my mind and get my colleagues to change their minds that they can*".

6.4.2.3 *Students and supervision*

Each academic has responsibilities that include the clinical and community-based education of undergraduate students, and the supervision of both undergraduate and postgraduate student research projects. Part of the concern of the participants was the workload of under- and postgraduate students; that the massification (cf. 2.8.1) of HE is encroaching on the values of quality (cf. Table D10.4). Staff felt pressure to supervise students that they consider outside of their expertise (cf. Table D10.10) and that there is an insufficient number of available and expert supervisors (cf. Tables 4.18; 5.3; 5.7; 5.10). Thiruthaneeswaran, et al. (2014:164), also found insufficient available supervisors in a study. Student supervision was perceived by some as a thankless task. In addition, participants felt that there was insufficient recognition for the throughput of postgraduate students (cf. Table D10.4).

"*…I don't think it is acknowledged. The time that you must read and correct and all that*".

"*Because we do get supervisors who really don't care whether they give feedback or how long they take. For me that is a poor research culture*".

Discrepancies from the expected norms were observed in that supervisors and students have different expectations; acceptance of poor-quality postgraduate students (cf. Tables D10.4; D10.10); and inconsistencies in the quality (and length) of theses (cf. Table D10.10). This is contrary to all the literature read by the researcher - where quality and excellence represent the epitome of a healthcare research culture (cf. 2.4.2; 2.5.1; Rath 2009:97). The role of supervision cannot be underscored enough; it is the cornerstone of the foundation to increase capacity of researchers and meet the objectives of government (cf. 2.5.3) to maintain the future sustainability of HE and specialised health professions.

6.4.2.4 *Leadership*

Leadership is crucial for a thriving research culture (Johnson & Louw 2014.153; 2.3.2, Table 2.5; 2.3). Leadership (cf. Table 4.16) was perceived overall positively in three sub-populations, except by the SoM participants. Two-thirds or more of the other three sub-populations showed agreement with leadership in research and the opportunities created by the participants' leaders for research. SoM participants did agree that line managers are goal directed and research oriented, however indicated the most disagreement with the communication of research expectations. This once again may be due to the number of joint-appointed participants (cf. Table 4.3).

The differences in the agreement of leadership by the SoM participants was also evidenced in the open-ended questions (cf. Table 5.16). There was greater dissatisfaction among staff who had perceived divided leadership, in this situation, between the UFS and the FSDoH. Pure academic UFS staff may well be very satisfied with leadership; but due to the diversity of appointments and heavy reliance on more than one source of authority, it creates dissonance in the uniformity of the research culture. The concept of bricolage (Swanson & Creed 2014:33), the making do with the existing resources and adapting what is at hand into usable parts, is very apt when considering the context of this study.

"*…I do think that our management do (sic) support research, to a great extent. They do what they can do, with what they have. Time and moneywise."*

"*There is a lot of support structures actually in place for research, and that definitely helps to elevate our research or the research culture, at least in our faculty. I can't compare it really*

to other faculties but if you think we have got the research clinic, we have got paths to funding, we have got leadership, research leaders where we can go to for help and so on…"

Development of staff in terms of long-term goals and career-path guidance should form part of the socialisation of the newly appointed academic (cf. 2.2.1), to assist in the early career guidance of academics.

"*If someone start today working at the School of Nursing, then I would tell him, 'listen, number one on your agenda is research'. Come let's sit down and see how you plan your research. Don't go diverse… that kind of pushing, guiding, mentoring a person to understand and give direction*".

6.5 DISCUSSION OF THE ORGANISATIONAL FACTORS INFLUENCING RESEARCH CULTURE

Organisational factors included policies and participants saw support structures, of which staffing and time as important. Previous literature indicate that policies have impact on the research culture (Thuraisingam, *et al*. 2014:535). Also that a lack of resources is a barrier (Williams & Lazzarini 2015:15); and incentives are viewed as important tools (Nosek 2018:online).

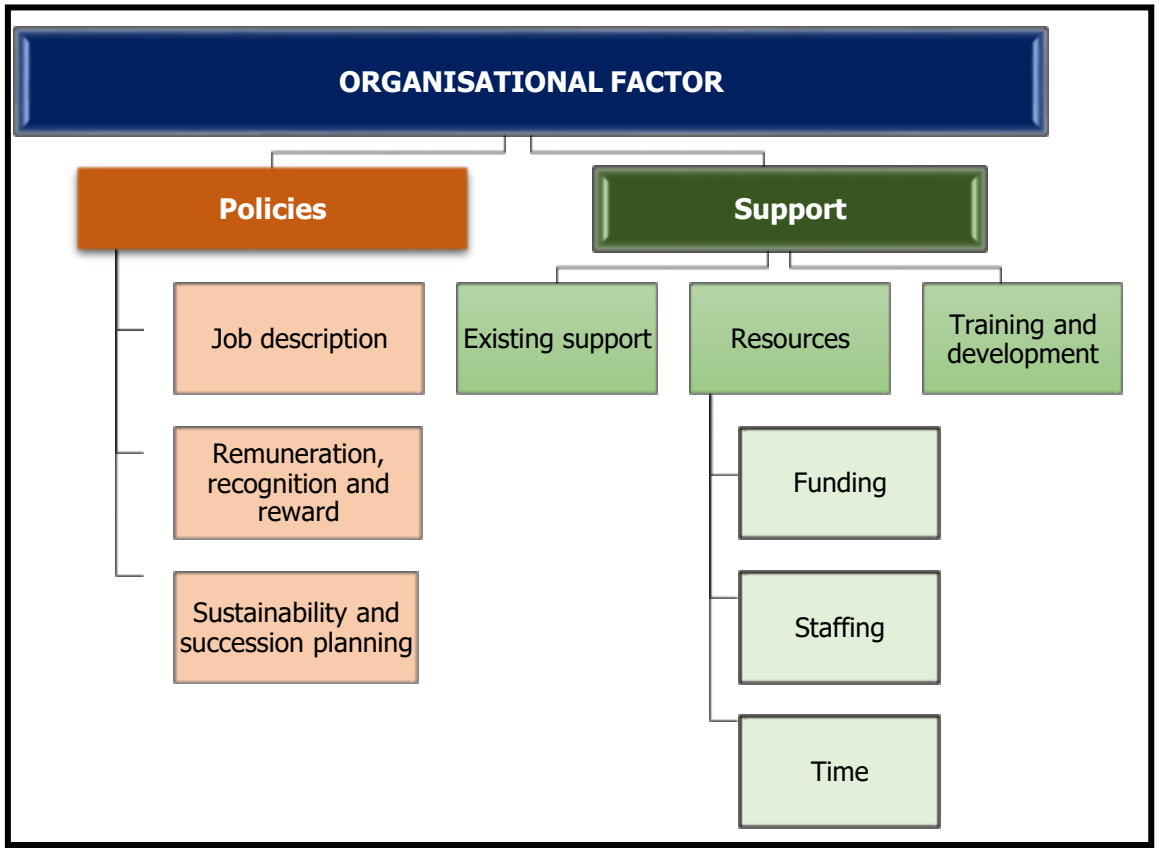

Figure 6.4: Organisational factors organogram

Figure 6.4 presents the elements discussed in greater detail in the sub-sections 6.5.1-6.5.2.

6.5.1 Policies

Policies within literature related to promulgation of policies, amendments and clarity thereof in departments of Education (Deem & Lucas 2007) and Foreign language (Hernandez-Mendez & Cruz 2014), health organisations (Joyce c2013) and the influence of research policies on the growth of the chiropractic profession (Weber II & He 2010). In this study, policies were focused more on rewards and recognition for research and the influence of the combined establishment employment policy (cf. 5.3.4).

The theme of Policies does not intend to include all policies of the UFS; merely the policies that participants felt were of relevance to the topic at hand and mentioned by the participants themselves. As such, policies on recruitment (Human Resources) and the contractual descriptions of job descriptions and designated retirement age; the promotion criteria and formal mentorship programs for sustainability in research; strategies for grooming and succession plans; also, the contentious issue of the combined establishments with the FSDoH in hospitals and laboratories affiliated with the UFS were recorded.

> "*…our university they don't do anything to retain the good people they have, with service delivery, they don't pay them enough, they don't and so we are never going to find them and even if we do find them we are not going to keep them*".

6.5.1.1 *Job description*

The enormity of the impact of the combined establishment, in a negative way, is a new nuance on joint ventures or partnership programmes relating to research in a health domain. Staffing appointments and their structures affect other South African institutions in terms of research (Johnson & Louw 2014); although no comparative study within the HE health South African context has yet been undertaken. In previous studies, this form of collaboration is viewed in a positive light; a way of leveraging resources and skills (Loke, Laurenson & Wai Lee 2014:134). This is not the case in this study and it remains to be determined if this is consistent in other academic institutions with similar appointment structures.

A golden thread in this study was that of the participants' job descriptions and the dissatisfaction (cf. Table 5.9; 5.10) with the trifocal model (cf. 2.1; 2.4); an increasing workload but no adjustment to the breakdown of responsibilities.

As research is merely done as a requirement (cf. Tables D10.2; D10.5-D10.7), the essence of a yearning for new knowledge is absent, research quality is compromised to 'just get it done'. Leibowitz, *et al.* (2015:328) found that capacity building research efforts in South African HEIs have created a perception that staff focused on teaching were neglected. People feel that there should be delineated roles within each department, separation of the trifocal mandate. Many people are admitting to performing research, purely as a prerequisite (cf. Tables D10.2; D10.5; D10.7).

> "*The people that don't like research, allow them to do it properly, others, allow them to do something else*".
>
> "*And a PhD is actually a job description*". (Continued by different participant) "*But when you get the job and boy, you better get that PhD. It's explicit in the advert".*
>
> "*Do you know that at the NHLS are in a very strange position? We are forbidden to spend more than 30 percent on University work. We actually have to fill in our time sheets for every week to make sure that you are not spending more time on University work. University is teaching, training and research… The other strange thing is when they evaluate your performance, 'your proficiency' they call it, they evaluate you on the 30 percent you are doing for the University, and not on the service delivery*".

In order to promote and motivate research within the Faculty, particularly with jointly appointment staff, the recognition and rewards offered should be reviewed (cf. 2.2.1; Table 2.5).

6.5.1.2 *Remuneration, recognition and rewards*

Rewards and recognition are described as motivators to execute behaviour (cf. 2.2.3) and seen as important to cultivate a research culture (Schulze 2008:641). These motivators should be tailored to individual needs (Barner *et al.* 2015:11); in this case, this need is voiced in the participants' view of the workload model requiring adaption for the specific role of the health academic (cf. Table 5.9; 5.10).

Staff who participated felt that the evaluation and promotion criteria are unrealistic, unfair and demotivating (cf. Table 4.9). This is an important finding as the University has the objective of (cf. 2.8.4):

> *"Launch studies to gain an understanding of the research environment, for example, obstacles and disincentives with regard to research, lack of time, requirements for development of infrastructure".*
>
> "*Create a culture, within the University, of monitoring and evaluation for own development*".

Monitor external and internal environmental factors and assumptions, as well as policy directives and policy-making which may influence research at the UFS",

These findings should be further investigated to establish the cause of these perceptions and how changes can be brought about to rectify this. The staff perception is then very much out of tune with the intention of the objectives of the UFS.

Recognition for research is considered pertinent to an enabling research culture (cf. 2.3.2). The category of remuneration, recognition and rewards, policies on promotion and evaluation of research were perceived negatively overall in the questionnaire (cf. Table 4.9). Similarly, in statements by the NGDs, to be demotivating and not holistic (cf. Tables D10.3-D10.5; D10.8). This being said, research is considered part of the mandate of all academic staff; even on a joint appointment.

"*I think for us and that is now for optometry and for the School of Medicine, we are all part of DoH so even if we publish until we are blue it doesn't mean anything for us, for our bank statement at the end of the month. We can apply to become senior lecturers and adjunct professors and whatever. But we are never going to get an increase in our salary for doing research*".

"*I mean when I got my PhD, I said okay 'so what do I get for this now' and they said 'ag, give me a copy and I will file it in your file'. That is what I got for doing a PhD. So, in our setting it is different to the UFS setting, but this forms a very big part of this faculty".*

"*We need the University to state clearly to the Department of Health and at the NHLS and everyone, exactly what is expected from someone*".

Part of the concern of the participants was the newly implemented, weighted workload model. The perception on the workload model is that it cannot readily be applied in the instance of the FoHS, as the clinical component is unique and demanding of time and effort. This results in participants feeling it is unfair and 'does not work' (cf. Table D10.3). There has been a call to review this by SoN and they fell that it has not been addressed.

"*It's stressing the fact that the performance model is not terribly efficient in terms of what it is expecting from you and what it is rewarding you for doing*".

"*But you know what I think, it's weighted in such a way that if you, even if you do your teaching load, and no supervision, you won't make the cut".*

"*…we lodged in writing our concerns about how this workload module is actually structured …it was not listened to. Our concerns were not*". (Continued by different participant) "*And we never got official feedback either although we spent quite some time in giving feedback on it".*

6.5.1.3 *Sustainability and succession planning*

The synergy that could be leveraged from senior people is not being taken advantage of (cf. 2.2.2; Table 2.6); this will create a lack of capacity in the future. Policies relating to career guidance (cf. 2.4.2) and early-career mentorship could alleviate this.

> "*We only have 10 staff members and three of our senior staff are on their way out, so nobody really intends to research or cares to do research, because they are just waiting out their pension time. That leaves our juniors to just fall on our faces and stumble through research on our own. There is nothing being done about that*".

> "*If you think about the faculty numbers that have dropped, this past few years that has not been mentioned maybe it's another point, that is the crisis and I do think that is maybe one of the main things that will, almost endanger research outputs for the next few - 10 to 20 years. I don't think we will feel the effect now, but the ripple effect of what has happened in the faculty, is a tragedy and I don't think it is, I don't know if it will ever be corrected in our generation, to lose people with capacities that we have lost. It has been a tragedy".*

> *"And even to attract people from other universities, they don't want to come here because of the salary scales, remuneration*".

From this discussion, it can be seen how integrative the nature of research culture is (cf. 2.3; 2.9) how like dominoes there is a knock-on effect. So tightly woven are the concepts of the workload with the lack of capacity of the clinical specialties by understaffing; which in turn causes more staff departures, combined with a set retirement age, leaves a gap in the mentorship and supervision.

6.5.2 Support

Support is a prominent factor in the literature and is seen to be needed to provide a conducive research environment (Gabriele & Caines 2013:20; Thiruthaneeswaran, *et al.* 2014:165); Training and development as well as career guidance is necessary to develop researchers (Kljakovic 2009:4); Funding allows for an improved culture (Hanover Report 2014:15).

Support in this study comprised many aspects, such as resources, including funding; training and development as well as any and all resources, staff, programs and provisions made for research, or which influence research (cf. 2.2.2; 2.9); as named by the participants. There was also an acknowledgement of existing support structures in place. These aspects were also noted in literature (cf. Table 2.5; 2.2.3; Naoreen & Adeeb 2014:3014).

6.5.2.1 *Existing support*

This interpretation does not assume to be an exhaustive list, merely that which was perceived by staff in the NGD. There were many positive statements relating to the existence of support and the efforts made by the Faculty, Postgraduate School and UFS at large. Workshops, library assistance, Faculty forum, among others were highlighted (cf. Tables D10.1-D10.2; D10.4; D10.8; D10.10).

> "*…with the expansion of the post-graduate school, I think that that is at least a positive, with the opportunities that exist. You know, for the workshops in principle, opportunities to learn more, although often the timing is really difficult. They have got some lovely topics, but if you are teaching, you can't always attend".*

> "*I will say in the last few years, make it for the last four to five years, the funding and the access to resources have…, it's better than 10 years back or 18 years back. There is definitely improvement, but ja (yes)*".

> "*So, it is leading by example, and I think our university has taken up that role. If you look at the increase in PhD's. If you look at the increase in Master's, there has been a specific drive from the top-down allowing people to study now, without having to pay and all of those things. So, I think those are positives. I think we have to give credit to the university".*

These findings are in agreement with those of Thiruthaneeswaran, et al. (2014:165).

6.5.2.2 *Funding*

A main cause of disgruntlement in the perceived support, second only to time allocation, was that of funding. Research funding inadequacy may be linked to the self-reported weaknesses in the knowledge on how to attract or apply for research funding, in this unit of analysis (cf. Tables 4.8; 5.11). This puts a spotlight on the perceived inadequacies of the page fee funding, and a feeling of utter hopelessness. There was also an accepted apathy towards funding:

> "*But you have to publish once a year in an accredited journal that sometimes costs you R20 000 which you have to pay out of your own pocket*".

> "*Nothing gets paid into your entity. Everything goes to the department and you have no control over it, so why would you do it then…*"

> "*I must admit I have never tried to find any funding so I don't know anything about it. I have just made peace with the fact that there is never going to be any funding*".

This factor of inadequate funding is similar to the findings of Bolon and Philips (2010:481).

6.5.2.3 *Resources*

Resources are considered a relevant factor influencing the research culture (Ridley 2011:288). Resources, in this study, were generally perceived to be adequate for research tasks, across of four sub- populations (cf. 4.4.3). Three aspects of resources were perceived to be lacking when posed in a sub-section of questions in the questionnaire: research administrative support; research funding and allocated research time. Resources in terms of software support are considered insufficient to NGD participants, and the indirect effect of the exchange rate have made some journals just too expensive to subscribe to:

> "*So, to access the body of literature from good quality publishers has actually moved beyond our reach, and so it's actually difficult to find good quality literature, the right journals through our library system, because they are no longer available to us…We cannot browse those journals, we have to know exactly what we want, from a particular journal and we can access it, but to the access to the general body of literature is no longer available, and that is I think your problem*".

> "*So, we had to pay R15 000 to use it (Evasys), but in the meantime, we didn't get training, we can't use it".*

This access to resources, but no training on the resource, is an obstacle personally experienced by the researcher, where there no one allocated for the support of the software Evasys, at the UFS. Due to the research office comprising three individuals and the HSREC office of a further three, this may play a role in the feeling of insufficient research administrative support, in addition to limited appointments within the departments, in the form of research assistants.

6.5.2.4 *Training and development*

Training is seen as an integral part of development researchers (Henson, *et al.* 2010:230 *"The training of future researchers will invariably affect the nature of future research.";* Williams & Lazzarini 2015:14). Training and development for many aspects of the research process are in place; many staff members were aware of training, but due to teaching or clinical load have difficulty attending (cf. Table 5.11). In terms of training for obtaining funding and for mentorship, there is room for improvement:

> "*The other thing is the planning because if I know I must start with my Master's degree and I knew that Atlas TI presentations is going to be in February, then I would have planned my stuff so that I can attend and it would fall exactly in the same week as my first focus group. I couldn't attend, now the lady is only coming at the end of the year so I must wait 6 months to get training in Atlas TI so now I am sitting in front of You-Tube and trying to understand it with my colleague's notes*".

"*We don't know where to start. Literally we don't know where to start*". (Speaking about funding).

"*To apply for a specific grant is a huge thing and we don't have the expertise for that. For instance, NRF grant it is so challenging just to start the process so they can teach you how to do it but if you have got, it's like a 'see one, do one and teach one*".

"*We need to be mentors but we don't even know what it means*".

Participants also felt that resources distributed for research were linked to research hierarchy:

"*…but of course, the lower down you are, the more pressure there is to do the research. But the less time and resources are available, ironically*".

Support of staff is required for the benefit of the University in the long run; there are linkages with retention of staff; developing mentors; maintaining capacity and through this creating synergy.

6.5.2.5 ***Staffing***

There was a noted lack of administrative staffing; this is noted as being counterproductive toward an enabling research environment (cf. 2.3.2). This is similar to the high administrative load found in a study by Gill (2004:877) and is a consideration in the research culture (Tynan & Garbett 2007:412).

"*…we have a shortage of staff and tremendous amounts of administrative work to do because we don't have an administrator. So, if there are copies to be made, I need to make them. If toilet paper needs to be ordered, I need to do it. No honestly! And that takes up two of my five days and I am only there three, so the rest of the time we are either in clinic or lecturing or whatever. So, no admin staff, no help in that regard*"

"Just a quick other example is that with Pelenomi's physiotherapists, there were normally 14 physiotherapists now there are six. And what happened is they (government staff) did the block evaluations and treatments and then we (academic staff) only went and do the exams. Now I have to do all those block examinations as well and that's 80. That's 80, ja (yes) that's 40 students but you have to evaluate them twice so its 80 hours. Then you have to give feedback with all this new stuff that's coming in, that goes up to one and a half hours per time, per student. So, it just and it takes time to get to the hospital. It takes time to get back".

"At Universitas, for example, in the past there were eight (occupational) therapists working there, now there are two that are working there".
"Ja (yes) I mean I am the secretary. I don't know how much they pay me an hour but it's much more than they should for a secretary".

"We need to have enough staff. We need to have enough supporting staff".

"Because they have 68 percent vacancy posts, they took the posts away, the ones that were frozen and then they were just taken away. So now they have got a three percent vacancy

rate. So, fill the vacant posts in a province, so that service delivery can be more spread out, so then people will get time to do research. Otherwise they focus so much on service delivery because there is such a staff shortage, that research will never happen" (Continued by different participant) "So we know then if you don't fill your post by the end of April, it will not be frozen. Then it will just disappear".

These vacancies are acknowledged by the FSDoH and are known to have an impact on service delivery (FSDoH 2016:45; 50; 55), here in this instance, the impact has been noted in the effect on research by the joint-appointment employees.

6.5.2.6 *Time*

Protected time is beneficial (Thiruthaneeswaran, *et al.* 2014:165); and time for a research is a factor commonly highlighted in literature, both the requirement and the noted lack thereof (cf. 2.4.3; Wilkes, *et al.* 2013:6). It is recommended that: "*Fostering a research culture means allocating and managing time for the activity*" (Hill 2002:20). Time was a factor that reoccurred in both of the methods utilised in the study.

"*…there is physically not enough time".*

"*…that you don't have time in normal working hours, you have to find the time outside*".

The vehement disagreement by the SAHP, SoM and SoN participants with the adequacy of the allocated research time (cf. Tables 4.5; 4.8; 5.13) is contrary to documented needs (cf. 2.4.) and although highlighted in the objectives of the University, should be formally negotiated as a review of current policy. AS participants showed agreement for the availability of research time; this however, may be linked to the nature of support posts and the lack of clinical hours worked by this sub-population.

6.6 DISCUSSION ON THE CONTEXTUAL FACTORS INFLUENCING RESEARCH CULTURE

Throughout the Faculty, there are signs and symbols (cf. 2.2.1; Figure 2.3) of the importance that is placed on research. The thumbtacked articles in departmental corridors; the rolling presentation in the foyer displaying new NRF ratings and graduated PhDs; the call for abstracts and conferences on notice boards and group emails for funding opportunities, training and guest speakers evidence this. The plaques of medal winners, cum laude degrees and PhDs graduated over the years, showcased near lecture venues.

Invitations to present or attend the Faculty Forum and the proud sharing of achievements of staff on social media. These are the aspects that are portrayed are the rituals, a visualisation of the philosophy (cf. 2.2.1; 2.4.2), indicating that research is high on the agenda.

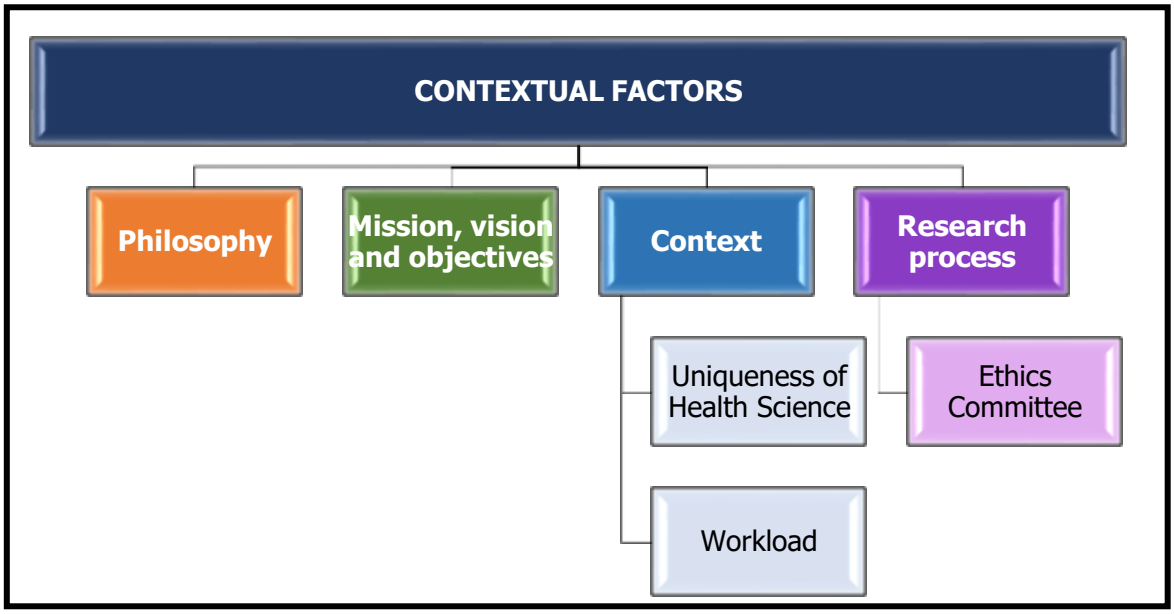

Figure 6.5: Contextual factors organogram

Each of the elements comprising the contextual factors (cf. Figure 6.5), will in turn be elaborated upon, in the sub-sections 6.6.1.-6.6.4.

6.6.1 Philosophy

Although the perceived values of the research culture are present, there exists a dissonance between these espoused values and the enactment of them; the actual lived experience by the staff. This aspect to research culture has not been noted in the literature, at present, in the HE health domain. Gardner and Nunan speak of "empowerment"; Henson, *et al.* (2010) mention the value of integration; Gibson, *et al.* (2007) express being "results-oriented"; Thomas (2011) of being "proactive" and Tynan and Garbett (2007) voice a "unity" within the research culture. These aspects may communicate an aspect of the philosophy in their various contexts, but no mention is yet made of any specific disharmony of their advocated values.

Staff have a good understanding what they believe to be the accepted norms related to research and research-related activities that pertain to a research culture (cf. Table 4.4). These aspects of the perception of the values have been discussed (cf. 6.2.5).

> "*I was told on the campus that you should have your PhD before you are 30. Very few of us can have an MBChB (Bachelor of Medicine and Bachelor of Surgery) before you are 30".*
>
> "*Because in medicine it takes a long, long time to qualify and do what you want to do to establish yourself … So, by the time that you decide I am now going to pursue an academic career, you are over 40*".
>
> "*Ja and we need to speak to people funding research and make them realise that especially for medicine, funds are for something like 'under 35's'. It is unrealistic. So especially for medicine, you cannot have the age cut off*".

The philosophy of the UFS is perceived to be rigid and resistant to change (cf. Tables 5.3; 5.4). However, there is a convergent understanding of the mission of the University (cf. Table 4.6). The concept of belonging to the UFS is absent, as the general feeling of being misunderstood and not being valued is present (cf. 5.3.4; Table 5.13).

Research is perceived as being forced upon staff (cf. 5.2.1). Other accepted academic norms are simply not possible in the HE health arena, for obvious reasons that a person takes 12 years consecutively to complete a medical specialisation. At the level of specialisation, a Master's degree is completed.

6.6.2 Mission, vision and objectives

The communicated mission (Marchant 2009:11) and vision (O'Brien 2013:2; Mullen & Hutinger 2008:200) are deemed part of the clarification of the importance of the research culture at an institution. The mission and objectives are one way the University can communicate their "language" to staff. The UFS does mandate the prioritisation of research (cf. 2.5.4; 2.5.4.1) with the goal of being a research-intensive university.

The majority of participants across all sub-populations agreed on the communication of the mission and objectives (cf. 4.4.2) of the University (cf. 2.2.1; 2.8.4), as well as the clarity of the research vision; and *what is expected of me in my position as an employee and it is in line with the research objectives of the university*. This supports O'Brien (2013:3) whereby dominant culture instils into a common language, shared understanding and research activities that are integrated into the vision and mission of the organisation.

The staff who participated were aware that research is part of the strategic focus of the University (cf. 2.8.4). Although the participants all agreed on the communication of the mission and objectives of the University (cf. 2.2.1; 2.8.4; 4.4.2), it is in decisive opposition

to the feelings of how those objectives (namely research) are evaluated and the promotion criteria alongside it (cf. 4.4.3).

> "*The thing that influences for me the research culture is also the objectives of the organisation. Which are research outputs*".

The open-ended questions indicate that the importance of research illustrated by the mission and objectives is not being manifested by genuine support (cf. Table 5.13). The commitment of the UFS to research should be established by the expenditure on support, such as resources and allocated research time (cf. 2.9). The NGDs indicated that the departmental vision overrides the UFS as a whole (cf. Table D10.5) and that the ethos of the FSDoH is at odds with the UFS (cf. Table 5.13).

> *"No and ja (yes) it still looks like we work, it comes back to, we work for two bosses and the Department of Health wants its pound of meat and then research is quite low down on what needs to be done".*
>
> *"Ja (yes), I think it is because the University is relying on the Department of Health to actually supply the staff which is not going to happen and the Department of Health doesn't really think research is important".*
>
> "*I will come back now again on what I have seen especially with the doctors, they can't do a lot of their research because it's not supported by the DoH. So, if we could find a joint strategic vision for research with our faculty and with the DoH that would go a long way for our research. If we could get them to buy in on research".*

This is an example of the lived experience of the dissonance created by being in a state of conflict with two opposing cultures: one from the UFS and one from the FSDoH. The research expectations from stakeholders who have great influence and impact directly and indirectly on staff should be engaged with. Alignment and consolidation to one voice in terms of the place and importance of research will help to obtain the buy-in of staff to perform research (cf. 2.4.2).

6.6.3 Context

Context in the thematic analysis was demarcated to be the context of the health domain (cf. 2.8); what makes the health practitioner academic different from another non-health-related academic. The literature that investigates research culture in the context of HE and health, where a relationship between an academic institution paired with an external stakeholder is limited, however one such study by Greenwood and Grey (1998) was found. This study focused on inter-sectoral initiatives and innovation to generate funding.

This unique context goes hand-in-hand with the workload, which is differentiated from other academics, as there is a clinical component; and the pervading atmosphere felt by the participants and the general sense describing the work place. The theme of staffing was more prevalent in the questionnaire (cf. Table 4.8; 4.8; 5.9), but present among the workload theme of the NGDs. This staffing component in the themes is due to the staff themselves being active in-service delivery in the government sector. The student training within the government sector also sets the tone.

The context in this study cannot be compared to any other Faculty within the UFS, as the mandate of teaching and learning requires the academic to train a health professional. Only the Department of Psychology at the UFS would have to comply with the HPCSA regulations of training a health professional, and then only at postgraduate level. This requires clinical training in government hospitals and clinics - which may also be described as unique as it is, to the researcher's knowledge, the only Faculty on campus with many jointly appointed staff members.

6.6.3.1 *Uniqueness of Health Sciences*

The environment is textured with the influence of the health system, and the spillover effect this has on the UFS staff. If there are not sufficient government-appointed staff to oversee practical sessions, the UFS academic staff must stand in (cf. 2.8.5.1). The all-encompassing difference is that of clinical work that is embodied in the category of Uniqueness of Health Sciences.

The true nature of the academic in the FoHS is that of being a health practitioner. Staff within the Faculty are unanimous that 'we are different', and the UFS does either not recognise this or fails to understand that working with real patients just makes the whole job description of being an academic unlike any other Faculty (cf. 2.5.1; 2.9).

Seemingly, there is agreement on the internal and external influences of the perceived forceful nature of research dictated by the UFS and the impact of the FSDoH's circumstances (cf. Table 2.1). This impact is also perceived as influencing the attractiveness of the UFS as an employment option to medical staff. In light of the health training platform and its associated clinical hours, the circumstances do not create a conducive context of an enabling research environment.

"*…you are not going to attract top class medical personnel to a Department of Health that is crashing. There is, no I mean if I had a choice of Cape Town or Bloemfontein, come on. I mean there is no ways, that unfortunately there is no ways, I would pick Bloem (sic)*".

"*Because its time management because of clinical load. You know it's all about clinical load*".

There has been a great drive by the University to get staff NRF rated (cf. 2.8.4), which has been understood by staff to be the crux of promotion within the UFS (cf. Tables 5.5; 5.9). Some participants considered this criterion, or expectation of a rating, to be more difficult in the FoHS (cf. Tables D10.1; D10.4).

"*I have heard within the Medical Faculty it's quite difficult and not actually worth the effort to do NRF rating so that should be also difficult. NRF rating and funding also both as well*".

With the joint appointment structure staff being active in the clinical field, these staff members who perform research will more readily undertake clinical research (cf. Tables D10.1-D10.2; D10.5).

"*We rely heavily on systemic factors, depending on who the population is…I feel like we don't always speak the same language when it comes to research*".

6.6.3.2 *Workload*

Workload has previously been mentioned in literature, pertaining to the inability to attend staff development (Leibowitz, *et al.* 2015:322); conflict with family time (Yates 2010:29); in relation to students (Wilkes, *et al*. 2013:6) and general workload (Weber II & He 2010:38).

6.6.4 Research process

Much of the clinical research utilises the convenient and abundant data available by being closely associated and working in hospitals and laboratories run by the DoH (cf. 2.8.5.1); however, the FSDoH has been seen as an obstacle to the research process. This is in terms of the approval process, access to patients and referral of relevant cases for research purposes between departments (cf. Tables D10.1-D10.2; D10.4). Not all participants were one sided, and also stood in the shoes of the decision makers of the expenditures for research:

"*…but I see this thing as a cycle. The more good research we do the better resources we will get*".

Expectations speak to the mismatch between the expectations the institution has for the staff employed and that of the staff members who participated in the data collection for this study that indicated they had certain expectations of staff in terms of incentives, time to perform research and support to complete and publish research in terms of funds. FoHS participants felt that they are expected to do the same job as other academics, in terms of production of research outputs; which is felt to be unachievable as the time allocation to clinical aspects often carries the most weight. They verbalise this as a feeling of being misunderstood. Participants deem expectations unrealistic:

"But specifically, in the Medical Faculty we have a situation where we have professional people physiotherapists, doctors, people, optometrists who are providing services. They are actually doing the service delivery, as well as teaching and they are expected to research. It's virtually impossible to do all three well".

"*The expectation and what you are driven to do, and what you have got time for and how the whole hierarchy is set up together, is not always, there is not always smooth waters*".

"*…I am not quite sure if it's always understood on the rest of the campus, that we have a practical, clinical…*".

"*I think the medical faculty is different to other faculties because we have a full-time job".*

Page fees were foremost in the minds of the SAHP participants, as it appears that there is a lack of transparency and a different protocol than in other Schools or the Faculty. According to participants, the status quo at the FoHS was not to expect the Faculty to pay for page fees. For this reason, it was quite an emotive topic:

"*This is our requirement and we are of course researching to get an article published and when you get an article accepted, then you have to go and stand 'bakhand' (bowl in hand) to everyone to ask "please give me a grant" just so that I can just pay my R10,000 page fees. Then you send a request to the research vice rector, via e-mail and then he replies, "I am sorry but I will not be able to support you*".

"*So, I don't want to publish because I have to beg. The page fees are very high and I don't have the money to pay for it*".

The Ethics Committee (also known as the HSREC) (cf. 2.8.4.1) although perceived as ethical and well-functioning (cf. Table D10.10), the submission of research protocols remains a lengthy task.

"*…getting research approved is difficult, full stop. Getting it to a place where you can actually start doing it, takes about a year*".

6.7 THE DISCUSSION OF EXTERNAL FACTORS INFLUENCING THE RESEARCH CULTURE

The external environment does influence the internal research culture (Hill 1999:6), the factors comprising these external factors are provided in the organogram, Figure 6.6, on the following page. Ridley (2011:296) found the national culture on the freedom of speech to impact institutional research; Loke, *et al.* (2014:133) noted political dynamics played a role. The UFS' context is impacted by the trends set in the educational arena, both locally and internationally; this was also indicated in the theoretical framework (cf. Figure 2.9).

The political and economic context (cf. 2.8.1-2.8.4; Tables 5.5; 5.14; 5.16) and the policies promulgated in the government arena for research, health and education have snowballing effects, which permeate every level of the HE system, directly or indirectly (cf. 2.8).

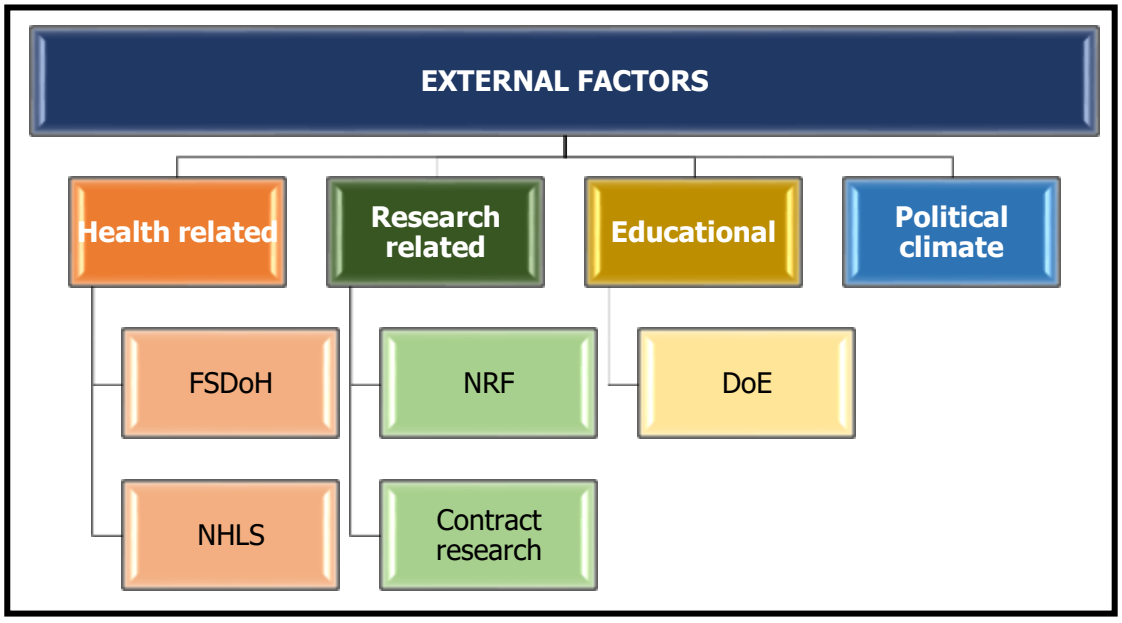

Figure 6.6: External factors organogram

External influences were alluded to (cf. Tables 5.14; 5.16); some discussions did mention economic and political factors.

> *"Academia is directly affected by systemic factors, such as our junk status. Eish (Oy vey)".*

> *"Well, that we must bring the academic agenda in line with the political agenda. That's a nice, I think, way to state it. Because we are hampered by the political agenda, to get to the academic agenda".*

These vast overarching external influences are out of the control of the UFS and Faculty but are acknowledged as being a factor of influence on the internal research culture (cf. Figure 2.8).

Through the analysis of the perceptions and factors observed by participants that have an influence and impact research culture, there are areas that do require change for the enhancement of the research culture, the following section provides guidelines on how this can be achieved.

6.8 DISCUSSISON ON THE ENHANCEMENT OF THE RESEARCH CULTURE

Successful implementation of cultural enhancement depends on the orientation of the culture, whether it is internal or external (Sporn 1996:45). A university with a strong sub-culture, which each of the Schools in this study may be described as having, can be developed into a more unified institutional culture (or Faculty culture) by initiatives that trigger a higher degree of identification with the University (or Faculty) (Sporn 1996:47).

6.8.1 Enhancement of the Research Culture at the Faculty of Health Sciences

Contexts change, and to maintain the improvements or fruitful results, an intervention may need to change and be updated over time; this is termed dynamic sustainability (Neta, *et al.* 2015:52). Figure 6.7 details these recommendations in a schematic.

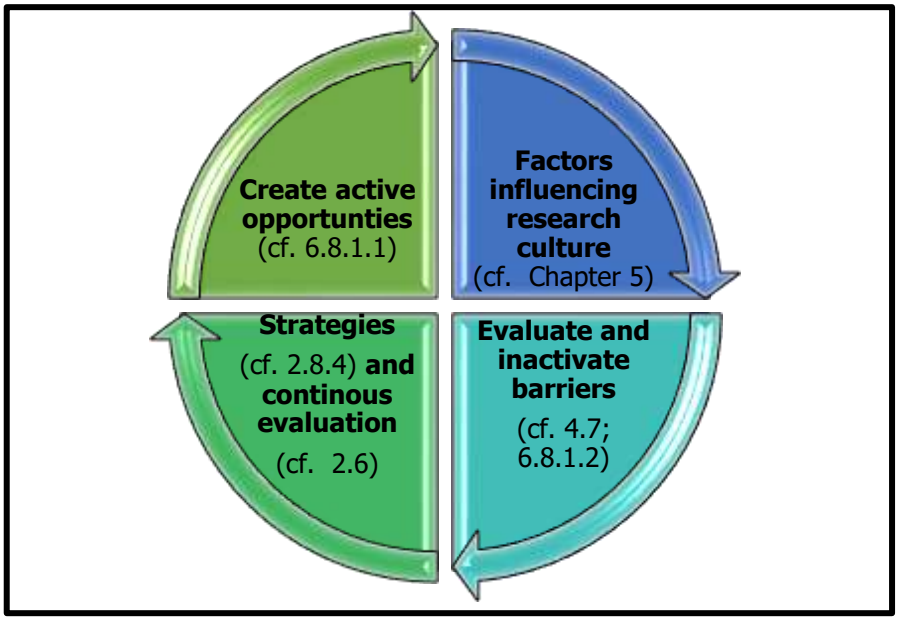

Figure 6.7: A change management process for FoHS

Identification of the underlying factors from the qualitative data in this study gave rise to some opportunities and barriers, discussed briefly below.

6.8.1.1 *Opportunities to leverage to enhance research culture*

Opportunities can be actions to be more effective or improvements of existing functional units or policies. Actions that could be implemented to allow for more efficiency of research activities include:

- more staff, particularly support and research appointments;
- allocated research time;
- clear communication of policies and amendments to policies; and
- online training and electronic library of resources relating to grant writing and funding access and applications.

Certain existing structures may be improved, reviewed or enhanced:

- review policies on promotion and job descriptions;
- provide transparency on funding model and expenditures relating to research;
- accommodate diversity in people and types of research;
- share the vision based on transparency and inclusivity; and
- identify favoured research topics that reflect the organisational culture, as this may provide motivation.

As indicated by Figure 6.7, another step in the change management process is to identify and inactivate barriers.

6.8.1.2 *Barriers to mitigate to enhance the research culture*

Barriers may pertain to any external forces or forces over which the UFS has no control and also new developments required that are not yet in place. Bourdieu (1988:46-50) made a significant contribution to the understanding of the socio-political relationships between the university and why institutions within the same system develop subsequent divergent strategic responses to external pressures (cf. 2.2.4); this has been investigated in a South African context (Naidoo 2004:467). This is evidenced in this Faculty by the nature of the role the FSDoH has.

Macro forces and other government-directed policies along with literature from previous studies provided the theoretical backdrop of this study (cf. 2.5) and the analysis at the level of the Faculty provides the expressive evidence (Chapters 4; 5), from which these barriers were identified. A non-exhaustive list of strategies to overcome barriers is given below:

- communication with the FSDoH and trust building between appointment structures;
- identifying mechanisms whereby the FSDoH and FoHS can collaborate;
- formal mentoring programme;
- facilitating networking and collaboration inspirational and strategic leaders to assess and distribute workload fairly;
- promoting team research activities; and
- a focused completion of a SWOT analysis for each School on an annual basis.

To identify one's own strengths and weaknesses is a method of being self-aware and reflective, which allows for Schools to consciously benchmark. Peterson (2007:484) warns:

> *"Those who mindlessly use the benchmarks of what others might say or think; those who don't take chances and have closed minds are…illegitimate".*

It is important to be aware, that in order to bring about change, these factors are not independent, but interrelated; one cannot focus on only one element, as the change in one will cause changes in others; and this may cause spin-off contextual effects (Neta, *et al.* 2015:52); the context and environment requires constant monitoring.

From this discussion, it can be concluded that for research to flourish, commitment is required from the highest levels in the organisational system. This also needs to be perceived by the staff; the awareness of support and backing behind them. This commitment may be manifested in the provision of research facilities, funding, management of research information and dissemination thereof. Two quotes that resonate with the researcher in relation to the discussion at hand are shared:

> *"Investing in research culture and capacity is imperative to the quality of the service that is delivered to individuals in primary health care and all health sectors".* (Borkowski, *et al.* 2016:302)

> *"The organisation should provide realistic standards of research quality and acceptability. At the outset, to germinate and nourish research activity 'publication' may not be a realistic standard. In addition, the organisation should think carefully about providing mechanisms and systems that enhance pleasure, excitement of doing research, and that reduce anxiety".* (Hill 2002:23)

These two quotes summate important aspects at the core of the study that are incorporated into Figure 6.7, which provides a schematic overview of the manner in which research culture could be enhanced. The schematic indicates through multiple levels the systems nature (cf. 2.2.2) of the interrelatedness of the factors that may be implemented to enhance research culture. The individual forms the central aspect, where by personal mastery of skills (Senge 2006:6-9) and a commitment to inquiry or curiosity (cf. 2.5.1) play a role. The values that people hold affect their alignment with the values of the institution (cf. Table 2.4).

Behavioural change brought about at an individual level (cf. 2.2.3) on the inner most levels can be effective through the communication of benefits and the pay per performance incentives (Burke 2014:253-254). The emphasis on team learning (Senge 2006:6-9), embracing cultural diversity (Wilkes & Jackson 2013:32) can then impact the inter-personal relationships, seen in the second green ring. To reinforce the change at an individual level, the re-educative communication (Nickols 2016:1-6) of the importance of research and research-related policies is emphasised. This can then be communicated to staff as a shared vision (Feldman 2013:21; Loof 2004:3) or a collective vision (Lunenburg 2011:3-5) that can enable staff to strive for the goals set.

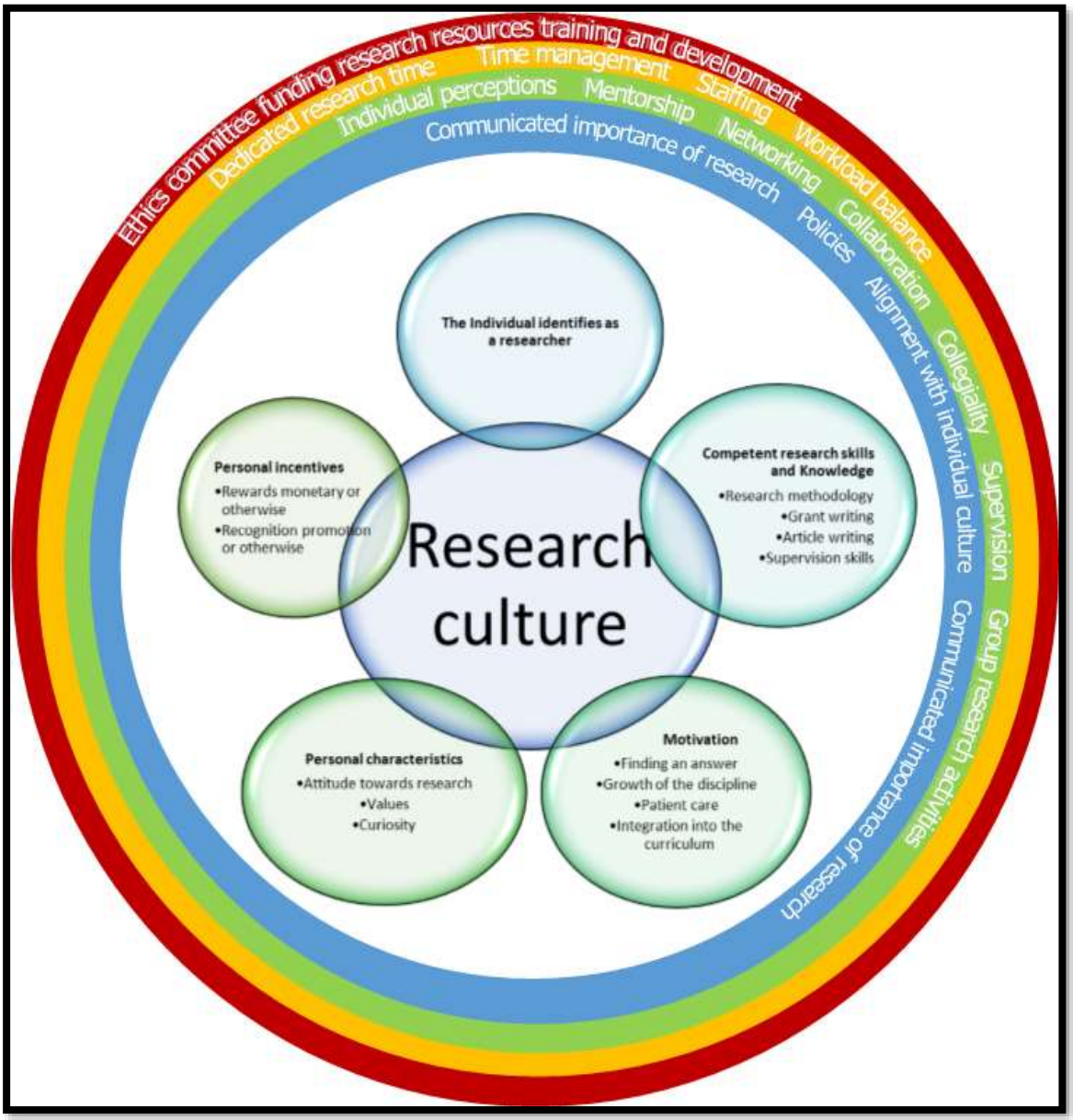

Figure 6.8: The enhancement of the research culture at the FoHS at the UFS

The buy in of change made visible by research leaders and managers (Aguirre & Alpern 2014:online) can be achieved through the allocation of dedicated research time and the improvement of staffing levels. This allows for better time management and will aid in a more balanced workload for academic staff. Thereafter, the effective commitment of resources and funding, along with the training and development aspects required identified allow for efficient allocation of research resources. This in turn allows for the streamlining of the Ethics Committee approval system.

After the analysis (cf. Chapter 4 & 5) and interpretation (cf. 6.2-6.7) of the findings and reflection on the status of the existing research culture (cf. 6.7), the researcher developed the preliminary framework, in accordance with the first part of the fourth objective (cf. 1.4).

6.9 THE PRELIMINARY FRAMEWORK

The compilation of the preliminary framework utilised three sources of data (cf. Figure 2.3; Table 2.5; Figures 2.7; 4.6; 5.1). The preliminary framework (cf. Figure 6.10) depicted the participants' perceptions of the existing research culture within the FoHS at the UFS (Objective ii; cf. Figures 4.2, 4.6) and the factors perceived as influencing research culture (Objective iii; cf. Figure 5.1). This was compared to the conceptual framework derived in Chapter 2 (cf. Figure 2.8; Objective i). The preliminary framework was the departure point to obtain feedback from management level at the VMs.

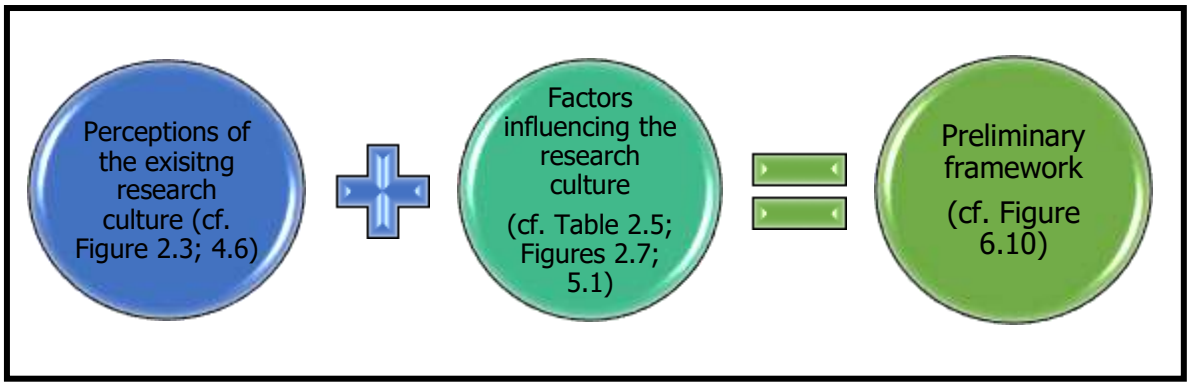

Figure 6.9: Compilation of the preliminary framework

A review of the literature culminated in the theoretical framework (cf. Figure 2.8), which included individual and organisational factors, along with the functional interaction of the FoHS within the structure of the UFS and the collaboration with the FSDoH and the NHLS. These factors were embedded in the national and international research and educational trends. These central themes formed the basis for data collection through the questionnaire and NGDs. Participant perceptions highlighted the individual aspects such as personal values and emotions, reward systems, relationships such as leadership, mentorship, and collegiality as important in research culture (cf. Figure 4.3). Whilst the factors identified indicated that context, support and policies as well as the research process and philosophy of the institution are integral to research culture (cf. 5.2).

The results in this study were compared to the initial theoretical framework (cf. Figure 2.8). The preliminary framework indicated the similarities and differences of the specific context in relation to the theoretical framework (cf. Figure 2.8) by way of size, positioning and emphasis of text. Reference to the specific placement of each component within the preliminary framework (cf. Figure 6.10) is expanded upon:

- Items included in the schematic, depicted within the brown square highlight their status as a factor identified to contribute to research culture in the thematic analysis of the NGDs (cf. Tables 5.17; 5.18; 5.19; Appendix D10);
- The nominal groups revealed seven themes (cf. 5.6) that are given as items within the brown oval in the preliminary framework (cf. Figure 6.10);
- The *size* of the item indicated the weight of theme, in terms of ranking, the larger the item, the higher the overall ranking; and
- The *thickness of the borders* indicated the importance of the theme in relation to the weighted frequencies and the uniqueness of the theme in relation to findings in previous literature.

The components of the schematic as explained (cf. 6.2-6.6) were integrated in a single, preliminary framework for the enhancement of research culture in the FoHS at the UFS. The surrounding areas of International and National research culture and International and National HE, grey and yellow areas respectively, indicate the impact on each of the encompassed factors on research culture given in the oval of the schematic. The UFS' commitment to research and policy promulgation to research-related strategies and reward systems is impacted by the trends set in the educational arena, both locally and internationally.

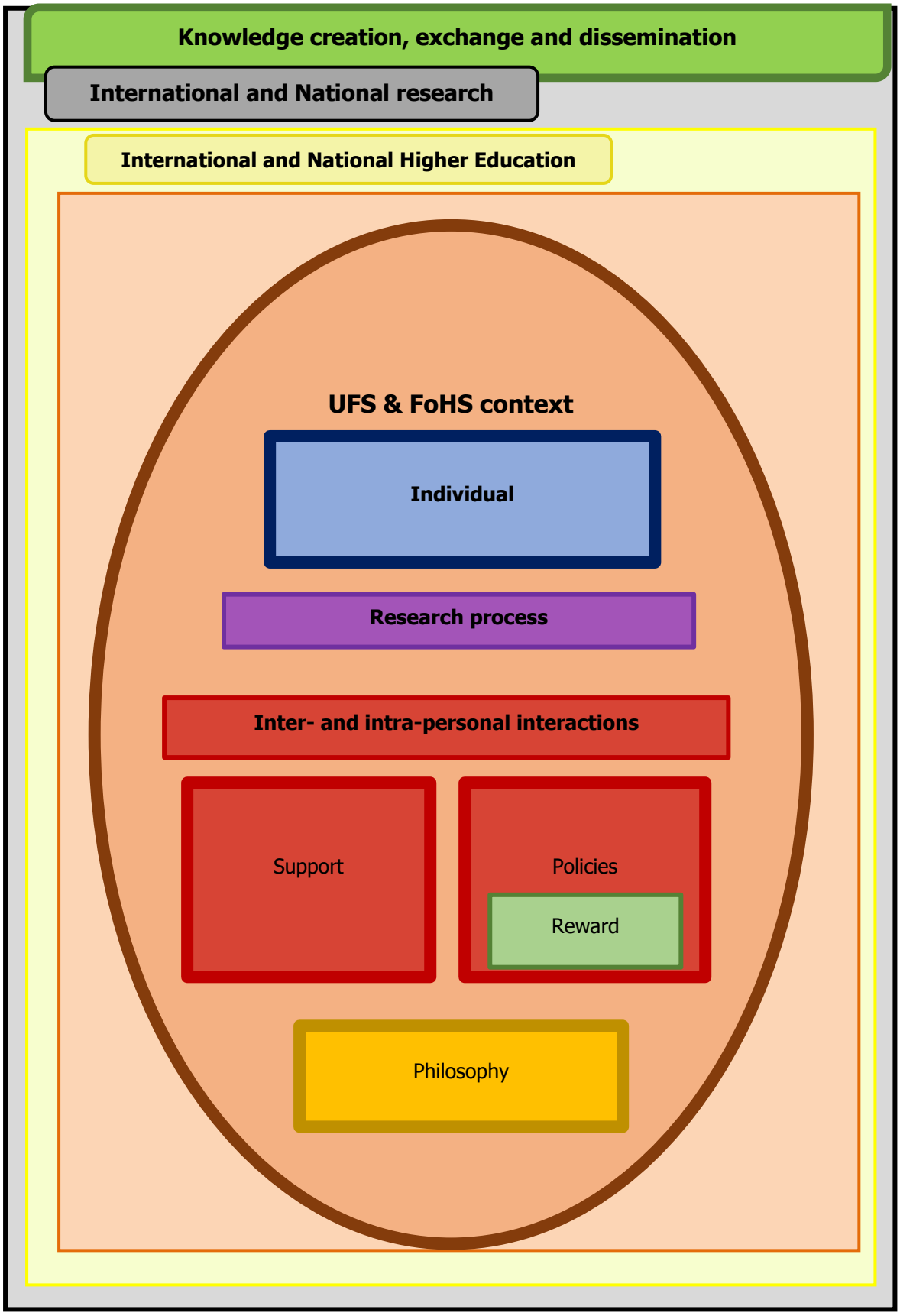

Figure 6.10: Preliminary framework: Reference is given to the importance of the theme given by the size of the item and thickness of borders within the schematic

The brown oval indicates the context (cf. 5.2.1) of being a health professional in the arena of academia with a workload based on the trifocal mandate: that of teaching and learning; a researcher and being engaged in the community. All three of these job descriptions are integrated with clinical duties. In turn, clinical duties are impacted by the government health platforms, which influences the role of being a researcher and the dissemination and implementation of research for better clinical care.

The philosophy (cf. 5.2.2) of the UFS is guided by the values it holds and is generated by years of accepted norms within the academic arena. The philosophy is embedded in daily doing and determines the atmosphere of research related tasks. This atmosphere permeates through to lower levels, so influencing motivation of the individual. This is the way in which an individual communicates the value of research and social structure of research in terms of what is expected of them; i.e. what topics of research to choose or what form of research to invest time in.

The vision of research held by the philosophy of the university is embodied in the policy documents (cf. 4.4.3; 5.3.2) that are disseminated to staff. Two particular strategies in the eyes of the participants of importance are staff retention and succession policy, and the promotion policy. Staff choosing to move institutions or leave academia impacts on the sustainability of the Faculty into the future. The retirement of echelon researchers is not fully compensated for by way of clear and enacted succession planning. This is then indirectly seen as a failure in aligning with the accepted norms that are promoted by top management.

The promotion criteria, and rewards linked to research are perceived as influencing participants' research culture (cf. Table 4.7). In addition, the policy of joint appointment with NHLS and FSDoH, as there are limited incentives for staff to perform research; this heavily affects the joint- appointment staff members' motivation to pursue any form of research as part of their academic activities.

Support structures (cf. 5.3.3) are acknowledged to exist, with particular praise for the medical editors, the Department of Biostatistics and platforms such as the Faculty Forum. Renewed support is called for in the consistent and fair allocation of dedicated research time in the working week. Staff are feeling vulnerable with regard to research supervision and ask for training; along with writing workshops and help with grant writing.

The training and development within support, as well as collaboration and mentorship relationships (cf. 4.6) are influencing factors. Once the support structures are in place, the research process (cf. 5.2.3) is streamlined and made easier for staff to undertake research tasks.

Individual factors (cf. 4.5; 5.4), from identified roles in the workplace to personal home life, feeling valued in collegial interactions and motivators to perform research, all impact on the research culture in a microcosm. The context in this study is further influenced by the individuals' perception and consequent behaviour in response to their lived experience in their own workplace context. The provision of support, and strong relationships with other researchers, and a sense of confidence in one's own abilities allow for new knowledge (cf. 6.4.1.2) to be created, disseminated and implemented. The motivation for new knowledge creation is different for different people (cf. Table 4.11).

All factors that were established as being an influence on research culture, by the participants, are included in Figure 6.10 as the preliminary framework for research culture in the FoHS at the UFS.

6.10 SUMMARY

At the conclusion of the analysis of the data, the interconnectedness of the constructs and themes to the perception of the existing research culture (cf. Figure 4.2) and the factors influencing research culture (cf. Figure 5.1) was established. In order to develop the preliminary framework, these two concepts were examined and new networking features were recognised. The overlapping constructs and factors that are integrated into the concept of research culture are indicated in the Figure 6.11, on the following page.

Research needs to be made a priority by the institution (cf. 2.2.1, DeHaven, *et al.* 1998:505). The need for change within the institution, leadership or strategically is not unique to the UFS as this has been seen in business administration (Loke, *et al.* 2014:136); health organisations (Gibson, et al. 2007:176); in adult education programmes (Cunningham & Doncaster 2002:59); and investigations into library sciences (Kiel, *et al.* 2015:48). This inertia and resistance to change has not been noted across multiple Departments and Schools within a Health Faculty in HE. Limited literature within this domain may be the cause.

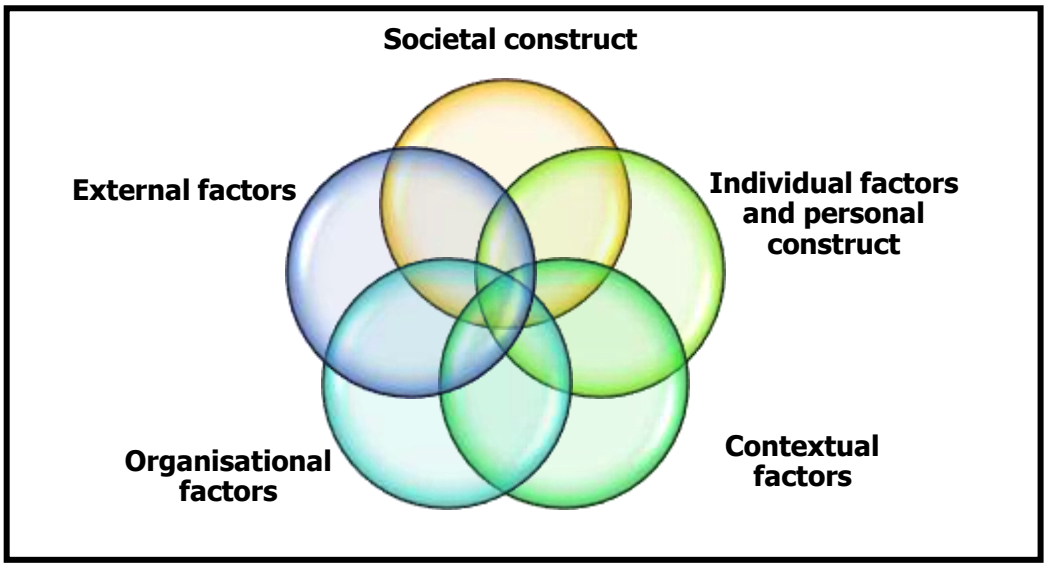

Figure 6.11: Interwoven nature of the perceptions and factors influencing the existing research culture

The triangulation of the data, with excerpts, and the analysis of which informed the development of the preliminary framework to be discussed in the next chapter, Chapter 7 entitled, **A framework to enhance the existing research culture.**

CHAPTER 7

A FRAMEWORK TO ENHANCE THE EXISTING RESEARCH CULTURE

7.1 INTRODUCTION

This chapter indicates the path taken to develop the final framework. This entailed a holistic review of the data to compile a preliminary framework (cf. Figure 6.10). The preliminary framework was the departure point to obtain feedback from management level at validation meetings. The preliminary framework (cf. Figure 6.10) depicted the participants' perceptions of the existing research culture within the FoHS at the UFS, as obtained from the findings of objectives ii and iii (cf. Chapter 4; 5). The theoretical framework, as presented in Chapter 2 (cf. Figure 2.8), was used to reflect and utilise the incorporation the opinions of participants from the FoHS. This is in alignment with the final objective (cf. 1.4): *To develop a preliminary framework (using data from objectives i, ii and iii above) which will be refined to generate a final framework (using findings from the VMs) that can be used to enhance the existing research culture in the faculty.*

VMs were held with managers, Heads of Departments, Heads of Divisions/Schools and the Dean of the FoHS in order to obtain managements' inputs and perceptions of the research culture in the FoHS. These inputs were then utilised to adapt and finalise the framework presented as the outcome of this study, through the revision of the preliminary framework (cf. Figure 6.10). Furthermore, contextual nuances and relevant unique aspects were integrated through the analysis of the results of this method and are presented in the final framework (cf. Figure 7.1).

7.2 RESULTS OF THE VALIDATION MEETINGS

The results of the VMs describe general comments made by participants and then sections describing the comments made, each grouped in the themes or categories to which they align the closest among the existing themes of the study. These are in four main overarching groupings: Contextual, Organisational and Individual aspects and the Societal construct (cf. Figures 6.1; 6.11; 7.2). Each of these aspects will in turn be elaborated upon in the sub-sections below (cf. 7.2.2-7.2.7), presented under the relevant themes and categories identified in the results chapters (cf. Chapters 4; 5).

7.2.1 General comments made by participants of the validation meeting

Comments were made in the meetings relating to the opinions on the preliminary framework (cf. Figure 6.10) and the value of the study's findings. Approval of the placement of the items within the preliminary framework was mentioned. This indicated agreement with the centrality of context and the involvement of context in other factors, placed within the oval shape representing context:

"I think the overarching inputs, as you put them in the circle, I think are very key…".

Pertaining to the theme of support (cf. Table 5.11; 5.12) of research, indicated in the preliminary framework as encompassing factors such as funding and staff development and training (cf. Table 5.11) and time (cf. Table 4.5). The perceptions given in the study by the participants and described by the researcher at the VMs were regarded as valid by managerial staff:

"Which is a true reflection".

In addition, the overall findings of the study were thought to be of value to the Faculty, as evidenced by the following:

"I think these inputs should also be good for feedback for the Vice-Dean Research, because you know it's all about alignment of strengths. Strengthening our culture…research culture".

"…with the appointment of the vice dean that he will actually drive the research in future and I think these comments will be so valuable… for a person like that to see what are the needs of the people and how from that office, because that will be then the central office".

"I think your data will and your PhD will be very valuable for such a person (Vice Dean) to get that information and to me it's then you don't have to go do the legwork again".

The participants also spoke of their own experiences, perceptions and opinions; this often echoed the participants' found in earlier analyses. This highlights that staff at the level of management share similar viewpoints and are aware of the feelings and experiences of staff who may work in non-management academic positions. Contextual aspects follow, each of which represent the remarks made by the management participants of the VMs and how these remarks either reinforce prior participants comments, or differ from them.

7.2.2 Contextual factors

Predominantly, management's viewpoint was that research culture is closely linked, if not synonymous with research outputs, and there is an awareness of this being the viewpoint

of expectation from higher management. Previous participants viewed research outputs as an expectation as well (cf. Tables 5.5.; 5.6).

> *"If you look at their outputs their outputs are significantly, X* University have got for instance 19 A rated scientists. Now I mean our University hasn't got even one, and I am referring to the Faculty of Health Sciences. Y* University for example generates 250 plus million Rands a year from their academic research. So, you know I am mentioning this because sometimes we are hard on ourselves about our outputs but we need to look and compare apples with apples".*
>
> *"I need to say to you from a management perspective we do know that the Faculty on a research platform is not producing what it is supposed to produce in comparing to other faculties of Health Sciences. And there are a number of main reasons for that".*

Listed reasons included the historical focus on excellence in undergraduate and postgraduate teaching; the lack of clinical medicine being incorporated into the University research clusters. This was in agreement with the NGD data (cf. Table 5.3). Consequently, to that omission, specifically in the School of Medicine, was that staff moved from an academic research platform, to a contract research platform. This was mentioned in two of the VMs and also in the NGDs (cf. Table D10.3). Staffing numbers and the resultant workload were also provided as other reasons.

Much of the discussion highlighted the contextual grievances previous participants had mentioned, staffing dominant among them (cf. Tables 4.5; 4.8; 5.9). A piece of dialogue from the transcript indicates the participant agreeing with the interpretation of the researcher of these viewpoints.

> *Researcher: You (staff) can't strive necessarily to be an A rated researcher because you have these contextual things that are barriers for you…*
> *Participant: Correct.*
> *Researcher: And that is what this is all about. Is that people feel this context is so much in their face that lack of toilet paper, lack of syringes.*
> *Participant: Absolutely.*
> *Researcher: Lack of gloves every day-to-day barriers and that patient care comes first. You are sitting here its patient care first.*
> *Participant: Definitely.*

This reiterates that the context of the health care domain, patient care and the crises perceived in the FSDoH are visible and known to management as well. This ends the discourse on the general agreement of the VMs with contact and the central nature of the theme. As provided in the schematic (cf. Figure 6.10), workload forms part of theme of context and was specifically mentioned by participants.

7.2.2.1 *Workload*

Management also accepts the prioritisation (or lack thereof) of research as viewed by previous participants, when faced with a higher clinical workload.

> *"Now the first thing that goes out of the window if you have got workload pressures with staff loads are academic research".*
>
> *"…staff and workload had a significant impact on research output".*

A solution to this falling by the wayside of research (cf. Tables 5.14; 5.16), is the generation of research teams; while at the same time corroborating the overload perceived by previous participants of the service delivery mandate. Team research was mentioned in two VMs; which may or may not be synonymous with previous participants' description of collaborative research or interdisciplinary or group research (cf. Tables 4.17; 5.7).

> *"Secondly to create more research teams that are working research I mean yourself would know and I would know at stages you are so busy you simply cannot do research. But if you are in a team and there are ups and downs for each member like one might get a more, higher average line of research output because it might be when I am overloaded with service delivery you might have some time and might be able to take some of my research and do it or report it".*

The concept of service delivery and patient care is a unique aspect in the domain of Health Sciences and participants echoed this.

7.2.2.2 *Uniqueness of Health Sciences*

Management reiterated that the FoHS is differentiated from other Faculties on campus, as the focus for health practitioners is patient centred (cf. Tables 5.16; D10.3; D10.4). One participant stated:

> *"...when you look at research within Health Sciences its totally different from research in any other Faculty because within Health Sciences its driven by health care, by patient care".*

The combined establishment posts are acknowledged to have a different workplace perspective, as they are not only answering to the UFS, but also to the FSDoH and this affects their job description, promotion among others (cf. Tables 4.7; 5.9; 5.10).

> *"I think this people who don't have joint appointments may have totally different ideas…"*

There was also agreement from management that clinical hours are a unique aspect of the academic in the FoHS and that it is a time-consuming activity (cf. Tables 4.5; 5.5).

Researcher: "They (previous participants) perceive, whether that's the truth is unknown, but they perceive that clinical hours eat up lots of the working hours in a week that other Faculties don't have.
Participant:" That is true".

Interestingly, even teaching and learning is viewed by management to be more differentiated than in other Faculties.

"Probably you know just the teaching and learning component, it is very different to other, I don't know if they mentioned that is what, I now study at Humanities and if one just look(s) (sic) at what goes into teaching and teaching wise into a 16 credit you know module there compared to what we have to put in for the same number of credits ja".

"…is quite amazing actually and I did not expect that…we have got about 8 main research areas"

These opinions of the Uniqueness of Health Sciences are part of the belief system, of the value of their role as healthcare practitioners or educators, held by Faculty members. This relates closely to the philosophy held by staff, where the belief system is a component of the accepted thoughts and actions of staff.

7.2.3 Philosophy

As previously discussed, the philosophy has an embedded set of values, historical events and sets the tone for the accepted norms of behaviours (cf. 2.3.2; 2.7.3) and communications of an institution. The value placed on research is another facet of this philosophy. The UFS' mission desires quality outputs and rated researchers, and management is aspiring to grow the Faculty. The following extracts speak to the perceived inertia and the reality of the historical impact of the institution. Please note: *denotes the removal of an identifying name.

"*I attended, when X's* Medical School turned 100 years. I attended their celebrations and I stood in awe on their achievements (of) 19 A rated scientists and so on…the then Dean of the Faculty…she reminded me about the flaw I am making in not comparing apples with apples. And what she actually said which brings one back to the reality is to say "yes we are there in 100 years. Have you compared yourself to where we were when we or not even 40 years of age as a Faculty of Health Sciences" and that sort of brought back a bit of reality to this, to my own discussion that I had with myself*"."

"*I have had a look at you know the Universities that have a high output rate of PhD candidates what is it that they do that at the moment the Free State University is not doing…"*

The importance of research was evidenced by management highlighting the improvements that have been made over the last while, through an increase in the research outputs. The

emphasis on the research outputs by participants reinforces the communication of the research objectives and goals held by the University. Key decisions made in the past, directly opposed the mission and objectives that are stated for the research mandate. In addition, a participant discussed research outputs:

> *"…the Faculty was on a unit level 36. And in that specific year the unit output for School of Medicine was zero. So, we are now at 86 which is about a 300 percent increase over what is it six, seven years. So, we are improving in those areas…. So, I mean although the Faculty Management is concerned about our research output, about the footprint of our research in the bigger South African community I think still one needs to applaud the staff that's here about what they have maintained at least as outputs on research level".*

> *"I am not surprised that we are at the present moment where we are despite all the other issued mentioned: vacant post, work load, shortage of personnel, funding and so on. I think then one of the main and even the University polices that influence some or other type of trends in research I think that one of the significant factors that impacted in the Faculty is when in 2000 the University sold off Paraxel to, as FARMOVS to Paraxel, because that was our research vehicle to do our clinical research".*

The avenue of clinical research is of great import to Health Sciences, as patient care is a unique aspect of the Faculty (cf. Table 5.16; 7.2.2.2); this change in policy was perceived as a setback for the research culture and outputs of the Faculty. Subsequently, FARMOVS has been purchased back, on the 7th of March 2018. In a daily communication (Loader 8 March 2018), the importance of this was noted:

"It is Prof. Petersen's vision that the UFS will become actively involved in the South African National Clinical Research Capacity Building Initiative with FARMOVS becoming a Clinical Research Centre of Excellence. "*This is something new for the UFS, the challenge now is to expand with more of an industry impact*," said Prof. Petersen". This is a proactive step towards stimulating internal clinical research. The following sections will address Organisational aspects (cf. Figures 6.1; 6.11).

7.2.4 Policies

Policies have also been viewed by management as having an impact on resources, such as the number of researchers able to mentor and supervise others.

> *"I think the biggest threat for us in research at the present moment there is the ageing component of researchers that is retiring and that has got a significant impact on the number of platforms and a number of levels of impact…. The first issue is to try and retain some of the academics that's good researchers (sic) after retirement to continue with their research".*

New information was obtained on the policy within the Faculty, with regard to the appointment of research assistants.

> *"…the Faculty decided on a policy to allocate research assistants in departments. And I mean some of those that we phased out, the last four people that we phased out I spoke to two of them and they haven't done any research, literature review, or anything in their last five years working as a research assistant. They did slides for the academics, they have written up their data, they actually made patient notes and stuff like that, but no research".*

An opinion was raised on the current workplace model for researchers, and the workload allocation for those staff whose primary function is research. This is similar to the call from previous participants to rethink the tripartite role of academics, into one singular dominant function, or a rotation basis for these roles within a department (cf. Table 4.12; 6.5.1.1). Management also felt that the workload model (cf. Tables 4.17; 5.1), as it pertains to clinical work, needs to be revised.

> *"I think if you look at the type of A rated scientists at the X*, they are predominantly those members that are exposed to the clinical area but, not first line responsibility for service delivery or clinical care. So, they had sort of protected time to do a research and I think we need to relook at our model for researchers in the Faculty".*
>
> *"And in the end, it (the findings of the study) will always be valuable towards the workload model and that is things that they have to revise on campus".*
> *Second participant: "It's good. So now they can still acknowledge the clinical work".*

The research cluster selection (cf. Table 5.3) had far-reaching effects on the Faculty, which led staff to feel that clinical medicine was not valued. Other staff echoed this, although not related to the cluster system (cf. Table 5.3).

> *"…about ten years ago, which had a significant impact on our Faculty…the University created research clusters. And clinical medicine, although we requested clinical medicine to be a research cluster, were not included in the research clusters. And staff members started saying that the University's, the University has made a call that they do not value clinical medicine as a possible growth point for research in the Faculty, which actually put us back".*

The above statement provides alignment for the philosophy of the communicated importance of research, held by the University, which is not always the perceived enactment of this importance, with regard to the Faculty (cf. Table D10.2: "*I think that the next generation will take to it (research) much more easily as part of their work rather than an add on it has been for many of us with huge clinical and administrative responsibilities initially*").

7.2.5 Support

The theme of support in the analysis of the NGDs included time as a resource. This example corroborates this interpretation and provides the viewpoint of staff feeling that service delivery is a burden, a hindrance to their achieving research goals. Once again, the reiteration of the closely linked nature of research outputs, this instance leading to the promotion and development of a research culture.

> *"And if I look at the University of X* …they have enough funding to put that doctor on a three-year sabbatical, fully funded, so that they can do a PhD study. They go and they for three years they are studying and doing their projects and so on...That helps because they have dedicated time. They don't have to worry about service delivery, about teaching. They have a very high output of research so I think when we are trying with the service delivery burden that we have it takes longer for us".*

> *"I don't think that they are born different from us but because they are given that opportunity (fully funded, dedicated time PhDs) they are producing a lot and you will find that as a result they have now developed a research culture".*

Recommendations were given to the Ethics Committee, in line with previous observations (cf. 4.7).

> *"We need to speed up our turnaround time for ethic approvals…if you are doing a few projects at the same time but now you have got delays all over it just becomes unmanageable. So, you would tend to do less but you can cope with all the delay".*

There were also comments relating to the acknowledgement of the existing support structures. In response to the agreement that supervisors do not feel that every postgraduate student has sufficient technical skills (cf. Tables 5.6; 5.12; D10.1), the following was mentioned:

> *"My understanding is that you know the Postgraduate School is supposed to (give training on research). So, I just think once again there are things that people you know don't know how to use the resource, how to actually go about. How do you utilise the Postgraduate School to help you with those students that can't write? I don't know. Because we do have the support systems".*

In response to a query on page fees, there was new information given - contrary to the comments made by participants in the NGDs (cf. Table 5.11). This was evidenced in two separate VMs.

> *"We have got a fund where anybody can apply to for page fees that actually come from the University. Because we never used all the money last year and we got more funding again so there is, it is there. So, it is not communicated to staff or doesn't (sic) staff investigate the possibilities or just have the perception, "I have to go and beg and borrow", which is actually not true".*

"…where we have five years ago haven't (sic) paid any page fees at least trying to contribute to page fees of people that actually publish and need some page fees".

Praise was given the DHES for their initiative with article writing and training boot camps in their HPE program for their initiatives with article writing and training boot camps.

"I think boot camps was one of the nice developments in the Faculty, in firstly working with a resource restrained environment but also utilising your capacity of training much better".

This previous comment also verified the perception of limited resources, pertaining to research (cf. Table 5.11). Time was also heavily linked to the perceived support of staff.

7.2.5.1 *Time*

Time, mentioned so often in the open-ended questions of the questionnaire (cf. Table 4.5), was its own theme due to this prominence; management also viewed this as vital. The time-consuming nature (cf. Tables 4.5; 5.5) of the rolling out of a research project was also acknowledged.

"And, of course, the most important thing in the usual factors is the time, if we look at the dedicated time that we put (into research)".

"Time is always on the list". Second participant agrees: "A very big issue".
"Unfortunately, it takes time to put your research in place".

The availability and perception of support is closely linked to staffing.

7.2.5.2 *Staffing*

Staffing was a separate theme found in the questionnaire. Sufficient staffing was an inherent assumption of the theoretical framework (cf. Figure 2.8). Provision was made in the model to introduce the functions of different appointment structures and the appointment structures' influence on the research culture. What was not planned for, was an intrinsic insufficiency in the most basic of support staff and number of academic members, to allow for research to even be performed. Academic staff reported fulfilling roles previously agreed to be executed by government employees.

The perception of low staff numbers described above and mentioned in the open-ended questions of the questionnaire, as well as within statements of the NGDs (cf. Tables 5.1; 5.11) was verified as a fact by management. This was not only academic clinical staff, but research support staff employed in the FoHS.

> *"…They (University X) have got joint staff… 889 staff members. November last year the School of Medicine had 83 staff members. So that's a 10 percent staff component to what X* has got. They (University Y) have got 32 staff members in support to our three members… And I mean if you are down to 83, by the way, the School of Medicine has got a memorandum of understanding with the Free State Health Department; and in that memorandum of understanding then there is a minimum staff complement that was negotiated as a core staff compliment to let the School of Medicine function on as a bare minimum staff requirement of 225 staff members. So, going down to 83 means it's a third of what we agreed is the core minimum staff to run a Medical School".*

These stark facts indicate how the reliance on stakeholders for academic joint staff appointments such as the FSDoH has a dire impact of the SoM, in particular. Societal construct factors (cf. Figure 6.11) carry on this discussion.

7.2.6 Stakeholders

Ownership of the research guidelines is perceived as being a concern, due to ignorance of these policies by staff.

> *"…for me the concern is that there is a lot of ignorance while there is information available that we actually state in our research guidelines policy… Because all the information is out there. We spend years of getting rules of policies of the School in place …and if people don't read it and feel unhappy?*
>
> *Participant: Where is the fault then?*
> *Participant: Ja where is the fault then?"*
>
> *"And an acknowledgement of not actually investigate documentation of your own work environment which is there. It's not management's responsibility always to spoon-feed academic staff members because the information is there. So, you do find that that is also maybe something to create this framework that there should be more interactive dissemination of information, 'cause dissemination, information is sent to everybody. But if people don't read it or make it their own they don't know about it".*

New information identified in this method related also to the acknowledgement in the need to improve research communication channels. Managers were also recognising their role as research leaders. Management also have expectations of the MoU with the FSDoH for staff capacity, which is at present not being fulfilled (cf. 2.8.5.1; Tables 4.5; 5.10). One aspect that managerial leadership also identified was the expected future research growth areas.

"So, there is a gap between management or the research committee because that's not only management, to the rest of the staff in the departments".

"I need to be there as a manager, I need to be a bit ahead of where we are going. My more relevant question is: "How do we get ourselves out of this hole?".

"One of the areas which I thought would be much more developed and higher growth where all the community-based education and the inter-professional education areas in Trompsburg with where I thought we can actually have a new growth area there in the research we are doing".

This indicated a positive pro-active approach towards research from a management level.

7.2.7 Perceptions and emotions

Some participants were aware of the feelings of staff and they shared examples at the meetings. Grant writing was acknowledged as a weak point for previous participants (cf. Table 4.5), and in the VM:

"You know there is a… people don't feel empowered to actually apply for these things (grant writing and applications)".

There was an example given of the struggle of the novice researcher to get published (cf. Table 5.15); and that this process is demotivating (cf. Table 5.16) and leads to staff not feeling appreciated (cf. Table 5.13).

"…they struggle to publish and they feel very strongly that it doesn't reflect the time and effort because it's not published. I understand it's all about money and that's what the University wants to see but they feel that some of the systems and the policies that is in place they are actually getting penalised …so its demotivating for them because they say to you I can show you the evidence that I have tried it…and they feel demotivated because then the Varsity still comes and say you are not doing your job you are not working hard enough…. what I am actually saying because they feel it (not valued). They are trying. They are doing the three pillars that is required of them but at this stage they struggle to publish".

This was an example of the great empathy that management has and identifies with the struggles of novice researcher colleagues. Other issues, such as the onus of reading distributed guidelines and materials, management feels the fault lies with the staff member (cf. 7.2.6).

7.2.8 Summary of Validation Meeting new findings

New data obtained from this method can be summated as:

- Identification of the communication channels that can be improved to facilitate research information being disseminated (cf. 7.2.6);
- The onus is on the staff member to familiarise themselves with research policies and guidelines, for example on page fees (cf. 7.2.6);
- Money should be spent to boost research (cf. 7.2.2);
- Management feels the same as staff in that there is a negative perception for the research status quo of the Faculty overall fine, but (cf. 7.3.2; 7.3.5.2);
- Management is actively investigating solutions (cf. 7.2.3):

These sections provide the evidence of new information and reinforcing existing data in this study. Other information from the VMs pertaining to the amendments and recommended changes to the preliminary framework (cf. Figure 6.10) will follow.

7.3 AMENDMENTS MADE TO THE PRELIMINARY FRAMEWORK

Recommendations to the preliminary framework (cf. Figure 6.10) are made in terms of suggestions of additions to the framework, as well as pinpointing limitations of the preliminary framework. There were also interpretation issues from the participants in these meeting. One group took the meeting in a very literal sense and focused predominantly on the depiction of the preliminary framework (cf. Figure 6.10):

> *"Why is some like straight and why is some like square?"*
>
> *"I for example now as I said in the beginning the sizes, the colours, you know the shapes, the relationship, this egg like figure why did you decide on that? For example, why didn't you just continue with you know the square…"*
>
> *"Is it not possible to change this one because it's just the preliminary one?"*

7.3.1 Limitations of the preliminary framework

Three main criticisms of the preliminary framework (cf. Figure 6.10) were addressed in the VMs, namely the visualisation of relationships between the factors; the demonstration of hierarchy; and the explicitly labelled item "Research Culture". The relationships between the themes were only indicated by way of being included within the context. No arrows or other diagrammatic indicators were provided to visualise the relationships between the themes presented. The relationship of the weighting of the themes was understood by the thickness of the border; however, was not felt to strongly convey this weighting.

In addition, the concept of hierarchy was poorly indicated by the placement (bottom to top) of the theme of Philosophy through to the Research Process and the Individual. This was intended to be conveyed through size and placement upon one another like building blocks; however, this was not interpreted as such by participants in the VMs.

Lastly, the item "Research Culture" was absent from the diagram. Participants felt that the item should be incorporated into the diagram explicitly, other than in the title of the figure or by way of having additional reading material to explain the diagram. These limitations were amended by altering the schematic to represent a more formal structure, as well as include the additional label "Research Culture".

7.3.2 Recommendations to the Preliminary framework

The concept of collaborative or group research was the foremost addition recommended to the preliminary framework (cf. Figure 6.10).

> *"It's just a suggestion that one actually maybe look at group research also in the framework as a block or heading in my opinion, that's just my opinion. Because all research on international level even globally is moving towards group research and not so much individual research due to a lot of factors, like resources".*

These kinds of interactions relating to intra-personal, research-related interactions are encompassed within the Inter- and Intra-personal Interactions item, and this was mentioned to the participant. It expands the terminology of collaboration to also include group research; as the nomenclature *group research* was no explicitly mentioned by any one of the participants in the NGDs, nor in the open-ended questions of the questionnaire.

There was, however, closely related comments to *team related* research activities and the positive effect of working together to achieve a united goal (cf. Table 4.4). Due to being part of the open-ended questions, there is no way of discerning if the participants feel that group research and team research are synonymous or separate elements.

7.4 TRENDS IDENTIFIED FROM THE VALIDATION MEETINGS

Some similarities to the previous analyses emerged (cf. 6.2-6.6). The following mentioned aspects may summate these:

- Workload causes the lowering of the prioritisation of research (cf. 7.3.2.1);

- Reinforced the impact of the capacity concerns with staffing (cf. 6.4.2.5; 7.3.5.2);
- The relevance of dedicated research time (cf. 6.4.2.6);
- A feeling of being in tune with their staff as described by the examples given pertaining to the perceptions and emotions of staff in their departments (cf. 7.3.7);
- Negative aspects perceived were the low publishing outputs and research in general in the Faculty as being in a *"hole"* (cf. 7.3.5.2);
- Confirming the notion that Top Management is not satisfied with the research outputs in the Faculty (cf. 7.3.2);
- The acknowledgement of the existing support structures (cf. 6.4.2.1; 7.3.5); and
- The FoHS has unique contextual aspects (cf. 6.2.3.1; 7.3.2.2).

Table 7.1 below indicates the number of meetings in which these similarities in topics arose. Once again, it can be seen that the prevailing themes Context and Support had all four meetings bring forth opinions on these topics; this is in agreement with the weighting of these factors already discussed (cf. Tables 5.18; 5.19).

Table 7.1: Frequency of similarities the remarks made in the validation meetings

TOPIC OF REMARKS	NUMBER OF GROUPS THAT MADE COMMENTS
Context	4
Workload	3
Uniqueness of Health Sciences	3
Philosophy	2
Policies	3
Support	4
Time	3
Staffing	3
Stakeholders	3
Perceptions and emotions	2
Comparisons to other Faculties within UFS or to other Universities	3

Table 7.2 (on the following page) dictates the presence of a theme in general or a category in particular, in all three methods of the study. This informed the placement, size and hierarchy of the factors in the revised and amended final framework. A tick (✓) indicates the presence through participants recording a statement in written form, and a hash (**#**) indicates the presence of the theme or category through discussions of participants. This is due to VMs not being thematically analysed, and NGDs informal discussions, as well as the multiple factors being recorded in one statement, as previously mentioned.

Table 7.2: Themes and categories overlapping in the data collection
(Table continues on next page)

THEME AND CATEGORIES	PERCEPTIONS	FACTORS	FRAMEWORK REFINEMENT
Accepted norms	✓		
Actions	✓		
Assumptions	✓	#	
Context	✓	✓	#
Climate	✓	#	
Environment	✓	#	
Research autonomy and accepted forms of research	✓	✓	
Uniqueness of Health Sciences	✓	✓	#
Workload	✓	✓	#
Individual	✓	✓	#
Attitude	✓	✓	
Family		#	
Motivation	✓	#	
Personal attribute	✓	#	
Personal context	✓	✓	
Skills and knowledge	✓	#	#
Inter- and Intra-personal interactions	✓	✓	#
Collaboration	✓	✓	#
Collegiality	✓	✓	
Mentorship	✓	#	#
Students and supervision	✓	#	
New knowledge	✓	#	#
Discipline/profession	✓		
Distribution of knowledge	✓		
Results	✓	#	#
Perceptions and emotions	✓	#	#
Negative	✓	#	#
Positive	✓		
Philosophy	✓	✓	#
Importance of research	✓		#
Inertia and resistance	✓	✓	
Mission and objectives	✓	✓	#
Values	✓	✓	
Policies	✓	✓	#
Combined establishment	✓	✓	#
Job description	✓	✓	
Remuneration, recognition and rewards	✓	✓	#
Sustainability and succession planning	✓	✓	#
Research process	✓	✓	#
Department of Health (DoH)		✓	#
Ethics Committee	✓	✓	#
Execution	✓	✓	#
Misalignment	✓	✓	
Outputs	✓	✓	#
Staffing	✓	#	#
Academic	✓	#	#
Clinical	✓	#	#
General	✓	#	#
Research	✓	#	#
Support	✓	#	#

Stakeholders	✓	#	#
Barriers to research	✓	#	#
Leadership	✓		
Support	✓	✓	#
Existing support	✓	✓	#
General	✓	#	#
Funding		✓	#
Management	✓	✓	#
Resources	✓	✓	#
Training and development	✓	✓	#
Time	✓	#	#
Allocated time	✓	#	#
Time management	✓		

From this analysis, it can be concluded that there were similar findings as in previous literature; and therefore, the theoretical framework is endorsed as a departure point (cf. 5.9.1). The findings in both methods do have overlapping aspects, which reinforce their importance as factors in the preliminary framework (cf. 4.5.1; 5.7; 5.7.7).

The compilation of these figures (cf. Tables 7.1; 7.2) expands on the factors identified in this study, as well as the interpreted analyses of the data into the concise depiction of the final framework.

7.5 SCHEMATIC OF THE FINAL FRAMEWORK

When reflecting on the data obtained through the VMs and considering the limitations of the preliminary framework (cf. Figure 6.10), the conceptualisation of the need for a schematic with clear relational associations was decided upon. This resulted in the use of arrows in the schematic.

The colours selected are consistent with the colours used for each factor in the preliminary framework (cf. Figure 6.10). The size of the text (the larger the text the greater the weighting of the factor in the analyses) with the exception of Research culture, which is a new item, as per recommendation from the VMs.

It can now be seen in Figure 7.1, depicted by the International and National trends in Higher Education, that Health and Research are primary aspects, which are integrated into the concept of research culture, if not the most visible of aspects to participants. However, the mandated importance of research by these government-led departments in South Africa do invariably influence the HEIs (cf. 2.7.1).

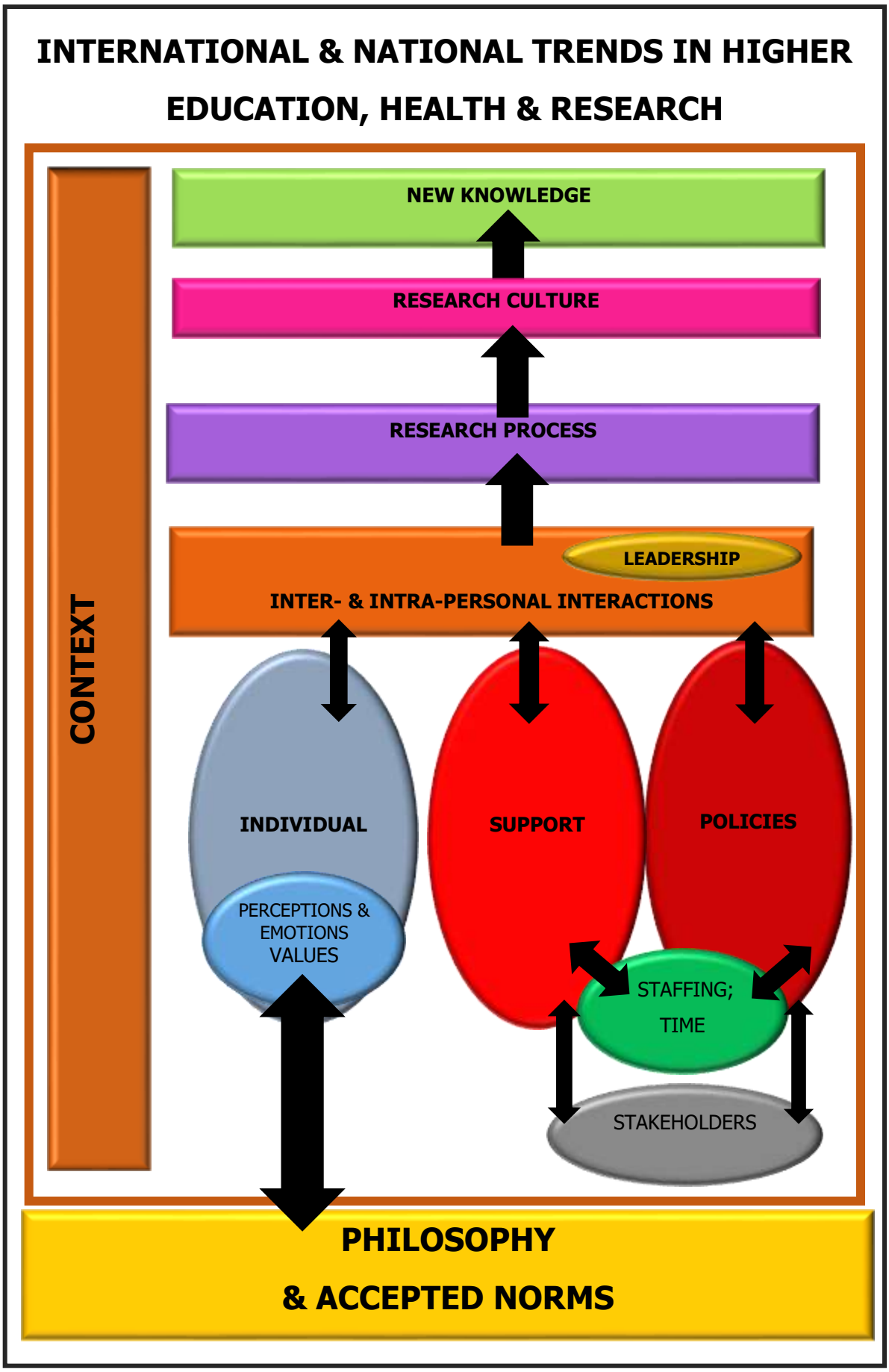

Figure 7.1: Framework for enhancing research culture at the FoHS at the UFS

As described, the Philosophy (cf. Tables D10.9; D10.10; 6.4.3) is an entrenched value system, with historical influences still bearing on present-day norms (cf. 2.6.2), which lays the way forward to the Context of the UFS, and the FoHS (cf. 2.7.4), which is in part described by the Uniqueness of the Health Sciences (cf. Tables D10.3; D10.4; 6.4.2). The depiction of the philosophy being an element at a foundational level, which influences the whole context of the Faculty.

A person is only likely to succeed in an institution if there is a cultural fit between the philosophy and the personal context of the individual (cf. 2.2). A group of like-minded individuals, through socialisation and communication of accepted norms, form the various sub-cultures within the Faculty.

The aspects of dedicated research time (cf. Table 4.12; 6.4.5); and sufficient capacity through staffing of academic, research and administrative posts (cf. Tables D10.1; 5.15; 5.16) are dependent on the policies and the support system for research within the Faculty.

Due to the integrative nature of the individual, the support structures that are reinforced by policies are required in order to enable there to be Inter- and intra-personal Interactions. These interactions include Collegiality; Mentorship; Collaboration through team and group research ventures (cf. Tables 4.13; 5.7; 5.8); Networking and the availability and skill to supervise Students. Leadership was seen as a specific requirement that affected the sub-populations (cf. Table 4.12; 5.1; 5.2).

The development of strong Inter- and intra-personal Interactions, in turn, allows for a smoother, more effective Research Process (cf. Tables 5.14; 6.1). The fruits of these factors are viewed as a positive and thriving Research Culture (cf. Table 5.16). The participation and execution of the research process provides the channel through which New knowledge (cf. Table 4.4) is gained, promoted and disseminated. The upward-moving arrows provide the hierarchy of these aspects. The use of the data from all three methods to form the elements comprising the final framework (cf. Figure 7.1) reflects the empirical design.

CHAPTER 8

CONCLUDING REMARKS

8.1 INTRODUCTION

The purpose of this chapter is to provide an overview and concluding thoughts on the final findings of the study. The chapter commences with an overview of how the study answered the research questions, followed by conclusions that were drawn. Thereafter the recommendations, followed by the limitations of the study, the way forward in the future through research opportunities and a conclusive remark.

The overall aim of the study was to determine the perceptions of staff in the FoHS of the UFS of the existing research culture, which until present had not been investigated. Secondly, to identify the factors, which were perceived to influence this existing research culture. Once these were influences identified, a framework for the enhancement of the research culture at the FoHS of UFS was compiled.

There is an open declaration of the prominence of research at the UFS, to fulfil the goal of becoming a research-intensive university. Part of the strategy to achieve this status, is the required presence of a culture of research, enabled by the research environment. Thus, the evaluation of the existing research culture is of significance.

8.2 OVERVIEW OF THE FINDINGS

Research was carried out based on three research questions. The findings of the research forms the basis of the recommendations discussed in this chapter.

In Chapter 1, (cf. 1.4) an outline of the research questions was presented. These research questions directed the study and shaped the eventual outcomes, which are presented in this final chapter.

Before the first method could be implemented, a preliminary literature review was conducted to orient the researcher and to assist in the compilation of the questionnaire survey utilised in this study, as no such questionnaire was available. Moreover, the first

objective of the study, pertaining to the literature review was: *To conceptualise and contextualise the factors that influence research culture in a theoretical framework.*

The literature gave an overview of the theoretical underpinnings (cf. 2.2) of Organisational theory as the departure point for the concept of culture in a broad sense. This was narrowed into a focus of academic culture (cf. 2.3) through the model compiled by Smerek (2010:410). Research culture was defined (cf. 2.4) and factors established in literature were identified (cf. 2.4.2); the evaluation methods most commonly applied to research culture were highlighted (cf. 2.5). The contextual incorporation of health and HE of this study (cf. 2.8) to research culture culminated the derivation of the theoretical framework of research culture (cf. 2.9).

This theoretical framework (cf. Figure 2.8) assisted in establishing the questions asked in the questionnaire, the NGDs and was a reference point for the development of the preliminary framework that was presented in the VMs. This theoretical framework together with the compilation of a literature synopsis in the specific topic of research culture in HE and health (Appendix A1), allowed for the contextualization and conceptualization of the topic. Thus, the completion of the literature study met the first objective of the study (cf. 1.4). Each of the research questions are reviewed together with a summation of the findings of each method applied to answer the research question, in the following sections.

8.2.1 First research question and second objective

The research question was stated as: *What is the current, perceived research culture in the FoHS at the UFS?*

The following objective was pursued: *To identify the perceived, existing research culture by way of description by the participants.*

Open-ended questions gave information on the participants' expectations of research culture (cf. 4.4.1), their experiences of research culture (cf. 4.4.2) and their perceived requirements when they evaluated the existing research culture (cf. 4.7). The thematic analysis of the open-ended questions derived 14 themes (cf. Tables 4.4; 4.5). Themes were: Accepted Norms; Context; Individual; Inter- and Intra-personal interactions; New Knowledge; Other; Perceptions and emotions; Philosophy; Policies; Research process;

Staffing; Stakeholders; Support; Time. These findings represent the perceived existing culture, through the lived experience of the participants in their work environment as a Faculty academic.

Values believed to be present in their existing research culture were: Ethical, Support, Competitive which was present in all four sub-population; also prevalent were Excellence or Quality or Rigour in research and being tenacious in Perseverance; Dedication; Commitment; Resilience and Determination (cf. 4.5.1). Thirdly, the participants' reported emotions, relating to research (cf. 4.5.2); emotions present in all four sub-populations, were Satisfaction, Excitement, Frustration and Stress.

These findings summate the perceptions participants have of the research culture, and thereby met the second objective of the study.

8.2.2 Second research question and third objective

The research question was stated as: *Which factors influence the research culture within the FoHS at the UFS?*

The following objective was pursued: *To determine the staff perceptions and views on the factors that influence research culture.*

Two open-ended questions pertaining to the organisational and external factors perceived to influence research culture were asked of the questionnaire sample. In addition, ten nominal group sessions were hosted, with participants grouped by their School or Academic support affiliation; 54 academic staff members participated. The question asked of the participants was: "*Which factors do you perceive to influence the research culture*?"

A thematic analysis of the statements revealed the factors influencing research culture (cf. Figure 5.1). The most important themes were Context, Support and Policies. The remaining themes were Individual and relationships of Inter- and intra-personal interactions, Research Process, Other, Perceptions and emotions, Philosophy, Staffing, Stakeholders and Time.

Furthermore, a Faculty wide analysis was undertaken, with the inclusion of a secondary analysis, with the van Breda (2005:1-14) method (cf. Table 5.18) and the McMillan, *et al.*

(2014:103-104) method (cf. Table 5.19). The most important themes, according to these two ranking methods were Context, Support and Policies. The themes remaining themes were that of Individual and Inter/Intra-personal interactions; Research Process and Philosophy. The recorded statements, supplemented by the thematic analysis provide insight into the factors perceived by these participants to influence their research culture; thereby answering the second research question and meeting the third objective.

8.2.3 Third research question and fourth objective

The research question was stated as: *How can the current research culture in the FoHS at the UFS be enhanced to enable a research-intensive academic environment?*

The following objective was pursued: *To develop and refine a framework, based on theoretical readings and the findings of the study, to enhance the existing research culture.*

The preliminary framework was compared to the departure point of the theoretical framework. From this analysis, an important discrepancy within the research culture principles, observed by the participants, of the concept of dissonance within the philosophy was revealed. VMs with the additional perspective given from management, where this preliminary framework was presented, were analysed. This allowed for the final framework was refined (cf. 7.5), through recommendations, limitations (cf. 7.3.1-7.3.2) and additional new data. The final framework (cf. Figure 7.1) to enhance the research culture at the FoHS at the UFS was collated, utilising the data collected from the three methods. This framework gives insight into the hierarchy and relationships of the factors required (currently perceived as present, partially present or absent) to be able to inculcate a research culture that is driven by successful knowledge creation and dissemination (cf. Figure 7.1).

8.3 RECOMMENDATIONS

Recommendations are given in two main areas: practical implications for this study and new opportunities for research in the future. The researcher takes the liberty to recommend the following:

- A submission of the findings of this study to the recently appointed Vice-Dean of the Faculty, whom it is intended, will drive research in the Faculty going forward, with the intention of equipping the FoHS with information for a starting point to enhance the

research culture. This may be in the form of formal mentorship programs, the collation of sources for assistance in a research office and list of resources available in the different departments.

- To further distribute a report to the Vice-Rector of Research, the Director of the Postgraduate School and the NRF, as there is a need to base future interventions on research evidence;
- That the outcome of this study be used as an initial contact point to network and engage with other universities, which may provide insight into similar studies conducted elsewhere and the comparison thereof;
- Findings may be shared with Stellenbosch University, in conjunction with a study being undertaken by the Centre for Research on Evaluation, Science and Technology (CREST), currently collecting data for a study into "*building cadres of emerging researchers in the HE system*". ASSAF has commissioned the study; and
- Research guidelines for newly appointed staff to assist in the orientation of research could be addressed by the addition of research orientation to the existing orientation program run by the Faculty.

This study emphasises that the current knowledge on research culture within the HE health domain may still be regarded, as being in its early stages of development and that there is room for more learning. In order to expedite the growth of learning in this field, the following opportunities exist:

- This study could be replicated at this institution and elsewhere; to allow for comparisons between Faculties at the UFS and between universities. It is furthermore noted that with multivariate analysis, the larger the sample, the greater stability and replicability of the dimensions; it is advised that such a study could be used across the university, instead of in only one faculty;
- The inclusion of new populations may allow for further extension and/or addition to the research culture typologies identified in this study;
- An implementation phase of research training, in requested skills, could provide post hoc comparative data on the findings pertaining to aspects of the individual, motivation, support and self-reported research knowledge and skills; and
- A longitudinal study, utilising the modified questionnaire survey may provide insight in the growth potential of young researchers and effective expenditure and acquisition and allocation of research resources. This may also be combined with personality

testing to identify future change agents and staff who may act as inspirational research leaders.

This study may act as springboard for other additional research ventures not listed above.

8.4 LIMITATIONS OF THE STUDY

The researcher acknowledges the limitations of the study. Due to being unable to access government email addresses, it was not possible to reach all of the population through the questionnaire electronic link, which was delivered to the UFS email address listed on the academic staff list. Many joint-appointment staff use predominantly their FSDoH-allocated email addresses ("fs.gov"). An attempt was made to overcome this shortfall by attending the Faculty Board meeting and distributing paper copies; however, even so it is unlikely to have reached every academic member.

Many HoDs indicated via email that their staff do not respond to UFS email and use preferentially the NDoH emails; this indicates that although the email link was delivered, it would never be read. Thus, the consent form was amended to include a space for the most frequently used email address of the participant, to ensure that transcriptions were received.

The questionnaire was of fair length in order to obtain greater insight; it is possible that a slightly shorter questionnaire will have yielded a better response rate. To prevent this, the design option of chapters was used in the Evasys programme, as it indicates the progress the participant is making and thus motivates the participant to get to the end.

The researcher also noticed the non-delivery of correct and contactable emails. This occurred more than once, when the researcher asked known staff if they had received the link, there has not been an explanation for this error, although it had been raised with the campus distributors of the program. Similarly, the program generated error reports, but with no indication to the user how to rectify the error.

In addition, the researcher was contacted by participants who indicated that after filling in the one link questionnaire the program required a password, which the participant did not receive and also that the submission page froze. In both instances, through the participation tracking tool, the researcher could see that neither of the completed questionnaires were listed as having the data imported. This resulted in these two willing participants not being

willing to fill in the questionnaire twice. It is possible that more of these instances occurred, of which the researcher is not aware.
It is uncertain if a different selection of available dates offered to academic staff would have accommodated more (or every person willing person) to participate in the NGDs. These dates were selected due to the availability of the facilitator and the venues; every other provision to accommodate staff members was made.

The lost transcript data for the one NGD group, due to electronic recording failure, may have provided different and new rich data that was not present in the other groups. This was addressed in subsequent groups by the addition of a third recording device. In addition, the facilitator wrote down her recollection and member checks by participants, whereby their contributions were also added.

As the researcher was not permitted to be present at the NGDs, all body language and similar subversive communication was unfortunately lost. It was noted, however, that there were instances where the facilitator did indicate to the group that similar items were previously mentioned. This was an unintentional confirmatory gesture from the facilitator that may have created leeway for impartiality.

It is possible that participants chose to give variations of their true, honest answers in order to provide more socially acceptable recorded answers. The researcher feels that this is likely, as some aspects were written down in open-ended questions and were not mentioned in the NGDs; however, this may be due to different people participating in the two methods. It is unknown if other factors play a role in the research culture of this population, as it is possible that not all factors came to light through the selected methods and questions. VMs were hosted when one School had recently undergone a change in structure, through the sub-division into three new Schools; this may have influenced the contribution at that meeting, due to new members joining the Executive Management meeting for the first time.

Likewise, one newly appointed and one acting Head of Department were present at another VM; these staff members may not have had the complete knowledge of the managerial roles and departmental information to be able to fully contribute to the meeting.

As mentioned, it is possible that the researcher and co-coder inadvertently brought bias into the interpretation of the data. The declaration given (cf. 1.7; 3.7.5) allows the reader insight in an attempt to minimise these biases.

8.5 RESEARCHER ASSUMPTIONS

This section is intended to provide evidence of the reintegration phase of the bracketing that took place in the study (cf. Table 3.12). This declaration is in order to attest to the credibility of these findings, and that of the findings discussed throughout (cf. Chapters 4 - 7).

The researcher can be perceived in varying degrees of being on the insider/outsider continuum, in different settings (cf. 3.4.3.1). The social nature of academia created ambiguities and ambivalences in the relationships and connectedness, for the duration of this study. Maton (2003:56) describes this as the relational positions within the specific field of practice - where each person is relationally positioned within the field and this position determines the viewpoint of the activities and others. Each person, then, can only have their viewpoint - a partial viewpoint - and acts accordingly.

Similarly, the power differential of the researcher to the participants may have had more impact, had the researcher been viewed in esteem; or held a position within the Faculty, that held sway with participants (Mercer 2007:14). Through regular journaling, the following excerpts highlight the feelings and perceptions of the researcher through the research process of this thesis. The formal process of bracketing required biases to be written down explicitly; to draw these biases into consciousness.

As each set of questionnaires were sent out per sub-population (cf. 3.5.2.1; 3.6.1) and NGDs were hosted per sub-population (cf. 3.5.2.3; 3.6.2), when the coding took place, both the researcher and the co-coder discussed their perceptions and thoughts about their expectations and biases for each of these sub-populations. The researcher acknowledges the following assumptions and perceptions made at the beginning of the study:

8.5.1 Assumptions made of the SAHP

- Is perceived as having strong research leadership;
- Much pressure on newly appointed staff as research is viewed as competitive;
- Overall good support for research and staff are fairly happy in the workplace;

- Not all departments equally focused on research or agree on what quality research is;
- Optometry will have more negative research culture, as the only department with joint appointed staff and working off campus;
- Nutrition and dietetics would have the strongest research culture within the SAHP, due to the high number of postgraduate students; and
- Acceptance of both qualitative and quantitative research.

8.5.2 Assumptions made of the SoM

- Has too many departments to be cohesive. Too varied a selection of specialties creates a fragmented culture;
- Joint appointments create dissention among staff. For example, pure academic staff have significantly more personal leave days than joint appointment staff; which creates a dilemma of who takes over the responsibilities when pure academic staff are on leave;
- Dire working conditions. Lack of basic resources;
- Huge grants allocated to large projects;
- Very different leadership personalities from one department to another;
- Many staff members focused on RWOPS;
- Low quality of research projects from MMed registrars;
- Antagonistic, "leave me alone" attitude of staff;
- Likely to be the most negative; and
- Mostly clinical, experimental and quantitative research performed.

8.5.3 Assumptions made of the AS

- Has strong research culture in most divisions and active research leadership;
- Funding is available in some divisions for research, particularly for degree purposes;
- More likely to have time to perform research as no clinical duties and no joint appointed staff;
- Most are probably high up in the research hierarchy and more likely to be established researchers; and
- Due to the role in Faculty, mostly geared to interdisciplinary and educational focused research.

8.5.4 Assumptions made of the SoN

- Staff will be the kindest, and therefore the easiest to work with;
- The researcher perceived SoN to have a rich research culture, cohesive and team oriented;
- Mostly qualitative research performed;
- Probably predicted to be the most uniform of the four groups and have research integrated into daily routines; and
- Have resources, space and very well organised; strong research focus from School management.

8.6 FINAL REMARKS

This study originated from the recognition of the dearth of information pertaining to the research culture, specific to the FoHS at the UFS and also the HE health faculties in the South African context.

In order for the UFS, and more explicitly the FoHS, to contribute to the research endevours of importance in finding African solutions to African concerns, and simultaneously achieving status as a research-intensive university, action needs to be taken by those within the research sphere of academia.

This study addressed a gap in the knowledge of the existing research culture of the FoHS at the UFS and the perceived contributing factors that influence this research culture. Consequently, a framework, hierarchical and relational in nature, was developed to create a departure point for the enhancement of the present research culture.

The researcher believes this study made a unique contribution to the field of research culture in HE, and in the field of Health Sciences within the context of South Africa, in particular.

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APPENDICES