THE INFLUENCE OF HIGHER EDUCATION RANKING SYSTEMS: AN INSTITUTIONAL LEADERSHIP PERSPECTIVE

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By

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DECLARATION

I declare that the work on this thesis is my own unaided work and the work of others is appropriately acknowledged and referenced. I further declare that I have not submitted this work or any version of it to another university for assessment purposes.

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ABSTRACT

Competition between universities has intensified with the rise and expansion of Higher Education Ranking Systems (HERS). Many researchers agree that the HERS, and the publication of annual rankings, has influenced all participating institutions to some extent (Espeland & Sauder, 2015; Hazelkorn & Ryan, 2013; Rauvargers, 2013). This study was designed to investigate these influences as perceived by institutional leaders. The objectives of the study were to identify the various influences HERS exert on universities, and compares the extent to which institutional leaders from South Africa, South East Asia, Australia and the Arab Gulf experience these influences. The literature review includes discussions on the flow of international higher education, global phenomena like internationalisation, marketisation and an increased demand for higher education, and how these contributed to the development of HERS. The literature review contains an in-depth analysis of the big-three rankings (QS WUR, THE WUR and the Shanghai Ranking ARWU), and a discussion on the economic, cultural and political push and pull of the global knowledge economy.

To identify and compare the influences of HERS on universities, the researcher employed a sequential mixed method study design, opting to conduct a qualitative exploration prior to a quantitative examination. The qualitative phase involved interviews with 25 institutional leaders to identify the numerous ranking-related influences on universities. The researcher employed two cycles of emergent coding to uncover the themes and categories within the interviews. In the second phase of the study, the themes and categories informed the development of a 65-item questionnaire to test the emergent aspects on a wider audience (86 international respondents). The questionnaire results confirmed the majority of the items underpinning the themes and categories.

The third phase employs a mixture of quantitative and qualitative information to compare experiences from institutional leaders in South Africa, Arabian Gulf, Australia and South East Asia. The outcomes were presented in four exemplar case studies, featuring the results of non-parametric statistical analyses (Kruskal Wallis and Dunn Bonferonni), regional-specific comments and contextual literature.

Overall, the findings suggest that HERS, and their rankings, influence the strategy of the ranked universities internally with most changes predominantly geared toward increased research production. HERS, and their rankings, influence with which institutions universities collaborate. Unintended stakeholders like university boards, the government, media and public, influence top leadership (VC & DVCs) and the university. Top leadership's (VC & DVCs) approach to rankings determines the extent of rankings pressure on strategy and academics. The socio-political and economic environment of a region or country can lessen or aggravate the pressure of HERS and rankings on universities.

The comparative assessments suggest that Australian institutions place less importance on HERS and the rankings they produce when compared to institutions South Africa, the Arabian Gulf and South East Asia. South East Asian institutions place a higher importance on HERS and the rankings they produce, when compared to the other regions. Institutions in the Arabian Gulf use rankings more to recruit or dismiss employees, when compared to the other regions. The South African government and university staff are less concerned with rankings than the other regions.

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 Introduction and Overview of the Study

"Like the water of a river basin, education flows across the globe". It flows "well" because of the long history and entrenched geography of the flow network, which is the result of the evolutionary process that brought the sharing of knowledge among people and institutions to its present level of effectiveness (Bejan, 2008, para. 7). Bejan (2008) uses the analogy of a river to explain that if all the higher education institutions and networks improve and strive for excellence then international higher education will strengthen but not change shape, or direction. "The streams swell, but the size of each, when compared with others, stays the same" (2008, para 11). As globalisation of the economy continues, a similar growth in the world knowledge economy is evident (Moloi, Gravett & Petersen, 2009). These developments are having a profound impact on higher education, and contemporary mass participation rates (Hazelkorn, 2013) have made tertiary studies a popular topic (Scott, 2013). Mass systems transform higher education from the 'private world', elite study of science and scholarship, to a 'public world', which requires social engagement, not only with regard to the accessibility higher education training but also regarding the accessibility of the various forms of knowledge production (Gibbons et al., 1994).

Changes like these, on a global scale, are accompanied by increased internationalisation of students and institutional mobility (Altbach, Reisberg & Rumbley, 2009). Globalisation, characterised by the evolution towards a single world market in goods and services, is most recently signified by the rise in global Higher Education Ranking Systems (HERS) (Hazelkorn, 2014; Hazelkorn, 2013). Rankings are controversial instruments, frequently criticized for lack of validity (De Witte & Hudrlikova, 2013; Badat, 2010), yet in the absence of any other reliable information to compare international higher education offerings (Downing, 2013), HERS and their rankings have gained recognition, prominence, and influence (Taylor & Braddock, 2007). Today they are considered appropriate instruments to assess quality and excellence (Ordorika & Lloyd, 2013; Attwood, 2009; Taylor & Braddock, 2007). The number of HERS and rankings have increased significantly (Hazelkorn, 2013) with QS (Quacquarelli Symonds), THE (Times Higher Education) and the Shanghai Ranking being widely considered the big three (most influential) HERS (Downing, 2013). Researchers agree that the existence of HERS and the

annual publication of university rankings affect universities in many ways (Wint & Downing, 2017; Espeland & Sauder, 2015; Rauhvargers, 2013). However, the exact influences and the extent to which it alters the direction and inner workings of the institutions remain a subject of debate. The study attempts to expand the growing literature of aspects associated between rankings and university management from the broad to the specific.

This chapter provides a summary of the problem statement and research question. The aims and objectives of the study are discussed, followed by a brief overview of the research design and methods used in this study. It concludes with a short outline of each chapter.

1.2 The Continious Rankings Debate

The explosion of HERS has sparked debate about the nature and validity of the various HERS and their methodologies (Altbach, 2006; Dill & Soo, 2005; Downing, 2012). HERS have different parameters, including publication and citation counts, student/faculty ratio, percentage of international students, number of awards and achievements, number of research papers per faculty, web visibility and the number of articles published in high impact journals, to name but a few (Aguillo, Bar-Ilan, Levene & Ortega, 2010).

Higher education is dominated by a reputational hierarchy of institutions that sustains HERS and is reinforced by HERS (Locke, 2014; Rauhvargers, 2014). Similarly, Marginson (2007) adds that rankings reflect prestige and power, and rankings confirm, entrench and reproduce prestige and power. Rankings are criticized for many reasons; the use of mostly quantitative indicators; proxies to represent the quality of teaching and learning; the reliance on publications written in English (Kehm, 2014; Rauhvargers, 2014). Despite all the opinions and arguments about the legitimacy of the rankings as a construct, it seems experts agree that they are here to stay (Downing, 2012; Hazelkorn, 2014). The question, therefore, seems to be less about whether or not universities should be compared and ranked, but the manner in which this is undertaken (Hazelkorn, Wells & Marope, 2013).

Scrutiny of HERS methodologies has increased considerably since 2009 (Baty, 2014). The arts, humanities and to a large extent the social sciences remain underrepresented in rankings because of unreliable bibliometric data (Hazelkorn, 2013). A Frequent criticism of HERS is that many ranking systems rely on poor indicators, such as reputational indicators, despite

increased criticism from peers (Rauhvargers, 2014). Citation impact is still determined more reliably through indicators that measure the proportion of articles in intensively cited journals, and thus favours those fields in which these articles are concentrated, namely medicine, natural sciences and engineering (Waltman et al., 2011). Marginson (2007) argues that the measures of internationalisation some ranking systems employ are a better indicator of a university's marketing function, rather than the international quality of its researchers. Student-to-faculty ratios are easily manipulated by institutions (Baty, 2014). The quality of teaching and learning and the 'value added' during the educational process eludes comparative measurement (Dill & Soo, 2005; Liu & Cheng, 2005). A lack of internationally standardised definitions makes it difficult to make valid comparisons across universities and countries (Waltman et al., 2011). The other problem according to Rozman and Marhl (2008) relates to the different cultural, economic, and historical contexts in which various higher education institutions function. Universities and their characteristics can differ greatly, no matter what position they occupy in the various HERS (Sowter, 2013). Therefore, in particular at international level, there should be an awareness of possible biases, and the objectives of rankings have to be clearly defined. Scott (2013) elaborates on the shortcomings of rankings methodology identifying four key points:

- Ranking data are often used for other purposes like resource distribution.
- More generously funded institutions can attract students of higher quality and would, most probably, lead to higher employment ratings.
- A dearth of reliable data about the teaching (the primary function of the university).
- Ranking systems subjectively and deliberately attach weightings to the amount of relative worth of each ranking criteria.

Judgements and decisions based on university rankings should be made with knowledge and a clear understanding of the methodology utilised during the ranking process (Liu, 2013). Sowter (2013) admits that all ranking critiques have validity; however, HERS have contributed to transparency and accountability among institutions and contributed toward a culture of performance evaluation in higher education. Despite volumes of criticism and boycotts by some universities and schools, rankings have become a popular reference point for decision and policy makers (Hazelkorn, 2014). They have also produced their antithesis in the form of

alternatives and have sparked a conversation about the role, value and contribution of higher education (Hazelkorn, 2014).

Downing (2013) elaborates on the value of rankings and argues that prospective students and their parents can make informed decisions about institutions from a diverse set of global offerings. A good ranking position also makes it easier to attract international students (Hazelkorn, 2011). Prospective students, nationally and internationally, have access to information about the strengths and weaknesses of the institution, and of some departments within that institution (Downing, 2013; Sowter, 2013). Institutional rankings can encourage university faculty to focus more effectively on the core business of higher education, teaching and learning, research and knowledge transfer. Senior institutional managers can foster internal competition between departments to, possibly, become international markets (Locke, 2014).

Another useful aspect of rankings is that it encourages the collection and publication of reliable national data related to respective higher education systems (Rauhvargers, 2014). Rankings are, of course, a useful benchmarking exercise for institutions and help them make strategic decisions (Baty, 2014). They also serve as critical self-reflection tools, universities can use comparative citation information to enhance strategies to increase research quality processes (Downing, 2013). Universities can justify claims on resources based on better ranking performance, and a good ranking will increase an institution's ability to attract good partners and funders (Hazelkorn, 2011).

Younger institutions are now able to demonstrate to their governments, the higher education sector, funding bodies and the public that they have evolved or improved in certain areas (Downing, 2013). Industry uses the information to identify where to invest in higher education and innovation (Baty, 2014). Hazelkorn (2014) points out how the HERS' inability to accurately measure 'quality', exposed a deficit in higher education information. Valuable debates about the definition of higher education 'quality', 'value' and 'impact', and how it should be measured, now take place.

1.3 The Impact of Rankings on Global Higher Education

Today over 60 countries have introduced national rankings, especially in emerging societies, and there are a number of regional, specialist and professional rankings. What started as an

academic exercise has now become a primary driver of a geopolitical reputation race (Hazelkorn, 2014). Rauhvargers (2014; 2013) list a few policy implications which are a direct result of HERS influence:

- Immigration policies: For example, in the Netherlands, migrants who possess a degree from a higher education institution which is ranked in the top 200 have the privilege of obtaining 'highly-skilled migrant' status.
- Recognition of qualifications: The Russian Federation adopted Decision No. 389 which establishes an automatic recognition of qualifications issued by foreign HE institutions which are in the first 300 positions of the SRC's ARWU, QS and THE rankings.
- Mergers are planned and underway in many European countries.
- Eligibility of Partner Institutions: In 2012, the University Grants Commission in India announced that foreign universities entering into bilateral programme agreements would have to be among the global top 500 in either THE or the Shanghai Ranking's ARWU.

Additionally, Hazelkorn (2014) points out changes to academic work practices, supporting the introduction of market-based salaries with merit or performance pay and attractive packages to reward high achieving scholars. Rankings led to universities increasingly opting to collaborate with institutions that are considered in the same league as themselves. It includes the formation of strategic alliances and exclusive university networks such as LERU (the League of European Research Universities) or Universitas 21 (a global network of research-intensive universities for the 21st century) (Kehm, 2014). National systems are subtly affected by the HERS influence on governmental policy which rewards vertical stratification. Another observable trend identified by Kehm (2014) is that of 'Isomorphism', i.e. the lower-ranked institutions trying to imitate the higher ranked ones in order to improve their ranking position.

High-ranking universities are sought after, elite and expensive. Most of the students that attend these institutions are wealthier than the average population in their home country, invest thousands on SAT tutors, private college advisors and coaches, basically, anything to be accepted into one of the best establishments in the world (Mills, 2012). University fees also increase exponentially to study at these institutions who strive to maintain their ranking (Rauhvargers, 2014). The price of higher education is therefore rising tremendously and many believe that it is getting too expensive (Mills, 2012; Altbach et al., 2009). Higher fees also

prompt institutions to provide useful public information to aid prospective students, while greater competition encourages them to devote more resources to marketing initiatives (Scott, 2013). The financial pressure is increasing at rates beyond which most countries' public revenue streams can keep pace (Altbach et al., 2009).

1.4 The Impact of Rankings on Universities

It is becoming increasingly difficult for universities to ignore the global rankings (Rauhvargers, 2013), which have made a significant impact, not only on universities, individual university departments and national education systems but also globally. Therefore, it has become necessary for modern university communities to recognise the importance of rankings (Efimova & Avralev, 2013). The rankings immediately secured great prominence in higher education, policy, and public arenas and have already had discernible effects in institutional and policy behaviours (Marginson & van der Wende, 2007). So much so, that Marginson (2007) questions whether rankings serve the purposes of higher education or whether institutions are changing to fit the ranking criteria.

When the universities decide to submit data, requested by the ranking providers, they enter into a relationship with the HERS. Highly ranked institutions have to invest to maintain or improve their ranking position (Rauhvargers, 2013). This has led to an increasing number of strategies employed by institutions to improve their rank (Rauhvargers, 2013). How universities react to global rankings have been studied by Espeland and Sauder (2007). Espeland and Sauder (2007) conceptualise the nature of reactivity as patterns that shape how people within organisations make sense of things and how they interact with rankings, each other, and other institutions. They identified two main mechanisms that induce reactivity as 'self-fulfilling' prophecies and 'commensuration'.

"Self-fulfilling prophecies: Processes by which reactions to social indicators confirm the expectations or predictions that are embedded in measures or which increase the validity of the measures by encouraging behaviour that conforms to it" (Espeland & Sauder, 2007, p. 11). "Commensuration: The transformation of qualities into quantities that share a metric (It) shapes what we pay attention to, which things are connected to other things, and how we express sameness and difference" (Espeland & Sauder, 2007, p. 16).

Locke (2014) maintains that these two mechanisms of reactivity are visible on a multitude of levels when analysing the affect rankings have on institutions of higher learning. Universities create self-fulfilling prophecies when they adopt a position on a ranking system as an explicit institutional goal or policy (Locke, 2014). Ranking systems simplify and de-contextualise information so that it can be easily integrated and organised in particular ways (Hazelkorn, 2014; Scott, 2013). Some important qualitative information is discarded in the name of simplicity and practicality (Locke, 2014; Dill & Soo, 2005).

Universities have invested considerable resources in institutional research, recruiting full-time managers to work with ranking agencies (Trounson, 2013). In some cases, universities have revised class sizes, departmental targets and merged some departments because university rankings systems reward low student/staff ratios and research productivity (Hazelkorn, 2014). Locke (2014) mentions the impact of ranking positions on staff morale; they become a source of stress for employees, especially when the institution performed worse than expected. The high socio-political power of indicators invites cheating in the production of data. A well-known practice, for example, is the buy-in of star researchers and Nobel Prize winners on part-time contracts (Rauhvargers, 2013). University governing bodies are usually more susceptible to ambitious expectations about where the institution could or should be positioned and can at times exert pressure on university management (Locke, 2014). Another ranking related phenomenon is the intense mediatisation of policymaking and institutional management (Scott, 2013).

1.5 Problem Statement and Research Question

Some HERS claim that the practice of ranking universities focuses predominantly on the needs of the students (Downing, 2013; Baty, 2014). However, it is quite evident that higher education systems and universities alike are significantly influenced by the rising tide of HERS (Altbach & Hazelkorn, 2017; Wint & Downing, 2017; Espeland & Sauder, 2015; Locke, 2014; Efimova & Avralev, 2013). Presence in the rankings is often associated with world-class institutions (Marginson, 2013) and world-class universities are essential to contribute and compete within the global knowledge economy (Wang, Cheng & Liu, 2013). A recent international trend sees governments implementing initiatives to create world-class institutions (Wint & Downing, 2017; Hazelkorn & Ryan, 2013; Wang et al., 2013).

These initiatives are present in countries with a long history of higher education as well as countries with young higher education systems, many times these systems are focused on adressing regional and national skills shortages and improving access and participation (Hazelkorn & Ryan, 2013; Marginson, 2013). The milieu of a developing nations' higher education system encompasses strategies to develop human capital, to increase student access, broaden teaching infrastructure and capacity and increase regional collaborations (Alemu, 2013; Okebukola, 2013; Ndoye, 2008). Higher education models for a developing continent, like Africa, are predominantly based on a mass model (Ndoye, 2008) and this creates a mismatch of higher education priorities which may become increasingly negligent to the development of the individual countries' higher education system.

The universities themeselves strive to rise in rank and ranking information is frequently used as marketing material and instrumental to attract, not only international students, but also local students (Downing, 2012). Every university wants to be ranked and their faculty want to be associated with a world-class university (Marginson, 2013; Hazelkorn, 2014). Today the ever expanding world university rankings like the Shanghai Ranking's ARWU, QS WUR and THE WUR, each rank more than 1000 institutions. It is becoming increasingly difficult for institutions to avoid HERS, and with more HERS as well as more diverse rankings on the horison, universities, their staff, students and public need to be educated as to the influence they have on their universities and HE system.

Previous studies have indicated that added pressure on higher education personnel, to obtain higher scores on performance indicators in order achieve a higher ranking position than the years before, impacts negatively on staff morale and contributes to high stress levels (Espeland & Sauder, 2015; Hazelkorn, 2014; Locke, 2014). Similar or generic influences are highlighted in various countries and/or regions, but none of them directly compares the impact or extent of them scientifically. The researcher contends that all the influences exerted by HERS on institutions are filtered through context and can therefore not be seen as generic in size and strength. The contextual variations may also bring about a myriad of reactions from institutions. Only a handful of scientific studies have documented the influence HERS and their rankings have on universities, and even less have compared the differences in influences experienced by the universities, from different parts of the world. No scientific research to date has examined the influence of HERS on universities in the developing nations or compared the extent of these influences with other regions of the world.

This study ascertained from the institutional leaders themselves, to what extent the rankings, their indicators and criteria affect their formal and informal strategic objectives and internal functioning of the university. As the primary research objective and aim, this study will investigate the perceptions of institutional leaders on the influence of HERS on their work life and institutional decision-making.

1.6 Aims and Objectives of the Study

The overarching aim of the study was - To explore and compare perceptions of institutional leaders on the influence of HERS and their rankings, on their work life and their institution's strategy.

To work towards this overall aim, the following objectives were set:

- exploring the influences of HERS, and their rankings, exert on universities directly and indirectly.
- comparing the experiences and opinions of institutional leaders from South Africa, South East Asia, Australia and the Arab Gulf regarding the extent of the rankings related influences on their institution.

1.7 Research Design and Methods

The research design best suited for the study is a mixture of qualitative and quantitative methods. The aim is twofold; calling for both exploration and comparison, and therefore the researcher is of the opinion that the research problem cannot be addressed by one research method alone. *"Mixed methods research involves collecting, analysing and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon"* (Leech & Onwuegbuzie, 2009, p. 267). A number of design typologies support mixed methods frameworks or designs (Creswell, 2015; Teddlie & Tashakkori, 2010). Leech and Onwuegbuzie (2009) advocates that when a study incorporates both qualitative and quantitative techniques to any degree, the study can no longer be viewed as utilising a mono-method design. It is therefore appropriate to use a partially mixed design or fully mixed research design (Leech & Onwuegbuzie, 2009). The two elements have to be

integrated at some point in the study, depending on the intended purpose of the study (Greene & Hall, 2010).

This study integrated both a qualitative method and a quantitative method (sequentially) with qualitative analysis, interpretation and outcomes contributing or building towards the quantitative phase of the study. Therefore the results of the quantitative phase adresses the first objective of the study, which inturn, enables the researcher to adress the second objective of the study by comparing the outcomes. The design or framework which seems to fit the study the best is an design put forth by Creswell (2012) namely the "Exploratory sequential mixed method approach". The design is considered to be the most appropriate because the qualitative exploration phase informs or builds towards the quantitative phase. A combination of data collection methods provides a better understanding of the phenomenon being studied.

1.7.1 Research Methods

The following section is a brief overview of the data-collection methods, sampling and data-analysis. A detailed account is provided in Chapter 5.

The researcher endeavoured to examine the influence of HERS and their rankings on their work life and their university's and their institution's strategy. The first phase of the research explores the research problem with qualitative methods (literature review and in-depth interviews). Sampling for the first (qualitative phase) was done by way of purposeful sampling (Nieuwenhuis, 2011) meaning participants were selected based on their experience. The interviews were conducted with a select group of individuals, from various parts of the globe, with appropriate experience as managers of institutions ranked in either the Shanghai Rankings (ARWU), QS Rankings or THE Rankings. Additionally, the researcher conducted interviews on a handful of rankers employed by THE and QS to broaden the scope of the study.

In total 25 interviews were conducted to provide a holistic comprehensive understanding of the influences rankings exert on the participating institutions. The researcher used in-depth interviews to allow participants to talk about their lived-experiences (Myburgh & Strauss, 2015). The interviews helped the researcher gain an understanding from the interviewees point of view. The data were coded and the codes sharing the same characteristics were grouped into a word or short phrase referring to a category (Saldana, 2012). Finally, categories displaying

links or relationships with other categories were grouped together to form themes (Saldana, 2012).

The categories (subthemes) and themes guided the development and design of a quantitative questionnaire. The questionnaire consisted of 65 items designed to test important influences of HERS and rankings, identified in the interviews and literature study on a wider audience (Lund Research Ltd, 2010). The quantitative sample was hosted online, self-administered and distributed via email to institutional leaders of the same rank as the interviewees in the first phase. However, responses were attained from a greater number of participants and countries. After cleaning the data, the researcher utilised 86 completed questionnaires in the final analyses. The questionnaire gathered formal direct influences in addition to informal or indirect influences of the rankings on the institution's strategy, decision-making practices as well as initiatives to improve rank in the short term. An overwhelming majority of the questionnaire items were confirmed by a simple frequency analysis.

To conduct the third phase of the study, some questionnaire responses were grouped into regions. The regions constructed were South Africa, Arabian Gulf, Australia and South East Asia. The regional responses were then compared across all questionnaire items. To distinguish whether there were significant differences between the responses of the regions, the researcher utilised the Kruskal-Wallis non-parametric assessment, followed by a Dunn-Bonferonni Post-hoc assessment. The Kruskal-Wallis assessment identifies whether significant differences between two or more groups exist, and the Dunn Bonferonni test indicates between which two groups the discrepancy lies (Dinno, 2015). The results of the analyses were written up as exemplar case studies. The exemplar case studies include a backdrop of contextual (regional) literature and, where possible, are supported by regional specific excerpts of the interviews from the first (interview) phase.

1.7.2 Legitimation (Validity and Reliability)

One of the most common arguments for mixed-method designs is that the different data gathering techniques and data sources can supplement and triangulate one another to produce more dependable findings with increased validity (Zohrabi, 2013). Interpretation of data emanating from mixed-method designs can be both deductive and/or inductive in nature, and

mixed-method researchers should be concened with the quality of their "inferences" (Teddlie & Tashakkori, 2003).

Onwuegbuzie and Johnson (2006) argue that an inference is more than an outcome and proposes a 'legitimation' model whereby checks are executed at every stage of the research process. The legitimation model proposed by Onwuegbuzie and Johnson (2006), include nine typologies (See table in chapter 5). The researcher employed Onwuegbuzie & Johnson (2006) legitimation model to inform his interpretation and decisionmaking. The qualitative and quantitative phases were analysed seperately before inferences were made.

1.8 Research Ethics

Three objectives in research ethics, as identified by Walton (2018), guided the researcher. The first objective is to protect participants; the second is to ensure that the research is conducted in a manner that serves the interests of individuals, groups and/or society. The third objective is the examination of research activities and projects for ethical soundness. The researcher gained ethical approval from the University of Johannesburg and the Faculty of Education Research Ethics Committee to conduct the study.

The researcher informed all research participants about the nature, background and aim of the study. All the participants were informed that the study was voluntary and that all personal information would be kept completely anonymous. At no point will the interviewees, questionnaire respondents or their institutions be identified. The researcher will keep the interview transcriptions and raw quantitative data confidential. These will be destroyed at an appropriate time in line with data protection rules and protocols.

1.9 Outline of the Chapters

Chapter 1 provides an overview of the study. It identifies the background to the research problem, focuses on the motivation of the study and includes the problem statement and research question as well as the objectives of the research. The research design and data generating methods are also briefly discussed.

Chapter 2 contains a review of the generic dynamics of contemporary higher education, including background on the birth of and expansion of HERS. Global phenomena like internationalisation, marketization and increased privatisation of state-funded higher education and newly established privately funded universities, support the environment in which HERS and their rankings flourish. Additionally, the chapter provides a snapshot of the contemporary distribution of talent, resources and political shifts within the global knowledge economy.

The third chapter **(Chapter 3)** predominantly scrutinizes the methodologies employed by the big three HERS (QS, THE and the Shanghai Ranking) to produce their individual world university rankings. The chapter sheds light on the various indicators the big three HERS apply to examine university performance, and highlights the similarities and differences between them.

Chapter 4 discusses the influences HERS and their rankings have on national governments, university leadership, personnel and strategy. The discussion encapsulates nationalist policy amendments to create "world-class" universities synonymous with highly ranked universities, as well as institutional changes to conform to generic ranking methodology. The chapter concludes with a discussion on ranking aspirations in developing nations.

Chapter 5 explicates the research design and methods used to achieve the aim and objectives of the study. The study employs three phases in addressing the research problem, a qualitative (interview) phase, a quantitative (questionnaire) phase and a third phase containing regional comparisons.

Chapter 6 (qualitative phase) contains an analysis and interpretation of the qualitative data. The chapter delineates the approaches taken to transform the raw data into categories (sub themes) and themes. The results are presented, discussed and the interplay between the themes visually illustrated. The identified themes and categories were used to develop a questionnaire.

Chapter 7 (quantitative phase) contains the analysis and interpretation of the questionnaire outcomes.

Chapter 8 (regional comparisons) addresses the second objective of the study by comparing the statistically significant differences found between four regions, South Africa, Arabian Gulf,

Australia and South East Asia. Additionally, the chapter discusses the results of the regional comparisons (third phase) through four exemplar case studies.

Chapter 9 discusses the main findings of the study. The discussion will incorporate previous research alongside the overall findings of the study.

The final chapter **(Chapter 10)** summarises the study by shortly reviewing the objectives of the study, the research design utilised, and the overall findings. Thereafter, the researcher considers the limitations to the study.

CHAPTER 2: INTERNATIONAL HIGHER EDUCATION AND THE DEVELOPMENT OF GLOBAL RANKINGS

2.1 Introduction

The researcher conducted a comprehensive literature review to facilitate a deeper understanding of the global context in which rankings, higher education systems and universities function. The world of higher education is changing at a rapid pace altering the very nature of the university (Teichler, 2004). Technological and communicative capabilities increase society's ability to compare different dimensions of human behaviour. Countries are ranked as either, developed, developing or least-developed (Hazelkorn et al., 2013). In almost every aspect of our daily lives, we are presented with appropriate ways to scrutinize the quality of goods and services (The Economist, 2018; Downing, 2013). For example, comparisons of restaurants, schools, and hospitals are a common practice (Hazelkorn et al., 2013). Some researchers contend that these factors have led to a global trend to market higher education institutions (Scott, 2013). The following chapter provides an outline of the global forces dominating tertiary education in the 21st century conditioning an environment in which Higher Education Ranking Systems (HERS) flourish. Additionally, the chapter contains a short history of the HERS and tracks the growth and expansion of the HERS and their rankings.

> *Every research university wants to improve its rank. Many higher education establishments with a primarily teaching mission feel the lack of rank. Faculty want to be associated with prestigious institutions. Students want to be selected by them. The desire to rise is universal* (Marginson, 2014, p. 45)

The higher education (HE) environment has expanded tremendously since the dawn of the twentieth century (Schofer & Meyer, 2005). The increased demand for higher education has engendered the development and success of Higher Education Ranking Systems (HERS) (Altbach, 2006; Dill & Soo, 2005), in which higher education systems and higher education institutions are measured according to their relative standing on a global scale, thus introducing the notion of competition among higher education institutions as a new paradigm in most countries (Altbach, 2006). The impact of international rankings can hardly be overstated. This is because, beyond their scope, purpose or limitations, they are viewed by many as relatively

objective measures of institutions' quality, and the similarities in the rank order of universities in the different ranking systems only serves to legitimize the results (Ordorika & Lloyd, 2013). They influence the judgements and decisions of many university leaders and faculty; prospective students; state policy makers and regulators; and industry and philanthropic investors (Hazelkorn, 2013; Altbach, 2006). It is often assumed that highly ranked institutions are more productive, have higher quality teaching and research, and contribute more to society than lower ranked institutions (Toutkoushian, Teichler & Shin, 2011). Therefore, ranking results are often used as promotional material for universities, which allows them to compete internationally, for economic and human resources (Dill & Soo, 2005). Additionally, HERS and rankings are also an important source of consumer intelligence about a selected 'product' on which people spend considerable amounts of time and money, and about which precious little other information is available (The Economist, 2018). Consequently, HERS have become established tools for assessing university excellence (Taylor & Braddock, 2007).

Attwood (2009) describes the influence of rankings: "Governments are swayed by them; universities fall out over them and vice-chancellors have even lost their jobs because of them" (para. 1).

2.2 Globalisation and Internationalisation

Globalisation has been forging change across all knowledge-intensive industries (Hazelkorn, 2013). Hazelkorn (2013) argues that globalisation and the evolution toward a single world market have led to an increased focus on higher education ranking systems. Knowledge-based societies are competing for talent and HERS are instrumental in achieving a competitive advantage. Therefore, in our fast-moving global economy, knowledge is often seen as the ultimate source of competitive advantage (Ince, O'Leary, Quacquarelli & Sowter, 2015). Approximately 17,000 universities in the world have created a highly competitive global environment for education (O'Loughlina, MacPhail & Msetfi, 2013).

Evans, Pucik and Bjorkman (2011) define globalisation as the spread of interconnectedness in all aspects of contemporary life, from the cultural, to the criminal, the financial to the spiritual. In fact, globalisation is shaped by an increasingly integrated world economy, new information and communications technology, the emergence of an international knowledge network, the role of the English language, and other forces beyond the control of academic institutions

(Altbach et al., 2009). The increasing phenomenon of interconnectedness combines social, economic and cultural changes. The cross-border flow of ideas, students, faculty and financing, coupled with developments in information and communication technology, are constantly changing the environment for higher education (Kärkkäinen & Lancrin, 2013).

The key question is not whether education should be public or private or whether globalisation is good or bad since these are questions that have been rendered irrelevant by reality. It is impossible to make higher education immune to the globalisation processes (van Rooijen, 2014).

Knight (2008) identifies five elements of globalisation:

- The knowledge society: Increasing importance is attached to the production and use of knowledge as a wealth creator for nations.
- Information and communication technologies: New developments in information and communication technologies and systems.
- The market economy: Growth in the number and influence of market-based economies around the world?
- Trade liberalization: New international and regional trade agreements develop to decrease barriers to trade.
- Changes in governance structures: The creation of new international governance structures and systems.

Teichler (2004) suggests that in the higher education context the term ‘globalisation’ has recently been replaced by ‘internationalisation’. The term ‘internationalisation’ is used to describe any supra-regional phenomenon related to higher education or anything on a global scale involving higher education which is characterized by market and competition.

“Internationalisation is certainly not defined by the fact that there are a large number of international students on campus. Internationalisation in a whole meaning is a radical transformation of academic disciplines, a freeing of both teaching and research from the dominance of the acceptance of and training in the intellectual traditions of a particular culture” (Ping, 1999, p. 18). Internationalisation is, therefore, not a synonym for globalisation but a

process in itself, a response to globalisation which contains both local and international elements (de Wit, 2010).

> *"Internationalisation is changing the world of higher education, and globalisation is changing the world of internationalisation" (Knight, 2008, p. 1).*

International activities in higher education are not viewed as regular systemic ones, which have to be systematized and embedded (Teichler, 2004). Higher education internationalisation strategies are shaped at the programme level by the different relationships these programmes have with the market and society. An internationalisation strategy can be substantially different for a teacher-training programme than for a school of dentistry or a business school. Strategies may also be different by level: doctorate, master and bachelor (de Wit, 2010). Internationalisation can also take many forms, including co-taught courses and degrees, massive open online courses (MOOCs), collaborative research projects and student exchanges. However, increased internationalisation projects can be costly and do not necessarily produce favourable outcomes (Tadaki & Tremewan, 2013).

Concerns have been expressed regarding the elimination of cultural heritage, language diversity, reducing the variety of academic cultures, structures and declining quality (Teichler, 2004). However, Teichler (2004) suggests that internationalisation scholars tend to share the view that internationalisation opens up more desirable opportunities than it produces dangers. National higher education systems, of both developing and developed countries like South Africa, grapple to transform their structures to better respond to the challenges and opportunities provided by globalisation (Meyer, Bushney & Ukpere, 2011). However, private institutions have been quicker to respond to the multiple commercial opportunities offered by globalisation than the public sector who are often providing a service to national systems (van Rooijen, 2014).

The five elements of globalisation, as defined by Knight (2008) earlier in the chapter, also affect the international component of higher education. Possible development opportunities and challenges can/will arise from these five elements. Knight (2008) lists the implications the five elements have for the international dimension of higher education:

2.2.1 Knowledge Society

New types of private and public providers deliver education and training programs across borders—e.g., private media companies, networks of public/private institutions, corporate universities, multinational corporations. Programs become more responsive to market demand. Specialized training programs are developed for niche markets and professional development and distributed worldwide. The international mobility of students, academics, education/training programs, research, providers, and projects increases. Mobility is both physical and virtual.

2.2.2 Information and Communication Technologies

Innovative international delivery methods are used, including e-learning, franchises. Satellite campuses require more attention to the accreditation of programs/providers, more recognition of qualifications.

2.2.3 Market Economy

New concerns emerge about the appropriateness of the curriculum and teaching materials in different cultures/ countries. New potential develops for homogenization and hybridization.

2.2.4 Trade Liberation

The emphasis increases on the commercially oriented export and import of education programs; international development projects continue to diminish in importance.

2.2.5 Governance

Consideration is given to new international/regional frameworks to complement national and regional policies and practices, especially in quality assurance, accreditation, credit transfer, recognition of qualifications, and student mobility.

2.3 Increased Internationalisation of Higher Education

Higher education scholars have increasingly demonstrated the inclination to look beyond the physical limits of their own country to stake a claim to bigger international markets (Marginson, 2007). Internationalisation strategies are filtered and contextualised by the specific internal context of the university, by the type of university, and how they are embedded nationally (de Wit, 2010). Knight (2008) defines internationalisation as *"the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education." (p. 21).* There is a myriad of reasons why institutions will choose to internationalise; these reasons can be broadly categorised as political, economic, academic or social and cultural in nature (de Wit, 2010).

Healey (2008) argues that many of Europe's most distinguished seats of learning were born global, set up in the 15th and 16th century as religious seminaries, attracting scholars from across the medieval western world. It has been the internationalisation of the student body, rather than the internationalisation of either the faculty or research/teaching, that gives rise to the perception that universities are beginning to mimic corporations in their orientation (Healey, 2008). Opportunities for students to spend all or part of their higher education careers outside of their country of origin or residence have risen dramatically in the last 10 years (Altbach et al., 2009).

The Organisation for Economic Co-operation and Development (OECD) released data which show that the number of students attending institutions outside their country of origin tripled between 1990 and 2015 (ICEF Monitor, 2015). Internationally mobile students are expected to reach 8 million by 2025 (OECD, 2017; Gibney, 2013). Total global tertiary enrolments are forecast to grow by 21 million between 2011 and 2020 (British Council, 2012).

Benefits of international student mobility include increased funding and powerful global alumni links for institutions, access to high-quality and culturally diverse education for students, and skilled-migrant streams for governments (Gibney, 2013). International exposure and experience are commonly understood as mechanisms to provide more graduates and scholars with perspective and insight that will increase their capacity to function in a globalized society (Altbach et al., 2009).

Some of the challenges, regarding student mobility, still to be addressed, include foreign providers offering substandard or even fraudulent academic services. Uncertainties concerning the quality of unregulated cross-border providers, as well as the potential for foreign providers to impose inappropriate curricula or teaching methodologies add further issues to this complicated dynamic. Consequently, some international students struggle to gain recognition for degrees or credits earned abroad (Altbach et al., 2009). Structural barriers between national systems are always a potential barrier to international cooperation and student mobility. However, they offer the opportunity for students to learn from their new environment which is in contrast from that at home (Teichler, 2004).

The British Council (2012) predicts that in the coming decade international student mobility should stabilise whilst the number of international joint research and educational delivery components will have growing prominence. Trends that follow a similar expansion include the emergence of major regional study destinations in Europe and Asia and the increase of transnational education provision (OECD, 2017). Information and communication technologies (ICT) are instrumental to the aforementioned trends and the OECD have estimated about 13 million cross-border online students in 2017 (OECD, 2017).

The burgeoning number of international agreements between tertiary institutions often includes long- and short-term faculty exchange components. International scholarship and fellowship programmes, along with other collaborative projects, move countless numbers of scholars around the globe each year to conduct research abroad (Altbach et al., 2009). The number of programmes and higher education institutions that are operating internationally has increased. This increase encompasses full campuses abroad and bilateral partnerships involving joint qualifications and academic posts (Gibney, 2013). The British Council (2012) suggests that about one-third of all academic research produced globally is carried out through international collaborations. In 2016, 22% of science and engineering papers were internationally co-authored, up from 16% in 2003 (The Economist, 2018). Additionally, from 2000 to 2014 the annual number of PhDs awarded increased by 50% in America, doubled in Britain and quintupled in China further emphasising the size and importance of the multinational network (The Economist, 2018). Contemporary and forecasted academic mobility of students and staff are discussed in more detail later in this chapter, where the researcher investigates the shifts and distribution of the global knowledge economy.

De Wit (2010) suggests that the recent emphasis on internationalisation, accompanied by the international ranking systems, calls for accountability by students, faculty, deans, the management of higher education institutions and national governments. In addition, the call for quality assurance is an important issue on the agenda of higher education and this includes the internationalisation process, programmes and projects. Accreditation, ranking, certification, auditing, and benchmarking have become key items on the international higher education agenda. Quality assurance concerns have led to a rapid expansion in measures of formal (i.e. not qualitative) standardisation combined with calls for facilitating recognition in the case of mobility (de Wit, 2010; Teichler, 2004). Institutions need a way to monitor internationalisation and collect information on an on-going basis. More precisely, relevant measures of explicit objectives and targets will help provide the information necessary to analyse strengths and areas for improvement (Knight, 2008).

Some of the formal quality and benchmarking measures that have been implemented, or are being implemented, include; the Lisbon convention of 1997, the Bologna declaration of 1999 and the European Credit Transfer System (ECTS) (Teichler, 2004). All these mechanisms suggest that if a mobile student has successfully participated abroad in a study programme similar to that provided by their own institution, one should recognise his or her prior study based on trust that the quality of study abroad is more or less the same rather than check the quality level in a detailed manner (Teichler, 2004).

As discussed above, various aspects of internationalisation present challenges and in some cases internationalisation itself generates new barriers. Altbach et al. (2009) suggests that the most disconcerting characteristic of globalized higher education is that it is currently highly unequal. The elite universities in the world's wealthiest countries hold a disproportionate influence on the development of international standards for scholarship, models for managing institutions and approaches to teaching and learning. These universities have the comparative advantage of budget, resources, and talent sustaining a historical pattern that leaves other universities (particularly in less developed countries) at a distinct disadvantage (Altbach, 2004).

In 2015, Knight (2015, p. 110) categorises three emerging models of international universities. She attempts to differentiate the approaches taken and shed light on the term ‘international university’. The first model is labelled the *classic model* as it refers to an institution that has

developed multiple activities and partners, both at home and abroad, and involves a broad spectrum of intercultural and international academic, research, service, and management initiatives. The satellite model is the second category and refers to those institutions that have concentrated on developing off-campus research centres, international branch campuses (IBCs), and offices for alumni relations, student recruitment, or consultancy purposes. The third type, which is the most recent development, is the international co-founded model. These are new stand-alone independent institutions that have been co-founded or co-developed by two or more international partners. Internationalisation constraints, predominantly related to the co-founded model, include governance models, intercultural partnerships, accreditation, awarding of qualifications, staffing, language, host country regulations, and sustainability.

The growing internationalisation of universities, with regard to students, staff and international co-authorship, is one of a few generic aspects encapsulated within rankings (Yat Wai Lo, 2014; Downing, 2013; Marginson, 2007). Internationalisation of contemporary higher education has enabled borderless collaboration on research projects, student mobility and provision of higher education offerings (de Wit, 2010; Taylor & Braddock, 2007). The rankings race is thus marked by a happy irony. Driven in part by nationalistic urges, it has fostered the growth of an international higher education community that knows no borders (The Economist, 2018).

2.4 Marketization and Privatisation of Higher Education

Universities are important contributors to state and national economies not only in terms of providing skilled human resources for various industries but also in terms of job creation, investment attraction and tax revenue generation (Nizar, 2015). The importance of economic growth as a driver of future tertiary education demand is clearly illustrated by the strong relationship between GDP per capita at purchasing power parity (PPP) and gross tertiary enrolment ratios. Not only is the correlation positive and statistically significant, but more importantly, at low PPP GDP per capita levels, gross tertiary enrolment ratios tend to increase quicker for relatively small increases in GDP per capita (British Council, 2012).

Economic motivations, including growth and competitiveness, national educational demand, labour market, financial incentives, have come more to the forefront in the present-day globalisation of our economies (de Wit, 2010). Lee (2004) suggests that in parallel with the globalisation of the economy is the retrenchment of the welfare state, which is being replaced

by a neoliberal state geared at promoting economic international competitiveness, through cutbacks in social expenditure, economic deregulation, decreased capital taxes, privatisation and increased labour flexibility. Universities thus have diversified their income sources across the state and the non-state sectors to secure their revenue. The essence of the above-mentioned restructuring process is a redefinition of the relationship between the university, the state, and the market, and a drastic reduction of institutional autonomy (Schugurensky, 1999).

Financial concerns have always impacted upon instruction and research activities (British Council, 2012). However, it is not just economic factors that determine how universities operate and what they charge students for their services; it is their increasing corporatization (Mills, 2012). As competition has become the driving force of many social institutions along with global and national economies, neoliberalism not only affects instrumental adjustments, such as cost shifting and sharing, but fundamentally alters the governing philosophy in policymaking and service delivery (Yat Wai Lo, 2014).

Teichler (2004) noted a gradual process affecting higher education institutions whereby governments reduce their direct supervision and control of higher education and try to shape higher education more strongly through target-setting and performance-based funding. "Paying for performance" is one of the core components of the new strategy that will tie financial aid to college performance (Nizar, 2015). National systems using performance indicators for higher education funding are also used in other countries like Denmark, Finland, Norway, Belgium and Sweden (Hicks, 2012). The direct consequence of a performance-driven culture in higher education is that universities need to rethink their relationship with the state and students. In the relationship between the higher education sector and the state, the strong emphasis on performance introduces a culture and a mode of regulation (Yat Wai Lo, 2014).

Sawyer, Johnson and Holub (2009) suggest that the value of the 'old university' was intrinsic and intangible. The intangible values pursued by old university models mostly represented the freedom of thought and a search for higher knowledge. The intangible values were typically not measurable. Most were relative, rather than absolute. Freedom for one individual often represented restriction for another. The intangible values were not tradable in a marketplace. The old university, characterised by differentiation and discretion, had become inflexible. Sawyer et al. (2009) list a few reasons why the old universities were transformed.

- These institutions could not accommodate their governments' need to educate more students.
- They were slow to respond to student demand for market-related courses.
- Decision making had become unaccountable and slow.
- Top-down accountability was absent
- The role of stakeholders was poorly defined, and the performance of the university was often not measurable.

These days' universities behave like firms with no shareholders, operating with a declining government subsidy, and trying to maximise sales in a market with excess demand. Student demand is paramount, and the determinants of demand have become the determinants of the university. Institutional change means that universities are now conditioned by monetary values rather than intangible values (Sawyer et al., 2009). The model of higher education has changed to one that is both expensive to run and difficult to reform as a result of its focus on status, its view of students as customers, and its growing reliance on top-down administration (Mills, 2012).

The growing importance of private institutions and the tendency to privatize the public sector are key international trends (Havergal, 2015; Altbach et al., 2009). As the demand for higher education increases, especially in countries like India, Brazil and China, so has the need to privatise existing universities or build private institutions. The situation is even more critical in the poorest African countries (Havergal, 2015) where, in the period 1991-2006, the number of students quadrupled, while the available public resources increased by, at most, 75 percent (Okebukola, 2013; Ndoye, 2008). The World Bank estimates that private enrolments account for 24 per cent of all tertiary enrolments in the African region (Havergal, 2015).

To meet expanding social needs in local communities institutions of lesser status are expanding rapidly and new institutions are coming into existence (Hawkings, 2008), it explains the move towards a diversified mode of providing funding through the participation of private or non-state players in higher education (Yat Wai Lo, 2014). Non-traditional financial sources such as capital endowment, commercialisation of teaching, research and services, loans at privileged interest rates and grants from tycoon and charity organisations become more and more common and important (Yat Wai Lo, 2014). This privatisation trend is not limited to developing nations

but is increasingly prevalent amongst developed nations too (Havergal, 2015; Pouris & Ho, 2014). Today, some 30 percent of global higher education enrolment is in the private sector (Altbach et al., 2009). Altbach et al., (2009) explain their notion of privatisation as

> *".. the necessity for institutions and systems to earn income in order to pay for (at least part of) their operation. Privatization can include, as has been discussed in this trend report, higher tuition fees and other charges to students so that a part of the cost of education is shared by students. It can also mean earning funds from consulting, licensing, selling the intellectual property of various kinds, university and industry collaboration that produces income, renting university property, and many other sources of income." (p 87)*

This increased privatisation – and commercialisation – of higher education has also been instrumental in promoting more industry-relevant curricula and higher-demand programmes in the hope of future monetary and non-monetary benefits over a student's lifetime (Choa, 2013), especially in subjects such as business management, accounting, computer science and economics (Havergal, 2015; Choa, 2013). Marginson and Rhoades (2002) suggest that the interactions between local, national and global players do not need to work in a linear pattern but in a more complex way by which universities are able to move into the international niches and remain serving local communities simultaneously. Academic units within an institution, institutions and system-level authorities can be seen as various autonomous cells and can operate within a complex inter-relationship network and at the local, national and/or global dimensions at the same time (Jones, 2008).

The potential dangers of making 'profit' an important education goal is that the providers tend to offer courses that require limited infrastructure investment and are cheaper to deliver, which puts critically important subjects like medicine and engineering in a vulnerable position (Havergal, 2015). Additionally, the use of a business model for higher education emphasizes a growing need to improve the quality of instruction (Bok, 2003) and self-evaluation as a quality assurance procedure (Teichler, 2004).

In some countries, governments have been unable to introduce quality assurance systems or, even if they have done so, lack the resources to undertake enforcement (Havergal, 2015). Furthermore, there are consequences that affect the internal functioning of the institution as

well. Sawyer et al. (2009) explains that the intrapersonal contracts or human interactions between academics, students, management and administrators change when an institution behaves like a firm. The academic contract with students changed appreciably with the corporate university for two main reasons. First, education is now a product, and it is an increasingly standardised product. The effect of standardisation is to reduce the discretionary authority of the academic. Second, university management perceives a student as a fee-paying customer and academics become accountable to students (Sawyer et al., 2009).

The explosion of student numbers and academic responsibilities increased the number of administrative tasks. As with the contract with the student, the implicit contract between the academic and the administrator inverted. Academics became accountable to a growing number of administrators (Mills, 2012). One of the changes of the neo-liberal state of higher education lies in its growing number of administrators and declining number of academics (Lee, 2004). The professor who takes time out from teaching and research to devote him- or herself to administration for a few years is increasingly an anachronism (Mills, 2012).

According to Sawyer et al., (2009), academics subcontracted tasks to the administrators to such an extent that they became reliant on administrators. Administrators were better informed than academics about procedures and information within the university. Therefore, administrators assumed the role of decision-makers. Between 1998 and 2008, private colleges increased their spending on instruction by 22 percent while they increased their spending on administration and staff support by 36 percent (Mills, 2012). During the G8 grouping of the leading Australian universities, there are now at least 1.3 administrators for every academic (Sawyer et al., 2009). Perhaps the greatest relationship transformation has been through the separation of management and academia. There are now two types of academics: those who pursue management and forego teaching and research; and those who continue to teach and to research. Few academics know of the information which underwrites management decisions. Academics are increasingly accountable to management (Sawyer et al., 2009).

Universities are now required to educate, with fewer subsidies, more students to higher levels (Altbach et al., 2009). The restructuring of universities has elevated managerialism whilst simultaneously diminishing collegiality. Individual higher education institutions become powerful strategic actors, and they establish a managerial system characterised by stronger executive powers of the institutional leadership (Teichler, 2004). When systemic values are

changing, it is hard to maintain the consistency which defines integrity (Sawyer et al., 2009). Bok (2003) suggest that increased managerialism includes increased secrecy for company-sponsored research, biased or compromised research findings, and treatment of programs such as extension courses as of marginal academic content (Bok, 2003).

The restructuring of higher education is prevalent worldwide through cultural diffusion and institutional isomorphism (Lee, 2004). However, Lee (2004) advocates against the notion that all higher education institutions are homogeneous because there are varied responses to global forces depending on the political economy, national culture, and the structural features of the particular education system. Studies of for-profit education indicate that marketisation and privatisation make higher education more efficient, more accountable, and less bureaucratic (Susanti, 2011). Marketisation and privatisation enable universities to allocate the profits made for any chosen purposes and improve the chance of turning scientific discoveries into useful products and processes (Bok, 2003).

2.5 World-class Universities

Governments across the world have become obsessed with the development of competitive higher education and research systems (TES Global Ltd, 1990). The positioning of knowledge and dissemination, as the foundation of economic, social and political power has driven economies from resource-based to knowledge-based economies (Wint & Downing, 2017). Different parts of the world are competing to create universities that can effectively participate in the global knowledge network (Salmi & Altbach, 2011) referred to as the global knowledge economy (The Economist, 2016). World-class universities are at the top of the higher education hierarchy, they create and disseminate knowledge whilst providing the workforce with highly skilled individuals needed to serve society (Wang, 2013).

> *Wang et al. cited Altbach (2009) and Liu (2009) "World-class universities are academic institutions committed to creating and disseminating knowledge in a range of disciplines and fields, delivering of elite education at all levels, serving national needs and furthering the international public good" (Wang, 2013, p. 2).*

Universities follow various pathways to establish themselves as world-class institutions (Marginson, 2013). After engaging in case study research, Salmi and Altbach (2011) suggest

that there are three main complimentary sets of factors at play in world-class universities: a high concentration of talent, an abundance of resources and favourable and autonomous governance. However, one needs to consider the ecosystem in which the university evolves. This includes many additional elements like the relationship between the university and the state, university governance structures, quality assurance frameworks, financial resources and incentives, articulation mechanisms, access to information, location and digital and telecommunications infrastructure (Marginson, 2013; Wang et al., 2013). There is no doubt that the notion of a 'world-class university' is becoming increasingly important to governments, employers, investors, alumni, students, parents and institutions themselves (Downing, 2013). Without measurement, it would be difficult to distinguish the truly world-class institutions from the rest (Downing, 2013). The elite status of universities are driven by international recognition (Salmi, 2009) and Marginson (2013) suggests that today the meaning of the "World-class" is simply aligned with presence in ranking.

2.6 The Push and Pull of the Global Knowledge Economy

Rankings make it possible to see how national universities fit into international agenda. This enables universities to reflect on their position within the global academic market (Yudkevich, 2015). Establishing world-class universities is seen as interlinked with success in the global economy (Wint & Downing, 2017). Consequently some countries pour massive amounts of money into their higher education budgets with an eye on rankings, their capacity to do so, affected by the strength of their individual economies (OECD, 2017; Spicer, 2017; Hazelkorn & Ryan, 2013). Demographic drivers, economic drivers and bilateral trade patterns are linked to increased competition and tertiary expansion (British Council, 2012). Altbach and Hazelkorn (2017; para. 15) state that "without massive financial and other resources, it is almost impossible for academic institutions to improve their ranking status". Various government initiatives to develop world-class universities will be discussed in more detail in Chapter 4.

Economic projections of countries are referenced to provide context to the global knowledge economy. The professional services firm PricewaterhouseCoopers (PwC) analysed high level trends expected to shape the global economy (ICEF, 2015). PricewaterhouseCoopers' (2015, p. 13) methodology incorporates data from the International Monetary Fund's World Economic Outlook (October 2014) estimates and are driven by key factors like;

- Growth in the labour force of working age (based on the latest UN population projections);
- Increases in human capital, proxied here by average education levels across the adult population;
- Growth in the physical capital stock, which is driven by capital investment net of depreciation; and
- Total factor productivity growth, which is driven by technological progress and catching up by lower income countries with richer ones by making use of their technologies and processes.

The latest analysis suggest a dramatic shift in economic power from advanced economies, like North America, Western Europe and Japan towards Asia and a block of faster-growing emerging economies (PricewaterhouseCoopers LLP, 2015; Sharma, 2015). The three biggest economies, China, India, the US and the rest of the globe will widen in the coming decades (ICEF, 2015; PricewaterhouseCoopers LLP, 2015). During 2014, the third largest economy in Purchasing Power Parity (PPP) terms, (India) was around 50% larger than the fourth biggest economy (Japan) (ICEF, 2015). PwC forecast that by 2050, India will have surpassed the US to become the second largest economy in the world, additionally the gap between the 3rd and 4th biggest economy, respectively the US and Indonesia are expected to grow to 240% (PricewaterhouseCoopers LLP, 2015).

Moreover, the US and EU share of the global GDP, in PPP terms, will decrease from 33% in 2014 to about 25% by 2050. Emerging economies perceived to have the potential for sustainable long-term growth include Colombia, Brazil, Poland and Malaysia. Mexico and Indonesia projected to be larger than the UK and France (in PPP terms) by 2030 and Turkey have the potential to be larger than Italy (PricewaterhouseCoopers LLP, 2015).

PricewaterhouseCoopers LLP (2015) forewarn rapidly growing economies against an overdependence on natural resources, countries like Russia, Nigeria and Saudi Arabia should aim to diversify their economies to sustain current growth over the long term. Figure 2.1 gives a backdrop of the projected GDPs by 2050.

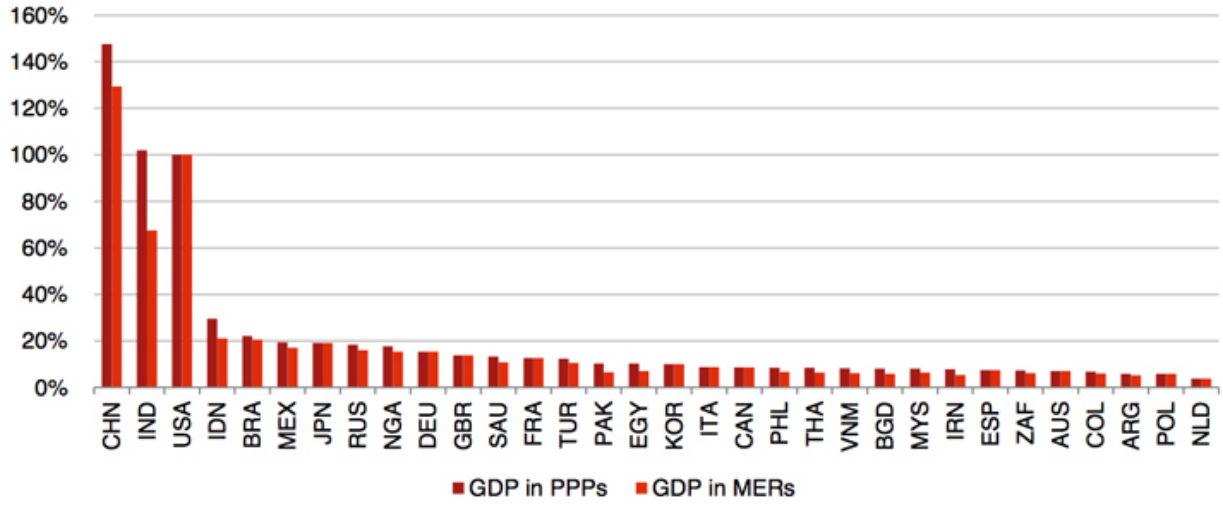

Figure 2.1: Relative GDP at MERs and PPP

The rise of East Asia as an international knowledge network are driven by various higher education systems of which China is a dominant force (ICEF, 2016; Sharma 2015; ICEF 2013; British Council, 2012). China's research and development spending has grown by an average of 23 percent a year during the past decade (Bothwell, 2016). During 2015, China spent more on research and development than any country other than the US (Bridgestock, 2015). Bothwell (2016) compares the size of a big Chinese university's budget with that of all 18 Indian institutes of technology. It is therefore not surprising that China dominates the THE and QS BRICS (Brazil, Russia, India and South Africa) ranking system (Bridgestock, 2015; Bothwell, 2016). China is building a mass higher education network with world-class universities and may one day compete with the top US institutions (Altbach, 2016).

India will surpass China as the largest population of higher education students (119 million) by 2025 (PricewaterhouseCoopers LLP, 2015). One of India's key focal points is not only to broaden higher education access but improve higher education quality as well (ICEF, 2016; Sharma, 2015). In an attempt to aid these ambitions, the Indian government established an enabling regulatory architecture to provide ten public and ten private institutions to emerge as world-class teaching and research institutions (ICEF, 2016; Sharma, 2016). A number of emerging market destinations have actively sought to attract inward investment in the tertiary sector by branding themselves as education hubs or similar (British Council, 2012).

The significant shift in global economic influence will be mirrored by international student mobility (ICEF, 2016). India, China, US and Indonesia will account for over half of the world's 18–22 population by 2020 (British Council, 2012). Additionally, the US, Pakistan, Brazil, Bangladesh, Ethiopia, and the Philippines expected to house large student-aged populations by 2025 (ICEF, 2016).

2.6.1 The Push: Academic Mobility

As discussed earlier in the chapter, higher education has been marked in recent years by a growth in international connectedness (Skyrme & McGee, 2016). Opportunities to study abroad started in the 1980s, as rich universities began to offer large scholarships as part of their aid programmes. (The Economist, 2016). Today higher education is one of the most rapidly globalising systems with five million students studying or doing research in a foreign country (Van Damme, 2016). Universities and governments are increasingly introducing policies to attract talented internationally mobile students (Wint & Downing, 2017).

Most of the tertiary international students are concentrated in the US, UK, Australia, France, Germany, Russia, Japan and Canada (Bilecen & Van Mol, 2017; British Council, 2012). Proportionally, countries like the UAE, UK, Switzerland, Hong Kong and Australia report the highest percentage of international students according to the latest QS WUR indicator ranking (Griffin et al., 2018). China is likely to remain the top sender of students to other countries in 2025 but it should also receive a greater share than it ever has by that point (ICEF, 2016).

Education agencies rank the United States as the most attractive destination (The Economist, 2016) and Asian countries have become vital to the revenue streams of top institutions in the US, UK, Canada, and Australia (ICEF, 2013). However, the latest projections show a decreased share of internationally mobile students for these nations in years to come (PricewaterhouseCoopers LLP, 2015). Given the increased investments in higher education and excess capacity in countries with less favourable demographics, countries like China, Singapore, Malaysia and some Gulf States will eventually become the fastest growing study destinations (British Council, 2012). The improved quality of domestic education in emerging destinations leads to a larger proportion of domestic students choosing to study within their own country's borders. The British Council reports that 26% of Arab students studying abroad in 2012 did so within the Middle-East, compared to 12% in 2007 (ICEF, 2016).

Similarly, more than 40% of the outbound Asian students studies at an Asian institution (up from 36% in 1999) (ICEF, 2016). The aforementioned shift implies that Asian students have more opportunities than ever to stay close to home when considering a higher education institution (ICEF, 2016; Sharma, 2015; ICEF, 2013). Other countries play an important and increasingly large destination role at regional level: South Africa (Sub-Saharan Africa); Singapore, Hong Kong and Malaysia (South East Asia); and South Korea (North East Asia (British Council, 2012). To compensate for a declining youth population, countries like Russia, South Korea, Germany, Italy and Japan are likely to expand international recruiting efforts (ICEF, 2016).

The global research landscape is increasingly diversifying (Van Damme, 2016). International masters and doctoral students are just as important for nations to attract. In addition to increased fees, these postgraduate students contribute to the research and development of a country (Organisation for Economic Co-operation and Development, 2016). Universities want to attract talent because of the growing importance of research output in determining funding and positioning in international university rankings (British Council, 2014). The majority of postgraduate students are currently from Asia and the US hosts almost 40% of them. The British Council projects that countries like Nigeria, Saudi Arabia, Indonesia and Pakistan will become key international markets next to India and China by 2024 (Macgregor, 2014). Australia and Canada are forecast to have the highest annual average growth in inbound postgraduate mobility, at 4.1 per cent each (British Council, 2014).

International PhD students may stay in their host countries after graduating, expanding the labour force as professionals, technicians and researchers (OECD, 2016). International doctoral students are attracted by countries that invest substantial resources into research and development (OECD, 2016). This investment, from countries like Luxembourg, Netherlands, Switzerland and Sweden have enabled them to lure the highest proportion of doctoral students (OECD, 2016). The strong country-level correlation between both sets of data suggests that doctoral students have a positive impact on the quantity and quality of scientific research in the host country. In turn, this could prompt governments to increase their Research and Development spending on universities. Indirectly international students then contribute to the innovation process and the development of a research-intensive knowledge economy in the host country.

The latest QS WUR (2019) shows a year-on-year proportional increase of 6.3% in international students for the top 500 ranked universities. Similarly, the proportion of international staff for the top 500 grew by 6.6%, from 242 984 (in the 2018 edition) to 259 021 (in the 2019 edition). Internationally academic mobility has significantly increased over the past decade (Bilecen & Van Mol, 2017). The Middle East and Southeast Asia are hiring a significant number of international staff, with Switzerland and Australia also displaying high average rates in the International Staff Indicator. More than 90% of the UAE's academic staff are international, followed closely by Macau (84%), Qatar (81.3%) and Singapore (64%) (Griffin et al., 2018). Top level academia is perhaps the world's most international community (The Economist, 2016).

Universities remain internally-focused and mindful of the need to foster international conversations, networks, partnerships and publications (Thomson, 2014). Qatar, Singapore, the United Arab Emirates and China have all promoted internationalisation in national policy, including inviting prestigious foreign universities to establish local campuses (Gibney, 2013). Countries like Australia and Canada have adjusted visa and immigration requirements to attract international students (Altbach et al., 2009). According to Altbach et al. (2009) most of the major research producing nations like the US, the UK, Germany, France, Canada, Italy, Australia, Spain, the Netherlands, Japan and Switzerland have doubled the number of research collaborations during the last ten years. However, most notably in China that figure is five times greater. China has the fastest growing research output in the world, and it will play a fundamental role in reshaping the research landscape in the future (Altbach et al., 2009).

Internationalisation has also reached prominence at regional and international levels. The Bologna and Lisbon strategy in Europe are the clearest examples of international engagement at the policy level. The Bologna process includes 40 countries in a European higher education area. Similar examples of regional collaboration are the Latin American and the Caribbean area for higher education, the African Network for Internationalisation of Education (ANIE) and in the development of the African Union Harmonisation Strategy (Altbach et al., 2009). International collaboration efforts like these inherently lead to a need for transparency and accountability (de Wit, 2010).

2.6.2 The Pull: Implications Emanating from Contemporary Changes to Governance Structures in the US and Europe

Currently the US and UK are widely regarded as the leading providers of higher education (TES Global Ltd, 2017) in the world and, as noted earlier in the chapter, they are also regarded as the top destinations for international undergraduate and postgraduate students (PricewaterhouseCoopers LLP, 2015). However, recent policy changes will affect their Higher Education Systems, especially with regard to their ability to attract quality international staff and students as well as being able to attain funding for research (Cooper & Dennis, 2017; Else, 2017; Kelly, 2017; Marginson, 2017).

2.6.2.1 The 'Brexit'

The UK has one of the most competitive higher education systems in the world. Oxford was ranked as the best university in the world in the 2018 Times Higher Education (THE) World University Rankings (WUR) of which British universities accounted for 31 of the top 200 places in the Rankings (TES Global Ltd, 2017).

During June 2016, the British public voted to leave the European Union (EU) after Britain first joined 43 years ago. The vote (to leave) signifies a reversal of European efforts at political and economic integration (Smith, 2016). The word 'Brexit' has been widely used as a shorthand to refer to the UK withdrawing from the EU, merging the words Britain and Exit (Smith, 2016). The UK had to invoke Article 50 of the Lisbon Treaty, which gives the two sides (UK and the EU) two years to agree the terms of the split. The process officially started on 29 March, which means that the UK is scheduled to leave on the 29th of March 2019 (Hunt & Wheeler, 2017). It is a long and complicated process unpicking 43 years of treaties and agreements covering thousands of subjects. The 'Brexit' will influence all the countries involved, politically and economically, and may be a catalyst for future changes seeing as Northern Ireland and Scotland voted to stay in the EU whilst England and Wales decided to leave (Hunt & Wheeler, 2017). Most of the Higher Education community seemed to be in strong support for the 'remain' vote as publicly expressed by Universities UK (UUK), the Russell Group, the MillionPlus group, and other HE groupings. The British universities and students perceive Brexit as a potential threat to the

competitiveness and sustained excellence of UK Higher Education (Birmingham, Elder, Gotz, Sijmons & Yardeni, 2017).

The Cambridge Brexit Report highlights the significant role the EU plays in British Higher Education, the EU provides about 16% of all research funding, 16% of academic staff, and 125 000 students (Birmingham et al., 2017). Marginson (2017) sees British Higher Education as collateral damage emanating from the 'Brexit', suggesting that the UK universities benefitted substantially from the UK being a member of the EU. More than 25% of the staff in the leading research universities are non-UK EU-citizens and it is unlikely that the government's draft migration policy will be able to sustain the talent pool (Marginson, 2017). About 4.6% of UK universities' teaching income is directly associated with EU students. Universities UK estimate that, in total, EU students generate £2.2 billion for the economy (Birmingham et al., 2017).

Student mobility is another factor, which may affect UK universities (Marginson, 2017). Non-EU international student numbers may reduce by 30 to 40 percent, which would cut into institutional incomes (Marginson, 2017). Applications to UK universities from continental EU students, starting university from September 2017 to September 2018 have dropped by 7 percent, even though the British government guarantees a full fee loan for the period of study (Cooper & Dennis, 2017). Cooper and Dennis (2017) suggest that the reduction may be due to a growing perception that international students are no longer welcome in the UK. It is expected, that in the future, post 'Brexit', EU students will be required to pay higher international student fees (Cooper & Dennis, 2017).

Between 1981 and 2014, the proportion of published UK research with international collaboration increased from 16% to 52% (Birmingham et al., 2017). The Russell Group (2016) affirms that 80% of their internationally co-authored papers were written with EU collaborators. EU membership provides the staff and students of world leading universities in the Russell Group access to over 800 top research facilities (The Russel Group, 2016). Research collaboration between the UK and EU will definitely be stifled; however, the UK's ultimate relation to the EU's research programme is unclear at present.

If the EU does not grant the UK 'associated member status', universities from the UK will stand to lose large grants from the European Research Council. Nearly 25% of Cambridge's

research funding and 20% of Oxford's research funding from competitive grants comes from the European Union (Bothwell & Grove, 2017). Over the last 10 years, researchers at the University of Cambridge have successfully won 218 individual European Research Council grants (Birmingham et al., 2017). Institutions from the UK's Russell Group will also be concerned about potential loss to EU funding (Bothwell & Grove, 2017). The reduced funding available for research coupled with a tougher migration policy may likely impact the UK's ability to recruit top academic staff (Birmingham et al., 2017; Else, 2017).

If the UK were to drop out of EU's research and innovation system, it would be to the detriment of science in Europe (Else, 2017). Thomas Jørgensen, senior policy coordinator at the European University Association states, "Britain is the biggest player and you can't take out the biggest player without having systemic effect" (Else, 2017; para. 7). Else (2017) sites Kurt Deketelaere, the secretary general of the League of European Research Universities (LERU) which represents 23 research-intensive universities throughout Europe, "difficult decisions will have to be made over how the EU will spend their budget because the UK is a net contributor to the EU budget. Should the UK stop contributing funding to the Research and Innovation fields then continental European universities will lose". The Cambridge Report makes a number of recommendations to the UK Government to the benefit of the UK Higher Education System. Some of the recommendations listed below (Birmingham et al., 2017).

- The exclusion of international students in UK net migration figures.
- That the UK Government reform the current immigration system so that it reflects the benefit of international researchers. This could take a number of forms, such as waiving visa requirements or having fast track visas for academic researchers.
- That the UK Government makes continued access to Horizon 2020 and future European Framework Programmes a high priority in 'Brexit' negotiations.
- UK Universities should consider lowering all international student fees (i.e. rather than just bringing EU student fees up to meet existing international fees).
- The UK Government should strive to retain access to the Erasmus student exchange programme.
- The UK Government should review current spending on Arts and Humanities and guarantee continued support and funding.

- The Government should guarantee the status of EU students and staff already here as early as possible.
- The Government clearly communicates to students and universities any relevant transitional arrangements made as part of the Article 50 process.

2.6.2.2 The Trump Administration

A few months after the UK announced their exit from the EU, the United States elected Donald J Trump their 45th president in November 2016 (Roberts, Siddiqui, Jacobs, Gambino & Holpuch, 2016). President Trump's 2018 budget proposal sees reduced funding to the Education Department by more than 13 percent. The reduction in spending is in order to offset more than $50 billion in increases for the Department of Defence, Homeland Security, and Veterans Affairs (The Cronicle of Higher Education, 2017).

The budget included cuts to institutions like the National Institute of Health and the National Science Foundation which contributes funds toward academic research as well as plans to eliminate programs that aid primarily low-income and minority students. The proposed budget involves nearly $200 million in cuts for federal programs that help disadvantaged students make it into and through college. The combination of these budget cuts with restrictive immigration policies threatens America's supremacy in science and technology (The Cronicle of Higher Education, 2017).

In June 2017, the US president's proposed budget was condemned by his own party, as the appropriations panel in the House of Representatives released a 2018 spending bill that rejects most of the Trump Administration's proposed changes (Lederman, 2017). The legislation sees lower overall spending on education but still preserves most major programs important to higher education. Programs like the Supplemental Educational Opportunity Program and Federal Work-Study Program will attain the same level of funding, even though the Trump Administration proposed the former to be eliminated and a reduction to the latter. Similarly, in stark contrast to the proposed budget, the National Institute of Health (NIH) will see increased spending by more than 1 billion dollars, instead of the proposed cuts (Lederman, 2017). Later in September 2017 a Senate Subcommittee approved an increase of 2 billion dollars in funding to the NIH, almost twice the numbers approved by the House of Representatives. The agency

is the world's largest source of public research funding and the Senate's financial backing is welcome news to research universities and researchers worldwide (Kelly, 2017). The Senate spending bill would also block a Trump proposal to cut NIH payments to cover the overhead costs of research (Kaiser, 2017).

The Senate's 2018 budget would also increase the size of the Pell program's maximum grant, however it would subsequently recall a large portion of the 10 billion dollar surplus (3.9 billion dollars) from the program's reserves (Lederman, 2017). The Pell program is the primary source of federal grant aid for millions of students from low-income families (Douglas-Grabriel, 2017). Nearly two-thirds of African American Undergraduates, and more than half of the Latino Undergraduates, receive Pell funding which only covers a small proportion of the total cost of attending a public four-year college (Douglas-Grabriel, 2017).

International students studying in the US are also affected by new legislation. Early in 2017 President Trump suspended the expidited processing of the H-1B visas. The visas are used by universities to hire postdoctoral researchers and by international students to find graduate employment (Bothwell, 2017). The suspension will make it very difficult for international students to remain in the US after graduation (Cooper & Dennis, 2017). O'Malley suggests that the stricter visa requirements on international students may also be to the detriment of the America.

A study was conducted by the NFAP (National Foundation for American Policy) which shows that international students dominate graduate STEM programmes and that many graduate level programmes in science and engineering fields would be unavailable for American students without international students (O'Malley, 2017). "At approximately 90% of US universities, the majority of full-time graduate students (masters and PhDs) in computer science and electrical engineering are international students". The study recommends that the US maintain reasonable visa policies for international students and making it easier for them to find work after graduation (O'Malley, 2017).

Redden (2017) reports recent survey results which show that thirty-nine percent of American Universities are seeing declines in applications from international students at Undergraduate and Postgraduate levels. The survey was conducted by six higher education groups (American Association of Collegiate Registrars and Admissions Officers, the Institute of International

Education, NAFSA: Association of International Educators, the National Association for College Admission Counseling, and NACAC's internationally focused subgroup, International ACAC) in February 2017.

The reason for the declines can be attributed to the students and recruiting professionals, mostly being concerned about visas and perceptions of a less-welcoming climate in the country (Redden, 2017). The survey findings show the largest declines from students in the Middle-East, China and India. China and India account for nearly half of all international students in the US (Redden, 2017). Bothwell (2017) quoted Mary Sue Coleman, the president of the Association of American Universities, when saying that visa changes in the US would "severely undermine universities' abilities to bring the world's best and brightest…students, educators, and scientists into the country". Cooper and Dennis (2017) suggest that the recent perceptions held by international students, not feeling welcome in the US and UK, coupled with restricted mobility of academics, will surely lead to a loss of existing and prospective talent. UK and US policy may still change in the months to come, especially with regards to the lengthy Brexit negotiations, however, it will take some time to remedy the effects of current perceptions and reality (Cooper & Dennis, 2017).

2.6.2.3 New Migration Policies in Australia

The US and UK aren't the only countries changing their regulatory framework pertaining to international students. In April 2017 Australia, one of the biggest destinations of tertiary international students, abolished a four-year visa programme for skilled migrants. The repeal of the so-called 457 work visas could unfairly affect international students who have spent years studying with the intent to work in Australia (Zhou, 2017). The visa will be replaced by a new Temporary Skill Shortage Visa issuing visas lasting two or four years (Bothwell, 2017). Laurie Berg a researcher in immigration and labour law at the University of Technology Sydney, said the changes represents a trend of pushing students toward temporary visas (Zhou, 2017).

The changes will also make it challenging for Australian universities to hire post-doctoral research fellows because of a requirement to have a minimum two years of work experience (Sturmer, 2017). Sturmer (2017) cites Professor Biercuk an Experimental Physicist who is of the opinion that being able to hire international talent is crucial to help with research and the

development of local staff. It is estimated that the visa replacement regulations may put at risk many of the estimated 130 000 jobs supported by Australia's 21.8 billion dollar international education industry (Sturmer, 2017).

2.6.2.4 Post 'Brexit' and Trump Opportunities

The long-term impact of 'Brexit' and the Trump administration will create opportunities for countries and regions with less restrictive visa regulations (Bothwell, 2017; Cooper & Dennis, 2017). According to (ICEF Monitor, 2017) Canadian universities are seeing an increase in inquiries and applications for EU students deterred by both 'Brexit' and the new US leadership (Collier, 2017). According to a survey conducted on international students in January 2017 by Red Brick Research, Germany is seen as the number one choice among both EU and non-EU students, when asked to name the most desirable alternatives to studying in the UK. However, Cooper and Dennis (2017) suggest that countries like Canada may bennefit by making it easier for students to obtain study visas and to gain employment after graduation. Regional educational hubs such as Asia and Southeast Asia will grow in international students in the years to come (Bothwell 2017; Cooper & Dennis, 2017).

Up to this point, chapter 2 discussed the external (macro-level) forces affecting global higher education today, encapsulating aspects such as internationalisation, marketization and privatisation. The growth in communication technology within an increasingly globalised world, has made it possible for higher education institutions to transcend their national boundaries (The Economist, 2018; Havergal, 2015; British Council, 2012). Additionally, universities are becoming exponentially financially motivated (Havergal, 2015; Yat Wai Lo, 2014; Choa, 2013) with governments and universities (both public and private) attempting to accommodate the increased demand for higher education (Havergal, 2015; Okebukola, 2013).

The last decade saw an explosion of private institutions deemed essential in providing more higher education opportunities as existing higher education institutions are increasingly dependent on funds from a combination of sources to compensate for the decline experienced in state funding in some parts of the world (Nizar, 2015; Choa, 2013). The aforementioned performance-driven culture of higher education is based on increased accountability to both global and local financial actors.

Increasing local higher education participation is crucial for most countries (Nizar, 2015) however, universities and governments alike cannot ignore the various benefits of international talent contributing to their institutions (Gibney, 2013). Multiple governance strategies are enforced to serve all countries' regional agenda and global aspirations (Nizar, 2015; Bok, 2003). The ability to compete internationally are affected by the economy and political motivations (Wint & Downing, 2017). More recently, governments have opted to increase funding into a select number of elite universities to establish world-class universities (Wang, 2013).

World-class universities have the ability to attract international staff and students, and therefore various excellence initiatives are undertaken to create world-class institutions (Albach & Hazelkorn, 2017), which are increasingly determined by HERS, especially the world university rankings (Marginson, 2013). Many regard HERS as the latest manifestation of the neoliberal corporatization of higher education, in which market forces increasingly govern research and teaching adding to the commodification of knowledge and the relentless pressure to produce (Castree & Sparke, 2000).

2.7 Higher Education Ranking Systems (HERS)

During 1983, the US News started what many argue to be the first HERS by ranking colleges (Hazelkorn, 2013). The first international rankings of universities (Academic Ranking of World Universities) were published in 2003 (Liu, 2013). Since then, various commercial media and research institutions have released their rankings and ranking methodologies worldwide (Toutkoushian et al., 2011). Today, there are more than 20 separate organisations compiling global rankings of universities (The Economist, 2018; Sowter, 2018).

A compact definition of ranking is that it is an established approach, with corresponding methodology and procedures, for displaying the comparative standing of whole institutions or of certain domains of their performance (Sadlak, 2010). The majority of 'rankings' and all 'league tables' attempt to reflect the quality of institutions and/or study programmes in an ascendancy of the types and domains for which the listing is being done (Sadlak, 2010). The US News publication revealed valuable information about undergraduate programmes from various American higher education institutions (Hazelkorn et al., 2013). According to

Hazelkorn et al., (2013) the late 1990's ushered in several lists, league tables and rankings of American under- and post-graduate programmes. A decade later (2003) the Shanghai Jiao Tong University in China published their Academic Ranking of World Universities (ARWU) (Hazelkorn et al., 2013; Usher & Savino, 2006).

The publication started out as a benchmarking project for Chinese universities. At that time China aspired to produce world-class universities and, in order to do so, they had to establish a definition of a world-class university, and benchmark the top Chinese universities against, what they perceived as the best universities in the world (The Economist, 2018; Liu, 2013). The publication of the report resulted in numerous positive comments many of which invoked the possibility of undertaking a real ranking of world universities (Liu, 2013). Nobody expected it to be so popular (The Economist, 2018). Two years later in early 2003 the Academic Ranking of World Universities (ARWU) was completed (Liu, 2013; Usher & Savino, 2016). The publicised rankings received lots of attention from mainstream media worldwide, and ARWU was considered the most influential international university ranking system (Liu, 2013). After the first publication, the "knowledge economy" was emerging into the global consciousness. Universities were no longer just sources of cultural pride but the engines of future prosperity, the generators of human capital, of ideas and of innovative companies (The Economist, 2018). Since then the number of HERS and their rankings has grown considerably, however the three biggest or most influential HERS are the Times Higher Education (THE) world university rankings, the Quacqarelli-Symonds (QS) rankings and the Shanghai Ranking's Academic Ranking of World Universities (ARWU) (The Economist 2018; Efimova & Avralev, 2013; Downing, 2012; Savino & Usher, 2006). Across the globe, more than 85 countries were covered in the latest QS WUR (QS Quacquarelli Symonds Limited, 2018) and 86 in the latest THE WUR (TES Global Ltd, 2018).

According to Sadlak (2010) ranking is done for a variety of reasons, the most frequent being:

- to provide the public with information (whatever the specifics of the ranking format) on the standing of higher education institutions for individual or group decision-making (potential students, parents, politicians, foundations, funding agencies, research councils, employers, international organizations, etc.);
- to foster healthy competition among higher education institutions;

- to provide additional evidence about the performance of particular higher education institutions and/or study programmes; to stimulate the evolution of centres of excellence;
- and to provide an additional rationale for allocation of funds.

Hazelkorn (2013) argues that university rankings are only one way of comparing institutions, she distinguishes between ranking alternatives like specialist rankings systems and system level ranking systems which all seek to measure quality, impact and benefit of the system as a whole. World rankings systems can only include a few world-class universities, excluding the vast majority of higher education institutions (Rauhvargers, 2014; Hazelkorn, 2012). System level rankings aim to rank countries' higher education ranking systems as a whole rather than focusing on the performance of individual institutions (Millot, 2015).

Quality Assurance and Evaluation is used to assess, monitor and audit academic standards, and to provide relevant information to key stakeholders about the quality of teaching and research. It is usually conducted at the whole-of-institution or sub-institutional level (Hazelkorn, 2012). Multi-dimensional rankings, such as the EU U-Multirank, have a range of indicators which can be arranged according to individual preferences (Hazelkorn, 2012).

Assessment of Higher Education Learning Outcomes (AHELO) is a specific project being developed by the OECD to measure the quality of teaching and learning in higher education using a test of generic and discipline-specific skills. AHELO measures student performance in both generic and discipline-specific skills (economics and engineering), and captures information on the contextual dimension through a specific questionnaire for institutions (Millot, 2015). AHELO is in its feasibility stage but is likely to become a tool for comparability and benchmarking similar to the role played by OECD Programme for International Student Assessment (PISA) (Hazelkorn, 2012).

There are also sub-institutional rankings, which compare one aspect or field, with similar aspects of other universities (Usher & Savino, 2006). These aspects are usually professional schools such as business, law and medicine (Hazelkorn, 2013). Organisations like the Economist, Financial Times, Business Week and the Wall Street Journal, frequently, publish rankings of graduate business schools (Usher & Savino, 2006). The U21 ranking provides a more thorough attempt to rank educational systems, and the greater China ranking, published

for the first time during 2012, aims to assist students from the Chinese mainland choose their preferred institution. There are now several rankings that are primarily concerned with research; the Shanghai Ranking, Leiden Rankings, Scimago Rankings, University Rankings of Academic Performance (URAP), National Taiwan University Rankings and the US News and World Report Best Global Universities Rankings (BGUR). Additionally, there are also rankings that measure web activity, environmental sustainability, employability and innovation (Holmes, 2017).

The following table illustrates the various international ranking systems and their dates of inception.

Table 2.1: The inception of HERS from 2003-2017 (Ewalt, 2017; U21 Ranking of National Higher Education Systems, 2017; Worldtop20, 2017; Zha, 2017; 2015 Eduniversal Group; Rauhvargers, 2014; Hazelkorn, 2013)

Ranking system and year of inception				
2003	Shanghai Ranking (ARWU)			
2004	Webometrics	QS & THES		
2006	Newsweek Top 100 Global Universities			
2007	Mines Paris Tech: Professional Ranking of World Universities	HEEACT/NTU: Ranking of Scientific Papers	Eduniversal: Business School Ranking	
2008	World's Best Colleges and Universities			
2009	RatER: Global Universities ranking	CWTS: Leiden Ranking	Scimago	
2010	University Ranking by Academic Performance (URAP)	THE World University Rankings (WUR)	QS World University Rankings (WUR)	High Impact Universities Research Performance Index
	UI GreenMetric World University Ranking	Emerging/Trendence Global University Employability Ranking		

Ranking system and year of inception				
2011	U-Multirank	QS Stars	The Best Schools Ranking	
2012	U 21: Ranking of National Higher Education Systems	Nature Index		
2013	Centre for World University Rankings (CWUR)	Round University Ranking (RUR)		
2014	US News Best Global Universities Rankings (BGUR)	World Top 20 Project: Global University Rankings		
2015	Reuters Top 100: The World's Most Innovative Universities			
2017	UniRanks: The Ranking of Rankings			

Today many international ranking systems include subject specific rankings and/or regionally focused rankings in addition to their world university rankings. The three biggest HERS, Shanghai Ranking, THE and QS, have diversified their rankings portfolio to produce specialist university rankings, university rankings in subject areas/subjects, rankings of universities in a specific region and rankings of universities under the age of 50. These specialist rankings may be a subset of the outcomes generated by the respective world university rankings tables, a subset of the universities with different weights applied to the indicators/metrics, or the product of a completely new methodology or weighting matrix.

The following table shows the proliferation of rankings as annually published by the big three rankings systems.

Table 2.2: The annual rankings published by QS, THE and Shanghai Ranking, Quacquarelli Symonds Ltd, 2018;TES Global Ltd, 2018; ShanghaiRanking Consultancy, 2017 as October 2018

	Times Higher Education (THE)	**Quacquarelli Symmonds (QS)**	**Shanghai Ranking (ARWU)**
World university rankings	THE World University Rankings (WUR)	QS World University Rankings (WUR)	Academic Ranking of World Universities (ARWU)

	Times Higher Education (THE)	Quacquarelli Symmonds (QS)	Shanghai Ranking (ARWU)
Region or location focused rankings	THE US College Rankings; THE Latin America Rankings; THE Japan University Rankings; THE Asia University Rankings	QS Asia Rankings; QS Latin America Rankings; QS Arab Region Rankings; QS Emerging Europe and Central Asia (EECA) Rankings; QS IGAUGE Rankings	
Subject focused rankings	THE WUR by Subject	QS Rankings by Subject	Global Ranking of Academic Subjects, Academic Ranking of World Universities by Subject Field
Rankings by age	THE Young University Rankings (YUR)	QS Top 50 under 50	
Rankings by economic classification	THE Emerging Economies	QS Rankings: BRICS	
Other rankings	THE World Reputation Rankings	QS System Strength Rankings	Global Ranking of Sport Science Schools and Departments
	THE Global University Employability Rankings	QS Graduate Employability Rankings	
	THE Europe Teaching Rankings	QS Best Student Cities	
		QS Global MBA Rankings	
		QS Stars Rating System	
		QS Business Masters Rankings	

In addition to the table above, THE announced the development of a new sub-ranking, the 'THE Impact Rankings' which will be launched at *THE*'s Innovation and Impact Summit in South Korea in April 2019. The new sub-rankings will be focused on the impact that a university has on the economy and wider society through its innovations and inventions (THE Reporters, 2018).

Many higher education institutions are beginning to develop their own systems for assessing the quality of learning and teaching at a departmental level, which incorporates the best of the observed global practices, while ensuring these meet particular local and regional requirements (Downing, 2013). Downing (2013) suggests that this trend should not lead to a lack of differentiation because universities will always interpret best practice in terms of their local and regional requirements and contexts. Sowter (2015) theorizes that, with time, the HERS will become more established, and the various methodologies will start to settle. The multiplicity

of different types of comparative and transparency tools may eventually diminish the authority of the current market leaders (Hazelkorn, 2013).

For publishers, high profile rankings have become profitable products, just as transparency and accountability tools (and, in particular, research assessment) have increased the profitability of scientific publishing (Scott, 2013). The increase in external scrutiny means that universities have had to reorganize and build a distinct identity and reputation in order to compete for the best students, faculty and funding (Steiner, Sammalisto & Sundstrom, 2012).

2.8 IREG Approved

Rankings are not only controversial because of their impact on reputation but also the nature of the measurements is a cause of concern (O'Loughlina et al., 2013; Hazelkorn et al., 2013). The ranking systems keep refining methodologies in addressing numerous criticisms (Sowter, 2017). In 2006, members of the International Ranking Expert Group (IREG), founded in 2004 by the UNESCO European Center for Higher Education (UNESCO-CEPES), established a set of safeguards of quality and good practice (IREG Observatory on Academic Ranking and Excellence, 2006) to produce a framework *"that ultimately will lead to a system of continuous improvement and refinement of the methodologies used to conduct" (p. 1)* rankings.

Higher Education experts from across the globe, representing numerous universities, research institutes and foundations, governmental and non-governmental organisations participated in establishing the 'Berlin principles' (Stolz, Hendel & Hor, 2010). The principles are essentially a set of rules, which promotes good practice with the ranking industry (Millot, 2015). Its purpose as stated on the IREG website is strengthening of public awareness and understanding of range of issues related to university rankings and academic excellence (IREG Observatory on Academic Ranking and Excellence, 2009). One of its main activities relates to collective understanding of the importance of quality assessment of its own domain of activities – rankings (IREG Observatory on Academic Ranking and Excellence, 2009). IREG has even started to audit ranking systems (Millot, 2015).

The IREG Ranking Audit initiative is based on the Berlin Principles and is expected to: - enhance the transparency about rankings; - give users of rankings a tool to identify trustworthy rankings; and - improve the quality of rankings (IREG Observatory on Academic Ranking and

Excellence, 2009). Successful organisations also need to show that they observe good practices and respond to a need for relevant information from a range of stakeholders, in particular students, higher education institutions, employers and policy makers (Juno, 2013). These principles are considered an important step in the development of standards of quality and accountability in ranking systems, as they consider the autonomy of consumers and HEIs in ranking exercises (Harvey, 2008).

Given the heterogeneity of methodologies of rankings, these principles for good ranking practice will be useful for the improvement and evaluation of ranking (IREG Observatory on Academic Ranking and Excellence, 2006).

Table 2.3: The Berlin Principles on rankings of higher education institutions (IREG, 2006)

Nr	Principle statement
1.	Be one of a number of diverse approaches to the assessment of higher education inputs, processes, and outputs. Rankings can provide comparative information and improved understanding of higher education, but should not be the main method for assessing what higher education is and does. Rankings provide a market-based perspective that can complement the work of government, accrediting authorities, and independent review agencies.
2.	Be clear about their purpose and their target groups. Rankings have to be designed with due regard to their purpose. Indicators designed to meet a particular objective or to inform one target group may not be adequate for different purposes or target groups.
3.	Recognize the diversity of institutions and take the different missions and goals of institutions into account. Quality measures for research-oriented institutions, for example, are quite different from those that are appropriate for institutions that provide broad access to underserved communities. Institutions that are being ranked and the experts that inform the ranking process should be consulted often.
4.	Provide clarity about the range of information sources for rankings and the message each source generates. The relevance of ranking results depends on the audiences receiving the information and the sources of that information (such as databases, students, professors, employers). Good practice would be to combine the different perspectives provided by those sources in order to get a more complete view of each higher education institution included in the ranking.
5.	Specify the linguistic, cultural, economic, and historical contexts of the educational system being ranked. International rankings in particular should be aware of possible biases and be precise about their objective. Not all nations or systems share the same values and beliefs about what constitutes ‘‘quality’’ in tertiary institutions, and ranking systems should not be devised to force such comparisons.

Nr	Principle statement
6.	Be transparent regarding the methodology used for creating the rankings. The choice of methods used to prepare rankings should be clear and unambiguous. This transparency should include the calculation of indicators as well as the origin of data.
7.	Choose indicators according to their relevance and validity. The choice of data should be grounded in recognition of the ability of each measure to represent quality and academic and institutional strengths, and not availability of data. Be clear about why measures were included and what they are meant to represent.
8.	Measure outcomes in preference to inputs whenever possible. Data on inputs are relevant as they reflect the general condition of a given establishment and are more frequently available. Measures of outcomes provide a more accurate assessment of the standing and/or quality of a given institution or program, and compilers of rankings should ensure that an appropriate balance is achieved.
9.	Make the weights assigned to different indicators (if used) prominent and limit changes to them. Changes in weights make it difficult for consumers to discern whether an institution's or program's status changed in the rankings due to an inherent difference or due to a methodological change
10.	Pay due attention to ethical standards and to the good practice recommendations articulated in these Principles. In order to assure the credibility of each ranking, those responsible for collecting and using data and undertaking on-site visits should be as objective and impartial as possible.
11.	Use audited and verifiable data whenever possible. Such data have several advantages, including the fact that they have been accepted by institutions and that they are comparable and compatible across institutions.
12.	Include data that are collected with proper procedures for scientific data collection. Data collected from an unrepresentative or skewed subset of students, faculty, or other parties may not accurately represent an institution or program and should be excluded.
13.	Apply measures of quality assurance to ranking processes themselves. These processes should take note of the expertise that is being applied to evaluate institutions and use this knowledge to evaluate the ranking itself. Rankings should be learning systems continuously utilizing this expertise to develop methodology.
14.	Apply organizational measures that enhance the credibility of rankings. These measures could include advisory or even supervisory bodies, preferably with some international participation.
15.	Provide consumers with a clear understanding of all the factors used to develop a ranking, and offer them a choice in how rankings are displayed. This way, the users of rankings would have a better understanding of the indicators that are used to rank institutions or programs. In addition, they should have some opportunity to make their own decisions about how these indicators should be weighted.
16.	Be compiled in a way that eliminates or reduces error in original data, and be organized and published in a way that errors and faults can be corrected. Institutions and the public should be informed about errors that have occurred.

During 2008 the IREG Observatory on Academic Ranking and Excellence was established. This Observatory would be a more permanent organisation responsible for the continued work

to promote and improve ranking practices throughout the world (Hagg & Wedlin, 2013). In May 2013, two rankings were the first to be granted the 'IREG approved' label; the Polish domestic Perspektywy University Ranking and the international QS World University Ranking (Hagg & Wedlin, 2013; Juno, 2013). Positive audits will be published on the IREG website (IREG Observatory on Academic Ranking and Excellence, 2014). However, the Berlin principles (BP) used in the IREG audit procedure is not without its faults. Hägg and Wedlin (2013, p. 336) lists a variety of issues, one of which, is a contradiction that lies in the very message of the principles itself:

> *"to continuously improve the rankings and contribute to a better ranking practice overall, thus to make the rankings 'learning systems' that develop in collaboration with the evolving expertise in rankings (BP number 13). At the same time, a fundamental principle in the construction of indicators and weightings is that these should be kept stable and that changes to them should be limited in order to assure comparability over time (BP number 9)".*

In general, however, Hägg and Wedlin (2013) suggest that the debate following the launch of the BP has been mainly positive about the usefulness and positive contribution of the BP to the general debate about rankings.

2.9 Summary

The milieu in which higher education systems and institutions operate today is a globalised, transnational context wherein ICT technology continues to improve the way we communicate and share information (van Rooijen, 2014; Altbach et al., 2009; Knight, 2008). Higher Education Institutions are presented with a plethora of opportunities to internationalise its offerings whether motivated by political, economic, social or cultural reasons (van Rooijen, 2014; de Wit, 2010; Teichler, 2004).

Internationally mobile higher education students and staff are increasing exponentially and the number of cross-border collaboration like joint-programme offerings, student exchange programmes, scholarship and fellowship programmes and research communities, form part of the global knowledge economy (OECD, 2017; Knight, 2015; Altbach et al., 2009). The academic community are now seen as the most international community in the world and about

one-third of all academic research produced globally is carried out through international collaborations (The Economist, 2018).

Universities are increasingly motivated by monitory gains and diverse financial sources such as capital endowment, commercialisation of teaching, research and services to maintain globally competitive (Nizar, 2015; Mills, 2012; Castree & Sparke, 2000). Traditional universities are behaving more like commercial entities (Sawyer et al., 2009; Teichler, 2004) and private institutions are growing considerably due to the increased higher education demand especially in developing nations (Havergal, 2015; Susanti, 2011).

The chapter describes the contemporary forces of the global knowledge economy - as a 'push' and 'pull' effect. The 'push' encapsulates the movement of the economy, higher education funding and academic (students and staff) mobility. The pull embodies contemporary political influences on the global knowledge economy, more specifically, changes emanating from the new governance structures in America and the UK. The new administrations impacts and will continue to influence global higher education, seeing as the US and UK are still two of the most succesful influential higher education providers, globally.

The increase in competition, international ambition and an ever-increasing demand for higher education has manicured an ideal environment for HERS to flourish (Rauhvargers, 2014; Hazelkorn, 2013; Altbach, 2006). Rankings have garnered the interest of international students, universities, governments, scholarship bodies and employers (Sadlak, 2010). Even though the publications of university rankings by HERS are controversial, hotly debated and regularly scrutinised, they seem to be increasing in scope and number (Hazelkorn et al., 2013; Downing, 2013; Liu, 2013). The three biggest HERS are the Shanghai Ranking, QS and THE, which produces annual rankings of universities along with other rankings products. The big three have become influential comparative manifestations still revolutionising its own goals and structure (Marginson, 2014; Downing, 2013, 2012).

2.10 Conclusion

Chapter 2 reviewed the global phenomena present in contemporary higher education systems. Universities are becoming more international and increasingly independent, which make them more customer orientated and vulnerable to changing market conditions and external

influences, such as HERS. Chapter 3 will take a deeper look into rankings, especially with regard to the big three HERS.

CHAPTER 3: CRITICAL INTERNAL ANALYSIS OF THE BIG THREE HIGHER EDUCATION RANKING SYSTEMS – QS WUR, SHANGHAI RANKING'S ARWU, THE WUR

3.1 Introduction

The increasing marketisation of higher education, greater mobility of students and ultimately the recruitment of foreign students, has gathered pace since 2000 (Harvey, 2008). Countries obtain large amounts of money from international students, but it is a highly competitive market and perceived status and reputation are important marketing tools (Harvey, 2008; Dill & Soo, 2005). Rankings are extensively used in university marketing campaigns (Connell & Saunders, 2012) as established assessment tools of university excellence (Taylor & Braddock, 2007). The explosion of worldwide university rankings has sparked debate about the nature and validity of the various HERS and their methodologies (Hazelkorn et al., 2013; Downing, 2012; Altbach, 2006; Dill & Soo, 2005). The objections range from the philosophical to the pragmatic (Connell & Saunders, 2012).

The process of ranking institutions starts with data collection; the second step entails the selection of the types of ranking and variables, followed by selection of indicators and weighting shares before executing the analysis (Merisotis & Sadlak, 2005). Rankings have different parameters, including publication and citation counts, student-faculty ratio, percentage of international students, number of awards and achievements, number of research papers per faculty, web visibility and the number of articles published in high impact journals, to name but a few (Aguillo et al., 2010). Despite all the opinions and arguments about the legitimacy of the rankings, the appetite for rankings persists, as experts agree that they are here to stay (Hazelkorn, 2014; Downing, 2012; Connell & Saunders, 2012). The question, therefore, seems to be less about whether or not universities should be compared and ranked, but the manner in which this is undertaken (Hazelkorn et al., 2013). Chapter 3 will attempt to provide a critical analysis of what are widely considered the 'big three' international higher education rankings, QS World University Rankings (WUR), THE World University Rankings (WUR) and the Shanghai Ranking's Academic Rankings of World Universities (ARWU).

3.2 Critique Regarding Ranking Methodology (The Way HERS Rank)

Different indicators and weights produce different outcomes. Shastry (2017) suggests that the indicators employed by the Shanghai Ranking's measure age, size and medical research. THE measures institutional income and QS provides opportunity for universities with local reputations to gain international visibility (Shastry, 2017) but this is certainly far too simple a picture of all three. Scrutiny of rankings methodologies has increased considerably since 2009 (Baty, 2014) but some believe problems with rankings concern the practice, not the principle (Altbach, 2006). Alongside this proliferation and influence has come increasingly virulent criticism of their objectives and methodologies (Kaychen, 2013; Downing 2013; Taylor & Braddock, 2007; Van Raan, 2005).

The subjective aspects of the ranking process; e.g., the list of the universities' attributes used in the rankings, their respective weights, and the size and composition of the comparison group are criticized regularly (Bougnol & Dula, 2015). The arbitrary manner ranking systems assign weights to ranking indicators without sound theoretical motivation is often criticised (Harvey, 2008; Savino & Usher, 2006). The fact that the arts, humanities and, to a large extent the social sciences, remain underrepresented in rankings is often blamed on unreliable bibliometric data (Hazelkorn, 2013). Anowar, Helal, Afroj, Sultana, Sarker and Mamun (2015) suggest that larger institutions have an advantage in rankings as they may have more papers, citations, award-winning scientists, students, web links and funding. Some rankings suffer from focusing only on the research dimension, which is more visible and easier to measure using external observations (Daraio, Bonaccorsi & Simar, 2014). Moreover, Bekhradnia the president of the Higher Education Policy Institute (HEPI), suggests that international rankings are one-dimensional because they only measure research activity to the exclusion of everything almost else (O'Malley, 2016).

Others believe that rankings are largely based on what can be measured rather than what is relevant and should be measured (Harvey, 2008; Altbach, 2006).

Bougnol and Dula (2015, p. 860-864) describe a variety of pitfalls in today's modern ranking systems. They criticize the use of *"Anti-isotonic attributes",* a weighting scheme that uses positive weights for the attributes' values rewards larger magnitudes. *"Rewarding inefficiency"* A pitfall occurs when inputs and outcomes in a rankings scheme are treated in

the same way by assigning them positive weights. *"Transparency and reproducibility"* Ideally, a ranking will provide both the data as it was used in the calculation of the scores and the weights. Unfortunately, not all ranking schemes live up to these ideals. *"Co-linearity in the data"* A problem with ranking schemes may result from co-linearity in the data. Co-linearity among attributes' data is a manifestation of excess information.

3.2.1 Technical Issues with Citation Databases

The big three ranking systems (ARWU, THE WUR, QS WUR) make use of citation databases. Citation impact is still determined more reliably through indicators that measure the proportion of articles in intensively cited journals, and thus favours those fields in which these articles are concentrated, namely medicine, natural sciences and engineering (Waltman et al., 2011). Another criticism regarding citation impact has to do with "measurement time frame". It would need specific time duration to determine the importance of citation of any institution. Taking too long might otherwise be irrelevant to the institutions current state (Anowar et al., 2015). The most central technical process on which citation analysis is based entirely is the matching of citing publications with cited publications. The 'identification by matching' process is done by referees (Van Raan, 2005). A considerable amount of errors occurs in the citing-cited matching process leading to a loss of citations to a specific publication (Van Raan, 2005). These 'non-matching' citations are highly unevenly distributed in situations, which may cause an increase of the percentage of lost citations of up to 30% (Moed, 2002). Van Raan (2005) adds that the names of the organisation/universities can be incorrectly attributed to a certain publication, especially when a variation of names for an institution exists. This is a frequent problem when medical schools, graduate schools and research organisations are used instead of the university where the research actually takes place (Van Raan, 2005).

Larger institutions may have the advantage of relying on their strong citation background should change occur (Anowar et al., 2015). Anowar et al., (2015) mention another methodological shortcoming concerning citation impact, they suggest, that credit allocation has thus far not been adequately distributed across ranking parameters. *"A paper, equally cited but authored by several institutions versus a paper authored by one institution. In this case, several institutions authored paper should be given more credit"* (Ioannidis, Patsopoulos, Kavvoura, Tatsioni, Evangelou, Kouri, Contopoulos-Ioannidis, Liberopoulos, 2007).

The citation database also tries to separate scientific fields, but this is unavoidably imperfect. Scientists with more multidisciplinary work have more difficulty passing the highly-cited threshold in any one field. Within the same field, scientists in sub-fields with higher citation densities have an advantage (Ioannidis, et al., 2007). Moreover, reviews are often more-cited than any 'original' article, and their exclusion may not be justified (Patsopoulos, Analatos & Ioannidis, 2005).

It is widely understood that language has an impact on publication and hence citation. Since most citation indices are in English and are more likely to include journals published in that language (Soh, 2015), these journals are readily available in the larger academic systems (Altbach, 2006). For example, American scientists prefer to cite scientist from America, which may lead to an artificial boost in the ranking of US institutions (Altbach, 2006). Van Raan (2005) suggests that professional bibliometricians should act as advisors, not as number crunchers, in order to add value to the peer review process and to avoid misleading use which can cause damage to universities, institutes and individual scientists. Properly designed and constructed they can be applied as a powerful support tool to peer review (Van Raan, 2005).

3.2.2 Methodological Ranking Critique

There is a body of literature highlighting the methodological problems of rankings (Goglio, 2016). One of the most common and most vociferous complaints about university rankings is their use of reputation surveys (Rauhvargers, 2014; Baty, 2011). This indicator may be a mere symptom of excellence as it favours world-renowned institutions and does not represent current research performance (Baty, 2014). The response rate is relatively low (Bekhradnia, 2017) and the current reputation surveys only reinforce the existing reputation and prestige of particular universities (De Witte & Hudrlikova, 2013; Downing 2013; Bowman & Bastedo, 2010).

The measures of internationalisation some ranking systems employ are a better indicator of a university's marketing function, rather than the international quality of its researchers (Marginson, 2007). Internationalisation incentivises quantity over quality and often reflects a country's geographic position (Altbach & Hazelkorn, 2017). Additionally, universities in English-speaking countries have the advantage of being able to recruit both native and non-native English-speaking academics from around the world (Rauhvargers, 2014; Kaychen, 2013; Toutkoushian, Teichler & Shin, 2011).

Student-staff ratios are easily manipulated by institutions (Baty, 2014). A lack of internationally standardised definitions makes it difficult to make valid comparisons across universities and countries (Waltman, et al., 2011; Ioannidis, et al., 2007). Changes in the formula used to compile the index can result in substantial changes in league position year on year (Harvey, 2008). In addition, as an indicator of teaching quality, there is little attempt to separate out the research effort of the staff (Bekhradnia, 2017). The quality of teaching and learning and the 'value added' during the educational process eludes comparative measurement (Dill & Soo, 2005; Liu et al., 2005).

A report from the Higher Education Policy Institute (HEPI) discusses a couple of aspects the HERS (referring to THE, QS, Shanghai Ranking and U-Multirank) should consider in order to improve their annual assessments (Bekhradnia, 2017). One of the recommendations involves auditing and validating the institutional data provided by the universities and if institutional data do not exist, ranking bodies should refrain from data scraping techniques. Another recommendation sees the international surveys of reputation dropped, the HEPI report argues that reputation surveys only reinforce research performance and skew the results in favour of only a small number of institutions. Similarly, HERS should move away from research-related criteria and publish rankings in more complex ways than simple numerical rankings (Bekhradnia, 2017).

Holmes (2017) criticised HEPI for only focussing on the QS WUR, THE WUR, Shanghai Ranking's ARWU and U-Multirank as it gives a misleading picture of the contemporary rankings landscape which includes university rankings of various aspects from innovation to graduate employability. Research-orientated ranking systems are not entirely useless for evaluating teaching and learning as a good research reputation is likely to be associated with positive student and graduate outcomes such as satisfaction with teaching, completion of courses and employment (Holmes, 2017). Furthermore, Holmes (2017) suggests three reasons why QS and other HERS should not be apologetic for resorting to data-scraping techniques; information about universities are more likely to be correct if it comes from more than one source, if it is from a source independent of the HERS or the university, if it has been collected for reasons other than submission to the rankers, or if there are serious penalties for submitting incorrect data (Holmes, 2017). Sowter (2017), in defence of QS, suggests using information on university websites or data scraping, are more accurate then assuming zero.

Holmes (2017) agrees with the HEPI report that the weightings attached to the reputation surveys (employed by QS and THE) are too much, however he argues that students value the perceptions of employers and professional schools and that surveys can provide a reality check when universities are dishonest. While acknowledging notable imperfection in the ranking methodologies, especially with regard to measuring teaching and outreach, Baty (2017) addresses some of the recent criticisms in the HEPI report by stating the THE rankings is not an end in itself but rather an output from one of the world's most sophisticated databases of higher education performance data. The weightings and methodologies are developed in consultation with universities, governments and academics.

Similarly, Sowter (2017) admits that the QS Rankings are imperfect but refutes the claims made about inadequate data audits, adding that it is one of the costliest and time-consuming aspects of the rankings process which they take very seriously. Many educators question the value of rankings and argue that they can measure only a narrow slice of what quality higher education is about (Redden, 2013). Both QS and THE have expanded their online interface and functionality to compare several aspects of the rankings, which can be filtered by geography and/or other dimensions (Baty, 2017; Sowter, 2017).

The selection of an appropriate methodology is crucial to any attempt to capture and summarize the interactions among the individual indicators included in a composite indicator or a ranking system. None of the ranking systems are perfect; each has inadequacies and weaknesses (Anowar et al., 2015). Every ranking, the QS WUR as well as the THE WUR and the ARWU, are regularly criticized (Hazelkorn, 2013; Rauhvargers, 2013; Downing, 2013).

It is hard for rankings to generalise all institutions in terms of one scale. Therefore, an appropriate approach should be developed for defining different institutions effectively (Anowar et al., 2015). An alternative strategy available to critics of rankings is to encourage the proliferation of rankings with different methodologies, different weightings and different orientations (Scott, 2013). Although no single ranking can ever be satisfactory, a plurality of rankings may begin to capture the diversity of twenty-first-century higher education (Scott, 2013).

In the last decade, HERS gained considerable experience. Responding to criticism, some of the rankings have decided to refine aspects of their methodology (Griffin, Sowter, Ince & O'Leary,

2018). The next section includes an analysis of the big three rankings (QS WUR, THE WUR and ARWU), their methodologies as well as the recent amendments made to their methodology.

3.3 The Shanghai Ranking's Academic Rankings of World Universities (ARWU)

The Shanghai Ranking's ARWU is the most consolidated of the popular university-based global rankings. There have been no changes in the core methodology of this ranking since 2010 (Rauhvargers, 2014). The Academic Ranking of World Universities (ARWU) is compiled by researchers at the Centre for World-Class Universities of Shanghai Jiao Tong University (CWCU) (ShanghaiRanking Consultancy, 2003). The Academic Ranking of World Universities (ARWU) is published and copyrighted by the independent Shanghai Ranking Consultancy.

The ARWU is not a holistic university ranking but focuses on research performance of HEIs because, as argued by the Shanghai Ranking group, broadly available and internationally comparable data of measurable research performance is the only sufficiently reliable data to construct a ranking of the world's universities (Yat Wai Lo, 2014). The Shanghai Ranking group is of the opinion that, because of the various differences between universities and countries, it is impossible to compare teaching and learning worldwide (Liu & Cheng, 2005). The ARWU is reputed for its stability from year to year (Calderon, 2016; Rauhvargers, 2014). ARWU publishes the world's top 500 universities annually based on transparent methodology and third-party data. In 2017 ARWU added universities ranked between 501 and 800 as 'ARWU World Top 500 Candidates' (Wang, 2017). In total, more than 1300 universities were ranked, in the 2017 edition (ShanghaiRanking Consultancy, 2017).

The Shanghai Ranking have expanded their assessment of universities to include ARWU-Field rankings and the Global Ranking of Academic Subjects (GRAS) (ShanghaiRanking Consultancy, 2017). ARWU-Field provides the world's top 200 universities in five broad subject fields, including Natural Sciences and Mathematics, Engineering/Technology and Computer Sciences, Life and Agriculture Sciences, Clinical Medicine and Pharmacy, and Social Sciences (ShanghaiRanking Consultancy, 2003). The Shanghai Ranking Consultancy (2014) perceive its methodology to be scientifically sound, stable and transparent (ShanghaiRanking Consultancy, 2003).

3.3.1 Discussion of the Shanghai Ranking's ARWU Methodology

ARWU scores and ranks universities (individually or into bands) by first gathering separate raw data elements for each institution, the raw data values are then scaled and transformed. The indicator scores are combined to produce a total score used to assign a rank or band to the institution (Docampo, 2013). The ARWU indicators are predominantly focused on research performance (Bekhradnia, 2017; Huang, 2011). The ranking is heavily focused on the natural sciences over the social sciences or humanities which has opened the door for criticism (Anowar et al., 2015; Sorz, Fieder, Wallner, & Seidler, 2015).

The majority (five of six) of the criteria used by ARWU are counting criteria. Hence, it should be no surprise that all these criteria are strongly linked to the size of the institution (Bekhradnia, 2017; Anowar et al., 2015). This is associated with a bias in favour of countries having known few radical political changes since 1901 and those created long ago, having kept the same name throughout their history (Billaut, Bouyssou, & Vincke, 2010). Rewarding the publication of more papers regardless of impact may end up reinforcing bulk science, salami publication and least publishable unit practices (Patsopoulos, Analatos, & Ioannidis, 2005). However, Holmes (2017) argues that quantity is a necessary prerequisite to quality and enables the achievement of economy of scale.

Sorz et al. (2015) analysed the ARWU ranking results and found an extreme pattern of non-linearity between ranks and scores. Particularly the first ranked university that scores far ahead of all the others in the ARWU ranking annually. Shanghai Ranking claims that it uses carefully selected objective criteria which are based on internationally comparable data. But as they do not make this data publicly available it is not possible to check the authenticity of this data (Billaut, Bouyssou, & Vincke, 2010).

Table 3.1: ARWU methodology (ShanghaiRanking Consultancy, 2018)

Criteria and weighting	How it is measured	Definition
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals. (10%)	The total number of the alumni of an institution winning Nobel Prizes and Fields Medals. Alumni are defined as those who obtain bachelor, masters or doctoral degrees from the institution. Different weights are set according to the periods of obtaining degrees. A person obtains more than one degrees from an institution; the institution is considered once only.
Quality of Faculty	The staff of an institution winning Nobel Prizes and Field Medals. (20%)	The total number of the staff of an institution winning Nobel Prizes in Physics, Chemistry, Medicine and Economics and Fields Medal in Mathematics. The staff is defined as those who work at an institution at the time of winning the prize. Different weights are set according to the periods of winning the prizes.
	Highly cited researchers in 21 broad subject categories. (20%)	The number of Highly Cited Researchers selected by Clarivate Analytics. The Highly Cited Researchers list issued in 2017 (2017 HCR List as of December 15, 2017) was used for the calculation of HiCi indicator in ARWU 2018. Only the primary affiliations of Highly Cited Researchers are considered.
Research Output	Papers published in Nature and Science. (20%)	The number of papers published in Nature and Science between 2013 and 2017. To distinguish the order of author affiliation, a weight of 100% is assigned for corresponding author affiliation, 50% for first author affiliation (second author affiliation if the first author affiliation is the same as corresponding author affiliation), 25% for the next author affiliation, and 10% for other author affiliations. Only publications of 'Article' type are considered.
	Papers indexed in Science Citation Index-expanded and Social Science Citation Index. (20%)	Total number of papers indexed in Science Citation Index-Expanded and Social Science Citation Index in 2017. Only publications of 'Article' type are considered. When calculating the total number of papers of an institution, a special weight of two was introduced for papers indexed in Social Science Citation Index.
Per Capita Performance	Per capita academic performance of an institution. (10%)	The weighted scores of the above five indicators divided by the number of full-time equivalent academic staff. If the number of academic staff for institutions of a country cannot be obtained, the weighted scores of the above five indicators is used. For ARWU 2018, the numbers of full-time equivalent academic staff are obtained for institutions in USA, UK, France, Canada, Japan, Italy, China, Australia, Netherlands, Sweden, Switzerland, Belgium, South Korea, Czech, Slovenia, New Zealand etc
For institutions specialized in humanities and social sciences such as London School of Economics, N&S is not considered, and the weight of N&S is relocated to other indicators. Number of academic staff data is obtained from national agencies such as National Ministry of Education, National Bureau of Statistics, National Association of Universities and Colleges, National Rector's Conference.		

3.3.2 The Use of Nobel Prizes and Field Medals as an Indicator of Quality in Education and Staff

Nobel and Fields awards clearly measure research excellence, even if they don't cover all disciplines (Ioannidis et al., 2007; Billaut et al., 2010). Altbach (2006) suggests that the use of Nobel prizes under represents the social sciences, humanities and other highly diverse and expanding academic fields, which are fields in which Nobel prizes are not awarded (De Witte & Hudrlikova, 2013; Huang, 2011). Huang (2011) concurs that the two indicators (Nobel prizes

and Fields medals) are awarded only for extremely outstanding achievements and under represent the wider range of scholarly achievement.

It is unclear why universities with Nobel- or Fields-winning alumni are those that provide the best education (Ioannidis et al., 2007). Similarly, it may be incorrect to assume that having a handful of prize winners is a true reflection of an entire university's research performance (Huang, 2011). Further investigation by Billnaut et al. (2010) report that distinctions such as the "A. M. Turing Award" in the area of Computer Science or the "Bruce Gold Medal" in the area of Astronomy, are among the many examples of highly prestigious awards that are ignored in the Shanghai ranking.

Nobel- and Fields-winners typically have performed their ground breaking work elsewhere (Anowar et al., 2015; De Witte & Hudrlikova, 2013). Ioannidis et al. (2007) found that of 22 Nobel Prize winners in Medicine/Physiology in 1997–2006, only seven did their award-winning work at the institution they were affiliated with when they received the award. One may also wonder why prizes attributed long ago are linked with the present quality of an institution (Billaut et al., 2010). A university can therefore recruit a prize winner through head hunting and immediately gain an advantage in ranking without having a direct contribution to that winner's research achievement (Huang 2011). Even though the discounting scheme tends to limit the impact of these very old prizes and medals, they still have some effect. Moreover, the discounting scheme that is adopted is completely arbitrary (Billaut et al., 2010).

Billnaut et al., (2010; 7) report a fascinating example regarding the influence of a single Nobel prize on ranking position:

> *"...two universities (Free university of Berlin and Humboldt University, using their names in English) created in Berlin after the partition of Germany and, therefore, the splitting of the University of Berlin, quarrelled over which one should get the Nobel Prize of Albert Einstein. It turned out that depending on the arbitrary choice of the university getting this prize, these two institutions had markedly different positions in the ARWU."*

3.3.3 Highly Cited Researchers as an Indicator of the Quality of Staff members

Shanghai Ranking utilises a list of highly-cited researchers, compiled by Clarivate Analytics since 2016, previously administered by Thomson Reuters (ShanghaiRanking Consultancy, 2018; Thomson Reuters, 2014). The list identifies scientists and social scientists who have demonstrated significant influence through publication of multiple highly cited papers during the last decade. The list contains 21 sub-categories (those used in Clarivate Analytics Essential Science Indicators, or ESI) (Highly Cited Researchers, 2018). About 6000 researchers are named in the most recent addition (2018) of the list. The 2018 addition is the first to include the impact of cross field performance as well as performance in a specific field (Highly Cited Researchers, 2018).

Van Raan (2005) stresses the reliance of Shanghai Ranking on the choices made by an external party compiling the list for a different purpose. Additionally, the list is criticised as a ranking indicator because it seems to favour medicine and biology (Billaut, Bouyssou, & Vincke, 2010). Billaut et al., (2010) also remarks that the 21 categories are not generic in size, the number of journals used in each category varies as well as the physical size of the journals.

Similar to the criticism received from (Huang, 2011; Ioannidis, et al., 2007) on the previous indicator using prizes to assesses the quality of staff, using the Highly Cited Researchers list may also lead to staff being recruited as an attempt to gain ranking advantage. For example, in 2011, Bhattacharjee (2011) reported that more than 60 ‘highly cited’ researchers from various disciplines signed a part-time employment arrangement with a university that offered financial incentives in exchange for adding their affiliation to the names of their researchers.

During 2014, Thomson Reuters announced a revision to the process to identify Highly Cited Researchers, to make the methodology consistent with Essential Science Indicators process, and to respond to community feedback on the output of the highly-cited researcher process vetted and published in 2012 (Cram & Docampo, 2014). The revised list identifies the researchers’ field by field (Thomson Reuters, 2014). Since then Clarivate Analytics has made a number of small refinements to produce the current methodology (Table 3.2).

Table 3.2: New highly cited researchers list methodology

The methodology used by Clarivate Analytics to compile the Highly Cited Researchers list
The list focuses on contemporary research achievement: only highly cited papers in science and social sciences journals indexed in the Web of Science Core Collection during the 11-year period 2006-2016 were surveyed. Highly cited papers are defined as those that rank in the top 1% by citations for field and publication year. The data derive from Essential Science Indicators (ESI), a component of InCites. The fields are also those employed in ESI – 21 broad fields defined by sets of journals and exceptionally, in the case of multidisciplinary journals such as Nature and Science, by a paper-by-paper assignment to a field based on an analysis of the cited references in the papers. This percentile-based selection method removes the citation advantage of older papers relative to recently published ones, since papers are weighed against others in the same annual cohort. Researchers who, within an ESI-defined field, publish highly cited papers are judged to be influential, so the production of multiple top 1% papers is interpreted as a mark of exceptional impact. Relatively younger researchers are more likely to emerge in such an analysis than in one dependent on total citations over many years. To be able to recognize early and mid-career as well as senior researchers is one of the goals in generating Highly Cited Researchers lists. The determination of how many researchers to include in the list for each field is based on the population of each field, as represented by the number of disambiguated author names on all highly cited papers in that field, 2006-2016. The ESI fields vary greatly in size, with Clinical Medicine being the largest and Agricultural Sciences, Economics & Business, and Pharmacology & Toxicology being the smallest in terms of researchers and number of highly cited papers produced. The square root of the number of authors in each field indicated how many individuals should be selected. One of two criteria for selection is that the researcher must have enough citations to his or her highly cited papers to rank among all authors in the top 1% by total citations in the ESI field in which that person is considered. Authors of highly cited papers who meet this criterion in a field are ranked by number of such papers, and the threshold for inclusion is determined using the square root of the population represented by the number of disambiguated authors names on the highly cited papers in a field. All who published highly cited papers at the threshold level are admitted to the list, even if the final list then exceeds the number given by the square root calculation.

3.3.4 Citation Databases as an Indicator of Research Output

The bibliometric literature has emphasized the importance of taking the impact of research into account in order to produce relevant and meaningful indices (Moed, 2002). However, using citation databases are not without fault (Van Raan, 2005). The generic technical problems using citation databases as an indicator for rankings systems have been discussed earlier in this chapter.

The ARWU makes use of three citation databases as indicators for research output, ARWU utilises papers published in Nature and Science, Science Citation Index-expanded (SCI) and Social Science Citation Index (SSCI) (ShanghaiRanking Consultancy, 2003). Huang (2011) are of opinion that the SCI/SSCI paper indicator over emphasizes the quantity of output (numbers of published papers) and fails to measure output quality (the citations/uses of those papers). The Nature/Science indicator has similar issues with the prize winner indicators; it over emphasizes extremely outstanding research and is biased toward certain subject disciplines (Huang, 2011).

While the absence of "perfection" provides an easy way to criticize work based on the data sets, it is probably more useful to ensure that potential errors and uncertainties are adequately understood and that conclusions are reliable despite the presence of a small level of error (Cram & Docampo, 2014). The real problem is not the use of bibliometric indicators as such, but the application of less-developed bibliometric measures (Van Raan, 2005).

3.3.5 The Per-capita Performance Indicator

This criterion is clearly affected by all the elements of imprecision and inaccurate determination (Billaut et al., 2010). Moreover, Shanghai Ranking does not fully detail which sources they use to collect information on the number of Full Time Equivalent (FTE) academic staff (Billaut et al., 2010). The various definitions of academic staff in different universities can distort the measurement relating to institution size and creates comparison validity problems in the resulting ranking (Huang, 2011). If this data on the size of the institution is not available this dimension is omitted and the ranking is based on the weighted average of the other dimensions, which also results in distortion (Harvey, 2008).

3.4 The QS World University Rankings (WUR)

The latest QS World University Rankings (WUR) was published for the 15th consecutive year. The 2019 QS WUR, published in June 2018, ranks 1011 universities from 85 countries (Griffin, 2018). This year, QS considered approximately 4700 universities before publishing the final (2019) table. Additionally, QS increased the number of universities using specific ranks, by moving the point at which we break into bands from 401+ to 501+ (Griffin, 2018). The QS

Rankings include classifications to enable readers to choose between universities of different sizes, ages and degrees of specialisation (O' Leary, 2015).

During the first ten years of the QS World University Rankings, QS has created an extended portfolio of annual rankings: of subjects and subject areas, of regions such as Asia, Latin America and the 'BRICS' and Arab countries, of the best universities under 50 years old, and of the best student cities to be a student in (Ince et al., 2015). Since then QS added more regional rankings like the EECA University Rankings which ranks universities in emerging Europe and central Asia. QS also diversified their portfolio to include Graduate Employability Rankings which provide information about how successful today's students are at securing a top job after graduation and System Strength Rankings which is an assessment of Higher Education Systems regarding to access and funding (QS Quacquarelli Symonds Ltd, 2017). According to John O' Leary the editor of the Times, Sunday Times Good University Guide and member of the QS Advisory Board, the QS WUR has a clear purpose which distinguishes itself from other rankings:

> *"Unlike other rankings, which are compiled with academics or governments in mind, the QS World University Rankings is intended to be of particular interest to prospective students and their families" (O'Leary, 2015, p. 19).*

3.4.1 Discussion of QS WUR Methodology

The QS ranking methodology is consistently criticized for a lack of methodological transparency (Kaychen, 2013). Additionally, Redden (2013) and Huang (2011) argue that the QS methodology is particularly controversial due in large part to its greater reliance on reputational surveys than other rankers. When combined, the survey approach accounts for 50% of the QS methodology (Redden, 2013). The 2019 rankings compare universities across four broad areas of interest to prospective students: research, teaching, employability and international outlook (QS Quacquarelli Symonds Ltd, 2018). Table 3.3 illustrates the methodology QS employs to rank universities. Included in the table are the rationales, provided by QS, for using these measurements. The Z-transformation, (or 'normal' or 'standard' scores), is applied to each measure ensuring it contributes the intended amount to the overall score; (this involves subtracting the mean score from each individual score, then dividing by the standard deviation of the scores (Sowter, 2015).

Table 3.3: QS World University Rankings methodology according to QS Quacquarelli Symonds Ltd (2018); (Griffin et al., 2018)

Criteria and weighting	How it is measured	Rationale for inclusion
Academic reputation (40%)	Based on a global survey of about 83 000 academics, in which participants are asked to identify the institutions where they believe the best work is currently taking place within their field of expertise.	Gives an equal weighting to different discipline areas than research citation counts. Whereas citation rates are far higher in subjects like biomedical sciences than they are in English literature, for example, the academic reputation survey weights responses from academics in different fields equally. It also gives students a sense of the consensus of opinion among those who are by definition experts. Academics may not be well positioned to comment on teaching standards at other institutions, but it is well within their remit to have a view on where the most significant research is currently taking place within their field.
Employer reputation (10%)	Based on a global survey, taking in almost 42 000 responses for the 2019 edition. The survey asks employers to identify the universities they perceive as producing the best graduates.	Of critical importance to students seeking to make crucial study decisions is the question of future employability. This means that the opinion of employers regarding an institution's capacity to produce reputable, well prepared graduates provides important insight into university performance.
Faculty student ratio (20%)	The number of academic staff employed relative to the number of students enrolled.	It assesses the extent to which institutions are able to provide students with meaningful access to lecturers and tutors, and recognizes that a high number of faculty members per student will reduce the teaching burden on each individual academic.
Citations per faculty (20%)	QS collects this information using Elsevier's Scopus database, the world's largest database of research abstracts and citations. Five complete years of data are used, and the total citation count is assessed in relation to the number of academic faculty members at the university, so that larger institutions don't have an unfair advantage.	This indicator aims to assess universities' research output. A 'citation' means a piece of research being cited (referred to) within another piece of research. Generally, the more often a piece of research is cited by others, the more influential it is. So the more highly cited research papers a university publishes, the stronger its research output is considered.
International student ratio (5%)	The proportion of international students in relation to all students.	To assess how successful a university has been in attracting students and faculty members from other nations.
International staff ratio (5%)	The proportion of international staff to the overall staff number.	To assess how successful a university has been in attracting students and faculty members from other nations

3.4.2 Discussion of Academic and Employer Reputation Indicators

The reputational survey adopted by the QS rankings stirred heated debates (Huang, 2010). Peer review can easily bias the ranking toward universities of international visibility (Anowar et al., 2015; Huang, 2012; Ioannidis, et al., 2007; Taylor & Braddock, 2007). However, QS believes

that the increased depth and scope of the reputation surveys offer tremendous value to students seeking to know how their prospective university is viewed by the academic community and by employers across the world (Griffin, 2018).

> *"In the absence of more precise data on teaching and more up-to date comparisons of research, it has become the central element of the QS World University Rankings "Who better to ask than the people who work in universities to discover the best?" (Sowter, 2015)*

According to Sowter (2015) the scores of the academic survey are more resistant to bias towards English-speaking countries than research citation scores. Respondents are sourced from participating universities, previous respondents and third-party databases (Sowter, 2015). The respondents participating in the Academic Survey range from lecturers to university presidents. They are asked to select a number of universities, excluding their own university, which they regard as the best in the field they are affiliated to (Baty, 2009). In the 2019 edition, QS surveyed over 83 877 academics (participants) globally to identify institutions they consider best for research in subject area(s) they identify themselves as knowledgeable about (QS Quacquarelli Symonds Ltd, 2018). The number of institutions nominated by the respondents increased by almost nine percent from 4 378 institutions (in 2018) to 4 764 (in the 2019 edition) (Griffin et al., 2018).

Responses are weighted by region and compiled into indices for the five broad subject areas, which are combined with equal weighting to yield the final result (Sowter, 2015). The latest Employer Survey informing the QS WUR Employer Reputation indicator, which accounts for 10% of the overall score, retrieved university nominations from 42 862 employer respondents, globally (Griffin et al., 2018). Employers nominated about 4063 institutions from more than 140 countries in the 2019 edition (Griffin et al., 2018).

The growing number of participants and interest in both the Academic Reputation Survey and Employer Reputation Survey can be attributed to increased importance and significance that employers and academics place on the QS surveys (Griffin, 2018). However, many academics continue to criticize the reliance on the peer review surveys (Anowar et al., 2015; Kaychen 2013). Whilst it may be a valuable tool, some prejudice may still exist through peer

conservatism and institutional reputation favoured by age, size, name and country biases (Soh, 2015; Kaychen, 2013).

After a thorough examination of the earlier 2009 QS ranking results, Huang (2012) expressed concern regarding a few aspects of the QS peer review process; for example, the results were heavily impacted by the number of return questionnaires from each country. Additionally, the way questionnaires were distributed and results calculated, provided clues that QS Rankings generally tended to be more advantageous for the Commonwealth of Nations (Anowar et al., 2015). Furthermore, Huang (2012) argues that most of the Academic Survey questionnaires were from three fields: Engineering and IT, Natural Sciences, and Social Science. Whilst, most of the Employer review responses, came from four industries: Financial services/ Banking, Consulting/ Professional Services, Manufacturing/ Engineering, and IT/Computer services. The way in which the survey was administered; suggests that the questionnaire lacked clear parameters which may result in manipulation of responses (Huang, 2012).

In 2013, QS issued a statement listing ten reasons why its rankings cannot be effectively manipulated. It includes a set of robust processes and procedures to ensure the validity of the resulting measures. The ten reasons are as follows (Sowter, 2013):

Table 3.4: QS's process to ensure ranking validity (Sowter, 2013)

Strict policy for participation: As a policy, it is not permitted to solicit or coach specific responses from expected respondents to any survey contributing to any QS ranking. Should the QS Intelligence Unit receive evidence of such activity occurring, institutions will receive one written warning, after which responses to that survey on behalf of the subject institution may be excluded altogether for the year in question. Not only are responses found to be invalid discounted from consideration, but any institution found to be engaging in such activity will attract a further penalty in the compilation of the results for the given indicator.
Inability to select one's own institution: We encourage the respondent to voice their genuine opinion on up to 40 institutions (10 domestic and 30 international). Respondents may not select their own institution.
Sign-up screening processes: The QS Intelligence Unit checks every request to participate in the QS Global Academic Survey through the academic sign-up facility for validity and authenticity. Only those who have passed the screening process will be contacted.
Sophisticated anomaly detection algorithms: The QS Intelligence Unit routinely runs anomaly detection routines on its survey responses. These algorithms are designed to detect unusual jumps in performance or

atypical response patterns. Responses are not meeting certain parameters are removed, and institutions showing unusual or unlikely gains are scrutinized in-depth.

Market-leading sample size: Only a large, concerted, and, therefore, detectable, effort to influence the results is likely to have an effect.

Academic integrity: Whilst there will be exceptions in any population, academics typically place great value on their "academic integrity". We believe the vast majority of our respondents give us their unfettered opinion of the institutions they consider strongest in their field, regardless of whether or not any external party has tried to influence their decision through direct or indirect means of communication.

International emphasis: The survey analysis is designed so that international responses are strongly favoured over domestic responses. Influencing international responses is a much more difficult task than affecting the opinion of domestic academics, who are more likely to be familiar with universities in their own country.

Three-year sampling: Responses are combined with those from the previous two years, eliminating the older response from anyone who has submitted in more than one year. This diminishes the influence of any changes in response patterns in the current year. To have a substantial impact, any effort to influence the results would have to be sustained for three years.

Watch List: The QS Intelligence Unit maintains a list of institutions which have qualified themselves for additional scrutiny in our process, known as the "Watch List". Any institution seen to be attempting to influence the outcome is automatically added to this list. When we conduct our analysis, we will examine responses in favour of Watch List institutions with particular care, to ensure that they receive no undue advantage.

QS Global Academic Advisory Board: The QS Global Academic Advisory Board consists of thirty esteemed members of the international academic community whose task is to uphold the integrity of the methodology behind any of the QS rankings. Executive members of the board include John O'Leary, Martin Ince, Ben Sowter and Nunzio Quacquarelli, the four originators behind the World University Rankings when it was first launched in 2004. Collectively, these executive members have over 50 years' experience in ranking universities.

3.4.2.1 Recent Amendments to the QS Reputation Indicators

QS adapted their Academic Reputation and Employer Reputation methodologies during 2015 (2016 edition), by adopting a five year historical data view instead of the three year historical view they used prior to 2015. The oldest data collected four and five years ago, weighs a half and a quarter, of the more recent ones (QS Quacquarelli Symonds Limited 1994 - 2017, 2017; Sowter, 2018). Bekhradnia (2017) critisizes the ammendment suggesting that recycling

unchanged responses over a period of five years means that it is possible that QS is counting votes of retired academics and employers. With regard to the Employer Reputation Survey, QS adopted an equal weighting (50%) attributed to international and domestic responses in the 2018 edition. Previously, international responses accounted for 70% and domestic responses 30%.

3.4.3 Discussion of QS Faculty Student Ratio Indicator

As illustrated in Table 3.3, 30% of the QS overall score is attributed to Faculty Student Ratio as a proxy for teaching quality (Bekhradnia, 2017). Despite technology, there is no substitute in conventional universities for face-to-face contact. Downing (2012) argues that even though faculty-student ratio is not a particularly sophisticated indicator of teaching and learning, it provides at least some measure of the amount of time and potential contact students have with lecturers and academic peers (Downing, 2013). Students value small groups and the opportunity to consult tutors (Sowter, 2015).

Huang (2012) points out that in addition to the difficulty of obtaining data, the definition of staff and student in each university is not consistent; sometimes the university might inflate the numbers of faculty, resulting in the indicator failing to reflect teaching quality and learning environment. In addition, Bekhradnia (2017) suggests that universities can appoint research-only staff to improve their student staff ratio which is supposed to be a proxy for teaching quality.

3.4.4 QS Discussion of Citations per Faculty Indicator

Citations in leading academic journals are a conventional measure of institutional research strength and the most common source of international academic comparisons. Dividing citation number by the number of staff/faculty considers institutional size. The staff number used is not restricted to research faculty; while factoring output by those involved in research, this precise data has proved difficult to collect but may constitute a future methodological enhancement (Sowter, 2015).

QS WUR analysed almost 13 million papers and 67 million citations for the latest QS WUR 2019 edition, as indexed by Elsevier's Scopus database (Griffin et al., 2018). Griffin (2018) points out that the average number of citations per faculty member has increased from 52

citations per academic, in the 2018 edition, to 60 citations per academic, in the 2019 edition. Similarly, the participating institutions increased their research output by about 12.1% (Griffin et al., 2018).

While the citation numbers are relatively objective data, using only average citations numbers can favour universities producing only a small body of papers within which a few were more often cited (Huang, 2011). The ratio of citation to staff in the Social Science filed is generally lower than that in the Science field as a result of various citation patterns practiced in different academic fields. This could result in a ranking bias toward specific academic fields (Huang, 2012).

3.4.4.1 Recent Amendments to the Citations per Faculty Indicator

The Citations per Faculty indicator has been subjected to a couple of changes in the past three years. A cap on the number of affiliates per paper was placed and initially set at 10 (in 2015/16) and then, after numerous objections, the cap was differentiated by field (in 2016/17). The number of citations were also normalised per field during the 2016/17 edition (Horseman, 2018, Sowter 2018; QS Quacquarelli Symonds Limited 1994 - 2017, 2017; Holmes & Siwinski, 2016). In the 2017/18 edition, QS excluded the number of citations accrued in the same year as the published ranking table. In addition, the citation window was extended from five to six years, whilst still retaining a five year publication window (QS Quacquarelli Symonds Ltd, 2017). Therefore, for the 2019 edition, QS counts the citations accrued from 2012 to 2016, generated by papers published from 2012 to 2017 (Griffin et al., 2018).

3.4.5 Discussion of International Students and International Staff Indicator

To function in the increasingly globalized environment, higher education institutions must continue to foster a commitment to internationalisation and make efforts to integrate the international dimension into key areas of operation (Gao, 2015). The QS methodology includes the number of staff and students holding an overseas nationality (QS Quacquarelli Symonds Ltd, 2017). Sowter (2015; para 5) points out the merits of including the proportion of international faculty and students as part of the QS methodology.

> *"The ability of an institution to attract, retain and compensate international faculty could be considered a measure of quality. The proportion of international faculty also provides an impression of institutional diversity and, perhaps, its global progressiveness".*

> *"The proportion of students from abroad is another factor that provides an impression of diversity and perhaps commitment to international students, and the provision of academic and other support".*

The latest version of the QS WUR show that 259 021 international faculty members are employed within the top 500 universities, which constitutes a year-on-year increase of 6.6% when compared with the results of the 2018 edition. Similarly, an increase in the proportion of international students from the 2018 to the 2019 edition is evident, with the top 500 institutions combined having almost 1.2 million international students (Griffin, 2018). Anowar et al. (2015) suggests that internationalised performance factors should also be considered such as international collaboration between universities or scholars.

3.5 Times Higher Education (THE) World University Rankings (WUR)

The latest Times Higher Education World University Rankings 2019 released in September 2018, has revealed the top 1,000 universities in the world. The 15th annual edition features more than 1 250 universities and represents 5% of the 20 000 or so, higher education institutions in the world. The ranking is based on 13 performance indicators clustered in five academic 'Pillars': 'Teaching', 'Research', 'Citations', 'Industry Income' and 'International Outlook' (Masterportal.eu, 2014). According to THE WUR, calculation of the rankings for 2018 was subjected to an independent audit by the professional services firm PricewaterhouseCoopers (PwC) (TES Global Ltd, 2018).

The Times Higher Education World University Ranking (THE WUR) was first published in 2003 by THE in cooperation with QS. In 2010, THE ended its cooperation with QS and started working with Thomson Reuters (Rauhvargers, 2013). In an attempt to improve the THE ranking system, Thomson Reuters carried out a global opinion survey to find out what higher education professionals and student consumers of rankings thought of existing ranking systems

(Adam & Baker, 2010). Consumers of rankings requested more information on all characteristics. This survey report also provided clear information on what indicators the consumers valued (Baty, 2014). The new methodology of THE's World University Rankings examines only a globally competitive, research-led elite group of institutions.

> *"Higher education is global. THE is determined to reflect that. Rankings are here to stay. But we believe universities deserve a rigorous, robust and transparent set of rankings – a serious tool for the sub-sector, not just an annual curiosity" (Mroz, 2009, p. 5).*

3.5.1 Discussion of the THE WUR Methodology

The Times Higher Education (THE) ranking excludes universities which do not teach undergraduates; are highly specialised (teach only a single narrow subject); have published less than 1 000 titles over a five-year period, and not less than 150 in any given year. Universities will also be excluded if 80% or more of their activity is exclusively in one of their 11 subject areas. THE used to partner with Thomson Reuters to obtain institutional data but has since moved this task in-house. The data collection is now carried out by a dedicated team of data analysts at THE (Elsevier, 2014).

Bookstein, Seidler, Fieder and Winckler (2010) analysed several indicators of the THE methodology. They found that the correlation between staff/student ratio 2007 and staff/student ratio 2009 is about 0.84. However, two definite subgroups are evident within the data. The first group represent a set of institutions whose scores stay relatively stable whilst the second group's scores change radically from year to year. This major year-to-year change is probably indicative of changes in definition, interpretation or data submission, not changes in organisational membership (Bookstein et al., 2010). One may suggest that all ratio based indicators are subject to changes in definition.

Table 3.5: THE WUR methodology (2018) (TES Global Ltd, 2018)

Criteria and weighting	How it is measured	Rationale for inclusion
Teaching: The learning environment (30%)	Academic Reputation Survey (15%)	The most recent Academic Reputation Survey (run annually) that underpins this category was carried out between January and March 2018. It examined the perceived prestige of institutions in both research and teaching. It examined the perceived prestige of institutions in teaching. The responses were statistically representative of the global academy's geographical and subject mix. The 2018 data are combined with the results of the 2017 survey, giving more than 20,000 responses.
	Ratio of Faculty to Students (4.5%)	The proxy suggests that where there is a healthy ratio of students to staff, the former will get the personal attention they require from the institution's faculty.
	Ratio of Doctoral to Bachelor's degrees awarded (2.25%)	We believe that institutions with a high density of research students are more knowledge-intensive and that the presence of an active postgraduate community is a marker of a research-led teaching environment valued by undergraduates and postgraduates alike.
	Number of doctorates awarded, scaled against the number of academic staff. (6%)	As well as giving a sense of how committed, an institution is to nurturing the next generation of academics, a high proportion of postgraduate research students also suggests the provision of teaching at the highest level that is thus attractive to graduates and effective at developing them.
	Institutional income scaled against academic staff numbers (2.25%)	This figure, adjusted for purchasing-power parity so that all nations may compete on a level playing field, indicates the general status of an institution and gives a broad sense of the infrastructure and facilities available to students and staff.
Research: volume, income and reputation (30%)	World's largest invitation-only academic reputation survey (18%)	This indicator is also informed by the annual Academic Reputation Survey and looks at a university's reputation for research excellence among its peers, based on the responses to our annual academic reputation survey.
	University research income, scaled against staff numbers and normalised for purchasing-power parity (6%)	Income is crucial to the development of world-class research, and because much of it is subject to competition and judged by peer review, our experts suggested that it was a valid measure.
	Research productivity - research output scaled against staff numbers. (6%)	We count the number of papers published in the academic journals indexed by Elsevier's Scopus Database per academic, scaled for a university's total size and also normalised for the subject. This gives an idea of an institution's ability to get papers published in quality peer-reviewed journals.
Citations: research influence (30%)	Citations made in the six years from 2013 to 2018 are collected, indexed by Scopus. (30%)	The citations help show us how much each university is contributing to the sum of human knowledge: they tell us whose research has stood out, has been picked up and built on by other scholars and, most importantly, has been shared around the global scholarly community. The data are fully normalised to reflect variations in citation volume between different subject areas.

Criteria and weighting	How it is measured	Rationale for inclusion
International outlook: staff, students and research (7.5%)	The ratio of International to domestic students. (2.5%)	The ability of a university to attract undergraduates and postgraduates from all over the planet is key to its success on the world stage.
	The ratio of International to domestic staff. (2.5%)	The top universities also compete for the best faculty from around the globe.
	The proportion of a university's journal publications that have at least one international co-author. (2.5%)	This indicator is normalised to account for a university's subject mix and uses the same five-year window as the "Citations: research influence" category.
Industry income: innovation (2.5%)	Research income an institution earns from industry, scaled against the number of academic staff. (2.5%)	A university's ability to help industry with innovations, inventions and consultancy has become a core mission of the contemporary global academy.

3.5.2 Discussion of the Times Higher Education Academic Reputation Survey as Part of the Teaching- and Research Pillars

As indicated in Table 3.5, Times Higher Education utilises an Academic Reputation Survey as an indicator in the THE methodology (TES Global Ltd, 2015). In the interests of transparency, THE made the results of the reputation survey public, oddly in isolation from the other rankings indicators. The results of each year's reputation survey are published as the Times Higher Education World Reputation Rankings (Baty, 2014). It examines the perceived prestige of institutions in both research and teaching (TES Global Ltd, 2015). The survey is based on subjective judgements of academics considered to be experts within their field (Begum, 2014). Baty (in University World News, 2018) mentions that the respondents are asked action-based questions to elicit more meaningful responses, such as: *"where would you send your best graduates for the most stimulating postgraduate learning environment?"* (University World News 2007-2018, 2018, p. para. 18).

The 20-minute questionnaire administered on behalf of THE by Elsevier, is distributed worldwide in 15 different languages based on an invitation only poll of experienced scholars, who offer their views on excellence in research and teaching within their disciplines (Baty, 2017; Rauhvargers, 2014; 2013). Academics involved in Arts and Humanities and Social Sciences published less frequently in journals than academics in hard sciences, which is the main reason why the Arts and Humanities and Social Sciences are mainly underrepresented in the data (Baty, 2014). In 2017, the best represented subject was the Physical Sciences (16% of the responses), followed by Social Sciences (15% of the responses). The Life Sciences, Clinical and Health, and Engineering each achieved 14% of responses, Business and Economics 13%,

Arts and Humanities 9% and Computer Science 5% (TES Global Ltd, 2018). According to THE, 19% of their responses come from North America, 33% from the Asia Pacific region, 27% from Western Europe, 11% from Eastern Europe, 6% from Latin America, 3% from the Middle East and 2% from Africa (TES Global Ltd, 2018).

Similar to the QS Reputation Surveys, the THE Academic Reputation Survey methodology has also been criticized. Altbach and Hazelkorn (2017) question the validity of obtaining opinions on the teaching ability of individuals who have never been in the classroom. In 2008, Harvey (2008) reviewed the THE WUR and essentially dismissed the trustworthiness and usefulness of the ranking system. Harvey (2008, p. 191) criticized the way ranking systems treat "missing values". The large proportion of missing information in the THE survey can distort the survey outcomes. The positional shifts by some institutions (annually), without any plausible explanation, raises questions regarding the reliability of the THE methodology and data interpretation/submission (Harvey, 2008).

Anowar et al., (2015) complains that the exact process whereby field experts are selected lacks transparency. Without transparency in all parts of the methodology, evaluating excellence is questionable. As mentioned earlier, Bookstein et al. (2010) detected statistical inconsistencies in the THE Academic Reputation Survey scores, when analysed from year to year. For example, the variance of the peer Life Sciences ranking is 0.048 from 2007 to 2008, but a full 0.104 from 2008 to 2009. However, some of this variance could possibly be attested to a change in the THE procedure (Bookstein et al., 2010).

3.5.2.1 Recent Amendments to the THE Academic Reputation Survey

THE used to outsource the administration of their annual Academic Reputation Survey to Thomson Reuters. However, as announced in late 2014, THE attained a new partner 'Elsevier' to assist them with the administration of the questionnaire.

3.5.3 Discussion of Citation Analysis as Part of the Research Influence Pillar

The indicator with the greatest individual influence is the citation analysis (30%) (TES Global Ltd, 2015). The generic technical problems using citation databases as an indicator for rankings

systems have been discussed earlier in this chapter on page two and three. Despite the criticism Baty (2013) argues that citation analyses show which research has made the most impact and which studies have been built on by other scholarly communities to expand collective understanding. Academics constantly stress the inclination of citation indices to favour an institution's size, English language publications, region and subject specialization (Huang, 2012; Ioannidis et al., 2007; Altbach, 2006). Baty (2013) suggests that normalising the data helps to reflect the variations in citation volume between regions.

3.5.3.1 Recent Amendments to the THE Citation Analysis Methodology

In addition to moving away from Thomson Reuters, with regard to the administration of the Academic Reputation Survey and attainment of institutional data, THE now draws research publication data from Elsevier's 'Scopus' Database. The aforementioned concludes THE's complete emancipation from Thomson Reuters (Elsevier, 2014). Elsevier is a world-leading provider of scientific and technical information, and Scopus is the world's largest abstract and citation database of peer-reviewed academic literature (Elsevier, 2014).

> *"The new database will allow THE to analyse a deeper range of research activity from a wider range of institutions than at present, including those institutions from emerging economies that account for a growing portion of the world's research output and which have shown a great hunger for THE's trusted global performance metrics. The change will enable THE to utilise SciVal Elsevier's research metric analysis tool to accommodate continuing innovation in the field of research performance" (TES Global Ltd, 2015).*

Ben Sowter in (Jobbins, 2014) agrees that Elsevier's Scopus database is a much larger database than that compiled by Thomson Reuters, especially when attempting to evaluate universities outside the very elite. The restructuring of these activities represents a major undertaking and is likely to lead to an initial set of results with increased volatility.

3.5.4 Discussion of the International Students, Staff and Faculty Pillar

The ability of a university to attract students and staff from across the world is key to global success (TES Global Ltd, 2015). Anowar et al. (2015) suggests that a higher proportion of international staff and students cannot always be seen a positive attribute. International student admission is not only concerned with the university. Political stability, government relations between the countries students are transferred to or from should all be considered when evaluating internationalisation (Anowar et al., 2015). Recently, as indicated on Table 3.5, THE employed a research collaboration indicator whereby the proportion of a university's journal publications that have at least one international co-author is assessed (TES Global Ltd, 2015).

Figure 3.1 shows the differences between the individual methodologies of the big three international rankings. All three of these systems use the weight-and-sum methodology (Soh, 2015). Soh (2015) explains that a weight-and-sum methodology is a set of indicators selected to fit the conceptualisation of a system and are chosen as an operationalisation of academic excellence with data gathered for these indicators. The indicator scores are then weighted, summed, and scaled (Soh, 2015). The QS Academic Reputation Survey (40%) along with the Employer Reputation Survey (10%) accounts for 50% of the total QS WUR score (QS Quacquarelli Symonds Ltd, 2016). THE employs a Teaching and Research Reputation Survey that contributes a third (33%) to the total THE WUR score (TES Global Ltd, 2018). The difference between the QS WUR and THE WUR's academic reputation surveys is that the THE's survey is restricted to a selected group of published researchers whereas QS allows universities to nominate potential respondents (Holmes, 2017).

3.6 Comparison of the Big Three (ARWU, QS WUR, THE WUR) Methodologies

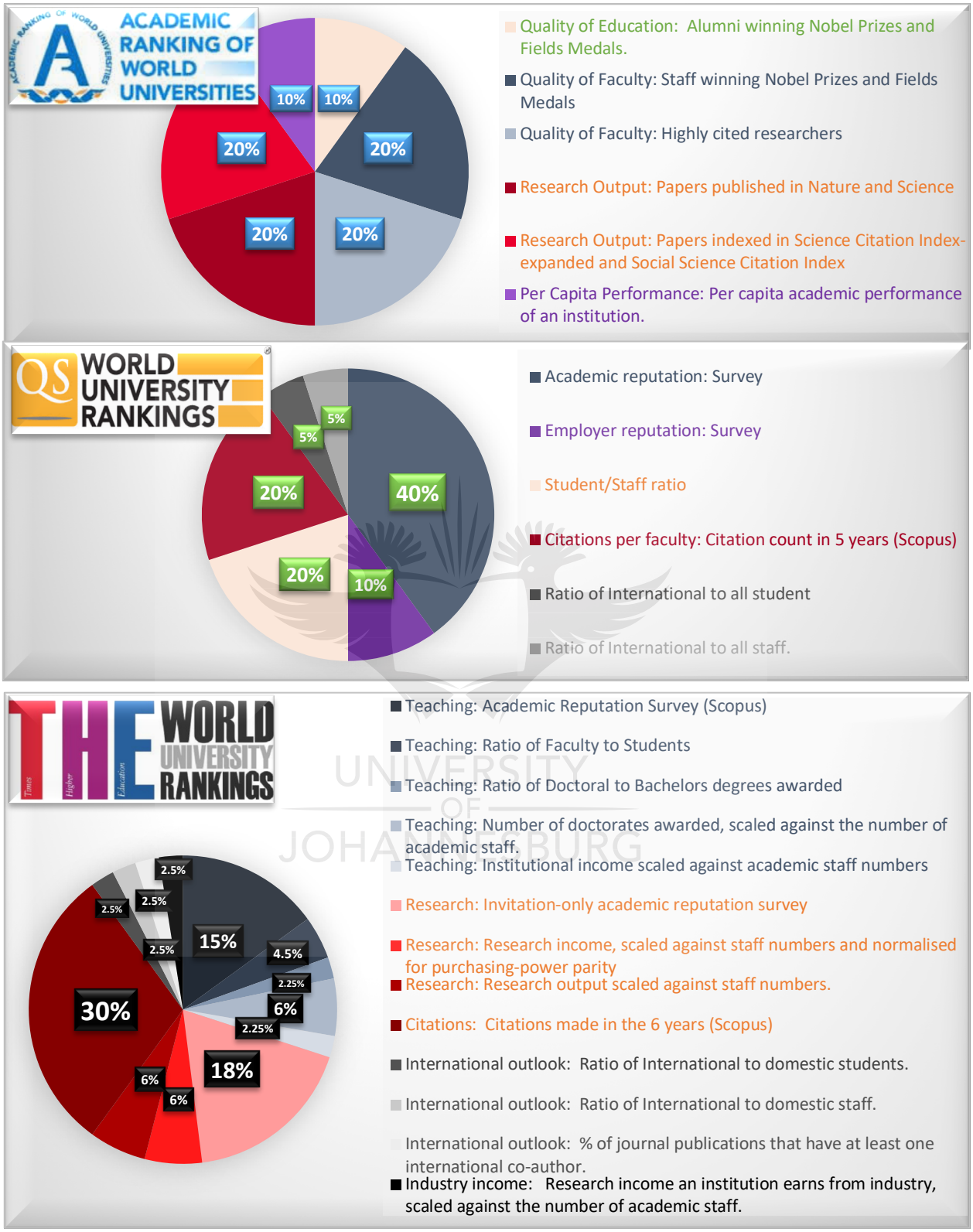

Figure 3.1: Comparison of the HERS Methodologies

The Shanghai Ranking's ARWU doesn't use reputational surveys at all, relying instead on metrics related to citations and publications and the numbers of alumni and faculty winning Nobel Prizes and Fields Medals (Redden, 2013). In a priori selected weights, the ranking favours universities for which the weights 'fit best' (De Witte & Hudrlikova, 2013, p. 342).

All three ranking systems make use of citation databases to evaluate research and/ or research impact (O'Malley, 2016). QS and THE utilises Elsevier's' Scopus database to collect citation data (Jobbins, 2014). The ARWU makes use of Nature and Science, Science Citations Index expanded as well as the Social Science Citation index to assess various aspects of research output (Huang, 2011). The ARWU also rely on data from Clarivate analytics to evaluate teaching via the Highly Cited Researchers list (Billaut et al., 2010). Both QS (20%) and THE (4.5%) to a lesser extent, use staff-to-student ratios as a proxy for teaching quality. QS (10%) and THE (10%) attribute higher scores to bigger proportions of internationalisation; THE includes the number of international collaborative publications to its 'International Outlook' 'Pillar' (QS Quacquarelli Symonds Limited 1994 - 2018, 2018; TES Global Ltd, 2017).

A big difference between these three is that the institutional data (number of academic staff) employed by ARWU is not provided by universities but obtained from national agencies such as ministries, national bureaus and university associations (ShanghaiRanking Consultancy, 2003). Notably, THE employs more indicators in its ranking procedure; like the number of Doctorates awarded scaled against the number of academic staff; the ratio of Doctorates awarded to Bachelor's Degrees awarded; Institutional income/ Industry income against the number of academic staff etc. but, on the downside, this can lead to probably statistically unsustainable small weighting percentages (Times Higher Education, 2017).

The three unique methodologies produce varying results (QS Quacquarelli Symonds Ltd, 2017). However, when the top ten universities were compared in 2017 (THE WUR 2018, QS WUR 2018 and ARWU 2017) seven universities appear in all three. These are Massachusetts Institute of Technology, Stanford University, Harvard University, California Institute of Technology and University of Chicago in the US, and the University of Cambridge and University of Oxford in the UK. With Stanford occupying the highest average, position (QS Quacquarelli Symonds Ltd, 2017).

3.6.1 Contemporary Research on HERS and their Rankings

Rankings include a small set of indicators, whose meaning in terms of overall education activity of universities is questionable (Saisana, D'Hombrea & Satelli, 2011). As discussed earlier in this chapter, proxies for education quality; like the Nobel and Field prizes (Billaut et al., 2010; De Witte & Hudrlikova, 2013; Ioannidis et al., 2007) student-staff ratios (Bekhradnia, 2017; Huang, 2012); proportions of international staff/students (Anowar et al., 2015) are all considered to lack validity and deemed unreliable by most analysts. Additionally, they have been inconsistent across various rankings (Saisana et al., 2011).

Various studies call into question and cast doubt on the statistical properties of the rankings (Bookstein et al., 2010; Harvey, 2008), irrespective of their substantive content, while others show that rankings systematically alter the representation in favour of large and/or established universities (Soh, 2015; Daraio et al., 2014). Anowar et al., (2015) critically analysed the construct validity of some of the indicators of multiple ranking systems. Both QS and THE reported strong construct validity with regard to their opinion surveys and moderate levels of citation analyses. ARWU also reported moderate levels for the citation analyses in the Nature and Science articles. However, ARWU, scored high levels of construct validity in the indicator of Quality of Faculty with Nobel/Field medal awards (Anowar et al., 2015). The overall score of the THE, and the reputation indicators obtained through survey responses, shows serious statistical problems when year-to-year shifts are examined in detail (Bookstein et al., 2010).

Soh (2015) analysed the THE criteria and discovered a high degree of multicollinearity between indicators. The problem of multicollinearity is that it signals that there is considerable overlap among the indicators, such that some of them are redundant and make the overall score unstable (Soh, 2015). Soh (2015) found that the Teaching and Research indicators have the largest amount of multicollinearity which implies that one of the measures could be a redundant measure of academic excellence. Surprisingly there was a lack of higher correlation between the Citation and Research indicators (Soh, 2015). This may suggest that high research productivity does not necessarily translate into publications in learning journals. The QS and the ARWU criteria are yet to be analysed.

Furthermore, Soh (2015, p. 13) suggest that because THE and QS have academic and administrative measures their overall score can be seen as a less 'pure' indication of academic

excellence. Both systems include students and staff in the indicators. As the academic achievement of the university depends to a large extent on the quality of students and teachers, these deserve more attention than have been accorded by the ranking systems. Kaychen (2013) analysed THE and ARWU and found that position in rankings is predominantly determined by underlying factors like age, scope, activity in hard sciences, university in U.S., English-speaking country, annual income, orientation towards research, and reputation. Universities may aspire to become world-class. However, they only have control over a limited amount of aspects like research and reputation while other institutions depend on historical indicators. Bowman and Bastedo (2010) tested the anchoring effect by examining THE data. They illustrated that rankings might influence assessments of institutional reputation.

Kaychen (2013) examined the existence of an underlying dimension (via a Principle Component Analysis) to the variables used in the ARWU and THE rankings. The results of the study show, 73.36 % of the variance of the ranking formed by the combination of the ARWU and THE rankings might be explained by six different factors. These factors include; activity in hard sciences, annual income ranking, if the university is from the US or an English-speaking country (excl. the US), a universities orientation toward research and its reputation.

Researchers like Sorz et al., (2015) and Dobrota, Bulajic, Bornmann and Jeremic (2015) address yearly data fluctuation. The THE Rankings in their current form have very limited value for the management of universities ranked below 50. This is because the described fluctuations in rank and score probably do not reflect actual performance, whereby the results cannot be used to assess the impact of long-term strategies (Sorz et al., 2015).

Dobrota et al., (2015) aims to overcome the yearly QS ranking instability and weighting subjectivity. A new weighting system based on a multivariate statistically and methodologically grounded course was established. The method resulted in a more stable and less uncertainty or sensitivity of ranking results. However, it is still subject to lots of methodological refinement. Sorz et al., (2015) compared year-to-year result fluctuations of the ARWU rankings and the THE, the ARWU seems to be more stable. Furthermore, a very low correlation between the ranks of THE and ARWU is evident, especially for the institutions ranked below 50 (Sorz et al., 2015).

Among other methodological propositions Daraio et al., (2014) presents an approach which would use an original and comprehensive database on European universities microdata integrated with bibliometric data on scientific production, and by applying recently developed techniques in efficiency analysis. De Witte and Hudrlikova (2013) suggests an endogenous weighting system where higher weights are given to outputs the university is relatively good at, and lower weights to outputs in which the university performs relatively less well. The weights are data dependent and potentially enhance the fairness of ranking for diverse (heterogenic) institutions. Limitations of the study include a lack of transparency and small changes in a variable may result in big changes in the ranking outputs. Goglio (2016) calls for a plurality of rankings when highlighting numerous stakeholders representing different needs and priorities, suggesting that HERS move away from the one-size-fits-all approach.

3.7 Summary

Chapter 3 encapsulated a review of the theoretical and operational methodologies used by the big three world university rankings (THE WUR, QS WUR and ARWU). Each ranking's background, methodology, the HERS motivation regarding the indicators they use, as well, as their most recent methodological amendments were explored. The chapter emphasize the intense scrutiny HERS have been subjected to since their inception.

The idea of ranking universities is not only criticized (Altbach, 2006), the ranking criteria and indicators are criticized, from a conceptual level (Bougnol & Dula, 2015; De Witte & Hudrlikova, 2013), to the very technical (Cram & Docampo, 2014; Van Raan, 2005). Some HERS executives engage with the higher-education community to improve the way they go about ranking universities (Rauhvargers, 2014). HERS executives have defended the validity of their participation criteria and choice of indicators, in addition to the procedures followed when producing indicator scores. Furthermore the HERS have acknowledged the shortcomings of the rankings exercise and the majority of these representatives have advised that rankings should not be seen as an end itself but as imperfect instruments to measure performance (Baty, 2017; Sowter, 2017).

University rankings are the subject of a paradox, the more social scientists and higher education experts on methodological grounds criticize them, the more they receive attention in policymaking and the media (Daraio et al., 2014). Most critics call for changes in methodology

(Kaychen, 2013; Huang, 2011), however, changes to the methodology will result in inconsistent yearly fluctuations that will also be scrutinised and remarked on (Soh, 2015; Sorz et al., 2015). It seems that the HERS find themselves in a bit of a 'Catch 22' situation regarding methodological refinement.

3.8 Conclusion

As some commenters have pointed out, HERS can only measure the tangible, quantifiable aspects of universities (Harvey, 2008; Altbach, 2006), resulting in an overreliance of research indicators, and an inability to accurately reflect teaching quality (Altbach & Hazelkorn, 2017). Chapter 3 has delineated and discussed the methodology and motivations behind the big three ranking systems. The consequences of the annual publication of rankings and the indicators the HERS employ to do so, will further be explored in the next chapter. Chapter 4 displays the nature and distribution of higher education systems across the globe and investigates which steps countries and universities are taking to compete in the international knowledge economy.

CHAPTER 4: THE INFLUENCE OF HERS AND ESTABLISHING WORLD-CLASS UNIVERSITIES

4.1 Introduction

In chapter, 2 and 3 the researcher reviewed some of the significant contemporary global phenomena influencing higher education, including Higher Education Ranking Systems (HERS). The different methodologies of QS, THE and ARWU are subject to multiple analyses and criticism from across the globe as discussed in the third chapter. Academic and academic leaders among other stakeholders report countless influences of the HERS and rankings on universities (Shastry, 2017). Some of the aforementioned influences are generic but a plethora of elements is unique to each institution, depending on its own economic, political and geographical circumstances and history (Marginson, 2013). The following chapter aims to identify and discuss some of the contextual challenges the rankings methodology has on institutions from different parts of the world.

4.2 Different Institution Types

Spring (2008) refers to four major interpretations of the process of educational globalisation, namely; 'World Culture', 'World Systems', 'Postcolonialist', and 'Culturalist' (Spring, 2008). A premise of 'World Culture' scholars is that all cultures are slowly integrating into a single global culture (Baker & Le Tendre, 2005; Ramirez & Boli, 1987). 'World Cultural' theorists feel that a western model of education is a worldwide cultural ideal that has resulted in the development of common educational structures and a common curriculum model (Ramirez & Boli, 1987). 'Culturalists' reject the view of 'World Culture' theorists that national elites select the best model of schooling from a world culture of education. They also question the idea that models of schooling are simply imposed on local cultures. These theorists believe that local actors borrow from multiple models in the global flow of educational ideas (Spring, 2008).

Yat Wai Lo (2014) suggests a useful way to map the global landscape of higher education is by using two of the four theoretical perspectives, 'World-Systems' theory and 'Post-colonial' analysis. The 'World Systems' approach sees the globe as integrated but with two major unequal zones. The core zone is the United States, the European Union, and Japan, which

dominates periphery nations (Spring, 2008). 'Post-colonial' theorists argue that Western schooling dominates the globe as the result of the imposition by European imperialism (Spring, 2008). They engage in discussions about a host of experiences connected to slavery and colonialism such as suppression, resistance, representation, difference, race, gender, and social class (Bailey, 2011; Crossley & Tikly, 2004).

The 'Post-colonial' conversation includes issues such as the primacy of the colonizer's language, religion, cultural histories, knowledge and other element of identity over that of the local people's (Bailey, 2011; Crossley & Tikly, 2004; Altbach, 1987). The colonial enterprise has left former colonies suffering from wounds which appear to deepen rather than heal (Bailey, 2011). Contemporary manifestation of 'Post-colonialism' is multinational corporations, and trade agreements (Spring, 2008). 'World System' theory and 'Post-colonial' analysis can explain how HEIs and higher education systems are stratified in accordance with their access to academic resources and how convergence and divergence are produced simultaneously to respond to global forces that are based on the hegemonic force of the centres over the peripheries (Arnove, 1980).

Altbach (2004) points out that almost all universities are European in structure, organisation and concept. The western model dominates international higher education. HEIs are not integrally linked to indigenous cultures. Even in countries like China, Ethiopia and Thailand, which were never colonised, follow western academic models (Altbach, 2004). For developing countries subjected to colonialism, higher education growth was generally slow paced, and in much of Africa and some other parts of the developing world, universities were not established until the 20th century (Altbach, 2004). "Colonialism, unequal trade and technological development has brought humanity closer to one another.

Today, numerous countries aim to produce world-class universities to increase their competitiveness, internationally (Wint & Downing, 2017). Yet a generic path to world-class does not exists between the colonizer and the colonised, between Africa and the US, or between China and the European powers" (Wang, 2009, p. 85).

4.3 The Global and Institutional Influence of HERS

Schmidt (2006) views rankings as a transnational policy discourse with national variants, emphasizing contextual aspects of policy transfer. The present study deals with aspects of the university, which are changing because of ranking participation. Many of the critiques, as discussed earlier (Kehm, 2014; Hazelkorn, 2013; Espeland & Sauder, 2007), stem from the idea that universities participating in HERS are changing the nature and functioning of the university. HERS appears to have triggered a 'reputation race' among higher education institutions, stimulating an array of stakeholders, particularly politicians, policy makers and university leaders to take decisions on a range of policy choices and major investments in higher education in their country (Wint & Downing, 2017).

Two mechanisms of reactivity are used to describe the effect of rankings on universities "Commensuration" and "Self-fulfilling Prophecies" (Espeland & Sauder, 2007). The former are described as the transformation of qualities into quantities that share a metric (It) shapes what we pay attention to, which things are connected to other things, and how we express sameness and difference" (Espeland & Sauder, 2007, p. 16). Commensuration prompts the redistribution of resources, the redefinition of work, and gaming (Espeland & Sauder, 2007, p. 33). "Self-Fulfilling Prophecies" include processes by which reactions to social indicators confirm the expectations or predictions that are embedded in measures or which increase the validity of the measures by encouraging behaviour that conforms to it" (Espeland & Sauder, 2007, p. 11). For example, self-fulfilling prophecies are used when a specific rank is explicitly referenced in institutional or governmental policy (Locke, 2014). The setting of goals will help to set important benchmarks that can drive performance even in countries situated in protective environments (Wint & Downing, 2017). Both aspects ('Commensuration' and 'Self-Fulfilling Prophecies') have been uncovered in universities and several higher education governing bodies (Lock, 2014; Yat Wai Lo, 2014; Hazelkorn, 2013).

HERS can be viewed as a surveilance mechanism that creates an environment where pressures are sometimes explicit but often subtle. Universites are forced to pay attention to numerous details, producing statistics that become routine, thus internalising outside control (Espeland & Sauder, 2007). Furthermore rankings open universities up to be held accountable by various constituants (Espeland & Sauder, 2007). It includes transparency and accountability with regard to finances, particularly in the case of publicly funded institutions, public accounting of

goals and results and government control over the performance of individual institutions or a system as a whole (Ordorika & Lloyd, 2013). Rauvargers (2013) report that universities benefit from improved data management practices such as improvements in student data, admissions information, annual university expenditures and infrastructure investments, improvement in campus facilities, student/staff exchange data, institutional income through commercialisation, staff information and internationalisation data.

Many universities have adapted their internal structure and culture in response to rankings (Espeland & Sauder, 2015; Hazelkorn, 2013; Espeland & Sauder, 2007), employing research units, strategies and university managers to analyse and benchmark performance in rankings (Altbach & Hazelkorn, 2017; Spicer, 2017; Yat Wai Lo, 2014). The European Universities Association (EUA) surveyed a number of EUA universities as part of their "Ranking in Institutional Strategies and Processes" (RISP) project which reported that 60% of the universities indicated that ranking play a part in the strategic planning process of their institutions (Wint & Downing, 2017).

In some cases universities have revised class sizes, departmental targets and merged some departments because university rankings systems reward low student/staff ratios and research productivity (Hazelkorn, 2014). One of the most common reactions to rankings has been the drive to publish in journals which the HERS use to analyse research output and citations (Hazelkorn et al., 2013). Publishing in journals listed in the Elsivier-Scopus database, now used by QS and THE, is a significant contributer to success in rankings (Wint & Downing, 2017) and even though the database includes new journals with a focus on including journals in more languages, English remains the primary publishing language. Consequently, it negatively affects universities in non-English-speaking countries in the rankings (Altbach, 2009). Some universities pay bonuses to academics for publishing in top tier journals (Wint & Downing, 2017).

Hazelkorn (2011) compared HEIs' responses to ranking systems from different countries. She reports remarkable similarities in the way they responded, the decisions they made and the reasons why they made those decisions despite their contextual differences. Rankings encourage and influence the modernisation and rationalisation of institutions, the professionalisation of services and marketisation of higher education, the research mission and fields of investigation, curriculum and disciplines, faculty recruitment and new

career/contractual arrangements, and student choice and employment opportunities (Hazelkorn & Ryan, 2013). Additionally, rankings influence decision-making, academic behaviour, resource allocation, internationally ranked journals, promotional criteria, organisational structure and institutional mergers along with a plethora of others as deliniated in chapters 1, 2 3.

Research suggests that academics and university management are intrinsictly linked to the reputation of their institution and will benefit from an improved rank (Schleef, 2006). Similarly, university management have been hired or fired because of ranking performance (Espeland & Sauder, 2015). Many rankings use the proportion of international academic staff and students as indicators for quality, coercing university leadership at all levels to increase international recruiting practices (Wint & Downing, 2017).

Espeland and Sauder (2015) explored the influence of law school rankings on faculty deans, and found that for the majority of them, rankings is a source of anxiety and many felt dismissive of rankings based on the methodology they employ. However the deans can't afford to ignore them due to the public and student perception they enjoy. Emphasis is put on the high importance that some university governing bodies and presidents place on the rankings which adds extra pressure on deans to improve their rank, resulting in deans feeling bound by a need to improve their ranking performance.

One dean remarked that with every decision made about personnel, curricula, school policies, and budgets, deans ask themselves, "What will this do to our ranking?" in addition to, "Is this best for our school?" The answers to these two questions often diverge, putting professional judgment and expertise against the effects of rankings (Espeland & Sauder, 2015, p. 107). Additionally, rankings have influenced changes in the way professional opportunities are distributed by determining the status of institutions so that faculty recruiters often consider rankings when recruiting academics (Espeland & Sauder, 2015). Additionally, many university leadership and policy makers consult ranking results and criteria to assist in the allocation of resources (Wint & Downing, 2017).

Universities allocate funds to areas that are more likely to produce higher rankings, which leads to increased budgets for natural science subjects to the detriment of humanities and the social sciences because most ranking systems overemphasize the citation impact of the natural

sciences, medicine and engineering (Rauhvargers, 2014; Hazelkorn et al., 2013). Similarly, to try to enhance their ranking, universities will sometimes increase spending on building up attributes and offerings, which they hope, will push them up the table (Spicer, 2017).

Moreover, Universities use rankings to collaborate with institutions considered in the same league as themselves (Espeland & Sauder, 2007). It includes the formation of strategic alliances and exclusive university networks such as LERU (the League of European Research Universities) or Universitas 21 (a global network of research-intensive universities for the 21st century) (Kehm, 2014). Likewise, Hazelkorn (2013) points out that several universities in the US (Florida/Arizona), benchmarked top ranked universities and used these as performance measurement systems to match academic salaries. In the latest QS WUR 2019 Supplement, Sowter (2018) points out that many countries, including Brazil, Denmark, China, Japan, Malaysia, Singapore, Russia, Kazakhstan, Chile, Netherlands, Thailand have consulted the QS Rankings to inform policy for various reasons. As pointed out in chapter 1, the Netherlands and Denmark use rankings to inform immigration policies (Rauhvargers, 2014). Similarly, Russia and Macedonia have specifically recognised the qualifications of universities in the top 300 and top 500, in either the QS, THE or ARWU rankings, respectively (Wint & Downing, 2017).

The media is another significant stakeholder in the rankings game. The power of mass media is increasing as a result of the ICT revolution and social networking, higher education is an active area of mediatization and universities use social networking like Facebook and Twitter as effective marketing tools which further reinforces the power of HERS (Scott, 2013). Nowadays, rankings are big news and the media are a constant source of anxiety for university management. Espeland and Sauder (2015) show interview exerpts of how university management are scrutinised by the media when they have dropped in rank. Consequently more resources are distributed to marketing and 'brand management' which invariably adds to increased financial pressure on institutions and students (Scott, 2013). An aspect which is already being transformed by the forces of marketisation (Hazelkorn & Gibson, 2017; Scott, 2013).

An overarching consequence to ranking universities, relating to one of Espeland and Sauder's (2007) mechanisms contributing to institutional reactivity "Commensuration", is that the relative generic methodologies employed by HERS results in a drive for uniformity in policies

and practices to improve ranking indicators (Wang et al., 2013). Resulting in a phenomenon known as Isomorphism, whereby the lower ranked universities attempt to imitate the higher ranked ones (Kehm, 2014).

4.3.1 The Influence of Rankings on Policy

Perhaps, the strongest influence of rankings is on national policy, described as the intensification of the development of policy objectives to improve global competitiveness and performance (Hazelkorn & Gibson, 2017; Hazelkorn & Ryan, 2013; Hazelkorn, 2013; Altbach & Salmi, 2011; Salmi, 2009; Dill & Soo, 2005).

Gornitzka (2013) suggests three ways national traditions are accomodating the changes brought on by rankings:

- institutions channel the transnational policy scripts leading to converging national policies,
- they may act as buffers that isolate national policies from external influences,
- or they may filter the transnational policy scripts, meaning that the respective changes are nationally specific.

Rankings strongly influence the behaviour of higher education institutions because their presence in rankings heightens their national and international profile and reputation which obliges universities to continiously improve or maintain their rank (Wint & Downing, 2017). The influence of rankings is suggested by the significant increase in excellence initiatives, since the debut publication of the Shanghai Ranking's ARWU, attesting to the growing interest of national governments in the development of world-class universities (Salmi, 2009). Policy reform in reaction to rankings have been adopted in over 30 countries across the globe (Hazelkorn & Gibson, 2017). Many of them openly state their objective to improve the standing of universities within the rankings and/or use the indicators of rankings (Hazelkorn & Gibson, 2017). The most generously funded initiatives are in France, China, Singapore, South Korea and Taiwan (The Economist, 2016).

Many of the policy initiatives finance elite institutions to achiever further success whilst 'second-tier' institution budgets are progressively squeezed (Wint & Downing, 2017). A

multitude of initiatives are evident. For example, in 2013 while other ministries in France experienced spending cuts, the higher education sector saw significant increases, with even more funding allocated to research institutions (Hazelkorn & Ryan, 2013). The French gowernment is planning a merger of 19 existing institutions, in an attempt to have a university to rival Harvard and MIT. The 'Paris-Saclay' project has an initial funding of 7.5bn Euros for an endowment, buildings and transport links (Spicer, 2017; Hazelkorn & Ryan, 2013). Similarly, during the last decade, Germany saw major policy reform and increased funding. In 2005, the German Initiative for Excellence was launched in response to their relatively poor showing in various rankings. The second phase of the initiative was rolled out in 2012 with €2.7bn to fund 45 graduate schools, 43 clusters of excellence and 11 future development strategies in 44 universities by 2017. In 2010, the proportion of the annual budget dedicated to higher education was at an all-time high (Hazelkorn & Ryan, 2013).

In 2013, Russian president Vladimir Putin initiated a method to increase the competitiveness of the leading Russian universities in the global higher education market. The objective of 'Project 5-100' is to have five Russian universities listed in the top 100 of the World University Rankings by 2020. Additionally, the programme attempts to boost international enrolment, particularly from Asian and African regions (QS Asia News Network, 2018; Spicer, 2017). Similarly, Nigeria's 2/200/2020 vision aims to have at least two institutions among the top 200 universities in the world rankings by 2020 (Hazelkorn & Gibson, 2017). Japan aspires to have 10 Japanese universities in the world top 100 by 2023 (Spicer, 2017). Furthermore, the Finnish government invested large amounts into merging three institutions to create a "Nordic MIT", with the aim of improving its standing in the rankings (Spicer, 2017).

During 2016, China announced a new scheme, named World Class 2.0, with the aim of establishing six of its universities in the leading group of global institutions by 2020 (Sharma, 2015). The initiative will boost China's top nine universities as well as create hubs for international collaboration with other universities. Additionally, the Chinese government has set a target for 42 of its universities to be included in leading international rankings by 2050 (Griffin, 2018). This comes after the previous Chinese government's eight year initiative which saw billions of US dollars being poured into elite universities to improve research performance and global ranking (Bothwell, 2016). In East Asia, some countries like Thailand and Malaysia encourage a handful of elite universities to pursue world-class status in the rankings. Some of the alternative approaches adopted by countries include Australia preferring to strengthen their

whole higher education system instead of a few elite universities by allocating resources more evenly to different parties in the higher education sector to achieve a system wide revitalisation (Sheil, 2010).

Even though, the majority of these initiatives are focused on building world-class universities, they are predominantly focused on growing research capacity. The global knowledge economy seems to favour research over teaching but so do the HERS (Hazelkorn & Gibson, 2017; Altbach & Salmi, 2011), reinforcing the "publish or perish" phenomenon in academia (Hazelkorn, 2013). Therefore, HERS can be seen as a rationale for the emergence of a performance culture in higher education. The relationship between higher education institutions and societal actors is also transforming at a regional level (Hazelkorn & Gibson, 2017). Hazelkorn and Gibson (2017) point out that the EU identified higher education as an area in need of in depth restructuring and modernisation if Europe is not to lose out in the global competition in education, research and innovation. It is difficult to establish whether policy reform stems from ranking ambitions if not explicitly referenced, but one can assume that rankings implicitly shape the policy discourse by playing a "powerful hegemonic function" (Hazelkorn & Gibson, 2017).

4.3.2 Manipulating the Methodologies and Gaming

As soon as you create a ranking system, you also create a whole system for gaming the rankings (Spicer, 2017; para. 7). Universities can employ numerous strategies to improve performance in rankings. Some strategies improve the university in various ways or strategic directions whilst other initiatives solely with rank in mind. There exists a desire to control rankings, to make them feel less like an imposed fate and to reassert some of the pressure brought on by rankings (Espeland & Sauder, 2015). All rankings have vulnerabilities, which can be exploited by universities in an attempt to improve their rank (Wint & Downing, 2017). A minimum investment of resources can create a questionable rise in the rankings (Holmes, 2017). Many instances of universities misrepresenting institutional data, recruiting staff and/or survey responses in an attempt to artificially improve ranking have been identified (Holmes, 2017, Pérez-Peña & Slotnik, 2012). A handful of universities have been caught 'gaming the system' by purposefully misinterpreting rules, cherry-picking data or lying (Pérez-Peña & Slotnik, 2012, para. 2).

Pérez-Peña and Slotnik (2012) highlighted a number of examples involving the US News and World Report Best Colleges Rankings, Iona College acknowledged that they had lied for year about test scores, graduation rates, retention rates, acceptance rates, alumni donations and their faculty-student ratios. Similarly, Claremont McKenna also acknowledged to artificially inflating SAT scores (Brody, 2012; Pérez-Peña & Slotnik, 2012). Additionally, in 2008, Baylor University offered financial rewards to admitted students to retake the SATs in an attempt to increase their average score (Pérez-Peña & Slotnik, 2012; Rimer, 2008).

Recently, King Abdulaziz University made impressive strides in various rankings by offering part-time contracts to dozens of highly cited researchers requiring them to put their university (King Abdulaziz University) as the secondary affiliations and thus aquiring a massive number of citations from a rankings perspective (Holmes, 2017). The progress slowed down as the major HERS removed the factor of secondary affiliation from their bibliometric parameters (Shastry, 2017).

In 2017, Chennai's VEL Tech University was ranked the top university in Asia according to the citations indicator in the THE Asia Ranking (regional ranking) eventhough the university did not do very well in other rankings (Shastry, 2017). After some analyses Ben Sowter (2017) Head of the QS Intelligence Unit concluded that the results is due to one researcher citing himself excessively over the last two years, in a journal where he served as associated editor (Holmes, 2017). The regional modification applied by THE can lead to a disproportionate score if it collects a large number of citations for a relatively small number of papers (Holmes, 2017). The vulnrability of the QS WUR is the reputation surveys. In recent years some Latin American and Asian universities have received academic and employer scores which is much higher than the scores obtained for any othe indicator (Holmes, 2017). These institutions include Kyoto University, Nanyang Technological University (NTU), the University of Buenos Aires, the Pontifical Catholic University of Chile and the National University of Colombia (Holmes, 2017).

In 2016, QS found Trinity College (Dublin) guilty of breaching the rankings guidelines by sending letters to graduates and academics reminding them of the QS and THE evaluation (reputation surveys). Trinity College defended their letters by stating that they did not attempt to influence the response of the participants, but merely to increase awareness and survey participation (O'Sullivan, 2016). Similar, O'Sullivan (2016) recalls an earlier incidents,

involving University College Cork, whereby the the president sent her/his staff a letter proposing that they send to their international contacts to make them aware of the QS Reputation Survey.

4.3.3 The Geography of Rankings

More than a decade ago Salmi and Saroyan (2007) analysed the distribution of the top 100 institutions in the ARWU and THES-QS ranking systems and deduced that the majority of them are English speaking, had adopted key aspects of the American research university model and are located in countries that conduct national rankings of their own institutions, such as Australlia, Canada, China, Japan, the United Kingdom and the United States. Similarly, Hoyler and Jöns (2013) analysed the different geographies of higher education by examining the perfomance of countries in the ARWU and QS WUR. During the analyses they concluded that the highly uneven geographies of higher education that the geographies mark particular nodes in the global circulation of knowledge, namely those that conform best to Anglo-American publication cultures and are seen as drivers of economic growth (Paasi, 2005).

In 2013 the ARWU and THE top 100 global higher education market was still strongly skewed towards the North American, and European universities (Wedlin, 2014) and in the latest QS WUR 2019 the top 100 of the ranking lists are still dominated by the US and UK universities (Griffin et al., 2018), with 33 and 18 universities in the top 100, respectively. The latest THE WUR show 42 US universities and 12 UK universities in the top 100 (TES Global Ltd, 2017). However, when the entire list of ranked institutions are considered, the QS WUR have a slightly more diverse composition with only one-third of the top universities originating in North America (Wedlin, 2014). The QS WUR 2019 indicate a larger proportion (26.5%) of Asia/Pacific universities in the total ranking of 1011 institutions. “A proportion that would have been wildly optimistic when the rankings were first published” (O'Leary, 2018, p. 20).

Another important finding outlined by Hoyler and Jöns (2013), is that ARWU and QS produced distinctive geographies that reveal a wider tension in the knowledge-based economy between established centers in Europe and the United States and emerging knowledge hubs in Asia Pacific. The new knowledge hubs and networks in Asia Pacific and elsewhere also indicates a growing importance of transnational processes in global higher education. Hoyler and Jöns (2013) argue that Anglo-American academic hegemony may be challenged by two

competing developments: a potential shift to East Asia and a proliferation of different tiers of knowledge hubs across the world.

> *"These two processes are currently leading to dynamic changes in the global knowledge economy and provide an important context in which the production, circulation and interpretation of world university rankings need to be situated" (Hoyler & Jöns, 2013, p. 54).*

At the heart of the challenge posed by the east, are the rapidly improving Chinese universities (Bothwell, 2018). The rise of China are reflected in the most recent THE WUR 2019 with a Chinese university becoming the top institution in Asia for the first time under the current rankings methodology (Bothwell, 2018). Overall, 72 Chinese universities are represented in the THE WUR 2019, up from 63 last year, and seven feature among the elite top 200. However, while Asia has improved its standing, the Anglo-Saxon dominance at the top of the latest rankings (top 10 and top 20) are still evident in the Shanghai Ranking's ARWU, THE WUR and QS WUR (Bothwell, 2018; QS Quacquarelli Symonds Limited, 2018; ShanghaiRanking Consultancy, 2018). The global rankings have geographic implications, as they produce rankings not only of universities, but indirectly also of countries and regions, revealing differences among them (Erkkilä, 2014; Hazelkorn, 2014). The actual effects are conditioned by the institutional context and traditions (Marginson, 2013).

4.3.4 Developing Nations in the Rankings Discourse

The trend to create or enhance globally competitive (world-class) universities can be traced not only in developed countries but also in developing ones (Yudkevich, 2015; Sharma, 2015; Marginson, 2013; Wang et al., 2013).

> *"Universities must ensure they remain relevant in the rapidly changing world of global education whilst remaining highly competitive in the prevailing global economy and increasingly globalised job market" (Wint & Downing, 2017, p. 232).*

Many emerging nations set targets to assert themselves among world-class universities that are based on position in the global rankings (Sharma, 2015; Yudkevich, 2015; Altbach & Salmi,

2011). Additionally, Marginson (2013) argues that the top universities in the world rarely use the term 'World-Class University' suggesting that the term is mostly used as an aspirational term by developing nations and is synonymous with high rank. Governments dedicate massive funding initiatives in the quest to establish world-class universities, including developing nations like Nigeria (as eluded to earlier) who has made headlines with their 2/200/2020 initiative.

Furthermore, these initiatives are predominantly, aimed to improve the research performance of a select number of institutions (Altbach & Hazelkorn, 2017; Hazelkorn & Ryan, 2013). As Hazelkorn and Gibson (2017) suggest the global knowledge economy seems to favour research over teaching. Even though rankings do not provide an empirically verifiable material basis for identifying "world-class" institutions, as they are norm-referenced and not criterion referenced, they do indicate the relative achievements of institutions (Salmi & Altbach, 2011). As a result, there is a drive for uniformity in policies and practices (Kehm, 2014; Wang et al., 2013), creating a homogenising effect on institutions (Altbach & Salmi, 2011; Sadlak, 2010), as it fails to consider HEI's contextual differences in missions and goals and challenges (Altbach et al., 2009).

Universities in developing countries face an abundance of difficulties when participating in HERS (Matthews, 2012). These institutions have to react to the demands of their society with limited resources (Visser & Sienaert , 2013). As developing nations aim to improve access to tertiary education and focus on teaching and support mechanisms to optimise student success (Matthews, 2012; Ndoye, 2008). This inevitably implies a lesser freedom to pursue an open research agenda (Visser & Sienaert, 2013; Ndoye, 2008). Yudkevich (2015) warns that fixating on rankings may mean that a university engages less with the local community and is less concerned with local needs. The national realities and development challenges of underdeveloped societies require differentiated higher education systems to serve the various educational purposes (Sadlak, 2010).

However, higher education institutions have to adapt to increased global and regional competition, to more diversity and greater student mobility of students and staff, particularly from Asia and the West (Sharma, 2015). Institutions are also expected to rise to expectations from employers and from the public at a time of rapid technological change and unpredictable job futures (Sharma, 2015). Should a university underperform in the rankings it might affect

the public's view of the institution which may result in an accumulation of negativity and generate public pressure (Espeland & Sauder, 2015; Salmi & Saroyan, 2007). This creates a mismatch in higher education priorities making them susceptible to the influences of the HERS (Ndoye, 2008). This can result in some universities reconsidering their missions to cope with immediate ranking pressure at the expense of long term goals (Yudkevich, 2015).

Rankings affect universities in emerging and developing economies significantly but they are also a reality affecting the majority of universities with a strong regional focus. Hazelkorn and Altbach (2017) argue that mid-range national, regional and specialist universities, colleges, their stakeholders and governments should quit the rankings game, as the resources required or the substantial changes in mission or academic programmes necessary to make significant gains are not worth it. The overwhelming majority of universities should be focused on demographic demand, societal and economic requirements (Altbach & Hazelkorn, 2017).

Sheil (2010) suggests that it is futile for universities from developing countries and/or smaller nations to challenge the superior status of the world's top universities. The research performance culture driven by rankings is expensive to maintain and the top institutions have considerable human and financial resources at their disposal as well as strengths in science, engineering and medicine which is less common for universities in developing nations (Altbach & Hazelkorn, 2017). Additionally, research suggests that participating in rankings result in more international collaboration at the expense of regional collaboration (Altbach & Hazelkorn, 2017; Wint & Downing, 2017).

Universities in poorer countries do not have the same financial freedoms which can lead to a reduction in financial support for students, increasing the effectiveness of educational delivery and altruistic initiatives like community engagement. Universities may be inclined to raise student fees to the detriment of prospective students and inreasingly focus on third-stream income opportunities, furthering the marketisation of higher education. The internationalisation indicators used by rankings favour quantity over quality (Altbach & Hazelkorn, 2017). By going abroad, students and faculty members might weaken their local social networks which can be vital for ensuring access to jobs and/or new positions (Bilecen & Van Mol, 2017). Furthermore research stars tend to get preferential treatment and higher salaries (Bilecen & Van Mol, 2017).

In contrast, Okebukola (2013) suggests that the competative nature of rankings can inspire improved quality and research capacity in developing areas and Downing (2013) points out that ranking outcomes and criteria may serve as invaluable tools of self-reflection, benchmarking and information sources to aid strategic planning and foster regional collaboration (Downing, 2012). Furthermore, rankings may be beneficial in countries where formal quality control measures are lacking, as rankings often serve in place of formal accreditation systems in countries where such accountability measures do not exist (IHEP, 2009).

Whilst there are numerous arguments against and for developing nations participating in rankings, many universities from developing regions nonetheless have a presence in the rankings along with smaller mid-range universities from developed nations. With the growing number of university rankings and their various sub-rankings (as pointed out in chapter 2), not taking the same consentual approach as THE and QS, the decision to "participate" is slowly being taken out of the universities' hands. The researcher argues that even if some universities quit the THE WUR and QS WUR, they will still be ranked on a global stage in many regional, subject and world rankings, including ARWU which have increased the number of ranked institutions.

Consequently, it is increasingly important for all institutions to be aware of the influences rankings have or may have on participating universities. Some influences do not stem from rank participation but can be attributed to the increasing globalised higher education landscape characterised by internationalisation, marketisation, managerialism and mass higher education which is supported by the world economy and facilitated by ICT technologies (discussed in chapter 2). For example, many of the governmental initiatives like China's first initiative predates the HERS (Hazelkorn & Gibson, 2017). However, researchers and higher education experts suggest that the annual publication of rankings intensifies and/or alters some of these generic influences, whilst bringing about additional influences (Wint & Downing, 2017). As Espeland and Sauder (2007) suggested, influences are both subtle and direct. The most significant intensification of existing influences has to do with the homogenization of higher education institutions to place research performance above teaching (Altbach & Hazelkorn, 2017; Yat Wai Lo, 2014; Hazelkorn & Ryan, 2013; Altbach & Salmi, 2011).

The ways universities have reacted to rankings has been described in the literature review together with the various reactions to the influence of rankings and HERS from overarching, aspirational goals to internal academic recruitment policies. Researchers have captured many of the influences HERS participation has had on universities from a system and institutional perspective. Additionally, they have contributed valuable insight into the interpersonal and inter-institutional effects of ranking on university management. This study aims to confirm these findings as well as explore additional influences through a number of in-depth interviews with university management.

Furthermore, universities function within their own regional and national economic and socio-political circumstances and higher education policies, which determine various amounts of gowernmental autonomy (Bilecen & Van Mol, 2017; Downing, 2012). These will mediate or inflame the universities' aspirations to be internationally competitive (Altbach & Hazelkorn, 2017; Paasi, 2005). An additional aim of the present study is to address whether the influence of rankings conditions university management in different regions or countries in the world, and if so, where do the significant differences lie.

4.4 Summary

The chapter starts off with a brief review of the different knowledge production models manifested in 21st century. Eventhough a handful philosophical approaches exist, the western education model continues to dominate international higher education wether it was coerced by colonialism or adopted. A recent global phenomena affecting universities, whether they were colonised or not, have been the increased governmental policies to create universities that can effectively compete in the global knowledge economy (Wint & Downing, 2017; The Economist, 2016; Wang et al,. 2013; Altbach & Salmi, 2011; Marginson, 2007).

These initiatives are also present in developing countries, many of which were subjected to colonialism with predominantly young institutions. Clearly, the path to world-class is not generic (Marginson, 2013; Wang et al., 2013), Marginson (2013) points out that in today's context the real meaning of "World-class" is aligned with presence in ranking. Additionally, if one considers the ecosystem in which the university develops, which involves the relationship between the university and their government, the structure of university management, quality assurance mechanisms, financial resources, articulation mechanisms, access to information

location and digital and telecommunications infrastructure (Wang et al., 2013). It is therefore, safe to assume that rankings will not have a generic effect on all institutions.

Previous work from researchers such as Espeland and Sauder (2007) were referenced when discussing the influences of HERS and their rankings on university strategy, management and staff. Moreover, the discussion encompasses efforts universities have adopted to game the rankings. The chapter concludes the literature review by highlighting the influences ranking participation exert on countries and higher education institutions from developed and developing nations, globally.

4.5 Conclusion

Chapter 4 provided more focus to the influences experienced by universities as a result f participating in the ranking systems. The chapter noted a number countries changing their policies on higher education and immigration in response to rankings. The aforentioned trends are evident in developmental countries as well, affecting the natural growth of young and under-developed higher education systems.

4.6 Scholarly Contribution

The present study will add to the growing literature of HERS by identifying all the influences universities experience as a consequence of being ranked. Higher education experts estimate that only about 5% to 6% of the world's universities are ranked globally (Griffin et al, 2018). This group of universities are experiencing a plethora of influences (good and/or bad) associated with global rankings (Erkkilä, 2014). HERS brought about unprecedented direct and indirect influences on universities, their students, staff, leadership, governing bodies, media, national government and societies (Wint & Downing, 2017; Hazelkorn & Ryan, 2013). Previous work suggests that the prestige associated with a high rank comes at a price (Espeland & Sauder, 2015). Most of the influences identified and confirmed by this study are not overt pressures on institutions but rather self-generated by institution, leadership, academics or government to improve rank.

The researcher believes university management across the globe needs to be aware of these influences and their potential impact, not only on individual institutions but also on their higher

education system, the academic community, government and global higher education. The analyses confirm most of the previous findings whilst uncovering new aspects to be added to the current body of knowledge. However, all influences and obstacles experienced by universities are not filtered through the same lens, or in this case, regional and/or national context (Altbach, 2004). The study is one of the first to successfully compare the intensity of the influences felt by institutional leaders from different regions of the world. Commonalities and differences faced by institutional leaders from four regions of the world are evidenced through a detailed discussion. The researcher chose a suitable methodology to enabled such a comprehensive analysis and feels that the thesis will be useful in research as the influences of HERS to university strategy. Even though, HERS has been around for 25 years, the topic is not overly researched and is yet to move into a sophisticated research area. The following chapter will unpack the methodological approach used to generate the findings.

CHAPTER 5: RESEARCH DESIGN AND METHODS

5.1 Introduction

Chapter 5 outlines the use of a mixed method research design in order to address the aim of the study, which is to explore and compare perceptions of institutional leaders on the influence of HERS and their rankings, on their work life and their institution's strategy. The aspects that comprise the research methods such as sampling, data collection and data analysis are explained together with their suitability to the aim and objectives of the study. The chapter concludes with ethical issues that were considered when undertaking the research.

5.2 The Research Design

The researcher utilized a mixed method methodological design. The premise of a mixed methodology is the ability to combine the strengths of both qualitative and quantitative methods (Creswell 2015; Cameron, 2011). Mixed method research is still in adolescence, but is nonetheless a growing area of methodological choice for many academics and researchers from across a variety of discipline areas (Cameron, 2011; Leech & Onwuegbuzie, 2009). Mixed methodology is in the process of developing a distinct identity, as compared with the other major research communities of researchers in the social and human sciences, mixed methods has been adopted as the de facto third methodological movement (Creswell, 2012; Teddlie & Tashakkori, 2010).

The mixed method design used in this study emulates Creswell's exploratory sequential design (Creswell, 2015) with one method following the other sequentially. The data collected and analysed from one phase of the study (i.e., quantitative/qualitative data) are used to inform the other phase of the investigation (i.e., qualitative/quantitative data) (Creswell, 2015; Teddlie & Tashakkori, 2010; Onwuegbuzie & Johnson, 2006). Chen (2006) conceptualizes sequential mixed method designs as theory driven evaluations by adopting the 'switch strategy' by first applying qualitative methods to uncover program theory of stakeholders and then using quantitative methods to assess the theory and the 'contextual overlaying strategy' by using qualitative approaches to collect contextual information for facilitating the interpretation of quantitative data or reconciling findings.

This study used predominantly qualitative methods as a tool for exploration to address the first research objective - exploring the influences HERS, and their rankings, exert on universities directly and indirectly. Before addressing the second part of the study with predominantly quantitative methods and comparing the experiences and opinions of institutional leaders from South Africa, South East Asia, Australia and the Arab Gulf regarding the extent of the rankings related influences on their institution (in the third phase). The researcher contends that a combination of the methods was instrumental in both research objectives and the overall aim.

5.3 Considerations when Deciding on a Research Design

Teddlie and Tashakkori (2010) lists a number of contemporary issues with mixed method research approaches, one of which, has to do with specific research design frameworks or typologies. Mixed method scholars have presented a plethora of frameworks, some with overlapping and divergent components and/or different labels/names (Leech & Onwuegbuzie, 2009). Therefore, the researcher considered the purpose of the research, the researcher's worldview, and concerns about inference quality when selecting a research design (Teddlie & Tashakkori, 2010).

5.3.1 Purpose of the Research

As mentioned, the researcher considered a mixed method design because he believed that both the quantitative and qualitative data, together, would provide a better understanding of the research problem and aim of the study than either type by itself (Creswell, 2009). However, the overarching reasons for employing such a design are:

- Triangulation: this allows for greater validity in a study by seeking corroboration between quantitative and qualitative data.
- Completeness: using a combination of research approaches provides a more complete and comprehensive picture of the studied phenomenon.
- Offsetting weaknesses and providing stronger inferences: many authors argue that utilising a mixed methods approach can allow for the limitations of each approach to be neutralised while strengths are built on thereby providing stronger and more accurate inferences (Bryman, 2006).

Greene, Caracelli and Graham (1989) suggest researchers use mixed method designs. The purpose of mixed method research is to triangulate results and to clarify or corroborate results as a development study. It allows utilisation of the results from the first phase to inform the second to seek new perspectives or contradictions within existing theories, or to extend breadth and depth of a topic of inquiry, through use of mixed methods.

5.3.2 Theoretical Perspective

Researchers are urged to position their research within a paradigm or worldview (Doyle, Brady & Byrne, 2009). Teddlie and Tashakkori (2010) define a paradigm as a worldview, together with the various philosophical assumptions associated with that point of view. The four commonly agreed worldviews are postpositivism, constructivism, transformatism and pragmatism (Creswell, 2015). One of the main critiques regarding mixed method research has to do with finding a rationale for combining qualitative and quantitative data in the face of seemingly incompatible paradigms (Hall, 2013). The argument is that logical positivism, predominantly used in quantitative studies is objective, whereas the qualitative (constructivist) inquiry is subjective (Creswell, 2015). Guest, MacQueen and Namey (2012) suggest that the aformentioned assertion is a false dichotomy. Admittedly, the two designs have different strengths, a quantitative design is more appropriate in certain contexts than a qualitative design and vica versa. However, the division between quantitative and qualitative methods are by no means absolute or mutually exclusive.

Guest et al. (2012) summarise a few aspects to counter the prevailing narrative regarding the use of quantitative and qualitative research.

- The majority of qualitative research methods are employed to generate hypotheses, whilst quantitative methods are predominantly used to test hypotheses. Guest et al. (2012) argue, that countless hypotheses, in the past, have been generated by quantitative methods and that it is also entirely possible to test hypotheses with qualitative methods.
- Both designs (quantitative and qualitative) can be employed to address the context of a study and explain reasons behind phenomena.
- Quantitative studies are seen as objective and specific in nature whereas qualitative studies tend to be viewed as subjective and/or holistic. However, a focused monomethod qualitative

study can be specific in scope, whereas complex statistical analyses such as structural equation modelling, can be more holistic in nature.

- Qualitative data are often quantified when analysed, to group data into themes, inherently making the findings more objective.
- Quantitative studies may become more subjective when interpreted. Social desirability bias may occur when interpreting quantitative data, which refers to the way a research's context and personal characteristics influence the way surveys and observational studies are interpreted.
- Some researchers maintain that qualitative methods like interviews are unique in the sense that they elicit data that are "from the participants' perspective". However, a structured questionnaire asking the participants how they feel should also be considered information from the participant's perspective.

Johnson and Gray (2010) argue that the majority of leaders in the field are advocating some form of philosophical pragmatism. Pragmatism has gained considerable support as a stance for mixed method researchers (Hall, 2013; Greene & Hall, 2010; Johnson & Onwuegbuzie, 2004) and can be seen as the paradigm in which this study anchors itself.

Pragmatism recognizes the existence of the natural physical world as well as the emergent social and psychological world that includes language, culture, human institutions and subjective thought (Creswell, 2015; Johnson & Onwuegbuzie, 2004). Pragmatism views current truth, meaning, and knowledge as tentative and changing over time. What is obtained on a daily basis in research should be viewed as provisional truths (Johnson & Onwuegbuzie, 2004). Pragmatism refers to an interface/bridge between philosophy and methodology (Greene & Hall, 2010). Patton (2002) defines pragmatism as the aim to supersede one-sided paradigm allegiance by increasing the concrete and practical methodological options available to researchers and evaluators. Such pragmatism means judging the quality of a study by its intended purposes, available resources, procedures followed, and results obtained, all within a particular context and for a specific audience (Patton, 2002). It has made a major contribution in eradicating the epistemological dualism of objectivity versus subjectivity (Cameron, 2011). The two methodological principles to multi-method research that distinguish it from other research approaches are:

- The rejection of the either-or at all levels of the research process
- Subscription to the iterative, cyclical approach to research

This embodies the discussion of pragmatism as the bridge between philosophy and methodology (Teddlie & Tashakkori, 2010).

5.3.3 Conceptual Aspects to Consider

De Waal (2001) suggest that mixed methods logic of inquiry includes the use of induction (or discovery of patterns), deduction (testing of theories and hypotheses), and abduction (uncovering and relying on the best of a set of explanations for understanding one's result). One should consider several dimensions when conducting mixed method research (Creswell, 2012; Teddlie & Tashakkori, 2010; Johnson & Onwuegbuzie, 2004). Mixed method research can mix the quantitative and qualitative approach to a study at any stage during a study (Johnson & Onwuegbuzie, 2004; Creswell et al., 2003). "Time" can be seen as an important dimension, and the approaches can be carried out concurrent and sequentially (Plano Clark et al., 2003).

Another important dimension is whether one wants to take a critical theory approach or a less explicitly ideological approach (Teddlie & Tashakkori, 2010). Greene and Hall (2010) describes integrated mixed method research designs such as those in which methods intentionally interact with one another during the course of the study, and as a result, offer more varied and differentiated design possibilities. However to be considered a mixed method design, the results have to be mixed and integrated at some point. For example, a qualitative phase can be used to inform the quantitative phase sequentially or concurrently the results must at a minimum, be integrated with the interpretation of the findings (Johnson & Onwuegbuzie, 2004). Integration at the level of data analysis is an important aspect of becoming proficient in mixed method research (Cameron, 2011).

Keeping these conceptual issues in mind, the researcher opted to use a mixed method research approach that resembles several designs or typologies proposed by various mixed-method researchers. The design is similar to what Creswell (2009) may describe as an exploratory sequential mixed method approach. The approach advocated by Creswell (2012) and Greene

et al. (1989) is two phased, and the idea is that the results of the first method can help develop or inform the second method (Greene et al., 1989).

5.4 The Exploratory Sequential Mixed Method Design

The Exploratory Sequential Design, explores a research problem with qualitative methods (literature review and in-depth interviews), during the first phase, because all aspects of the research problem is not yet known and because the population is understudied (Creswell, 2015). This method is well suited to the current studies because university ranking systems are young and dynamic and just a handful of studies have gauged the influence of ranking participation on the institutions involved, especially with a focus on the internal functioning of the universities in question. After the aforementioned qualitative exploration phase, the researcher identified categories and relationships, to direct the data collection in the second phase. The qualitative outcomes (themes and subthemes) were used alongside aspects identified in the literature review to develop a questionnaire. The questionnaire was employed to test the important variables and triangulate emergent theory, identified during the first phase. During the third phase, the researcher used the outcomes garnered from the questionnaire to produce exemplar case studies to compare the influences experienced by different regions.

Little or no studies have assessed the perceived influence of the HERS, and, therefore, no measurement instruments were available. The Exploratory Sequential design was more than appropriate to address the aim of the study.

5.4.1 Phase 1 (Qualitative Interviews)

The researcher conducted in-depth interviews to gain a broader understanding of the participant's experience. The data, from both the literature review and the interviews, unearthed hidden themes or slumbering variables that informed the second (quantitative) phase of the research.

5.4.1.1 Phase 1 - Instrument (In-depth Interviews)

Interviews were used to collect qualitative data during an in-depth interview that allows a participant the time and scope to talk about their 'lived-experiences' (Myburgh & Strauss,

2015). This method of interviewing ‘‘does not use fixed questions but aims to engage the interviewee in conversation to elicit their understandings and interpretations’’ (Liamputtong & Ezzy 2005, p. 332). Kvale (1996) suggests that interviews allow the researcher to understand something from the participant's point of view and to uncover the meaning of their experiences. The researcher believes that the interviews elicited rich information about the participants' experiences with HERS. The disadvantage of conducting interviews is that anonymity is not easily assured; moreover, it is expensive and time-consuming (Zohrabi, 2013).

The researcher/interviewer facilitated the flow of information from the participant (Myburgh & Strauss, 2015). The researcher stated the purpose of the interview before commencement. Furthermore, the researcher conducted the interview in an informal manner making use of active listening approaches when clarifying responses. When the interviewees stopped revealing new information (data saturation point), the researcher finished interviewing new participants (Myburgh & Strauss, 2015). Additionally, the researcher recorded the interaction and took field notes to ensure triangulation of data. The researcher recorded the interviews verbatim; the audio was transcribed, coded and interpreted to produce overarching themes.

5.4.1.2 Phase 1 - Sample

The researcher conducted the first phase of the research with a select group of individuals from various countries and institutions in order to generate a conceptual framework.

A purposive sample was administered, to include participants with experience in line with the aim of the research (Sampling Modelling and Research Technologies Incorporated, 2011). A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study. Purposive sampling is also known as judgmental, selective, or subjective sampling (Sampling Modelling and Research Technologies Incorporated, 2011). The researcher targeted members of the members of university management (VC, DVC, Directors, Dean and Head of Departments) of Higher Education institutions from universities ranked in either the Shanghai Ranking's (ARWU), QS Rankings or THE Rankings. The researcher decided to select these participants as they have experience as academics and university managers.

These participants are well versed in matters regarding the strategic direction of their institution, the resources they utilise and the obstacles that potentially impede progress. The participants are knowledgeable regarding the influences the rankings exert on decision-making at a high strategic level as well as lower levels as they interact with middle management and academics. They provided the rich contextual information needed to identify whether ranking participation has influenced the way their institution operates as well as in what way. Additionally, the researcher interviewed several high level employees from the HERS (QS and/or THE). The two population samples provided a holistic comprehensive understanding of the influences rankings exert on the participating institutions.

The researcher interviewed 25 individuals of which 21 were university leaders (VC, PVC, DVC, Dean, Director, HoD), and four employed by HERS. Two interviewees were from universities in the United Kingdom, three interviewees are from South African universities, four interviewees from universities in the Arabian Gulf, five interviewees from Australian universities and seven from South East Asian universities. Additionally, the researcher interviewed four 'Rankers' (employees from HERS).

Table 5.1: Country of interviewees

Region	No. of Interviewees in Country	No. of Interviewees in Region
South Africa	3	3
Arabian Gulf		4
United Arab Emirates	3	
Bahrain	1	
Australia	5	5
South East Asia		8
Indonesia	3	
Malaysia	3	
Singapore (1 Ranker)	2	
UK (3 Rankers)	5	5
Total	25	25

The majority of the interviews were conducted with participants from leading universities in South East Asia, Australia and the Arabian Gulf. Three of the four rankers are employed in the UK.

Table 5.2: Title/Post of interviewees

Title	No. of Interviewees
Ranker	4
Pro Vice Chancellor	4
Dean	3
Vice Chancellor	1
Deputy Vice Chancellor	7
Vice President	1
President	2
Head of Department	3
Total	25

A large proportion of the interviewees are Pro Vice Chancellors (4) and Deputy Vice Chancellors (7).

5.4.1.3 Phase 1 – Analyses and Interpretation

The results from the (first) qualitative phase were used to build or inform the second (quantitative) phase (Creswell, 2015). The interview transcriptions were read multiple times to gain familiarity. Each line of enquiry prompted its method of interpretation (Coffey & Atkinson, 1996). With the open-ended interview questions, one gets a true sense of how the participants feel (Coffey & Atkinson, 1996). The interviews were thematically coded utilising an emergent coding process; themes and categories were therefore developed with the interpretation of the recorded interviews, not beforehand (Saldana, 2009). Interchangeable or generic codes were grouped together to produce categories. Similarly, the categories emerging from the analyses constructed broad themes (Saldana, 2009). The researcher emulated Saldana's 'codes to theory model' to develop theory from raw data. Chapter 6 provides an in-depth look at how the researcher went about analysing the interview transcriptions and how Saldana's codes to theory model guided the analysis.

5.4.2 Phase 2 (Quantitative Questionnaire)

A questionnaire was designed from the results of the (categories and themes) first phase to test important variables and relationships, identified during the first phase of the study (Zohrabi, 2013). The themes, therefore, guided the inclusion of various items in the questionnaire. The researcher used a taxonomy affiliation as a basis for identifying comparison groups (Plano

Clark, Guttman, Hanson & Creswell, 2003). The questionnaire collected quantifiable data from a relatively large number of participants.

5.4.2.1 Phase 2 - Instrument (Questionnaire)

A questionnaire is particularly useful when the research involves large groups, when the research involves participants who are difficult to access and confidentiality can be assured as participants can complete the questionnaire anonymously (Myburgh & Strauss, 2015). Questionnaires are time-efficient, cost efficient, and can be sent to a large group of people simultaneously (Zohrabi, 2013). The questionnaire was hosted online, self-administered and distributed via email to university leaders. Two of the disadvantages of such a questionnaire are relatively low response rates and if any misunderstandings arise, or if there are any vague questions, the researcher is not available to clarify them (Zohrabi, 2013).

Some aspects of the questionnaire, garnered information about the formal or direct presence of ranking related criteria in strategic planning documentation or performance metrics, other aspects gauged the participants' awareness of informal or indirect influences of the rankings on decision-making practices as well as strategies to improve rank in the short term. Furthermore, the questionnaire inquired about the interpersonal influences of rankings on academics, along with more holistic questions about the existence and influences of rankings in general.

The study retrieved 168 fully and partially completed questionnaires. The researcher decided to discard responses that were not completed past the biographical section (Section A) of the questionnaire. After cleaning the data, the researcher utilised 86 completed questionnaires in the final analyses. The questionnaire consisted of 65 items compiled from aspects identified in the literature review, as well as the themes and subthemes, which emerged from the qualitative interviews. The questionnaire employed a five-point Likert scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = Strongly Agree) to gather data. The researcher distributed a link to the questionnaire (via email) that enabled the researcher to broaden the scope of the study to various parts of the world.

5.4.2.2 Phase 2 - Sample

The researcher broadened the scope of the study to incorporate participants from numerous institutions, internationally. The purposive sample helped the researcher gather useful data and information that would not have been possible using probability sampling techniques, which require more formal access to lists of populations (Lund Research Ltd, 2010). The respondents must have been employed by institutions ranked in either the QS, THE or the Shanghai Ranking's ranking system at that time. The sampling focused on those university leaders (VC, DVC, PVC, Deans, Directors, Vice Deans and Head of Departments) willing to participate in the research.

The researcher is aware that the purposive sampling technique is open to selection bias, especially non-response selection bias, the type of bias that happens when some people fail to respond to a survey (Lund Research Ltd, 2010). It is possible that only those actively working with ranking information would participate in the research. Those working with rankings will have extensive knowledge of whether certain influences occur within their institution than those in other parts of their institution. One of the advantages of a mixed-method approach is that the weaknesses of one is offset by the other. Two separate collection phases and approaches are used to triangulate the information mitigating the embedded biases associated with each (Creswell, 2009).

Table 5.3: Age of questionnaire respondents

Age group	Number of Responses	Percentage of Respondents
30-35	9	10.5
36-40	8	9.3
41-45	11	12.8
46-50	11	12.8
51-55	13	15.1
56-60	18	20.9
61+	16	18.6
Total	86	100.0

It was noted that nearly 40% of the questionnaire sample are older than 56 years, a product perhaps of the post seniority of the participants.

Table 5.4: Country of questionnaire respondents

Country	Number of Responses	Percentage of Respondents
Australia	10	11.6
Bahrain	3	3.5
Canada	1	1.2
Fiji	1	1.2
Hong Kong	4	4.7
Indonesia	1	1.2
Kazakhstan	3	3.3
Malaysia	4	4.7
New Zealand	1	1.2
Austria	1	1.2
Philippines	3	3.3
Russian Federation	1	1.2
Saudi Arabia	1	1.2
Slovakia	1	1.2
South Africa	38	44.2
Thailand	1	1.2
UK	2	2.3
United Arab Emirates	5	5.8
USA	1	1.2
Total	86	100.0

Just over 43% of the respondents work in South African institutions and 11.4% work at institutions in Australia.

Table 5.5: Years participating in either QS WUR, THE WUR or Shanghai Ranking's ARWU

Years	Number of Responses	Percentage of Respondents
0	1	1.3
1-5	32	40.5
5-10	31	39.2
10-15	15	19
Total	79	100.0

More than 58% of the respondents are employed by institutions which have been participating in HERS (QS, THE and ARWU) for more than 5 years.

5.4.2.3 Phase 2 – Analysis and Interpretation

The researcher used the Statistical Package for Social Sciences (SPSS) version 21 (IBM Corp, 2012) to conduct the data analyses. Descriptive statistics (means standard deviation, skewness and kurtosis) identified the broad nature of the data. Most of the quantitative interpretations was analysed by simple frequency analyses. The analyses enabled the researcher to distinguish,

which influences were felt most frequently or intensely and which ones were not as common. In addition, the frequency analysis provides support for the outcomes of the qualitative interviews.

5.4.3 Phase 3 (Regional Comparisons)

In the third and final phase of the study, the researcher grouped some of the participants into groups to conduct regional comparisons.

5.4.3.1 Phase 3 - Instrument

The researcher used specific statistical techniques to compare the differences between regions (groups). The outcomes of the statistical comparisons are considered along with regional-specific exerts identified in the interview phase (Phase 1) and cast against a backdrop of contextual literature and rankings data to produce four exemplar case studies.

5.4.3.2 Phase 3 - Sample

The analyses include regional comparisons of participants from Australia, South Africa, Arabian Gulf and South-east Asia.

Table 5.6: Number of responses from regions selected to produce case studies

Name of Region	Number of respondents	Percentage of respondents
South Africa	36	52.2
Arab Gulf	9	13
Australia	11	15.9
South-East Asia	13	18.8
Total	69	100

Respondents from South African universities form the biggest sample 52.2%, followed by the South East Asian respondents (18.8%) and the Australian respondents (15.9%).

5.4.3.3 Phase 3 – Analysis and Interpretation

To conduct regional comparisons of the survey results, the researcher administered the Kruskal-Wallis non-parametric assessment. The Kruskal-Wallis is a distribution-free test used when the assumptions for ANOVA are not met (Statistics Solutions, 2018). The Kruskal-Wallis test identifies significant differences on a continuous dependent variable by a categorical independent variable (with two or more groups). In this case, the researcher assessed significant differences of every item (65) in the questionnaire by region (Australia, South Africa, Arabian Gulf and South-east Asia). The Kruskal-Wallis test is suitable for this study, as the data for the dependant variables is not normally distributed and the independent variable consists of more than two independent groups (Lund Research Ltd, 2018). The test is rank-based and used with ordinal data (Lund Research Ltd, 2018).

The Kruskal-Wallis test assesses whether there is significant differences (significance $p \leq 0.05$) between two or more of the independent variables (regions). If the test determines a significant, difference between two groups then it rejects the null hypothesis. Upon rejection of the null hypothesis of this test, one would conduct post-hoc multiple pairwise comparisons for stochastic dominance or median difference (Dinno, 2015). Dunn's test is the appropriate procedure following a Kruskal–Wallis test and determines between which of the specific groups the significant differences occur (Lund Research Ltd, 2018; Dinno, 2015). The Dunn test can simply be understood as a test for median difference.

The quantitative analyses of the regional comparisons revealed 24 statistically significant differences, as analysed by the Kruskal-Wallis test, between regions. The median differences, as analysed by the Dunn test, are interpreted and triangulated, where possible, with interview exerts from those regions or conversations about the region. A short literature study completes the short regionally focused case study, as the differences in outcomes are often influenced by contextual nuances.

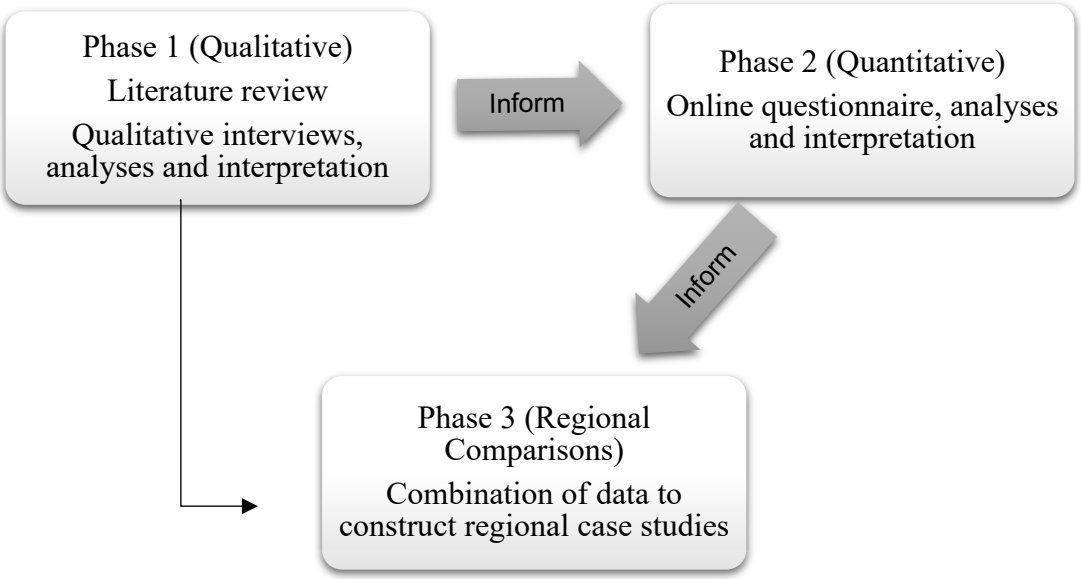

Figure 5.1: Graphical representation of the exploratory sequential design

5.5 Legitimation (Inference quality)

Research needs to be defensible to the research and practice communities for whom research is produced and used (Onwuegbuzie & Johnson, 2006). In a mixed-method design the different ways of gathering information can supplement each other and hence boost the validity and dependability of the data (Zohrabi, 2013; Bryman, 2006). Because inferences are made in research studies regardless of whether the associated interpretation is inductive or deductive in nature, Teddlie and Tashakkori (2003) contend that the concept of "inference" transcends quantitative and qualitative research and recommends that *inference quality* be used as the mixed research term for validity. Onwuegbuzie and Johnson (2006) argue that an inference is more than an outcome and proposes a 'legitimation' model whereby checks are executed at every stage of the research process. The legitimation model proposed by Onwuegbuzie and Johnson (2006), include nine typologies (See table below).

Table 5.7: Legitimation typologies as proposed by Onwuegbuzie & Johnson (2006) combined with the researcher's actions when conducting the study

Legitimation type	Description	The Researcher's approach
Sample Integration	The extent to which the relationship between the quantitative and qualitative sampling designs yields quality meta-inferences.	The researcher used the same criteria to sample qualitative and quantitative data. The qualitative sample can be seen as a small subset of the quantitative sample.
Inside-Outside	The extent to which the researcher accurately presents and appropriately utilizes the insider's view and the observer's views for purposes such as description and explanation.	For both the qualitative and quantitative phase, one or more outsiders were consulted to review the results.
Weakness Minimization	The extent to which the weakness from one approach is compensated by the strengths from the other approach.	The researcher combined the strengths of interviews as a tool of discovery, and the strengths of the questionnaire as a tool of assessment.
Sequential	The extent to which one has minimized the potential problem wherein the meta-inferences could be affected by reversing the sequence of the quantitative and qualitative phases.	The researcher is confident that should the sequencing have been reversed, he would predominantly have drawn the same conclusions.
Conversion	The extent to which the quantitizing or qualitizing yields quality meta-inferences.	The researcher interpreted the qualitative data extensively before using it to build the quantitative phase.
Paradigmatic mixing	The extent to which the researcher's epistemological, ontological, axiological, methodological, and rhetorical beliefs that underlie the quantitative and qualitative approaches are successfully (a) combined or (b) blended into a usable package.	As mentioned, the study has a purely qualitative section and a purely quantitative section with its own set of interpretations.
Commensurability	The extent to which the meta-inferences made reflect a mixed worldview based on the cognitive process of Gestalt switching and integration.	The researcher switches between qualitative and quantitative viewpoints and provides an overarching viewpoint when the exemplar case studies are produced.

Legitimation type	Description	The Researcher's approach
Multiple Validities	The extent to which addressing legitimation of the quantitative and qualitative components of the study result from the use of quantitative, qualitative, and mixed validity types, yielding high quality meta-inferences.	The researcher is confident that the exemplar case studies provide a truer view of the reality than each phase on its own.
Political	The extent to which the consumers of mixed methods research value the meta-inferences stemming from both the quantitative and qualitative components of a study.	The researcher is the only one conducting the study and adopts a pluralism of perspectives to strive to generate practical theory or results that consumers naturally will value.

The researcher consulted the aspects of legitimation, as outlined by Onwuegbuzie and Johnson (2006), to inform and examine the study. The researcher finds this approach useful as it enables one to view the study as a whole and to incorporate the design-specific standards to articulate particular evidence, knowledge, principles and technical skills.

During the qualitative phase, the researcher incorporated a second reader to triangulate codes and categories. Similarly, to validate the data collection instruments in the quantitative phase, the researcher consulted regularly with questionnaire design experts to ensure that the questionnaire is appropriately developed from the literature and qualitative themes and categories. Additionally, a pilot study was conducted to improve data collection methods, and to consider comments or criticisms made by the participants in order to improve the effectiveness of the main investigation.

5.6 Ethical Concerns

The researcher has to behave in an ethical manner when conducting research. There are three objectives in research ethics. The first objective is to protect participants; the second is to ensure that the research is conducted in a manner that serves the interests of individuals, groups and/or society. The third objective is the examination of research activities and projects for ethical soundness (Walton, 2018).

The researcher gained ethical approval from the University of Johannesburg and the Faculty of Education Research Ethics Committee to conduct the study and assure that all ethical issues are in order. The researcher provided all participants with a background, aim and nature of the

study beforehand, additionally; the researcher notified the interview participants verbally, to make sure participants were fully informed. Interview participants were informed that their participation was voluntary. Interview participants signed informed-consent forms based on the above information provided on the project information sheet. When transcribing the data, the researcher removed any references to names of individuals, schools or universities. The only instance where the researcher refers to specific universities is in literature reviews and ranking information already in the public domain. The researcher is the only one in possession of the audio and/or video recordings and will keep the information private and confidential. The researcher will save the participant information, interviews and transcripts on a personal hard drive to ensure confidentiality. These will be destroyed at an appropriate time in line with data protection rules and protocols.

Survey participants were informed that the project had no risks associated with their participation and that confidentiality and anonymity were ensured. Respondents were informed of the nature of the study and the intention to aggregate data to support the group comparisons beforehand. Furthermore, the survey participants had the option to opt-out of the questionnaire at any point and time and their participation was voluntary. Following these processes ensured that the participants were able to make an informed decision on whether or not to participate in the research. The data and statistical outputs are kept confidential on a hard disk drive. At no point will the universities or the participants be identified. The findings will be used to inform policy and decision making pertaining to ranking participation.

5.7 Conclusion

In this chapter, I have outlined the research paradigm, design type and research methods that were used to identify and compare the influences on HEI brought on by rankings. A discussion on using mixed-method research paradigms was conducted and the reasons provided, as to, why a mixed-method design is suitable for the study. Furthermore, the researcher encapsulates the ethical procedures used to conduct the study, data analyses and reporting. In the next chapter the researcher provides a detailed description of how the data were analysed.

CHAPTER 6: FROM CODES TO CATEGORIES TO THEMES (QUALITATIVE PHASE)

6.1 Introduction

This chapter provides a detailed account of the process followed to analyse the qualitative data. It begins by explaining the coding process by employing the methods as described by Coffey and Atkinson (1996) and Saldana (2009). Subsequently, the emergent themes and categories are highlighted and interpreted. These themes and categories represent the results of the interview phase. Raw data is included in the interpretations to illustrate and substantiate the results further and setting up an "audit trail" (Merriam, 2009). Additionally, the raw data give an account of the voices and perspectives of the role players. In so doing, the researcher provides a description that reflects the participants' perspectives as suggested by Henning, Smit and Van Rensburg (2004).

6.2 The Coding Process

The researcher conducted in-depth interviews to elicit responses from the interviewees. The interviews are used to collect qualitative data during an in-depth interview that allows a participant the time and scope to talk about their 'lived-experiences'. This method of interviewing *''does not use fixed questions but aims to engage the interviewee in conversation to elicit their understandings and interpretations'' (Liamputtong & Ezzy 2005, p. 332).* The researcher recorded the interviews and thereafter meticulously read the transcribed interviews to familiarise himself with the content. The responses were thematically coded by utilising an emergent coding process (Saldana, 2009). The emergent coding process means that the themes and categories were identified with the interpretation of the recorded interviews, not beforehand.

> *"Codes are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study. Codes usually are attached to 'chunks' of varying size—words, phrases, sentences, or whole paragraphs, connected or unconnected to a specific setting. They can take the form of a straightforward category label" (Miles & Huberman, 1994, p. 56).*

The codes reflect the reading and re-readings of the data, in which the details of the interview and the author's own emergent concerns interact (Coffey & Atkinson, 1996).

The raw data were coded in two cycles, the first cycle of codes was generated by utilising Saldana's "Structural coding" method (Saldana 2009, p. 66). Structural Coding applies a content-based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question used to frame the interview (MacQueen, McLellan-Lemal, Bartholow & Milstein, 2009). Structural coding serves as a labelling and indexing device to locate particular data related to a larger data set (Saldana, 2009). The researcher coded the data manually by reading through the transcripts. The researcher read each transcript several times to ensure that he did not overlook any meaningful segments of data. The researcher tried to stay as close to the intended meaning of the participant as possible. Below is an extract as an example of the first cycle of coding.

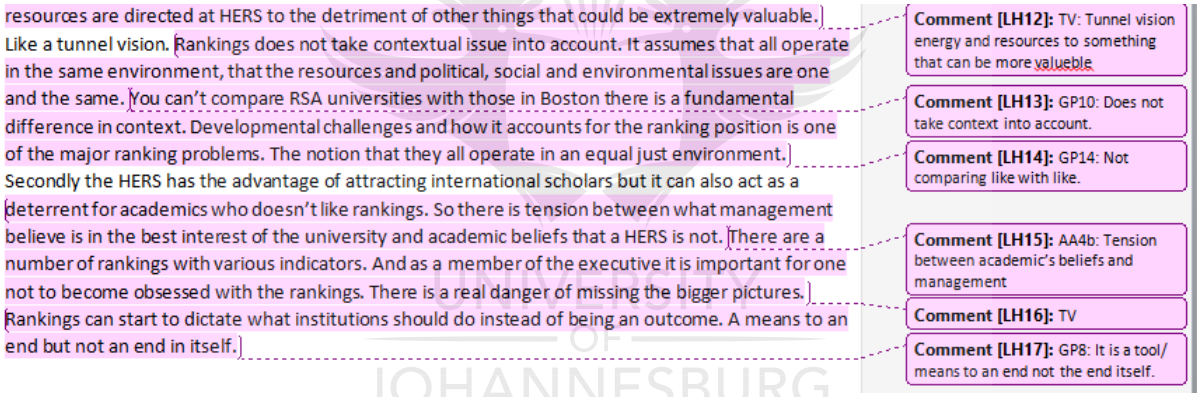

Figure 6.1: Example of structural coding

During the second coding cycle, the researcher used a so-called "Pattern Coding" technique. Saldana (2009, p. 152) describes pattern coding as a way to group together chunks of similar information into a more meaningful unit of analysis. The second coding process established commonalities and reduced the number of codes from the first cycle by combining similar ideas and concepts, and made it possible to identify recurring units of data (Miles & Huberman, 1994). During the application of this process, the emergent codes made it possible for the researcher to compare responses from various participants for similarities and differences. The table below clarifies/explains the coding cycles followed:

Table 6.1: Coding cycles

First cycle of codes	Second cycle of codes (Refined codes)
Rankings position looks good on your staff CV.	Career building
A higher ranked university will improve your job options.	Career building
Academics do not believe that the rankings measure the right indicators.	Tension between academic beliefs and rankings indicators.
Academics think that they know who has got the best reputation not the rankings.	Tension between academic beliefs and rankings indicators.
Academics do not think the rankings indicators are valid measurements of quality.	Tension between academic beliefs and rankings indicators.
Built in KPI's in Performance contract.	Mentions rankings as part of university strategy.
Evaluate performance in rankings indicators in strategic plan.	Mentions rankings as part of university strategy.
To promote the university internationally.	Marketing material to aid global reputation
To gain importance in the mind of the international student.	Marketing material to aid global reputation
Domestic goals are more important. Need to improve the national HE system as a whole.	Regional commitments are more important than global.
Global aspirations come secondary to immediate contextual challenges.	Regional commitments are more important than global

6.3 From Codes to Category

The illustration below depicts the how the researcher utilised the codes to build towards broader categories and themes. The process is based on Saldana's codes theory model for qualitative inquiry (Saldana, 2012, p.12).

Figure 6.2 shows a simple streamlined coding process, however as Saldana (2012) mentions, it also shows that when the higher-level themes and categories interact the information begins to transcend 'reality' and progress toward the thematic, conceptual or theoretical. The model makes it possible for me to show how the codes, themes and categories interrelate to develop a theory (Corbin & Strauss, 2008).

The raw data collected from the 25 interviews were analysed and interpreted, as described above. The researcher identified patterns within the data of the 25 interview transcripts and used it to construct emergent categories. The content was segmented into 114 different codes. After the data was coded, it was interrogated and systematically explored to generate meaning as suggested by Delamont (1992). Following this, patterns and relationships between codes were identified and used to group the codes into categories (Saldana, 2009; Delamont, 1992; Miles & Huberman, 1994). Similar concepts were coded generically and grouped into newly generated categories (Saldana, 2009).

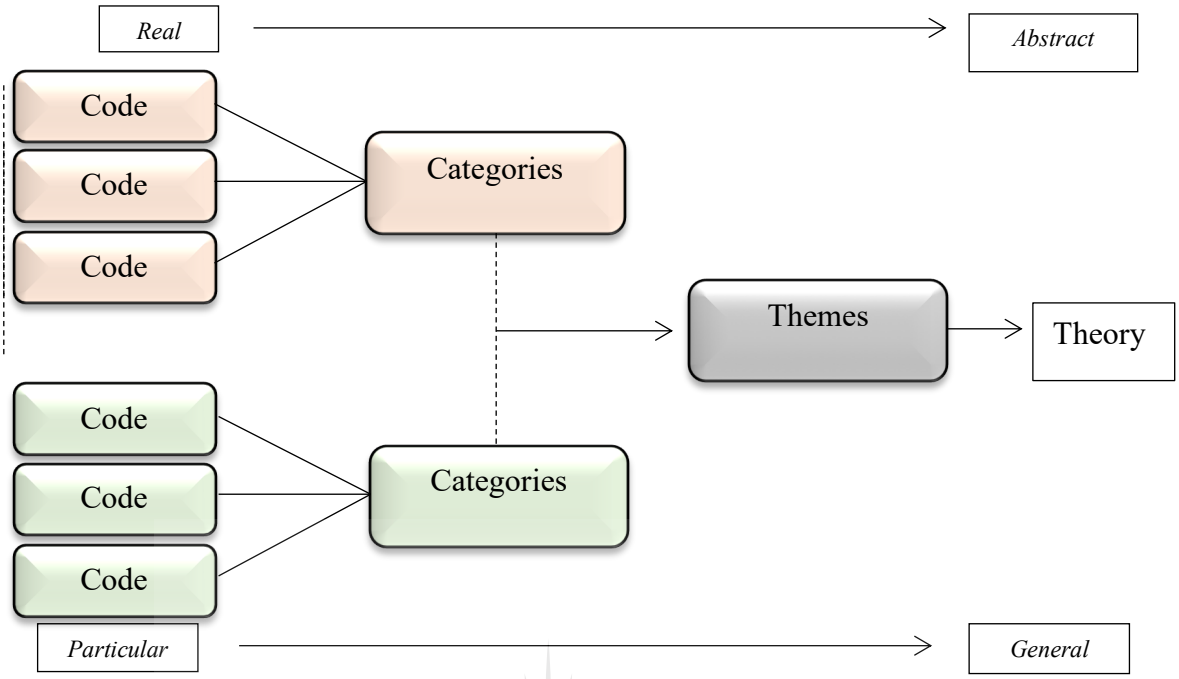

Figure 6.2: Codes to theory model (Saldana, 2012, p. 12)

By moving back and forth between the data, codes and categories, it was possible to verify the "meaningfulness and accuracy of the categories and the placement of data in categories" (Patton, 2002, p. 466).

The categories were labelled with reference to the codes, using the codes as a guide, to what the categories and themes should be called (Henning, et al. 2004). The categories selected and organised by the researcher are not cast in stone and can be dissolved, split into sub-categories/ or merged with others. The selected codes can therefore be used to make pathways through the data (Coffey & Atkinson, 1996). The categories emerging from this research study were eventually funnelled into six themes. The figure below shows how the individual codes combine to form a category.

Figure 6.3: An example of codes to category

6.4 From Categories to Themes

Once the researcher categorised and coded all the data, the following step was to investigate the relationships between the categories and the research question (Henning et al., 2004). The themes were already beginning to emerge from these categories (Henning et al., 2004). The categories were grouped into the six most general themes namely: 'HERS influence university strategy', 'Leadership drives rankings', 'National commitments are at odds with rankings' and 'Academics are affected, 'Considerations when participating' and 'General perceptions and commentary'. The themes correspond with the thrust of questioning in the interviews.

The categories or subthemes are more detail specific. The complimentary codes underpin each category. Each code has a description and a frequency (indicating the number of times a specific code was assigned). Successive passes at the data resulted in overlays of different codes reflecting more than one theme or category. The data as reflected in codes, categories and themes are shown in Tables 6.2, 6.3, 6.4, 6.5, 6.6 and 6.7 below.

Table 6.2: Theme 1 – 'HERS Influence University Strategy'

HERS influence university strategy				
Categories	**n**	**Codes**	**Definition**	**n of codes**
Using rankings in strategy (Internal)	68	S8	Mentions the use of rankings in as part of overall strategy e.g KPI	13
		S14	Benchmarking	8
		P2	Increased awareness of other institutions strengths and weaknesses	8
		S2	Explicit statements in strategic plan, of rankings aspirations.	6
		S7	Planning and goalsetting	6
		CT	Emphasizes research outputs	5
		S22	Year to year trend analysis is useful	5
		S1	Regular analyses and reporting on rankings by committee	4
		S3	Becomes part of your culture	4
		S21	Influence funding policies	4
		E1	Evidence	3
		S18	Staff can use rankings methodology/outcomes as motivator for a specific change within the institution.	1
		S23	Helped to establish IR office	1
Using rankings in strategy (External)	42	MM	Marketing material to aid global reputation	10
		S11	Partnering with top institutions as strategy (Quality programmes)	9
		P1	Engaging with peers and networking	8
		S2	Explicit statements in strategic plan, of rankings aspirations.	6
		S17	Using rankings to build reputation	3
		NI	No market information available before HERS	3
		E1	Evidence	3
Playing the game	20	REC	Renewal of contracts (or not) or recruiting staff	7
		D1	External stakeholder to help submit rankings data	6
		S24	Hosting more conference to gain points for "academic reputation"	2
		S27	Separate rankings strategy	2
		I1	The way information is gathered	2
		RR1	Researched ranking systems and/or methodology	1
		PRP1	Purchase rankings products	1

Table 6.3: Theme 2 – 'Leadership Drives Rankings'

Leadership Drives Rankings				
Categories	**n**	**Codes**	**Definition**	**n of codes**
Leadership perspective R - S/P	28	S10	Rankings inadvertently aid strategy	8
		C2	Rankings is an important tool for management (planning and goal setting), to align resources	7
		GP7	Rankings is a good tool to aid strategy if used correctly by management	4
		S19	The aspiration to improve rank inadvertently helps you to perform	3
		GP3	Rankings journey - ends up fixing other key fundamental issues like academic programmes	3
		GP8	Means to an end not the end itself	2
		S23	Helped to establish IR office	1
Leadership perspective S/P - R	14	GP15	Performance in rankings = consequence of effort	9
		S13	Takes it seriously but not the driver of strategy	2
		GP9	Keeps universities on their toes	2
		S16	Guarantee or affirmation that the university is heading in the right direction	1
Importance of leadership	18	S15	Participation in HERS require commitment from management	7
		S20	Mentions the VC's interest to drive ranking	6
		AA7	Rather for leaders than academic	3
		D2	Measure leaderships' awareness of own reputation	1
		PR	Puts pressure on management to perform	1
Downward communication to get academics involved	17	S6	Competition or need to be on same standard	8
		S5	Internal incentives and convincing	7
		S4	Use several rankings to establish a culture of team work via goal setting	2

Table 6.4: Theme 3 – 'National Commitments are at Odds with Rankings'

National Commitments are at Odds with Rankings				
Categories	**n**	**Codes**	**Definition**	**n of codes**
Can't compare apples and oranges	12	GP14	Like comparing apples and oranges (research vs teaching, old vs young, contextual)	6
		GP10	Does not take context into account	5
		GP20	Imposition of west	1
HERS does not take into account what is important to region	11	RC1	National commitments are more important than global	5
		GP16	International Accreditation is more important than rankings	4
		MS6	HERS should consider to incorporate regional specific citations	1

National Commitments are at Odds with Rankings				
Categories	**n**	**Codes**	**Definition**	**n of codes**
		GP19	Does not improve regional collaboration	1
Community service	1	MS7	Community service element gets lost	1

Table 6.5: Theme 4 – 'Academics are Affected'

Academics are affected				
Categories	**n**	**Codes**	**Definition**	**n of codes**
Tension between Academic beliefs and HERS indicators that also leads to tension with management (IA3)	13	AA4	Tension between academic beliefs and rankings	7
		AA13	Staff believe there is an overemphasis on rankings indicators at institution	3
		AA4B	Tension between Academic beliefs and management	2
		AA2	Not all things good for rankings is good for staff	1
Not concerned/ Ignorant (IA2)	12	AA9	High degree of ignorance of how rankings are constructed	6
		AA12	Not concerned	4
		AA8	If it affects them directly (KPI)	2
Prestige/recognition associated with WC institution (IA1)	10	AA1	Good on CV = Prestige (Career building)	6
		AA5	Beneficial for young academics	1
		AA10	Want to be associated with globally competitive institutions, take their work seriously	1
		AA11	Recognition from public	1
		AA14	Think it is important	1
REC	7	REC	Renewal of contracts (or not) or recruiting staff	7

Table 6.6: Theme 5 – 'Considerations when Participating'

Considerations when Participating				
Categories	**n**	**Codes**	**Definition**	**n of codes**
Unintended stakeholders	32	O1	Local government	13
		O8	International and local companies	7
		O4	Overseas governments	5
		O2	Scholarship bodies	5
		O7	International and local investors	2
Rankings that best suits your	16	AP3	We need different institution types and some need to focus on access	8

Considerations when Participating				
Categories	**n**	**Codes**	**Definition**	**n of codes**
mission and regional needs (access) APA		AP7	Ranking that suits your mission	5
		AP1	Should take part in regional ranking	3
Assessment perspective - preparation energy resources could fail and demoralise staff APD	5	AP8	If unsure of outcome - could demoralise staff	2
		AP10	Universities should be of a national standard before considering	2
		AP6	Decide if you want to be involved in the assessment (takes energy and resources)	1
Part of the global knowledge economy APB	6	AP2	International students look at them and take makes them important	3
		AP4	Intra-institutional communication, (Global language, like economy)	1
		AP9	Research active universities should definitely participate	2
Ranking can blind you	5	TV	Tunnel vision (Obsessed, distracted, blinded by rankings) can affect mission	5

Table 6.7: Theme 6 – 'General Perception and Commentary'

General Perception and Commentary				
Categories	**n**	**Codes**	**Definition**	**n of codes**
General perception of HERS	25	C1	Institutions have taken rankings more seriously the last few years.	6
		S9	Moving toward subject rankings - useful for variety of reasons	6
		GP6	Rankings fatigue	6
		GP5	HERS becoming more transparent and nuanced	4
		C3	If you don't participate you are at a disadvantage	1
		GP4	Rankings will become obsolete in the long term	1
		GP18	Rankings are here to stay	1
Rankings Methodology critique	15	Q1	Measuring the quality of teaching	6
		GP13	Top of rankings remain stagnant	2
		MS3	Accreditation should be recognised by the HERS	2
		MS4	Too volatile from year to year	2
		GP11	Global rankings is better than international HERS' attempts at regional	1
		MS1	Student experience	1
		MS5	HERS and rankings are rigged towards SET	1

6.5 Presenting the Results of the Interviews (Qualitative Phase)

The aim of the study was to explore and compare perceptions of institutional leaders about the influence of HERS on their work life and their institution's strategy. The qualitative analysis

revealed six major themes underpinned by numerous categories and codes. The themes address various aspects of the research aim.

The six major themes that emerged from the analysis include:

- HERS influence university strategy
- Leadership drives rankings
- National commitments are at odds with rankings
- Academic are affected
- Considerations when participating
- General perceptions and commentary

6.6 Theme 1: HERS Influence University Strategy

'HERS influence university strategy' consists of nine categories or subthemes and each category encompasses a number of similar codes, addressing various aspects of that category. Essentially, being ranked, has a washback effect on all participating universities. The rankings information is used in ways that directly and indirectly alter the strategic functioning or direction of the institution.

The first category focuses on the internal changes that take place because of HERS participation. These changes include aspects of the university's strategic plan, goalsetting benchmarking etc. The second category focuses on ways the university uses the rankings information as a tool to build reputation and engage with other external stakeholders. The third category has to do with the various changes universities employ specifically to affect their ranking results. The three categories are interwoven strands of one theme, the codes interact with one another and cannot exist in isolation.

6.6.1 Using Rankings as Part of Strategy (Internal)

The most prominent category is defined as "Using rankings as strategy (internal)", it emerged from 68 responses categorised into 13 codes. The category suggests various ways by which the universities utilise rankings information internally. In general, it seems that data obtained from

various rankings produced by HERS are utilised internally to inform not only institutional but also departmental and divisional planning. The code with the highest frequency for this section is S8: "Mentions the use of rankings as part of overall university strategy or as part of the strategic plan", it relates to another code, in this section, where the interviewer indicated whether the participants (interviewees) mentioned explicit statements related to rankings aspirations within their strategic plan. The aforementioned, suggests a strategic intention built around ranking success at various levels of the institution, which includes an increased emphasis on research outcomes and research targets at various levels of the institution. Institutional leadership is placing increased pressure on departments and academics to produce research outputs to unprecedented levels, which leaves less time for teaching.

A large number of responses implies that universities use IR (Institutional Research) offices and committees to analyse the ranking results in depth. In some instances, HERS participation is what led to the establishment of IR offices. Most of the results are used as evidence to compare strengths and weaknesses with other institutions, which may influence various universities' funding policies. Some participants suggested that rankings related analyses, reporting and data generation had become part of their institutional culture. The most direct influences are the presence of rankings related information in institutions performance management systems. Institutional leaders have to adopt and improve new rankings related indicators as departmental goals and Key Performance Area (KPA) or Key performance Indicator (KPI) in their performance contracts.

HERS and/or rankings indicators serve as evidence or a catalyst to convince management to invest in a particular field of study or initiative. In this sense, it seems that ranking results and/or rankings indicators are used as a currency to influence institutional decision-making. Some of the responses are shown below.

"... because we had a stake in the outcome we were making sure that the data was accurate and fit for purpose but it gradually began to creep into the whole discourse of what the university was about. The outcomes became bragging rights and as explicit statements in their strategic plan e.g. we want to be in the top 200. It would mean taking action to improve the data". Participant D

"Ranking is important as a benchmark – where we are in the eyes of the world, it also provides a background for the university to fall back on in their strategic planning but it is not the indicators for the university". Participant L

"Because it is a declared aim for us to get to the top 100 of a rankings system possibly by 2020, currently we are at 146 so we have a way to go, a lot of things to fix. Not all our strategies are focused on rankings some of it helps rankings like research strategy but is not the overriding goal". Participant K

"So I use the rankings to reinforce my argument what I want to achieve. It is a powerful motivator to instil change in one's organization". Participant T

"I actually think sadly yes it is. It has just become part of the culture". Participant G

"It is all research isn't it". Participant G

"Although they are arbitrary they've made universities more out looking and have increased awareness of the quality of universities in different parts of the world immeasurably". Participant D

"Rankings is a good yardstick to benchmark yourself against and secondly a diagnostic tool that points, in defined areas, to where the university could and should improve". Participant N

"I take a particular interest in rankings because I like evidence based approach to university management". Participant H

6.6.2 Using Rankings as Part of Strategy (Externally)

The category with the second highest frequency (n = 39) encompassing 7 codes has to do with the "Use of rankings as part of strategy (externally)". This category is distinguished from the first by target market. It has to do with the inclination some universities have to use ranking information and their rank-based reputation to engage or collaborate with other

international/world-class institutions. For example, university department heads use the subject ranking information to decide with which universities to collaborate with at subject level.

The ranking information, is therefore, also used as marketing material to aid the institutions' global reputation. The rank is used to promote the university to prospective students as well as to attract future staff members. Ranking results are powerful marketing material because of their easy to reference nature and universities not participating may miss the potential benefits from not having access to the marketing tool, especially because it is seen as objective indicators of quality.

Some HERS measure international research collaboration directly, which encourage institutions to improve collaborative efforts and relationships, internationally. Additionally, International collaborations is correlated with higher citation counts (measured by HERS), further increasing the ranking related benefits of international collaboration.

"However when you work with institutions in some parts of Asia your ranking position is extremely important to them. So it is important to choose your friends carefully and strengths can complement each other". Participant O

"I believe that the power of rankings lies in marketing. It is short and gets a message of perceived quality across. If you are in the top 2% for example, the public see it as unbiased objective truth" Participant B

"It is quite ironic that universities criticize them but then they use them, not only to promote themselves but also to decide which universities to partner with and arrange of other things they never intended". Participant A

"At this point we are climbing and obtaining encouraging results as our university gets more international students. Another thing I've noticed is that other universities mostly from Eastern Europe want to do this MOU thing with us and collaborate". Participant K

"When we partner with a university like they then automatically people perceive our qualifications/offerings of quality/value. It is essential to accelerating our global presence/

recognition. Global recognition was a key objective for my role. It doesn't necessarily mean you get ranked but collaboration with other highly ranked universities is important". Participant J

6.6.3 Playing the Game

The third largest category (n = 20) for the 'HERS influence university strategy', has to do with a number of ways universities attempt to optimise their ranking. The code with the highest frequency has to do with the hiring and firing of staff members. Some interviewees mention that one of the best ways to increase an institution's rank; is to employ high performing staff members, or staff members with a large number of citations. Another is to alter the contractual obligations of their existing staff members. Universities call in experts to aid them with their rankings submission. The category encompasses many initiatives; from targeting specific research outputs, altering the way they obtain information, hosting more international conferences, to employing a specific rankings orientated strategy or office.

"We obtained the help of a rankings consultant and we rose in the rankings". Participant Y

"Another thing I have picked up to boost academic reputation. We are hosting more high-level conferences. As they say everyone remembers a party". Participant O

"Part of the issue is that we can improve by submitting the data is a different way but that's just data. We are still recruiting PhDs and think by 2019 up to 60% of the faculty may have PhDs". Participant R

Figure 6.4 graphically illustrates the dynamic nature of the first theme's three categories "Rankings influence strategy". As mentioned earlier, the categories are intertwined and affects each other on a continuous basis. The figure will be used again later in the overall summary.

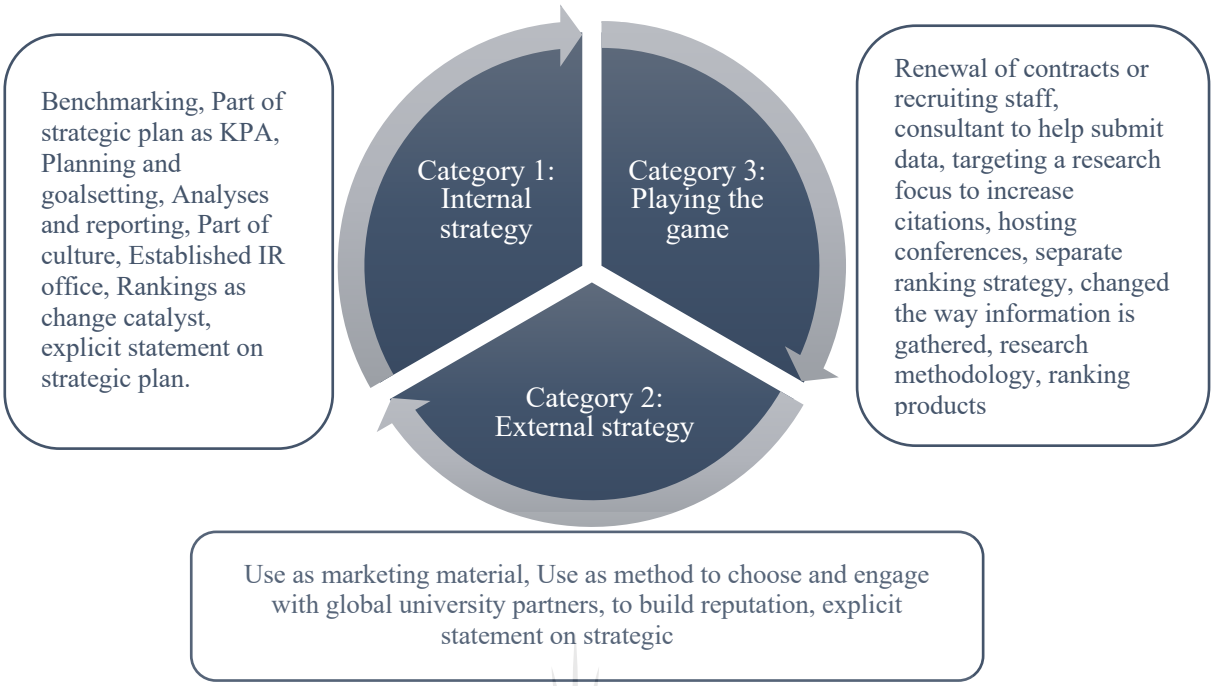

Figure 6.4: Theme 1: 'HERS Influence Strategy' – Categories

6.7 Theme 2: Leadership Drives Rankings

The second theme that emerged has to do with the way that a university's leadership deal with HERS participation. The categories suggest two approaches university leadership take when it comes to rankings, they demonstrate the importance of the university leaders when participating as well as the way the rankings are communicated to the academics and support staff.

6.7.1 Rankings Aid Strategy

The researcher identified two opposing yet related stances regarding HERS and their rankings from the interviewees. The first perspective (n = 28) suggests that participating in HERS will inadvertently improve university strategy. Many institutional leaders (interviewees) suggest that participating in rankings will aid or support their HE strategy. Some interviewees suggest that merely the aspiration to improve rank and compete with others will lead to improved motivation and performance in key areas; others feel that the shared goals will align resources and efforts to improve the university's performance. In addition, the various information

submissions (as required by THE and QS), which have to be submitted annually, resulted in the establishment of IR offices and an increased awareness of the institution itself.

"When used strategically however, I think they are such a good tool to align or realign your resources both human, physical and financial towards the betterment of the institution and ultimately performing well will impact the society positively. I wish senior managers will use them as a resource and not as a crutch". Participant F

"Personally I think rankings is good for 2 reasons. Number 1 if you take part in rankings it forces you to make decisions to make sure you have the right strategy. The second I believe it is a good way to move the university forward by implementing the right system to aid the institution's ranking on a wider scope and inadvertently improve the quality of my organization". Participant P

6.7.2 Strategy Aids Rank

The second perspective (n = 11) represents the other side of the coin; meaning that there is a perspective that implies that your institution's HE strategy or performance will automatically trickle down to an improved rank. This perspective views rank as, a consequence of effort, not the driver of strategy.

"They are looking to rankings to build a reputation, if they obtain a good rank it gives them a sense of achievement and the affirmation that they are doing the right thing". Participant T

"Rankings are important, we see it as a consequence. We work on the quality of our students, graduates, research, commercialization of research and outreach. Then I feel the ranking will take of itself. We view it as a marker an indication of where we are. We want to improve and rankings will be the side effect". Participant W

6.7.3 Importance of Leadership

Another category that emerged (n = 18) has to do with the interviewees' perspectives on the role that university leadership, plays to support ranking performance. Participants emphasized

the important role Vice Chancellors and top management play when participating in rankings, they argue that if top management commits to improving rankings the institution will most likely align themselves with the rankings indicators which will increase the chances of improving from year to year. Some interviewees add that University leadership may be the true target market of the HERS as rank appeals to the prestige and reputation of the universities but also the reputation of the Vice Chancellors themselves. Participating in HERS puts pressure on the leadership and measures leadership's awareness of their own reputation.

"I have seen different institution responses and I think leadership is important at the president or vice chancellors level because if they are not determined it will not go anywhere". Participant E

"That says there is a leadership in place that's got an eye on the brand. A measure of institutional leadership, it may not tell you a lot about performance". Participant I

"My institution has a very positive attitude towards rankings as a result of their VC for the last 10 years. He is in favor of the rankings and promotes the university within them". Participant Y

"...they appeal to the pride of our leaders and their aspiration to be highly ranked" Participant R

6.7.4 Communicating Rankings Criteria and Indicators to Academics

This category is concerned with the way top management communicate to the rest of the institutions. Participants elicit various ways management attempts to get academics to increase performance in the rankings indicators. 'Communicating Rankings Criteria and Indicators to Academics' (n = 17) involves internal incentives used by top university management, to convince academics to align, individual and/or departmental efforts, toward the rankings indicators. Some strategies include creating competition between faculties/departments, especially with regard to the subject rankings. Management can foster a culture of teamwork within the institution by emphasizing their present or envisioned rank. A common strategy, as

stated by the participants, involves educating academics regarding the HERS and ranking indicators and how they can improve with workshops and presentations.

"…they like competition after all academics are competitive, so they want to be better, so you want to drive them in each discipline create an incentive, a carrot". Participant E

"I needed to persuade people, by taking care of global rankings we weren't necessarily going to find out more about our performance than we already knew, but we would at least let the world know that we were paying attention to it, building our data systems appropriately and that it was fine to be a global leader in different areas". Participant I

"Basically the reward system that trickles down to faculty level. We have a 5 star reward system at faculty level. We use QS indicators for this. We distribute equal funds to all budgets but we leave some extra funds for faculties to compete for it. The priority is given to those faculties that scored 5 stars". Participant X

"My institution has a very positive attitude towards rankings as a result of their VC for the last 10 years. He is in favor of the rankings and promotes the university within them". Participant Y

"My VC says that he doesn't care about rankings, however we market results like you would not believe. It is actually a joke" Participant R

6.8 Theme 3: National Commitments are at Odds with Ranking Criteria and Indicators

The third most prominent theme (n = 23) has to do with the juxtaposition of international aspirations with regional or national commitments. Several participants suggest that the universities' rankings aspirations are at odds with its regional responsibilities, which are at the heart of their institution. Participants argue that the role some institutions play in their country stems from a societal need, sometimes allocated by the local government. These agendas are, and should be, placed paramount to rankings criteria and commonly forms part of the institutions mission and/or vision. Some institutions can therefore, not be as competitive in the HERS.

Institutions differ from country to country; some universities are research orientated whilst others focus on teaching; some universities/HE systems are much older than others, yet the HERS rank them using generic indicators. Participants suggests rankings are like comparing apples with oranges. The large emphasis rankings performance place on research inevitably makes it harder for non-research universities to be as competitive as research universities.

Participants fear that rankings aspirations will be to the detriment of regional and/or national specific collaboration, regionally focused research and altruistic initiatives like community service. THE and QS scores universities higher for small staff student ratios as a proxy for teaching quality. However, in sub-Saharan Africa for example, a key regional focus is to increase access to higher education and universities obtain higher state funds for a high staff student ratio. Similarly, participants from the Middle East have very young universities with a small research footprint, the region is more concerned with teaching standards and some interviewees suggest their institution places a higher emphasis on international programme accreditation.

"There are flaws in all rankings. They require more sophistication and try compare institutions with different missions and stages of development". Participant T

"Rankings does not take contextual issue into account. It assumes that all operate in the same environment, that the resources and political, social and environmental issues are one and the same. You cannot compare RSA universities with those in Boston there is a fundamental difference in context. Developmental challenges and how it accounts for the ranking position is one of the major ranking problems". Participant N

"So our goal is focused on the regional ranking, we aspire to be in the top 10 by 2021. So priority nr1 is aligning the curriculum with the job and employable students, number two is accreditation and after that is rankings". Participant R

6.9 Theme 4: Academics are Affected

Four emergent categories were identified with regard to the influence participating in rankings exerts on academics. The four categories suggest that academics have various perceptions of

the HERS and their influence on their occupation. The theme suggests there are positive and negative perceptions regarding the influence HERS participation exerts on the work life of an academic. Academics may choose to ignore rankings, welcome it, or completely disagree with the existence of HERS. However, the outcomes suggest that HERS participation may affect their employment period, the impact of their research, their performance targets and prospective employment opportunities.

6.9.1 Tension between Academic Beliefs and Rankings Criteria and Indicators

Tension between academics and management because of the mis-alignment of their academic beliefs with rankings indicators is the prominent category for this theme. Many participants report that university staff/academics do not agree with the rankings indicators and some suggest an overemphasis of the rankings indicators by management. The majority of the academics (according to the interviewees) do not agree with the principle of ranking universities or the indicator used to assess universities. Therefore, many academics are against their leadership's decision to participate in HERS. Academics also find the new direction and ranking related strategies difficult to stomach. Some academics are concerned that the increased focus on research will make it easy to neglect the quality of teaching and curriculum. Furthermore, some academics feel that HERS play a big part in increasing managerialism, and marketization whilst reducing academic freedom.

"There is a difference between the rankings metrics and what the academics generally believe as quality, they might question that what employers think is a testament to how good we are. I could see tension between rankings and government". Participant D

"I think they are really suspicious of them. I think they think that they know who is good in what discipline and who does have a good reputation. Who delivers good papers at conferences and papers published?". Participant C

"Academics like to believe in the pure form of the university, pursuing an open research agenda, however rankings have contributed to the over administration of some aspects by the managers, telling them where to publish and who to collaborate with in addition to promoting

demanding multifaceted university courses like tomato sauce. Taste the world's 32nd best sauce." Participant I

6.9.2 Not Concerned with Rankings

Numerous interviewees are of opinion that the academics within their institution are not concerned with HERS. Some academics are ignorant when it comes to ranking and the ranking indicators.

"I think there is a high degree of ignorance of how rankings are constructed even in my university which takes it seriously. For example they'll ask me why it is important for me to be the top 1% instead of the top 10% and that's a debate occurring within academia". Participant M

"I think if it is not an institutional KPI for them they would not care. It is not that I think they don't have the capacity to care. I just think that they are already overwhelmed by other areas of work". Participant U

6.9.3 Likes the Prestige or Recognition of being Associated with a 'World-class' Institution

Some suggest that the academics in their institution like the prestige or recognition they feel for being associated with a highly ranked institution. The aforementioned association may have some favourable implications for an academic's career, especially for a young academic. The association is also perceived to promote their research. For example, a scientific paper may be taken more seriously when the author is associated with a 'world-class' institution.

"As an academic it is good for your career if you are in a high ranking institution, better on your cv and your starting to see that people will actually put the rank of their institution on their cv and mention if they were a student or a faculty member at the time. It is more widely used". Participant D

"I think it means prestige to them if they come from well ranked universities. These days at a conference the first few slides of a presentation includes the rank of the institution". Participant B

6.9.4 Recruitment

Rankings indicators could lead to the recruitment of more international or renowned academics. The increased emphasis on research performance, for example, could lead to the discontinuation of a 'non-performing' staff member's contract. The interviewees suggest that universities have also become more selective when they recruit, preferring to recruit higher proportions of international staff because it is an important indicator for numerous HERS. Rankings are also influencing the qualification requirements of universities with institutions and HERS preferring staff members with higher qualifications.

"It is heavily used for allocating funding and used for hiring and firing people. Not just me but also my colleagues no about cases where numerous senior members of staff had to leave because the universities weren't happy with their ranking results". Participant P

"So basically the new VC came in got rid of the deadwood and changed the culture". Participant T

The figure below is a visual representation of the theme and will be used again later on in this document. The theme includes the four categories identified in the interviews.

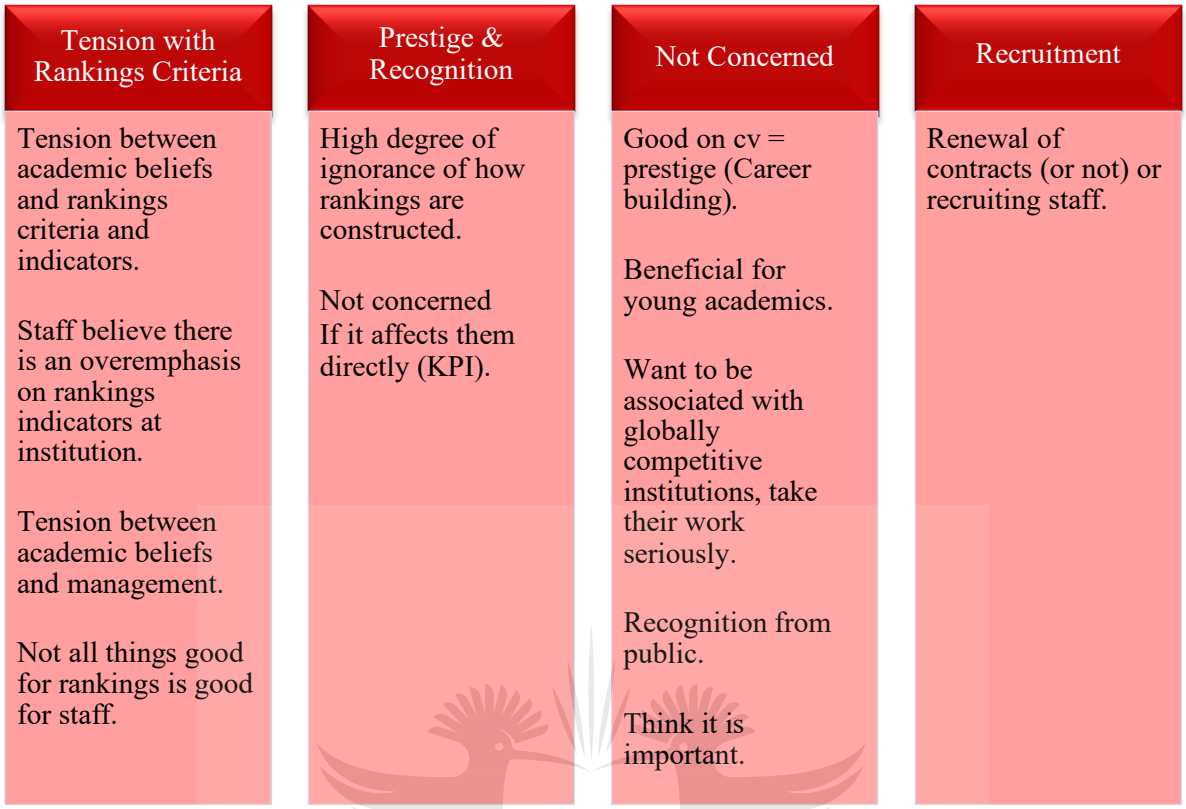

Figure 6.5: Theme 4: 'Academics are Affected' – Categories

6.10 Theme 5: Considerations when Participating

Some interviewees mentioned aspects universities should keep in mind before deciding to participate in rankings. Theme 5 describes the lessons the university learns and reflects upon after the ranking process.

6.10.1 Participate in Ranking that Best Suit your Mission and Regional Needs

This category relates to the third theme 'National Commitments are at Odds with Rankings Indicators', interviewees suggest that universities should keep their context in mind when deciding to participate in HERS. They propose that universities participate in the HERS and/or rankings that best suits the university's mission. Some interviewees stress the importance of having a differentiated HE system and warn against the dangers of isomorphism emanating from the generic research-orientated nature of the rankings criteria and indicators. Aspects perceived to be at risk are student access, student experience and teaching quality.

"I think it is not for everyone and they shouldn't be for everyone because there are certain methodology they are based on and if every institution followed that, we will not have the diversity, we will not have the access to education which is so crucial". Participant F

"It is inherent for people to be competitive. It is normal to want to take part/human nature and I think people always want to compete and when they compete and they do not win the race. They then compete in a different race and sometime they will also blame the race". Participant O

"At least now that there is several rankings universities can choose to participate in those that they identify with most". Participant A

6.10.2 Assessment Perspective

Many interviewees are of the opinion that an institution should tread lightly when deciding to participate in the rankings, because it could negatively affect their reputation. The university should be at a certain standard otherwise it could demoralise the staff. Participating in HERS, demands energy and resources, which could have perhaps been allocated elsewhere.

"In summary if you bring your institution up to the national standard you can look to international systems". Participant Q

"You should know that you can perform well. So if an institution for whatever reasons will not perform well, then I don't think they should do it because it is kind of telling the world I'm horrible". Participant. J

6.10.3 Part of the Global HE Economy/Language

An institution should see rankings as a global language like the economy, and if the institution wants to attract international students or attract research funding or expertise it needs to be able to communicate with those stakeholders via HERS and rankings. If institutions choose not to participate, they are at a disadvantage when seeking international universities to collaborate with or when seeking to attract funding or top students and staff.

"I think students are looking at ranking and therefore all universities should be in it. It is all part of the business". Participant H

"…there is a global language in the whole mix and world is not going to wait to understand your rank which I understand is very important but I think there are two levels to it. One level is aspects which is relevant to our own country, it is almost like global economy, if you are not linked to everyone you can say how wonderful you are but when other compare your just never there." Participant E

6.10.4 Rankings Can Blind You

The category implies that universities should be careful not to get obsessed or blinded by ranking thereby neglecting other responsibilities, plans or goals. This relates to a statement made by a participant who suggested that rankings have a washback effect, which refers to the effects assessment practices have on everybody involved. The fact that universities are being assessed will inevitably have an effect on them and everybody involved.

"Rankings has a washback effect on institutions". Participant Y

"There are down sides – it can almost blind you to be more responsive to environmental issues because you are so focused on rankings that all your energy and resources are directed at rankings to the detriment of other things that could be extremely valuable. Like a tunnel vision". Participant N

"So there are certain important things in the rankings but the concern is not to lose your mandate. You have got to choose your focus/mission and when you start to diversify too much you may stray". Participant R

6.10.5 Unintended Stakeholders

This category emerged after successive passes at the data. International students, local students and other universities are the main target of HERS. However, it seems that the number of stakeholders has increased over the last few years. The publication of annual rankings results

has awakened increased interest from governments. Some interviewees suggest that their government interrogates HERS and their rankings when devising national funding or migration policies. The aforementioned is especially evident for countries without a formal external quality monitoring system. Employers have begun to look at rankings when considering applicants or internships. Overseas governments have used rankings tables to establish immigration policies. Scholarship bodies employ rankings when considering candidates and foreign investors have used the HERS and rankings to pursue funding opportunities in a particular area. The unintended consequences of these new role players have expanded the reach and importance of a university's global rank.

"Some are of more interest because they relate more to the purpose of the organisation, some because they gain the interest of students and families and some of more interest to the government to allocate funding." Participant I

"The minister really want push HE for international constituents of all universities, especially public institutions because we want to be on the same level as any other HE system. So we have to agree with the views of the minister otherwise we are in trouble". Participant X

"The rankings of universities matters to investors, it is because investors would like to know whether the country's HE can cater for high tech industries which is the kind of industries they would like to attract. We are moving away from low cost assembly manufacturing to high impact higher value capital-intensive industry. You need a higher skills workforce, hence the target by the government to have a certain ratio researchers, scientists etc. to the population by 2020." Participant K

"...if you look at external stakeholders like governments looking to invest and perhaps looking at a quick and dirty measure to decide where to send their students it gives them an indicators." Participant M

New ideas and perceptions developed after or while participating will feed into the way the university handles the next rankings assessment. This theme resembles a concept called the "washback effect" (Cheng & Fox, 2013, p. 525). The washback effect is described as the influence that an exam has on the way in which a student is taught, either positive or negative.

The contents of the examination influence the course books on what the students are taught and upon what they are expected to know, which does not necessarily correspond to what the students actually need to know (Cheng & Fox, 2013).

Similarly, rankings have a washback effect on the participating institutions; the existence of ranking metrics itself affects the way universities operate, the plans they make and the way they perceive the ranking process. The lessons learned may also manifest as advice to institutions when they consider HERS participation. The figure below is a very simple visual representation of the theme and will later be used again in combination with the other themes.

Figure 6.6: Theme 5: 'Considerations when Participating' – Categories

6.11 Theme 6: Overall Commentary on Rankings

Interviewees had an inclination to share their beliefs regarding various aspects of the HERS. They commented on ranking practices and methodology in general.

6.11.1 General Perceptions of HERS and Rankings

The first category includes general perceptions or remarks about the HERS themselves. The remarks suggest that universities have taken the rankings more seriously during the last few years, as they appear to be more transparent and nuanced, particularly the addition of subject rankings are described as more useful for a variety of reasons. With an increasing number of rankings and sub rankings published, some suggest rankings fatigue may begin to set in.

"My view is that the rankings agencies are here to stay. Some are getting more sophisticated and nuanced. A few years ago, people looked at them and said it is a bad piece of Social Science but nowadays it is more respectable. Serves a need for future students when looking at and benchmarking universities. Rankings are very important in terms of attracting students as a factor in student perceptions. It is one of the factors and I think subject rankings are another". Participant M

"Rankings will stay relevant they are moving toward the subject rankings which I think is good". Participant A

6.11.2 HERS and Ranking Critique (Methodology)

The second category for this section has to do with methodological critique. The largest critique about ranking, according to the participants, is that HERS are incapable of measuring teaching quality. Some of the other critiques have to do with the perception that the top of the most of the rankings are stagnant, the volatility from year to year and the high influence the SET subjects have on the indicators.

"Rankings should aspire to reflect teaching practices because our main goal is to produce more graduates. To make sure there is more value in the market and I think that's the most important especially in our context teaching is more important than research". Participant Q
"Like I say they don't include teaching quality and that creates a potential conflict within the region". Participant V

6.12 Summary

The illustration (below) represent the results. On a very basic level there is the relationship between the HERS and the university. The university uses the relationship to increase awareness of the institution and its various strengths to specific stakeholders or target market, e.g. when universities participate in HERS like THE and QS, they aim to reach international students. The light grey background depicts the country in which the university is situated and the darker grey background depicts the university itself.

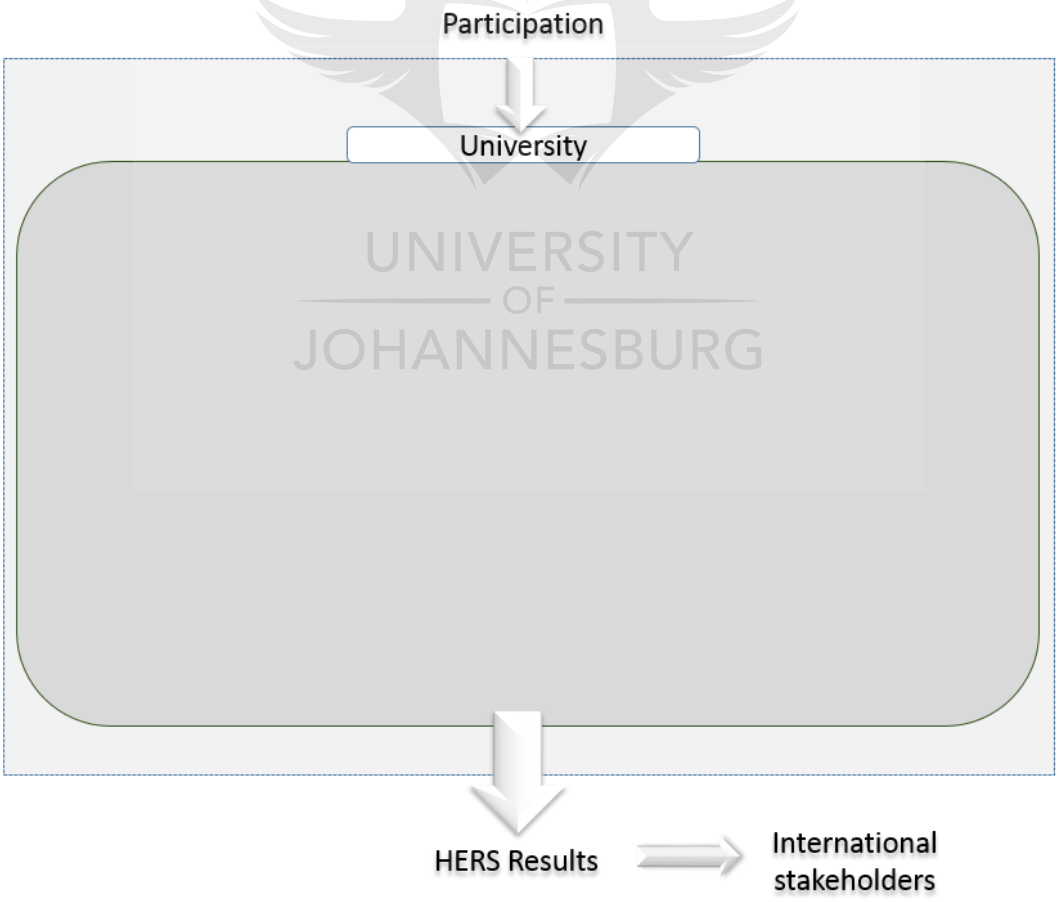

Figure 6.7: Summary - Background

The illustration (below) includes the six major themes and depicts their relationship with each other and with the university. The first theme 'HERS Influence Strategic Plan' are represented by the blue box and theme 2 'Leadership drives rankings' are represented by the dark green box. The red box represents Theme 4 'Academics are affected'. The first second and fourth theme takes place within the university (darker grey background). The two black arrows in the middle depict the relationship and interdependence between theme 1, 2 and 4, university leadership, university's strategic plan and the academics. University leadership communicates with the academics (green arrow) and makes important strategic decisions as reflected on the strategic plan (black arrow). The academics' performance targets are aligned with the strategic objectives in the strategic plan (black arrow). The introduction of rankings influences the aforementioned interdependence in various ways as summarised by the emergent codes and categories identified earlier in the chapter.

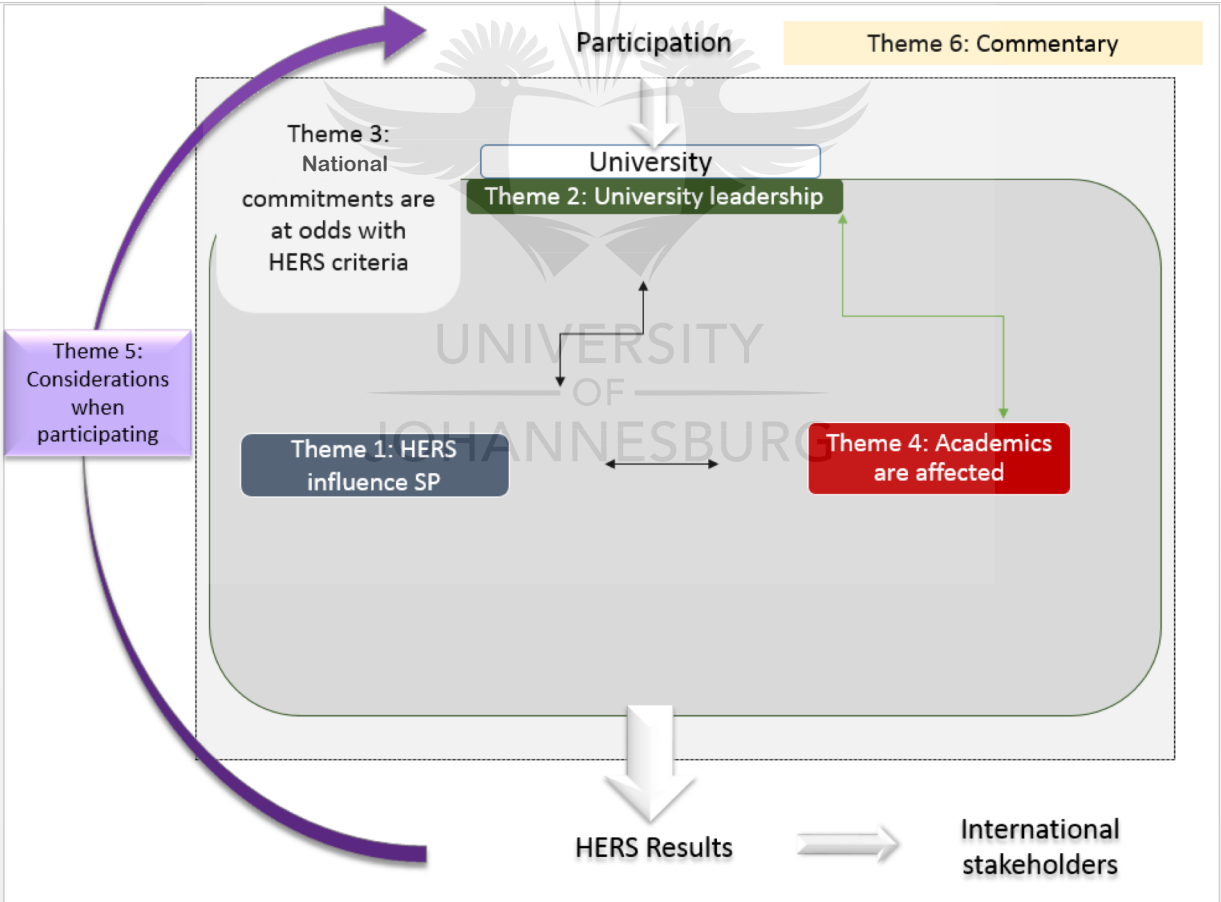

Figure 6.8: Summary – Themes

The grey box in the top left corner represents Theme 3 'National Commitments are at Odds with Rankings Criteria and Indicators'. The theme addresses the domestic aspects and, is

therefore, situated within the light grey background, which, as mentioned earlier, represents influences or stakeholders of the region or country or government outside of the university walls. Theme 5 and 6 can be described as perceptions and critique about rankings that transcends the physical boundaries of the universities. Theme 5 'Considerations when Participating' is depicted by the purple box, it represents the washback effect as described earlier in the chapter and theme 6 are represented by the yellow box at the top.

The last illustration (below) adds the categories to the themes. The visual representations of theme 1, theme 4 and theme 5, focused on earlier in the document, are now evident in the illustration. The influence of HERS and rankings is evident within the major arteries of the higher education context of the university. The illustration below provides a summary and birds eye view of the emerged themes and categories that represent the results of the qualitative study.

When universities decide to participate in the HERS they do so with preconceived notions about the ranking process, based on the commentary and critique they read in the media and other publicly available platforms, including the HERS themselves. The commentary varies from general to specific rankings related issues as discussed earlier in Theme 6. Upon deciding, to participate in HERS the universities' leadership attempts to address national commitments and ranking requirements. The aforementioned regional challenges relate to Theme 3 "National Commitments are at Odds with Rankings". Universities are confronted by their unique context and challenges. Some institutions operate in more demanding contexts than others do. For example, state funded universities have more contextual obligations than private institutions. Many respondents would say that the diverse financial and geopolitical contexts make it difficult to rank universities but even more so for numerous institutions to participate in rankings. The inclusion or exclusion of universities in the HERS as well as their rank, affects their reputation.

The way the university's leadership handles these two dual responsibilities impacts the way the organization changes to accommodate HERS participation. As the second theme "Leadership Drives Rankings" suggest, the importance leadership places on ranking success; the actions they take to pursue ranking success and the way they communicate their vision will inevitably alter the way the university operates. The university's strategic plan reflects its leaderships' strategic intentions largely. The plan aligns all aspects of the university's

functioning as well as the human and financial resources to attain strategic goals. The changes HERS participation brings to universities strategy is well documented in the first theme "HERS Influence University Strategy". Theme 1 categorized the way universities use ranking data to inform institutional planning. University leadership, departments, divisions or schools use ranking data in various ways to influence strategic planning directly or indirectly. The aforementioned categories refer to; the actions taken to improve or change the institution internally; the way the university use rankings data to engage external stakeholders, and how universities employ actions to optimize rank.

University personnel carry out the university's strategy and academics are the most crucial players in this regard. Academics are directly affected by the university's strategic plan and leadership's vision (like recruitment strategies); they are also indirectly influenced by the culture and identity of the institution. Theme 4 "Academics are affected" suggests that the myriad of influences summarized above, may lead to contradictory perspectives from academics. Academics may enjoy the prestige and recognition of being employed by a highly ranked, 'world-class' university. However, some academics may disagree with; the idea of ranking academic institutions; the methodology employed by the rankings; or the newly adopted strategy focused on ranking success as evidence of progress. University leaders adopt new perceptions, having been through the ranking process a few times.

Theme 5 "Considerations when Participating" includes some of the lessons learned. The theme emphasizes the number of unintended stakeholders (entities with an eye on ranking performance). The unintended stakeholders utilize the rankings data for different purposes; the local government can be the most influential of these stakeholders, followed by international and local companies and scholarship bodies. The interviewees suggest that institutions should take part in the rankings that suits their mission best. Universities leaders warn that taking part in HERS may involve lots of preparation and requires resources to improve rank. Universities should be cautious to not become obsessed with rankings. However, institutions should also be cautious 'not' to participate if they want to be part of the global knowledge economy and want to collaborate internationally. The number of lessons learned from taking part in the rankings exercise grow and becomes part of the rankings discourse it directly and indirectly affect or transform not just the institution but also the country's higher education environment and strategy.

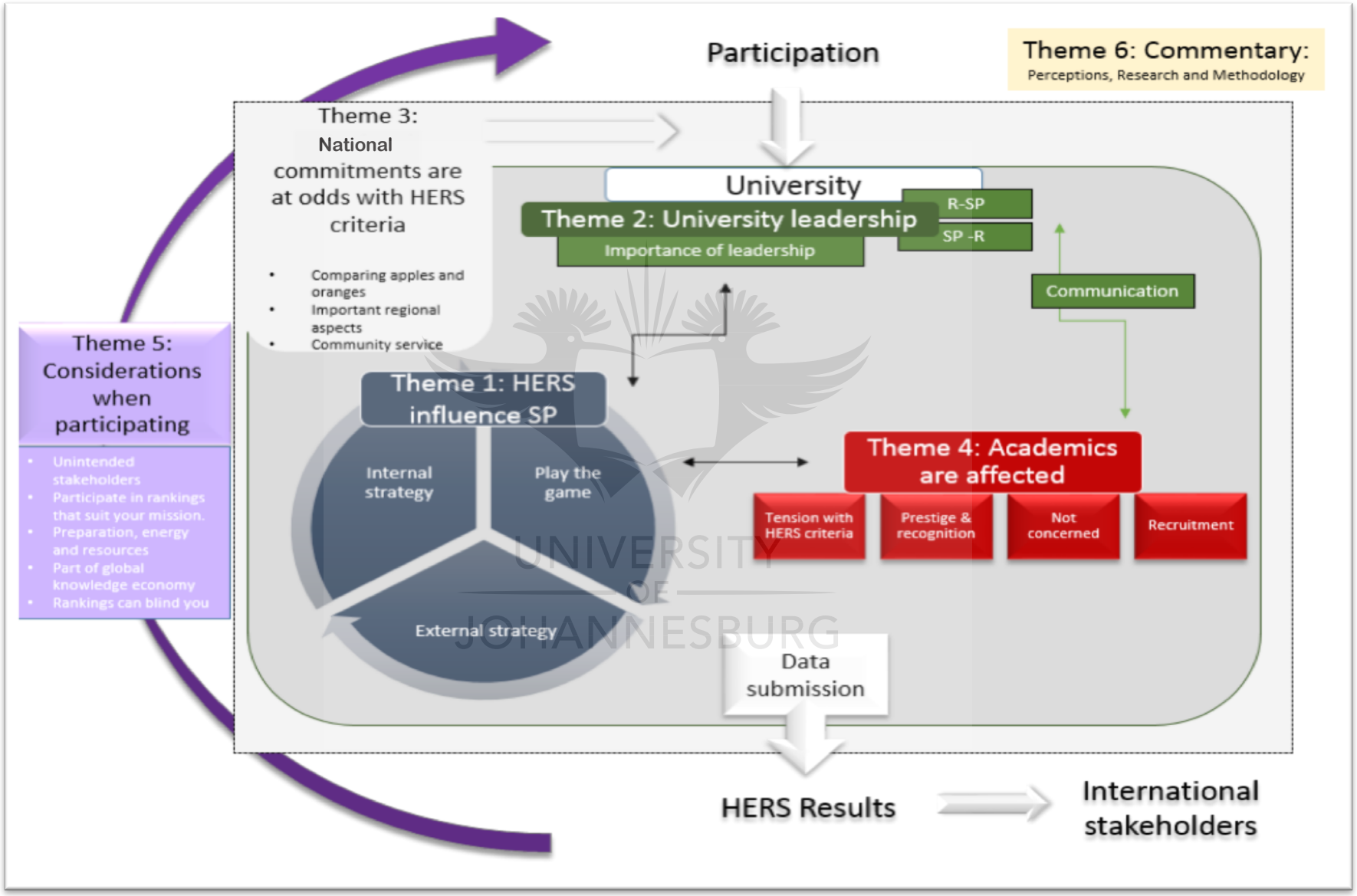

Figure 6.9: Summary – Themes and categories

6.13 Conclusion

This chapter highlights the steps followed when coding, the logic behind the development of the categories, and how the themes emerged from the categories to address the research problem. The researcher has documented the results of the qualitative phase thoroughly. The institutional leaders (interviewees) revealed numerous influences on their institutions, perceived to be because of HERS participation. The themes and categories represent these influences, and formed the basis for the second (quantitative phase) of the study. The researcher formulated the results of the interviews (themes and categories) into a questionnaire consisting of 65 questions. The design and outcomes of the questionnaire, second phase of the study, will be discussed and interpreted in the next chapter. The next chapter will shed light on the design of the questionnaire and the analysis and interpretation.

CHAPTER 7: QUANTITATIVE RESULTS

7.1 Introduction

The previous chapter presented and discussed the results of the interviews. All the themes were graphically illustrated and combined to represent the influences of participating in HERS within the universities as perceived by the interviewees. Chapter 7 contains the outcomes of the quantitative phase of the research. The results involve some general outcomes presented as descriptive statistics, e.g. Number, mean and frequencies as well as information on the nature of the data like the standard deviation scores and variance.

7.2 The Results of the Questionnaire

The questionnaire consisted of 65 items (statements) formulated from aspects identified in the literature review, as well as the themes and categories, which emerged from the qualitative interviews. The questionnaire was administered to those institutional leaders (VC, DVC, PVC, Deans, Directors, Vice Deans and Head of Departments) willing to participate in the research. Consequently, the respondents of the questionnaire were on a slightly lower level (rank) when compared with the interviewees. After cleaning the data, the researcher utilised 86 completed questionnaires in the final analyses. The questionnaire items specifically required the respondents to reflect on their experiences at their specific university. The ranking results have generated many articles and other literature containing aspects of rankings and HERS, which may affect the lives of the university personnel. It was therefore imperative that the researcher emphasize that the respondents reflect on their own university and lived experiences.

Various questionnaire items gauge different aspects, perceived as influences on the university, encompassing external and internal aspects, which alter university behaviour instantly, or over time. Some items inquired about the presence or increased presence of ranking related criteria (ranking metrics) in planning structures and documentation, other lines of inquiry refer to what institutions do with the information they receive from the published rankings, and what strategies they might employ to improve their rank. Other items examine the approaches different stakeholders (external and internal to the university) have toward HERS and their

rankings, most notably, senior management, academics, employers, students and the government.

Respondents were asked to carefully consider each statement and indicate their experience with regard to the way their institution deals with the HERS (QS, THE or ARWU) rankings information. The questionnaire employed a five-point Likert scale to extract ordinal data. The participants were presented with a choice of five responses (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = Strongly Agree) of which they had to choose one. Therefore, the higher the mean score retrieved by each item, the more respondents agreed with the item. Fifty-nine of the 65 items retrieved a mean of more than 3.0, which suggests that most of the respondents either felt neutral or agreed to some extent with most of the items on the questionnaire.

Most of the items (n=59) scored a mean value of more than three (Tables 7.1 and 7.2), indicating that the respondents agreed more with 59 items than they disagreed. The quantitative data therefore, confirms the majority of the aspects represented in the themes and categories (subthemes) of the qualitative analysis. The aforementioned results suggest that the themes and categories (or influences), on which the questionnaire is based, take place at most universities which participate in the HERS.

The table below shows descriptive information for the 16 questionnaire items that retrieved the highest mean scores, ranked from the highest mean (top) to the lowest (bottom), with item number one attaining the highest mean score and number sixteen the lowest.

Table 7.1: Descriptive information (16 items 'agreed' with most)

Rank	Questionnaire item	N	Mean	Std. Error	Sd	Variance	Skewness	Kurtosis
1	In my institution, ranking results are used as marketing material to promote global reputation	85	4,46	0,083	0,765	0,585	-1,822	4,665
2	To improve my institutions rank my institution emphasizes its research outputs	86	4,45	0,082	0,762	0,58	-1,638	3,776
3	My institution's top leadership (Vice Chancellors and Deputy	84	4,35	0,086	0,784	0,614	-1,468	3,286

Rank	Questionnaire item	N	Mean	Std. Error	Sd	Variance	Skewness	Kurtosis
	Vice Chancellors) is committed to improve the institution's ranking position							
4	Rankings participation takes energy and resources	81	4,30	0,073	0,66	0,436	-0,406	-0,721
5	In my institution, ranking results are used as marketing material to promote local reputation	85	4,21	0,096	0,888	0,788	-1,479	2,901
6	Rankings participation influences collaboration with international institutions	81	4,21	0,087	0,786	0,618	-1,026	1,98
7	My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that rankings have strategic value	84	4,17	0,096	0,876	0,767	-1,547	3,304
8	Institutions should take part in the ranking systems that suits their mission the most	79	4,04	0,099	0,884	0,781	-0,991	1,161
9	My institution's strategic plan has a specific rank as target	86	3,99	0,134	1,241	1,541	-1,186	0,475
10	My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that ranking participation will improve the direction of the institution	86	3,98	0,101	0,933	0,87	-0,755	0,244
11	My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that their institution's strategy will inadvertently lead to an improved ranking position	84	3,98	0,11	1,006	1,011	-1,189	1,324
12	My institution's strategic plan has rankings related indicators at institutional level	86	3,97	0,129	1,193	1,422	-1,295	0,927
13	In my institution, ranking results are used for internal planning and goalsetting	85	3,96	0,119	1,096	1,201	-1,151	0,813
14	Rankings participation influences recruitment of international students.	81	3,96	0,106	0,955	0,911	-0,986	0,625
15	In my institution, ranking results are used to identify peer institutions to partner with at institutional level	85	3,92	0,098	0,903	0,815	-1,128	1,665

Rank	Questionnaire item	N	Mean	Std. Error	Sd	Variance	Skewness	Kurtosis
16	In my institution, ranking results are used to increase awareness of my institution's perceived strengths and weaknesses	86	3,87	0,102	0,943	0,889	-1,031	0,671

The table above (Table 7.1) includes the top quartile of questionnaire items according to mean score. The six items that respondents agreed with the most are; 'In my institution, ranking results are used as marketing material to promote global reputation' (Mean=4.46), 'To improve my institutions rank my institution emphasizes its research outputs' (Mean=4.45), 'My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) is committed to improving the institution's ranking position' (Mean=4.35), 'Rankings participation influences: Rankings participation takes energy and resources' (Mean=4.3), 'In my institution, ranking results are used as marketing material to promote local reputation' (Mean=4.21) and 'Rankings participation influences collaboration with international institutions' (Mean=4.21). Table 7.2 (below) shows descriptive information for the 16 questionnaire items which retrieved the lowest mean scores, ranked from the highest mean (top) to the lowest (bottom), with item number 50 attaining the highest mean score and number 65 the lowest.

Table 7.2: Descriptive statistics (16 items 'agreed' with the least)

Rank	Questionnaire item	N	Mean	Std. Error	Sd	Variance	Skewness	Kurtosis
50	The academics at my institution are directly affected by institutional ranking systems	85	3,19	0,113	1,041	1,083	-0,259	-0,794
51	Rankings participation influences the decisions made by local (domestic) investors	78	3,18	0,118	1,041	1,084	-0,3	-0,493
52	National commitments are at odds with ranking metrics	85	3,13	0,103	0,949	0,9	0,164	-0,781
53	Rankings distracts institutions from their true mission and vision	81	3,11	0,127	1,14	1,3	0,088	-1,037
54	The academics at my institution thinks the ranking systems are important	85	3,11	0,115	1,058	1,12	-0,339	-0,839
55	National commitment makes it tough for my institution to improve its global ranking position	84	3,08	0,125	1,143	1,306	0,131	-0,901
56	To improve my institution's rank my	85	3,07	0,118	1,089	1,185	-0,596	-0,755

Rank	Questionnaire item	N	Mean	Std. Error	Sd	Variance	Skewness	Kurtosis
	institution adjusts its Human Resource (HR) policy (e.g. recruitment policy)]							
57	Rankings participation influences the national HE policy set by the government.	82	3,06	0,131	1,19	1,416	-0,075	-0,682
58	Rankings participation influences collaboration with the national government	81	3,05	0,122	1,094	1,198	-0,1	-0,63
59	All institutions should participate in rankings	82	3,04	0,113	1,024	1,048	0,279	-0,538
60	The academics at my institution are not concerned about rankings results	84	2,81	0,112	1,024	1,048	0,325	-0,462
61	My institution's mission makes it tough for my institution to improve its global ranking position	84	2,81	0,108	0,988	0,975	-0,143	-0,855
62	The academics at my institution are contractually bound to improved ranking performance	83	2,71	0,128	1,164	1,354	-0,029	-1,071
63	To improve my institution's rank my institution employs the help of a rankings consultant	85	2,66	0,124	1,14	1,299	0,017	-0,773
64	My institution's mission are at odds with ranking metrics	85	2,6	0,107	0,99	0,981	-0,096	-0,686
65	The academics at my institution are dismissed, in some cases, to improve ranking performance	83	2,34	0,118	1,074	1,153	0,314	-0,899

The bottom six items are the only items in the 65-item questionnaire that retrieved a mean score less than 3 ('Neutral'), indicating that the majority of the respondents felt neutral or did not agree with the items. The six items include number 65 'The academics at my institution are dismissed, in some cases, to improve ranking performance' (Mean=2.34), number 64 'My institution's mission is at odds with ranking metrics' (Mean=2.60), number 63 'To improve my institution's rank my institution employs the help of a rankings consultant' (2.66), number 62 'The academics are contractually bound to improved ranking performance' (Mean=2.71), number 61 'The academics are contractually bound to improved ranking performance'

(Mean=2.81) and number 60 'The academics at my institution are not concerned about rankings results' (Mean=2.81).

7.3 Results Per Theme

Each theme identified during the qualitative phase was divided into numerous questionnaire items. The means of the questionnaire items were then compared to get an idea of which aspects occur the most frequently within each of the themes and subthemes/categories. Only the first five of the themes were included in the analyses, because theme six had too many aspects to consider and deviated from the focus of the study.

7.3.1 Theme 1: HERS Influence University Strategy

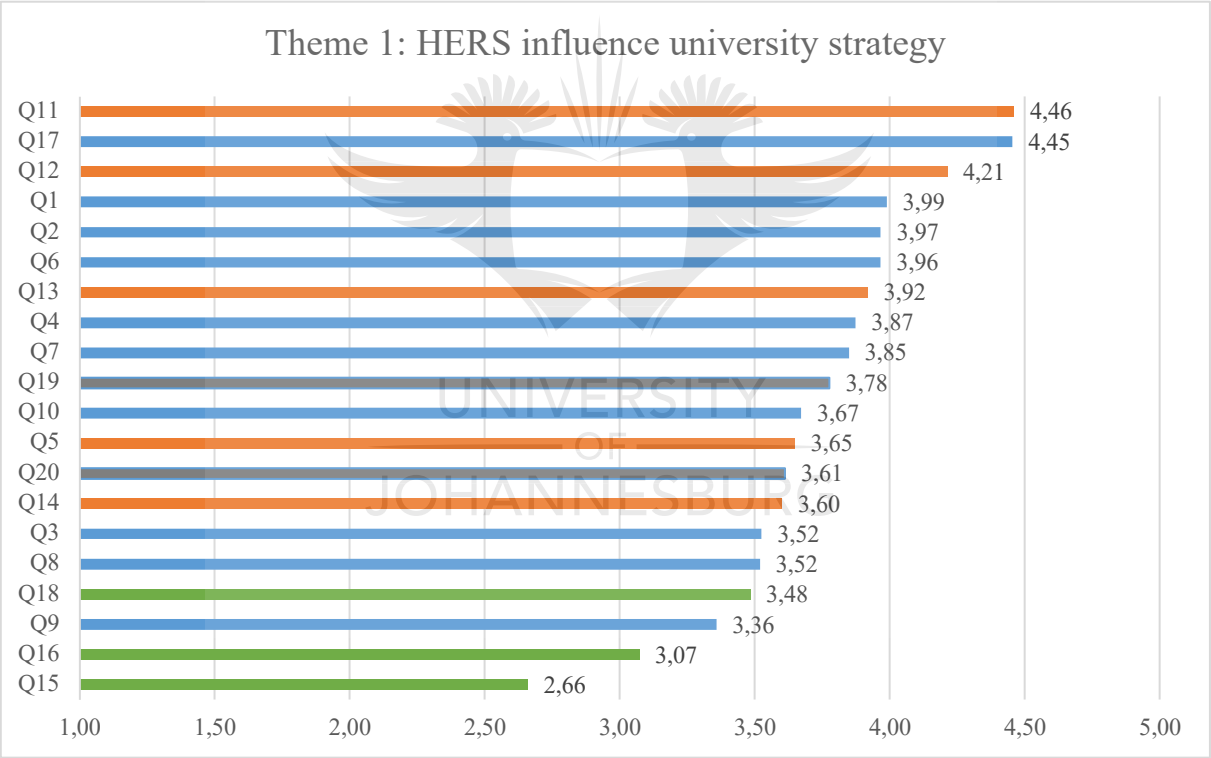

Figure 7.1: Theme 1 – 'HERS Influence University Strategy' (Frequencies)

The first category of theme 1, 'Using rankings as strategy (internal)' are indicated in blue, the second category 'Use of rankings as part of strategy (externally)' are represented by orange and the category theme 'Playing the game' are represented by green.

When the items related to the first category 'Using rankings as strategy (internal)'are compared, the aspects with the highest mean is 'To improve my institution's rank my institution emphasizes its research outputs' (Mean=4.45). Followed by Q1 'My institution's strategic plan has a specific rank as target' (Mean=3.99) and Q2 'My institution's strategic plan has rankings related criteria at institutional level' (Mean=3.97). The second category 'Use of rankings as part of strategy (externally)' includes the item (Q11 'In my institution, ranking results are used as marketing material to promote global reputation) with the highest mean value (4.46). The third category 'Playing the game' comprises four items, the respondents agreed with Q18 'To improve my institution's rank my institution hosts more international conferences' (Mean=3.48). The bulk of respondents disagreed with one item Q15 'My institution employs the help of a rankings consultant' (Mean=2.66). Respondents agreed with less specific queries like Q19 'My institution has changed its overall strategic direction as a consequence of rankings participation' (Mean=3.78) and Q20 'The culture of my institution changed as a consequence of ranking participation' (Mean=3.61).

7.3.2 Theme 2: Leadership Drives Rankings

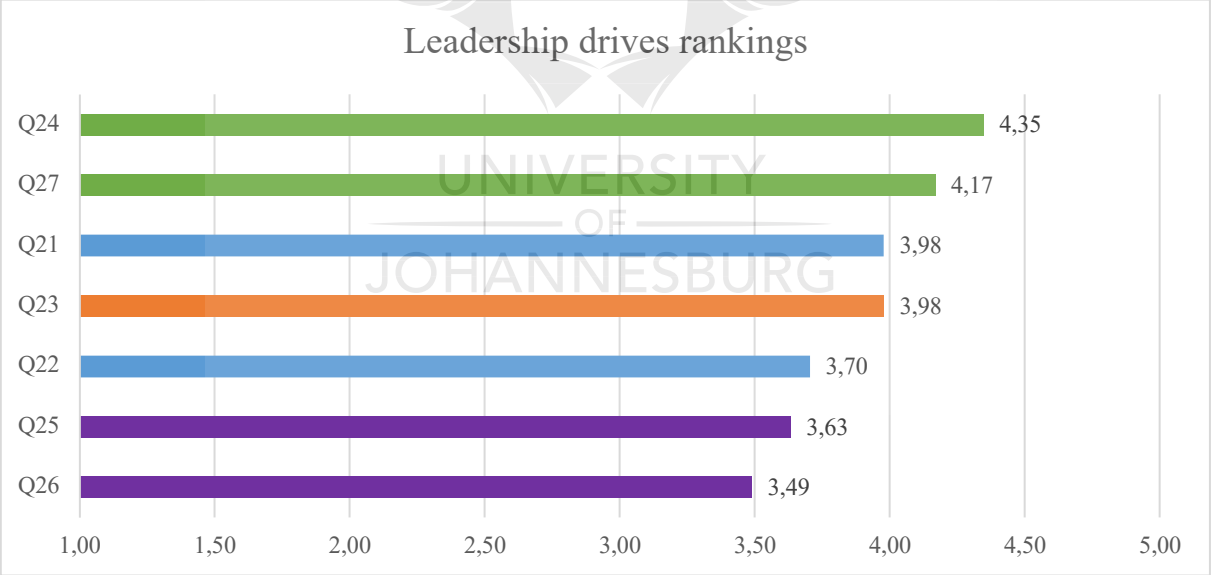

Figure 7.2: Theme 2 – 'Leadership Drives Rankings' (Frequencies)

Theme 2 encompass four categories, as described in chapter 6, the first category 'Ranking aids strategy' are represented by the blue bar, category two 'Strategy aids ranking' by orange, category three 'Importance of leadership' by green and category four 'Communicating rankings criteria to academics' by the purple bar.

Respondents agreed the most with category three (green) which has to do with the top leadership's inclination to improve in rankings. The item with the highest mean (4.35) is Q24 'My institution's top leadership (VC and DVCs) is committed to improve the institution's ranking position' followed by Q27 'My institution's top leadership (VC and DVCs) believes that rankings have strategic value' (Mean=4.17). The first two categories refer to the perspective or approach university leadership takes with regard to rankings in general. The first category 'Rankings aid strategy' suggest that leadership (top management) see rankings as a way to improve or support existing university strategy or mission, whilst the second category 'Strategy aids rankings' views ranking participation and performance as a by-product of university performance in accomplishing its goals or mandate.

The two perspectives (categories) are represented by Q21 'My institution's top leadership (VC and DVCs) believes that ranking participation will improve the direction of the institution' (Mean=3.98) and Q23 "My institution's top leadership (VC and DVCs) believes that the institution's strategy will inadvertently lead to an improved ranking position" (Mean=3.98), it seems that both items have retrieved the same mean value. Items Q25 "My institution's top leadership (VC and DVCs) promotes the value of ranking participation to the academics" (Mean=3.63) and Q26 "My institution's top leadership (VC and DVCs) actively attempts to engage with academics about rankings" (Mean=3.49) are included in category four.

7.3.3 Theme 3: National Commitments are at Odds with International Rankings

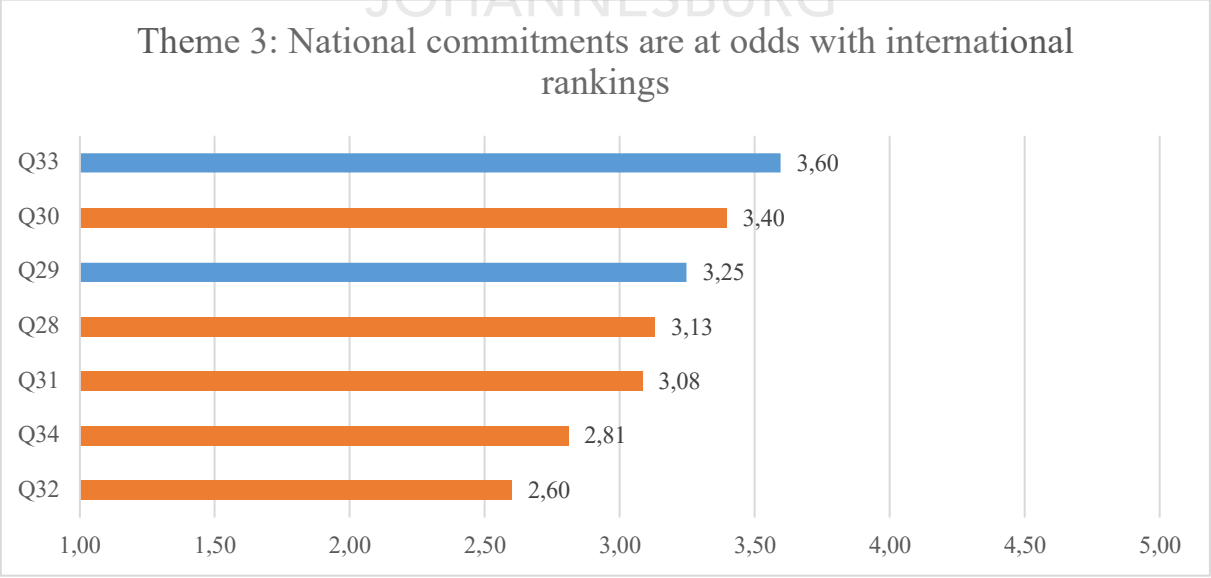

Figure 7.3: Theme 3 – 'National Commitments are at Odds with International Rankings' (Frequencies)

Theme 3 does not have multiple categories, items Q28 to Q34 gauge various aspects of the theme. Item Q33 "My institution's mission is aligned with ranking metrics" attained the theme's highest mean value (3.60), followed by item Q30 "My institution's national commitments are more important than ranking metrics (Mean=3.40). The majority of respondents disagree with item Q34 "My institution's mission makes it tough for my institution to improve its global ranking position" (Mean=2.81) and Q32 "My institution's mission are at odds with ranking metrics" (Mean=2.60).

7.3.4 Theme 4: Academics are Affected

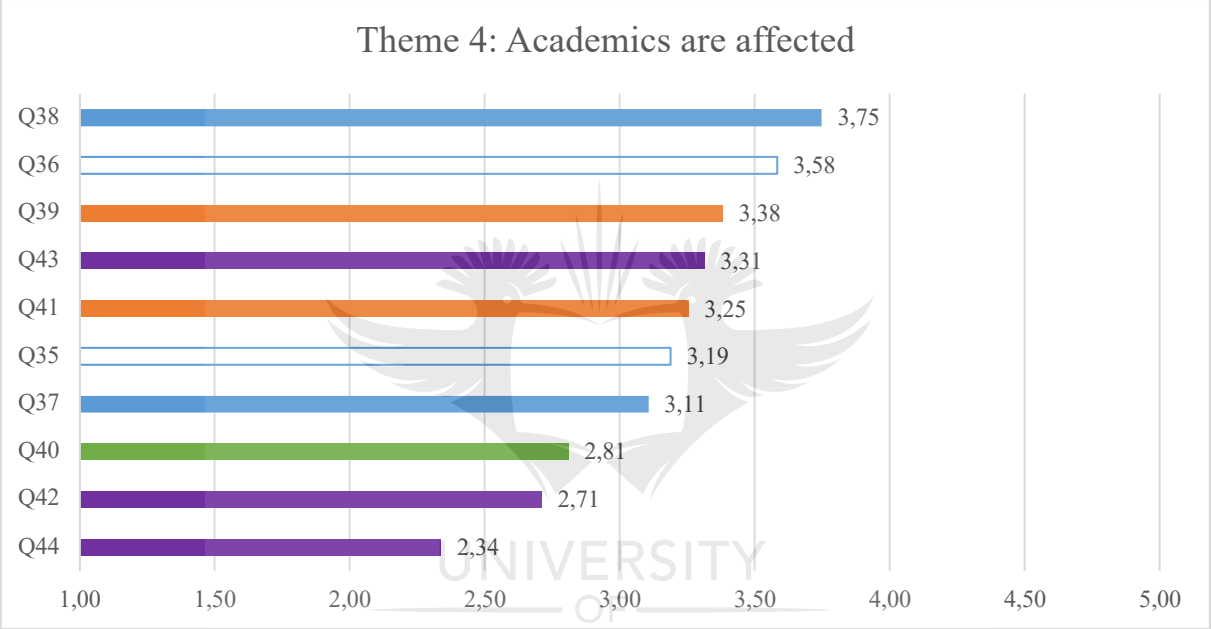

Figure 7.4: Theme 4 – 'Academics are Affected' (Frequencies)

As mentioned in chapter 6, the fourth theme contains four sub themes or categories, namely; 'Tension with rankings criteria' (in blue), 'Prestige and recognition' (in orange), 'Not concerned' (in green) and 'Recruitment' (in purple).

Questionnaire items Q35 "The academics at my institution are directly affected by rankings" (Mean=3.19) and Q36 "The academics at my institution are indirectly affected by rankings" (Mean=3.58) are not allocated to specific categories; however they address the theme as a whole. One of the items which addresses the first category "Tension with rankings criteria" Q38 "The academics at my institution are put under pressure in aspects that underpin rankings metrics" has the highest mean for the theme (3.75). Item Q39 "The academics at my institution enjoy the prestige that comes with a high ranking position" (Mean=3.38) directly addresses the

second category 'Prestige and recognition'. The items linked to the third 'Not concerned' and fourth category 'Recruitment' were among the lowest ranked items in the study (see Table 7.2). Items Q42 'The academics at my institution are contractually bound to improve ranking performance' (Mean=2.71) and Q44 'The academics at my institution are dismissed, in some cases, to improve ranking performance' (Mean=2.34) scored a mean value lower than 3.0.

7.3.5 Theme 5: Considerations when Participating

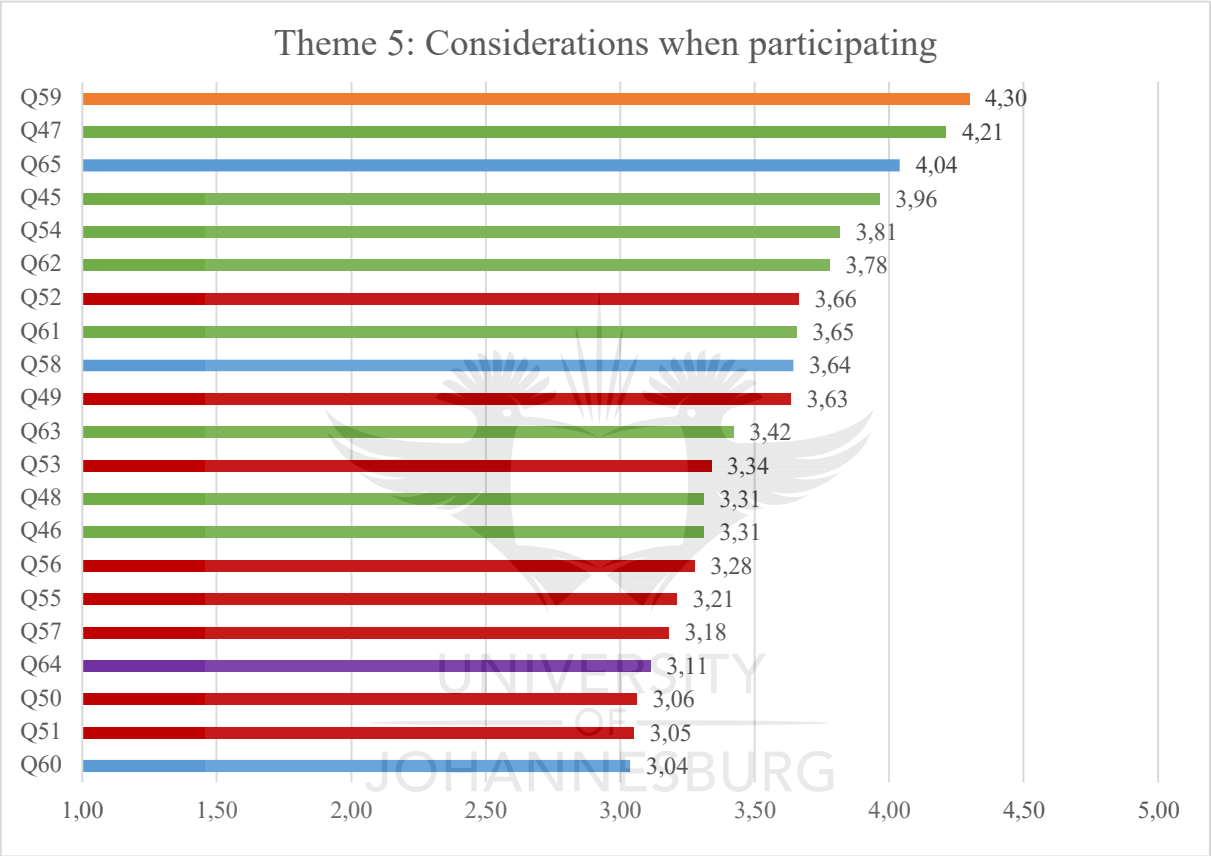

Figure 7.5: Theme 5 – 'Considerations when Participating' (Frequencies)

The bar graph above contains the results for the items related to Theme 5 'Considerations when participating'. The categories included in the theme are category 1 'Ranking that best suits your mission and regional needs' (in blue), category two 'Assessment perspective' (in orange), category three 'Part of the global HE economy/language' (in green), category four 'Rankings can blind you' (in purple) and category five 'Unintended stakeholders' (in red).

All of the items have a mean score of more than 3, even though many of the items' scores were only slightly over, suggesting a fair degree of uncertainty for those items. The first category for the fifth theme 'Ranking that best suits your mission and regional needs' correspond exactly

with item Q65 ‘Institutions should take part in the HERS that suits their mission the most’ which retrieved a mean score of 4.04.

Respondents agree with the second category ‘Assessment perspective’ as translated by one item, item Q59 ‘Ranking participation takes energy and resources’ (Mean=4.30). Item Q47 ‘HERS participation influences collaboration with international institutions’ (Mean=4.21) and Q45 ‘Ranking participation influences recruitment of international students’ (Mean=3.96) were the items with the highest mean value when considering the third category ‘Part of the global HE economy/language’ in theme five. A smaller number of participants agreed with the fourth category ‘Rankings can blind you’ as translated by item ‘Q64 Rankings distract institutions from their true mission and vision’ (Mean=3.11). Category five ‘Unintended stakeholders’ addresses the concerns related to external parties using ranking results, the item with which the respondents agree with most has to do with employers (item Q52) and governments (item 49) situated overseas.

7.4 Summary

Chapter 7 provided a detailed outline of the quantitative results produced by the questionnaire responses. The first part of the chapter revisits the themes and categories identified in the qualitative phase. The results make it possible to compare the items per category and theme. The frequencies of the corresponding questionnaire items confirmed most of the aspects that emerged from the qualitative interviews. Only six of the 65 items returned a mean value of less than three. It shows which items are more prevalent (or common) per theme. In general, the items related to the first two themes obtained the highest means. However, one may suggest that the third theme, related to national commitments, tends to be more context dependent than the other themes. The following chapters will compare regional responses, in order to gain a better understanding of the contextual nuances.

The individual items with the highest means have to do with increasing research outputs and using ranking results as marketing material to improve reputation. The majority of the respondents did not agree with the items gauging whether academics are contractually dependent on ranking performance or dismissed because of ranking performance.

To summarise the outcomes; HERS, and their rankings, influence the strategy of the universities directly and subtly. These changes are predominantly geared toward increased research production. HERS, and their rankings, influence with which institutions the universities collaborate. Unintended stakeholders like university boards, the government, media and public, influence top leadership (VC & DVCs) and the university and top leadership's (VC & DVCs) approach to rankings determines the extent of rankings pressure on strategy and academics. The outcomes above will be unpacked and discussed in chapter 9.

7.5 Conclusion

Chapter 7 presented the results of the questionnaire responses. The results are analysed interpreted and visually illustrated per theme. The following chapter will use the results to compile regional comparisons in the form of exemplar case studies.

CHAPTER 8: REGIONAL COMPARISONS

8.1 Introduction

As discussed in chapter 1 and 4, many of the influences identified by previous researchers, have not statistically compared the extent of those influences across different contexts. In 'Theme 3: National commitments are at odds with rankings', the influences of the HERS and their rankings are filtered or mediated through national contexts. The contextual differences stem from economic, socio-political and cultural differences. Furthermore, differences in cultural traditions of knowledge production, higher education policies and funding are instrumental in the way universities and countries digest international university rankings. Chapter 8 compares the survey outcomes between universities in four regions and/or countries, South Africa, Australia, South East Asia and the Arabian Gulf, to establish whether universities experience the influences of rankings differently. Additionally, the researcher analyses, interprets and discusses the differences between the regions through exemplar case studies, alongside contextual literature to support the discussion.

8.2 Statistical Considerations

The following analyses compare the means of the questionnaire items across South Africa, the Arabian Gulf, Australia and South East Asia. The results can be assumed to represent different influences prompting different approaches to rankings.

The research sample was divided into four different regions as indicated in the following table:

Table 8.1: Regions used in the study

Name of region	Number of respondents	Percentage of respondents
South Africa	36	52.2
Arabian Gulf	9	13.0
Australia	11	15.9
South-East Asia	13	18.8
Total	**69**	**100.0**

From the information presented in Table 8.1 it can be seen that South Africa has the highest number of participants participating in the research.

A total number of four regions will form the groupings against which the existing ranking approaches per region will be compared. The most likely test for this scenario is a one-way ANOVA, but using it requires some fundamental assumptions (Field, 2013). Some basic checks will indicate whether these assumptions are met and whether ANOVA can be used as a statistical test to compare the different existing ranking approaches per region.

The first assumption that must be adhered to is that the different dependent variables must be normally distributed. The normality assumption supposes that each region has a normal distribution, or the sample is large enough to impose normal sampling distributions of means through the Central Limit Theorem (Field, 2013). By executing both the Kolmogorov-Smirnov and the Shapiro-Wilk tests, it became evident that none of the dependent variables has a normal distribution.

The second assumption is that the different dependent variables over the different regions can have different means, but they must have equal standard deviations (known as homoscedasticity) (Lund Research Ltd, 2018; Field, 2013). By conducting a simple frequency analysis, it was shown that the means are different and that the standard deviations are very different – this is a second violation of the ANOVA assumptions.

The third assumption in using ANOVA is that the sample sizes must be equal (or at least comparable), seeing that unequal sample sizes can affect the homogeneity of variance assumptions (Field, 2013). Although ANOVA is considered to be robust to moderate departures from this assumption, the departure needs to stay smaller when sample sizes are very different (Lund Research Ltd, 2018). From the information shown in Table 8.1 it follows that South Africa has more than four times the number of participants compared to the Arabian Gulf; a factor that cannot be considered as a ‘moderate’ departure.

Cumulatively, it should be clear that although the parametric ANOVA test is the more powerful statistical test to use (i.e. will be more likely to detect a genuine effect in the data if there is one) when comparing three or more groups, the collected data for this study violates the assumptions underlying the use of the ANOVA. This raises the question of what analysis is appropriate in these circumstances. Consequently, the test that was finally chosen is designed for precisely this situation, namely the nonparametric Kruskal-Wallis test which does not require these assumptions, was applied to the data (Lund Research Ltd, 2018; Field, 2013).

8.2.1 The Kruskal-Wallis Test

The Kruskal-Wallis test is a rank-based nonparametric test that can be used to determine if there are statistically significant differences between more than two groups of an independent variable on a continuous or ordinal dependent variable. This test is considered the nonparametric alternative to the one-way ANOVA to allow for the comparison of more than two independent groups (Field, 2013). It must be kept in mind that nonparametric tests hypothesise about the median instead of the mean (as parametric tests do) of a distribution.

The following descriptive statistics (especially the median for each region) to see whether region affects the ranking approaches being followed, were calculated:

Table 8.2: Descriptive Statistics (Medians)

Variable	Region			
	South Africa	Arabian Gulf	Australia	South East Asia
Q1: My institution's strategic plan has a specific rank number as a future target	5,00	4,00	4,00	5,00
Q2: My institution's strategic plan has ranking related performance indicators	4,00	4,00	4,00	5,00
Q3: My institution's strategic plan has ranking related performance indicators at departmental level	4,00	4,00	4,00	5,00
Q4: In my institution, ranking results are used to increase awareness of my institution's perceived strengths and weaknesses	4,00	4,00	4,00	4,00
Q5: In my institution, ranking results are used to increase awareness of other institutions' strengths and weaknesses	4,00	4,00	3,00	4,00
Q6: In my institution, ranking results are used for internal planning and goalsetting	4,00	4,00	4,00	5,00
Q7: In my institution, ranking results are used to assess longitudinal performance in certain metrics (ranking areas)	4,00	4,00	4,00	5,00
Q8: In my institution, ranking results are used to influence funding policies	4,00	3,00	3,00	4,00
Q9: In my institution, ranking results are used as evidence to encourage a change in departmental functioning	3,50	4,00	4,00	4,00
Q10: In my institution, ranking results are used as evidence to encourage a change in institutional policy	4,00	4,00	4,00	4,00
Q11: In my institution, ranking results are used as marketing material to promote global reputation	5,00	4,00	5,00	5,00
Q12: In my institution, ranking results are used as marketing material to promote local reputation	5,00	4,00	4,00	4,00
Q13: In my institution, ranking results are used to identify peer institutions to partner with at institutional level	4,00	4,00	4,00	4,00

Variable	Region			
	South Africa	Arabian Gulf	Australia	South East Asia
Q14: In my institution, ranking results are used to identify peer institutions to partner with at department level	4,00	3,00	4,00	4,00
Q15: To improve my institution's rank my institution employs the help of a rankings consultant	3,00	3,00	3,00	3,00
Q16: To improve my institution's rank my institution adjusts its Human Resource (HR) policy (e.g. recruitment policy)	4,00	4,00	3,00	3,00
Q17: To improve my institution's rank my institution emphasizes its research outputs	5,00	4,00	5,00	4,00
Q18: To improve my institution's rank my institution hosts more international conferences	3,00	4,00	3,00	4,00
Q19: My institution has changed its overall strategic direction as a consequence of rankings participation	4,00	4,00	4,00	4,00
Q20: The culture of my institution changed as a consequence of rankings participation	4,00	4,00	4,00	4,00
Q21: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that ranking participation will improve the direction of the institution	4,00	4,00	4,00	4,00
Q22: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that participation in rankings will improve productivity	4,00	4,00	3,00	4,00
Q23: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that their institution's strategy will inadvertently lead to an improved ranking position	4,00	4,00	3,50	4,00
Q24: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) is committed to improve the institution's ranking position	5,00	4,00	4,00	5,00
Q25: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) promotes the value of ranking participation to all academics	4,00	4,00	3,50	5,00
Q26: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) actively attempts to engage with academics about rankings	4,00	4,00	3,00	5,00
Q27: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) believes that rankings have strategic value	4,00	4,00	4,00	4,00
Q28: My institution's national commitments are at odds with ranking metrics	4,00	3,00	2,00	3,00
Q29: My institution's national commitments are similar to the metrics used by the ranking systems	3,00	4,00	4,00	4,00
Q30: My institution's national commitments are more important than ranking metrics	3,00	4,00	4,00	3,00
Q31: My institution's national commitments makes it tough for my institution to improve its global ranking position	4,00	3,00	3,00	2,00
Q32: My institution's mission are at odds with ranking metrics	3,00	3,00	3,00	3,00
Q33: My institution's mission are aligned to the ranking metrics	4,00	3,00	3,00	4,00
Q34: My institution's mission makes it tough for my institution to improve its global ranking position	3,00	3,00	3,00	2,00
Q35: The academics at my institution are directly affected by rankings	3,00	3,00	3,00	4,00
Q36: The academics at my institution are indirectly affected by rankings	4,00	4,00	4,00	4,00
Q37: The academics at my institution think the institutional ranking systems are important	3,00	4,00	2,00	4,00

Variable	Region			
	South Africa	Arabian Gulf	Australia	South East Asia
Q38: The academics at my institution are put under pressure to perform in aspects that underpin rankings metrics	4,00	4,00	4,00	4,00
Q39: The academics at my institution enjoy the prestige that comes with a high ranking position	4,00	3,00	3,00	4,00
Q40: The academics at my institution are not concerned about rankings results	3,00	3,00	3,00	2,00
Q41: The academics at my institution benefit academically from their institution's participation in ranking systems	3,00	3,00	4,00	4,00
Q42: The academics at my institution are contractually bound to improved ranking performance	3,00	3,00	2,00	3,00
Q43: The academics at my institution are hired, in some cases, to improve performance in the ranking positions	4,00	4,00	3,00	3,00
Q44: The academics at my institution are dismissed, in some cases, to improve ranking performance	2,00	3,00	2,00	2,00
Q45: Rankings participation influences recruitment of international students.	4,00	3,00	5,00	4,00
Q46: Rankings participation influences recruitment of local (within country) students.	4,00	4,00	3,00	3,00
Q47: Rankings participation influences collaboration with international institutions	4,00	4,00	4,00	4,00
Q48: Rankings participation influences collaboration with local (within country) institutions	4,00	4,00	3,00	4,00
Q49: Rankings participation influences collaboration with overseas governments.	4,00	3,00	4,00	4,00
Q50: Rankings participation influences national HE policy set by the government.	3,00	4,00	3,00	4,00
Q51: Rankings participation influences collaboration with the national government	3,00	4,00	3,00	3,50
Q52: Rankings participation influences my institution's international graduate employability.	4,00	3,00	3,00	4,50
Q53: Rankings participation influences my institution's national graduate employability.	4,00	4,00	2,00	4,00
Q54: Rankings participation influences collaboration with international scholarship bodies.	4,00	3,00	3,00	4,00
Q55: Rankings participation influences collaboration with national scholarship bodies.	3,00	3,00	3,00	4,00
Q56: Rankings participation influences the decisions made by international investors.	3,50	3,00	3,00	4,00
Q57: Rankings participation influences the decisions made by local (domestic) investors.	3,00	3,00	3,00	4,00
Q58: Before participating in rankings, institutions should be of a high national standard	4,00	3,50	3,00	4,00
Q59: Rankings participation takes energy and resources	4,50	4,00	4,00	5,00
Q60: All institutions should participate in rankings	3,00	3,50	2,00	3,00
Q61: Rankings participation increases intra-institutional knowledge	4,00	4,00	3,00	4,00

Variable	Region			
	South Africa	Arabian Gulf	Australia	South East Asia
Q62: Rankings participation increases international collaboration	4,00	4,00	3,00	5,00
Q63: Rankings participation increases regional (country and surrounding countries) collaboration	3,00	4,00	3,00	4,00
Q64: Rankings distracts institutions from their true mission and vision	4,00	2,00	3,00	3,00
Q65 Institutions should take part in the ranking systems that suits their mission the most	4,00	4,00	4,00	5,00

A graphical representation of the information in Table 8.2 shows the following:

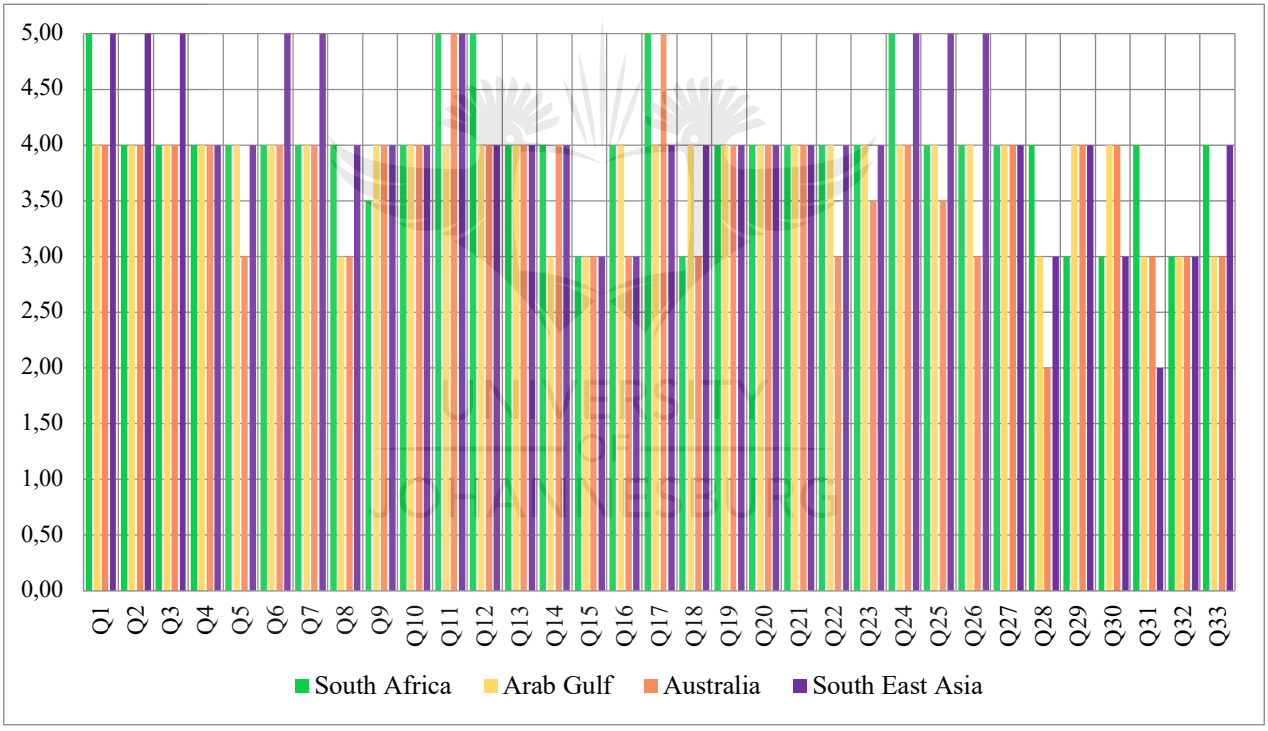

Figure 8.1: Distribution of the median over region for questions 1 – 33

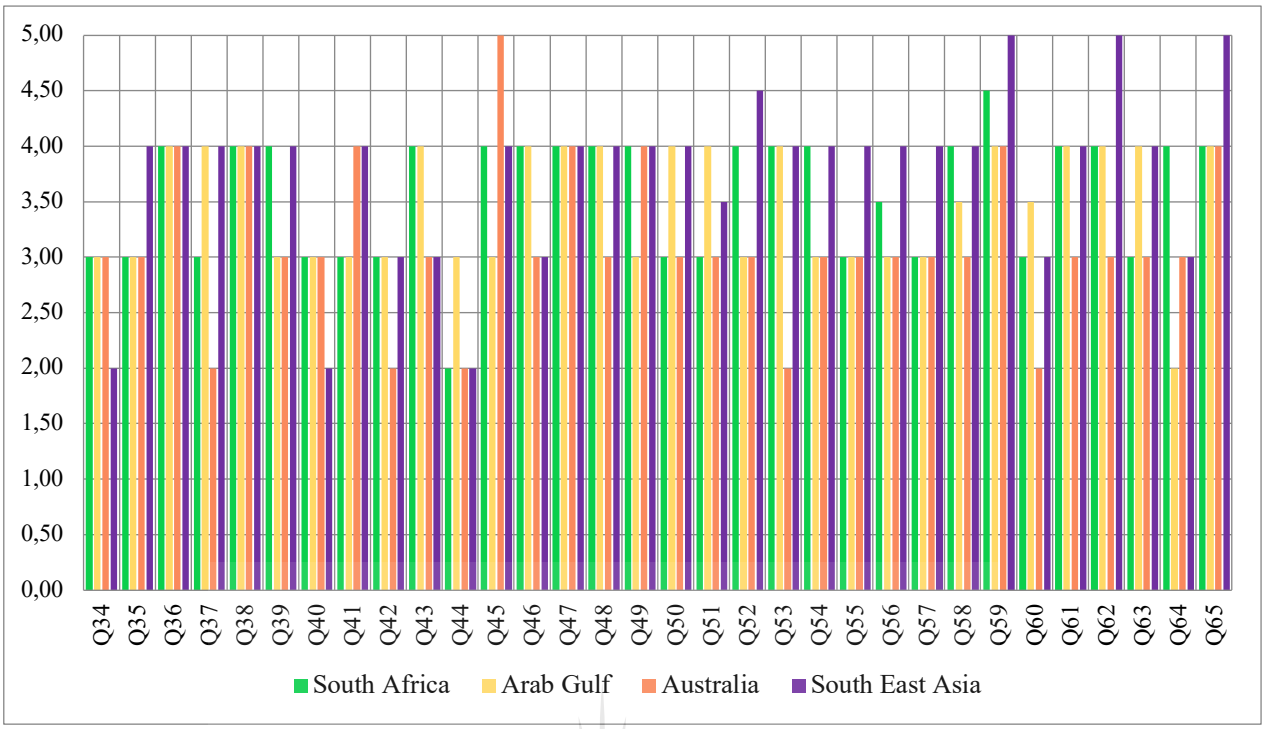

Figure 8.2: Distribution of the median over region for questions 34 – 65

It is important to keep in mind that the Kruskal-Wallis test cannot tell which specific groups of the independent variable are statistically different from each other, it only tells that the distribution of at least two groups are different. To determine which specific groups do statistically significant differ from each other a post hoc test needs to be used (Field, 2013).

The general null hypothesis that is tested for each dependent variable is that there is no statistical significant difference in the distribution of the specific dependent variable (Q1 to Q65) across the different categories of the independent variable (region). The results in applying the Kruskal-Wallis test over region for each dependent variable are as follows:

Table 8.3: Results of the Kruskal-Wallis test per region for the dependent variables

Variable	Kruskal-Wallis		
	Test value	DF	Sig.
Q1	8,348	3	0,039*
Q2	7,189	3	0,066
Q3	9,041	3	0,029*
Q4	6,405	3	0,093
Q5	8,872	3	0,031*
Q6	13,067	3	0,004*
Q7	7,803	3	0,050*
Q8	9,855	3	0,020*
Q9	3,964	3	0,265
Q10	8,134	3	0,043*

Variable	Kruskal-Wallis		
	Test value	DF	Sig.
Q11	6,058	3	0,109
Q12	7,574	3	0,056
Q13	3,277	3	0,351
Q14	5,479	3	0,140
Q15	1,273	3	0,735
Q16	2,409	3	0,492
Q17	16,150	3	0,001*
Q18	8,788	3	0,032*
Q19	6,011	3	0,111
Q20	1,204	3	0,752
Q21	3,543	3	0,315
Q22	2,116	3	0,549
Q23	4,573	3	0,206
Q24	4,931	3	0,177
Q25	9,472	3	0,024*
Q26	14,756	3	0,002*
Q27	4,501	3	0,212
Q28	8,110	3	0,044*
Q29	2,465	3	0,482
Q30	3,983	3	0,263
Q31	4,516	3	0,211
Q32	1,603	3	0,659
Q33	2,590	3	0,459
Q34	2,682	3	0,443
Q35	1,245	3	0,742
Q36	0,897	3	0,826
Q37	13,208	3	0,004*
Q38	8,677	3	0,034*
Q39	2,663	3	0,446
Q40	3,004	3	0,391
Q41	8,337	3	0,040*
Q42	8,761	3	0,033*
Q43	4,689	3	0,196
Q44	9,253	3	0,026*
Q45	6,627	3	0,085
Q46	1,699	3	0,637
Q47	0,325	3	0,955
Q48	5,877	3	0,118
Q49	3,870	3	0,276
Q50	9,615	3	0,022*
Q51	6,858	3	0,077
Q52	8,389	3	0,039*
Q53	15,084	3	0,002*
Q54	6,868	3	0,076
Q55	3,720	3	0,293
Q56	3,707	3	0,295
Q57	1,747	3	0,627
Q58	12,984	3	0,005*
Q59	5,209	3	0,157
Q60	6,838	3	0,077
Q61	8,482	3	0,037*
Q62	12,824	3	0,005*
Q63	13,304	3	0,004*
Q64	6,685	3	0,083
Q65	16,448	3	0,001*

* Significant at the 5% significance level

8.2.2 Post hoc Test Results for the Kruskal-Wallis Analyses

A post hoc test (Dunn-Bonferroni test) was also run for those dependent variables in which the null hypotheses were rejected (WordPress, 2016). The results are as follows:

Table 8.4: Post hoc test results for the Kruskal-Wallis analyses

Variable	Region X – Region Y	Post hoc test	
		Test Statistic	Sig
Q1	Australia - South East Asia	-21.545	.037
Q3	Australia - South East Asia	-21.545	.037
Q5	Australia - South East Asia	-20.367	.038
Q6	Australia - South East Asia	-24.885	.008
	Arabian Gulf - South East Asia	-22.607	.034
	South Africa - South East Asia	-17.190	.029
Q8	Arabian Gulf - South East Asia	-23.996	.019
Q10	South Africa - South East Asia	-16.287	.033
Q17	Arabian Gulf - South Africa	22.403	.003
	South East Asia - South Africa	15.103	.043
Q18	Australia - South East Asia	-23.129	.024
Q25	Australia - South East Asia	-21.215	.046
	South Africa - South East Asia	-16.935	.034
Q26	Australia - South East Asia	-27.046	.004
	South Africa - South East Asia	-20.374	.005
Q28	Australia - South Africa	18.981	.034
Q37	Australia - South East Asia	-23.479	.023
	South Africa - South East Asia	-17.801	.019
Q38	None		
Q41	None		
Q42	Australia - Arabian Gulf	25.278	.031
Q44	South Africa - Arabian Gulf	-19.673	.033
Q50	None		
Q52	Australia - South East Asia	-22.708	.026
Q53	Australia - South Africa	18.972	.031
	Australia - Arabian Gulf	25.917	.020
	Australia - South East Asia	-29.625	.001
Q58	Australia - South Africa	18.083	.038
	Australia - South East Asia	-27.274	.010
Q61	Australia - South East Asia	-19.419	.030
Q62	Australia - South East Asia	-26.244	.003
Q63	Australia - South East Asia	-26.744	.005
	South Africa - South East Asia	-17.896	.015
Q65	Australia - South East Asia	-25.556	.004
	South Africa - South East Asia	-19.829	.003
	Arabian Gulf - South East Asia	-22.625	.022

*The significance level is 0.05.

The Kruskal-Wallis non-parametric equivalent of a one-way ANOVA was deemed appropriate to reveal significant differences between the regions; in addition, the Dunn-Bonferonni Post

Hoc assessment identified which regions significantly varied from each other. The researcher found significant regional differences for 24 of the questionnaire items.

8.3 Interpretation of the Kruskal-Wallis and the Dunn-Bonferonni Assessments

From the results shown in Table 8.3 and Table 8.4 the following can be deduced for the distribution of the different dependent variables where the application of the Kruskal-Wallis test indicates a statistically significant difference across regions:

- **Q1** ***(My institution's strategic plan has a specific rank number as a future target)***

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the approaches followed by Australia and the South East Asia region (Table 8.4). The median value of responses for the South East Asia region is higher than the median value for Australia (see Table 8.2), indicating that the respondents from South East Asia region agreed significantly more with the statement 'my institution's strategic plan has a specific rank number as a future target'.

- **Q3** ***(My institution's strategic plan has ranking related performance indicators at departmental level)***

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from Australia and the South-East Asia region (Table 8.4). The median value of responses for the South-East Asia region is higher than the median value for Australia (see Table 8.2), indicating that the institutions from the South East Asian region have more ranking related performance indicators at departmental level than those from Australia.

- **Q5 (*In my institution, ranking results are used to increase awareness of other institutions' strengths and weaknesses*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from Australia and the South-East Asia region (Table 8.4). The median value of responses for the South-East Asia region is higher than the median value for Australia (see Table 8.2), indicating that universities from the South East Asian region use the ranking results significantly more to increase awareness of other institutions' strengths and weaknesses than universities in Australia.

- **Q6 (*In my institution, ranking results are used for internal planning and goal setting*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from the South-East Asia region and the other three regions (South Africa, Australia and the Arabian Gulf) (Table 8.4). The median value of responses for the South-East Asia region is higher than the median value for Australia, South African and the Arabian Gulf (see Table 8.2). This means that the respondents from the South East Asian region use the ranking results significantly more for internal planning and goal setting than universities from Australia, South African and the Arabian Gulf.

- **Q8 (*In my institution, ranking results are used to influence funding policies*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from the South-East Asia region and the Arabian Gulf region (Table 8.4). The median value of responses for the South-East Asia region is higher than the median value for the Arabian Gulf (see Table 8.2), indicating that respondents from South East Asia believe their institution use the ranking results more to influence funding policies, than respondents from the Arabian Gulf.

- **Q10 (*In my institution, ranking results are used as evidence to encourage a change in institutional policy*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from the South-East Asia region and South Africa. The sample average rank of responses for the South-East Asia region is higher than the sample average rank value for South Africa (see Table 8.4), This means that South East Asian respondents believe that ranking results are used significantly more as evidence to encourage a change in institutional policy, than universities from South Africa.

- **Q17 (*To improve my institution's rank my institution emphasizes its research outputs*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses from South Africa and two of the other regions (South East Asia, and the Arabian Gulf) (Table 8.4). The median value of responses for South Africa is higher than the median value for South East Asia and the Arabian Gulf (see Table 8.2), indicating that the South African respondents believe their universities put more emphasis on their research outputs to improve their rank, than universities from South East Asia and the Arabian Gulf.

- **Q18 (*To improve my institution's rank my institution hosts more international conferences*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses provided by the Australia region and the Arabian Gulf region (Table 8.4). The median value of responses for the Arabian Gulf region is higher than the median value for Australia (see Table 8.2), indicating that the respondents in the Arabian Gulf region feel their institutions are hosting

more international conferences with the aim of improving their institutions' rank compared to respondents in Australia.

- **Q25 (*My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) promotes the value of ranking participation to all academics*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the approaches followed by South East Asia and two other regions (Australia and South Africa) (Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia and South Africa (see Table 8.2). Therefore according to the respondents, university leadership from the South East Asian region promote the value of ranking participation to their academics significantly more than their Australian and South African counterparts.

- **Q26 (*My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) actively attempts to engage with academics about rankings*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the approaches followed by South East Asia and two other regions (Australia and South Africa) (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia and South Africa (see Table 8.2). Therefore according to the respondents, university leadership from the South East Asian region actively attempts to engage with academics about rankings, significantly more than their Australian and South African counterparts.

- **Q28 (*My institution's national commitments are at odds with ranking metrics*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses provided by South Africa and Australia (see Table 8.4). The median value of responses for South Africa is

higher than the median value for Australia (see Table 8.2), indicating that the South African respondents feel that the national commitments bestowed on South African universities are more at odds with the rankings metrics when compared to Australia.

- **Q37 (*The academics at my institution think the institutional ranking systems are important*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses provided by South East Asia and two other regions (Australia and South Africa) (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia and South Africa (see Table 8.2). This indicates a significantly higher level of agreeableness with the item 'The academics at my institution think the institutional ranking systems are important' from South East Asian respondents when compared with Australia and South Africa.

- **Q38 (*The academics at my institution are put under pressure to perform in aspects that underpin rankings metrics*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). The null hypothesis of no statistically significant difference in the distribution of values over the different regions is accepted for each individual case where two regions are compared. Thus, although the Kruskal-Wallis provided evidence of a difference in the distribution of opinion over the four regions, no significant difference between any two individual regions was detected (see Table 8.4).

- **Q41 (*The academics at my institution benefit academically from their institution's participation in ranking systems*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). The null hypothesis of no statistically significant difference in the distribution of values over the different regions is accepted for

each individual case where two regions are compared. Thus, although the Kruskal-Wallis provided evidence of a difference in the distribution of opinion over the four regions, no significant difference between any two individual regions was detected (see Table 8.4).

- **Q42 (*The academics at my institution are contractually bound to improved ranking performance*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses provided by the Arabian Gulf and Australia (see Table 8.4). The median value of responses for the Arabian Gulf is higher than the median value for Australia (see Table 8.2), indicating a higher level of agreeableness with the item 'academics are contractually bound to ranking performance' in the Arabian Gulf than in Australia.

- **Q44 (*The academics at my institution are dismissed, in some cases, to improve ranking performance*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the responses provided by the Arabian Gulf and South Africa (see Table 8.4). The median value of responses for the Arabian Gulf is higher than the median value for South Africa (see Table 8.2), indicating a higher level of agreeableness with the item 'The academics at my institution are dismissed, in some cases, to improve ranking performance' in the Arabian Gulf than in South Africa.

- **Q50 (*Rankings participation influences national HE policy set by the government*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). The null hypothesis of no statistically significant difference in the distribution of values over the different regions is accepted for each individual case where two regions are compared. Thus, although the Kruskal-Wallis

provided evidence of a difference in the distribution of opinion over the four regions, no significant difference between any two individual regions was detected (see Table 8.4).

- **Q52 (*Rankings participation influences my institution's international graduate employability*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of the South East Asia and Australia (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia (see Table 8.2), indicating that the South East Asian respondents believe that rankings participation influences their institution's international graduate employability more when compared to Australia.

- **Q53 (*Rankings participation influences my institution's national graduate employability*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of Australia and the other regions (Australia, South Africa and the Arabian Gulf) in the study (see Table 8.4). The median value of responses for Australia is lower than the median value for South East Asia, the Arabian Gulf and South Africa (see Table 8.2), indicating that the Australian respondents do not believe that ranking participation influences their national graduate employability, as much as respondents from South East Asia, South Africa and the Arabian Gulf.

- **Q58 (*Before participating in rankings, institutions should be of a high national standard*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of Australia

and two other regions (South Africa and South East Asia) in the study (see Table 8.4). The median value of responses for Australia is lower than the median value for South East Asia and South Africa (see Table 8.2), indicating that Australian respondents agree significantly less with the item 'Before participating in rankings, institutions should be of a high national standard' when compared to respondents from South Africa and South East Asia.

- **Q61 (*Rankings participation increases intra-institutional knowledge*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perception of the South East Asia region and Australia (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia (see Table 8.2), indicating that the South East Asian respondents feel rankings participation increases intra-institutional knowledge, significantly more than the Australian respondents.

- **Q62 (*Rankings participation increases international collaboration*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of the South East Asia region and Australia (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia (see Table 8.2), indicating that the South East Asian respondents agreed significantly more with the item 'Rankings participation increases international collaboration', when compared with their Australian counterparts.

- **Q63 (*Rankings participation increases regional (country and surrounding countries) collaboration*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of the South

East Asia region and two other regions (Australia and South Africa) (Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia and South Africa (see Table 8.2). It is therefore evident that the South East Asian respondents feel that rankings participation increases regional (country and surrounding countries) collaboration, significantly more than their Australian and South African counterparts.

- **Q65 (*Institutions should take part in the ranking systems that suits their mission the most*)**

Applying the Kruskal-Wallis test provided evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of groups (see Table 8.3). A Dunn-Bonferroni post hoc pairwise test was carried out for the four pairs of groups (regions). There was significant evidence ($p < 0.05$, adjusted using the Bonferroni correction) of a difference between the perceptions of the South East Asia region and the other regions (Australia, the Arabian Gulf and South Africa) (see Table 8.4). The median value of responses for the South East Asian region is higher than the median value for Australia, the Arabian Gulf and South Africa (see Table 8.2). It is therefore evident that the South East Asian respondents, feel that institutions should take part in the ranking systems that suits their mission the most, significantly more than the rest.

8.4 Exemplar Case Studies

The researcher highlighted instances where the outcomes of the regional comparisons, using the Kruskal-Wallis, support regional specific comments made during the interview phase. The overall results are considered against a backdrop of contextual literature to support the interpretation of the results. Therefore, each of the four regions are discussed as a case study.

8.4.1 Higher Education in the Arabian Gulf

8.4.1.1 Introduction

The Arab region contains 22 countries and around 422 million people with more than 50% of the population under the age of 25 (QS Quacquarelli Symonds Ltd, 2017). Arab higher education has an established tradition that goes back to the dawn of Islam in the seventh century A.D when emphasis was placed on learning and teaching the tenets of the new faith. Muslims

stressed the importance of understanding the Qur'an and the Traditions of the Prophet, on which the nascent society's theories of law and government were, based (Kettani, 1974). The Arab region, especially the GCC countries are experiencing a surge in Higher Education (Romani, 2009). State universities were founded beginning in the 1960s, after the GCC countries secured their independence. The 1990s saw the opening of the first private universities and an overall need for knowledge-based societies; underlie the post-2000 boom (Romani, 2009).

8.4.1.2 The Explosion in the Number of Universities in the Arabian Gulf

In line with a booming private sector, the region's higher education institutions have proliferated with a number of new institutions providing education designed to meet the needs of the market (Coffman, 2015). According to Romani (2009), the number of universities, operating in Saudi Arabia alone increased from eight to 100 from 2003 to 2009. New private higher education institutions have rapidly emerged throughout the Gulf. Many of the emerging universities used English as the language of instruction and imported Western-trained academics (Badry & Willoughby, 2017). The United Arab Emirates (UAE) and Qatar have established 40 foreign branches of Western universities over the same period. An astonishing, one third of all international branch campuses are found in the Arab states, which can be attributed to the value Arab leaders place on international education as well as their willingness to fund educational and research projects (QS Quacquarelli Symonds Ltd, 2017). Between 2004 and 2009, the GCC countries had expended more than 50 billion on higher education, and those levels of spending continue (Romani, 2009). At the time of writing, there are 62 higher education providers in Dubai alone. Those institutions have a combined enrolment of 60, 300 students (2016), including 33, 600 foreign nationals (ICEF Monitor, 2017).

This level of investment solidifies the Arabian Gulf as a significant academic actor within the region (Romani, 2009). Additional factors have contributed to the increased demand of higher education within the region. Roughly 60 percent of the population in the region is under the age of 16 and the ever expanding population growth of expats, which make up more than half of the population in Saudi Arabia and Kuwait and up to 80 percent of the population in Qatar and the United Arab Emirates, have contributed significantly to increased demand for higher education. More recently, world events, discussed in earlier chapters, have given the impression to Gulf Nationals that the United States is no longer a safe and welcoming place

for them to live as university students. Consequently, more students are expected to stay in their own country seeking western-quality programs locally (Coffman, 2015).

The three countries with the biggest academic developments are Saudi Arabia, the UAE and Qatar. A number of new big projects are planned with American, Canadian, British, Australian and Indian universities. The governments of Qatar and the UAE have set aside tracts of land in order to create high-prestige "university cities" to attract Western universities (Coffman, 2015). The GCC leaders believe that by developing world-class, top ranked higher education institutions they can reverse the balance of knowledge between the West and the Middle East. However, the scale of the projected academies significantly exceeds the capacities of the local workforce and this has forced the local authorities to resort to foreign institutions and manpower (Coffman, 2015; Davis, 2010; Romani, 2009). This largely contradicts the nationalist policies of nationalisation of manpower that GCC states have tried to enforce during the past decade (Romani, 2009).

Coffman (2015) argues that the most noteworthy characteristic of the region's higher education sector is the wholesale adoption of the American university model. American curriculums are taught in English, which will help Gulf countries become more productive in the new global knowledge economy. These universities will enable the region to diversify their economies through human capital and help prepare the region for a future when the energy resources are exhausted (Davis, 2010). However, national citizens are divided over their views of the higher education reform process; some have resisted the perceived takeover of higher education by Western professionals, while others see higher education quality as being dependent on English-language instruction and the intensive use of Western-trained academics (Badry & Willoughby, 2017). Reform may further destabilize relations between Gulf citizens and the expatriates who form a large share of the region's population (Badry & Willoughby, 2017).

8.4.1.3 The Arabian Gulf and HERS

Research production remains very low and represents one of the biggest challenges for the universities in the region to improve international rank. The universities in the Arabian Gulf are mostly staffed by expats with no time or mandate for research. The bulk of the research production comes from Education City in Doha and larger Saudi Universities (Usher, 2016; Purinton, 2015). Reputation indicators can be used to compare Arab universities however the

more regionally focused surveys will be more useful than the global surveys employed by both THE and QS. Global reputation surveys might not retrieve sufficient data to enable comparisons. Some ranking systems employ financial data in their assessment, however Usher (2016) argue that private universities from the Gulf may not be willing to be transparent about expenditures, furthermore their governments may also be hesitant to declare expenditures. A handful of institutions in the Arabian Gulf are ranked relatively high globally, however Purinton (2015) argues that the Middle East needs to pay less attention to the rankings and increase its focus on teaching quality, student outcomes, employability, critical thinking, effective reasoning and analysis and other higher education values expected in the West.

The QS World University Rankings 2019 ranks 30 universities from the Arabian Gulf (QS Quacquarelli Symonds Limited, 2018) and Times Higher Education World University Rankings 2019 includes 42 universities on their list (TES Global Ltd, 2018). King Abdulaziz University from Saudi Arabia heads up the THE WUR list for the Arab universities in the 201 – 250 group, followed by Alfaisal University (Saudi Arabia) and Khalifa University (United Arab Emirates) in the 301 – 350 group. Six universities are ranked in the top 500, another 13 between 500 and 800 and the rest are ranked in the 801-1000 or the 1001+ group (TES Global Ltd, 2018). Usher (2016) believes that rankers are unlikely to provide usable insights into Arab universities given the lack of usable metrics. Even with the aforementioned shortcomings a number of aspects identified in the qualitative interviews conducted with participants from the Arabian Gulf are triangulated by the quantitative results.

8.4.1.4 Regional Outcomes

a) Regional Outcome: Universities in the Arabian Gulf are Driving Rankings from the top Downwards

The respondents from the Arabian Gulf represent four countries and eight different universities. When all the outcomes of the Kruskal-Wallis and the Post hoc assessments are considered, the following issues regarding the Arabian Gulf are noteworthy.

- The respondents in the Arabian Gulf region reported the highest median of the four regions and a significantly higher mean rank than the Australian and South African respondents for

item Q50 ‘Rankings participation influences national Higher Education policy set by the government’. The aforementioned results are supported by qualitative data obtained in the interview phase.

The following excerpts are from interviews with participants from the Arabian Gulf and triangulates the quantitative results whilst providing possible reasons for the outcomes.

“I think our region is not ready for rankings yet. But we have no choice. The decision makers care but results and methodology is just noise to them. The Decision makers are the Sheiks and the Government they want the quality of HE to mirror the economy. It influences funding, support for initiatives, hierarchical leadership”. (Participant V)

“The region has a critical teaching shortage but the private universities have to follow the money”. (Participant V)

“… there are other parties that are appealing to the idea that the region’s institutions should be ranked higher. This puts us in a position where we are almost forced to adhere to accreditation standards and ranking indicators”. (Participant R)

“More and more valuable here, because of the low maturity of the education system”. (Participant R)

All of the participants from the Arabian Gulf are cognisant of the higher education reform strategies which depend on mostly private universities using western education models to produce suitable curriculums and education to develop the region into a reputable ‘knowledge economy’ or regional educational hub. World-class universities are a common feature of the knowledge economy and the term ‘world-class’ is aligned with a presence in rank (Marginson, 2013). Leaders in the Gulf are of the opinion, that if they want to transform their region from a talent receiver to a talent producer, then their universities should have a presence in the rankings. This perspective is not unique to the region; in fact, all four regions analysed reported a higher than ‘Neutral’ mean score for the item. The above, excerpts show that the participants suggest that the outcomes of the rankings influence funding policies and various support initiatives.

The majority of the participants believe that HERS influence their governments and policymakers. One interviewee suggests that the governments and Sheiks (university owners) in the region may be more susceptible to the influence of HERS because of the low maturity of the local education systems. Another aspect that may make the region's higher education leadership more susceptible to the influence ranking systems exert on universities is the fact that so many of the newly established universities are private institutions with profit as a driving factor. A higher rank means higher prestige, which is associated with many financial incentives. Higher rankings are associated with greater gains in research and development funding from government, industry and international tuition fees, and possibly the percentage of alumni that donate to the university (Bowman & Bastedo, 2011).

b) Regional Outcome: Academics are very Cognisant of Ranking Positions

- A Dunn-Bonferroni post hoc pairwise test, conducted after a significant Kruskal-Wallis assessment), confirmed a statistically higher mean rank for the Arabian Gulf region when compared with Australia for item Q42 'The academics at my institution are contractually bound to improved ranking performance'.
- The same statistical analyses confirmed a statistically higher mean rank for the Arabian Gulf when compared with Australia for the item Q44 'The academics at my institution are dismissed, in some cases, to improve ranking performance.'

The following excerpts are from interviews, with participants from the Arabian Gulf triangulate the quantitative results whilst providing possible reasons for the outcomes.

"Lower ranking outcomes could lead to their contracts not being renewed". Participant R

Participant P is not from the region but works for one of the big three ranking systems that liaise with the universities.

"The UAE for example, the policies related to the outcome of ranking results are scary. It is heavily used for allocating funding and used for hiring and firing people. Not just me but also my colleagues know about cases where numerous senior members of staff had to leave because the universities weren't happy with their ranking results". Participant P

Even though, the qualitative interviews did not contribute too many insights regarding the academic staff contracts being linked to ranking performance, one of the interviewed rankers suggests that rankings are heavily used to hire or fire staff, especially institutional researchers. As previously mentioned, most of the higher education institutions in the region employ expats from all over the world. These outcomes suggest that they may end up having to leave their institution based on an unfavourable rank. A contributing aspect related to the previous finding, is that many of the new higher education institutions within the Gulf are private institutions motivated by financial gains. The privately owned universities in the region have more freedom to set their own agenda.

c) Regional Outcome: The Influence of the West

The characteristics of the higher education systems in the Arabian Gulf lend themselves to unique/ contextual perspectives as elicited by the interviews.

"In reality our region believes the best education comes from the west, maybe lack of trust in local education systems. They believe in that Western stamp of approval. Accreditation made in the west". Participant U

"More and more valuable here, because of the low maturity of the education system". Participant R

"..they appeal to the pride of our leaders and their aspiration to be highly ranked". Participant R

8.4.1.5 Discussion

The overall perspective of the participants within the region is that universities in the Middle East and Arabian Gulf are focused on teaching. However, the leaders (governments and sheiks) within the region invest astonishing amounts in these universities, to recruit top academics and attract international talent, and to promote the reputation of the university to secure sustainability. Usher (2016) suggests that the leaders of the region see the university rankings as a way to attain prestige ignoring the hotly debated methodological criteria that underpin the

ranking systems. The criteria for most of the rankings are highly influenced by research output, which represents an obstacle for most of the many teaching orientated universities in the region. Nonetheless, only a small part of the rankings criteria are seen as relevant for the region, the leadership of the (private or public universities) want to be associated with highly ranked world-class institutions.

This latter perspective is not unique to the region and it represents one of the main themes, 'Theme 2: Leadership drives rankings', as discussed in chapter six. This perspective leads to one of the interviewees suggesting that the true target market of the ranking bodies is university leadership (vice chancellors and top management). In the case of the Arabian Gulf it seems that the leadership that drives rankings are external to the universities. The study suggests that the government and sheiks, that own the universities, are the primary driving force to obtain higher ranks.

One may suggest that the reason the finding is somewhat amplified in the region is because of the high number of private institutions within the area and the external decentralised leadership structures that exist therein. The university leadership structures are put under pressure to perform in rankings systems and nowadays the VC's and top management legacies, are marked by improved ranking outcomes. The importance of improved ranking performance are communicated downward to the academics (mostly expats). The universities can recruit talent in faculties or departments to boost ranking criteria, for example a highly cited researcher or institutional researcher (responsible for the rankings data submissions), are contracted with improved ranking outcomes in mind. However, improvement in rankings takes time and in some cases university staff can be held responsible for lack of improvement or a decline in the desired outcome.

8.4.2 Higher Education in Southeast Asia

8.4.2.1 Introduction

The South-east Asian countries are very diverse in nature having been influenced by the British, Spanish, Dutch, American and French colonialists. Wealth varies significantly across the region, from wealthy countries like Brunei and Singapore, middle-income and close to middle income countries like Indonesia, Malaysia, Thailand, Vietnam, and the Philippines, to lower-

income countries (Myanmar, Cambodia, Laos) (Altbach, 2017). Higher Education in Asia has expanded tremendously, providing increased access and a diverse curriculum to national and international students, the expansion has also brought about challenges such as shortages of qualified staff, instructional quality and financial constraints (Asian Development Bank, 2011).

8.4.2.2 The Association of Southeast Asian Nations (ASEAN)

The Association of Southeast Asian Nations (ASEAN) was established in 1967 by Indonesia, Malaysia, Philippines, Singapore and Thailand. Later on ASEAN was joined by Brunei (1984), Vietnam (1995), Laos (1997), Myanmar (1997) and Cambodia in 1999 (Association of Southeast Asian Nations, 2017). ASEAN's chief projects centre on economic cooperation, the promotion of trade among ASEAN countries and between ASEAN members and the rest of the world, and programs for joint research and technical cooperation among member governments (Moon, 2018). The ASEAN region has a population of more than 600 million and covers a total area of 1.7 million square miles (4.5 million square km) (Moon, 2018). The ASEAN higher education system has identified four main priorities namely; Student mobility, Credit transfers, Quality assurance and Research clusters. Ultimately, ASEAN aims to set up a common space of higher education in Southeast Asia (Zhang, 2013).

The 2025 ASEAN Socio-Cultural Community Blueprint, launched in 2016, encourages the promotion of an innovative ASEAN approach to higher education which will advocate people-to-people interaction and mobility leading to the free flow of ideas, knowledge, expertise and skills to inject dynamism within the region (McDermott, 2017). The ASEAN integration process has recognised the importance of student mobility, which led to the launch of the ASEAN International Mobility for Students, or AIMS programme (McDermott, 2017). Altbach (2017) argues that despite the existence of ASEAN and other regional organisations there is a dearth of accurate and comparable information or analysis concerning higher education in the region. This lack of up to date information and analyses is important for policymaking and makes benchmarking difficult. There is an urgent need for a research and policy community in higher education in this region. Only Singapore, Malaysia, and Thailand have research systems that publish more than 350 scientific papers per year (Marginson, 2014).

Access to Post-secondary and Higher Education varies considerably in Southeast Asia—from approximately 10 percent in Myanmar to 87 percent of the relevant age group in Singapore.

The region also shows low levels of post-secondary enrolment, with the exception of Singapore (Altbach, 2017). Altbach (2017) highlights modest spending on higher education by the region's governments (excluding Malaysia and Singapore), stifling the regions response for mass higher education. In Southeast Asia, per capita incomes range from a comparatively healthy $14,220 in Malaysia and $8,190 in Thailand to $1,950 in Myanmar. Six of the ten members of ASEAN have per capita incomes of less than $5,000 per year (Marginson, 2014). South-east Asian Universities have excellent teaching staff and are famous for the quality of their graduates. However, these universities cannot afford to invest hundreds of millions of dollars in research like the top-notch state-funded universities in China, Japan, Korea and Singapore (Maslog, 2017). The "arms race" in spending is currently confined to the post Confucian nations and Malaysia (Marginson, 2014, p. 15). The continued poor investment in higher education creates opportunities for the private sector.

Private universities are on the rise in the region and especially in Thailand, Indonesia, Cambodia, the Philippines and Vietnam. Many of the private education providers in the region play a "demand-absorbing" role, offering a wide variety of programs, and tend to be of lower quality (Asian Development Bank, 2011). Collaboration among the universities has grown considerably over the past two decades, which can partly be attributed to the Association of Southeast Asian Nations (ASEAN) (McDermott, 2017). Private providers in the region are more inclined to focus on lower cost programs such as business and education at the expense of more expensive programs like science, technology, and engineering.

Most of the countries across Asia share the same goals for their higher education systems, to upgrade and sustain the quality of education, to promote equity and access and improve the efficiency of higher education. However, significant variation in the higher education governance model still exists across the region. The variations tend to centre on differences in level of government control, funding arrangements, and personnel and civil service systems. Autonomy is a controversial issue in the sector as the structure of higher education became more diversified and complex, there is wide agreement that granting more autonomy to individual HEIs is necessary (OECD, 2003). Countries like Malaysia, Thailand and Vietnam have given top tier research universities more autonomy, some institutions have even received full autonomy, encouraging these top universities to strengthen research initiatives (Asian Development Bank, 2011). Governments want research to promote innovation, technical

development and productivity but additionally they seek the international prestige associated with world-class research (Asian Development Bank, 2011).

8.4.2.3 South East Asia and HERS

The QS WUR 2018 marked notable evidence of geopolitical shifts in higher education, with the rankings battle being between universities from North America and Western Europe versus those from East Asia and the Pacific (Calderon, 2017). Asian universities are climbing up various world rankings, an ascent that could soon rival some of Europe's most illustrious learning institutions (Boyd, 2017). Eleven Asian universities were among the top 100 universities in the THE WUR 2018. However, the results underscore the glaring education divide between Asia's more advanced and developing economies as only China, Japan, Singapore, South Korea and Hong Kong is listed in the top 100 institutions. Many of the universities in South East Asia still lag behind in the university rankings because they put fewer resources into research capabilities than global competitors (Boyd, 2017).

Thirty-six South East Asian universities feature in the THE WUR 2019, Singapore and Malaysia leads the way with the National University of Singapore 23rd, the Nanyang Technological University 51st and the University of Malaya in the 301 – 350 group. Two universities are ranked in the 501 – 600 group, six in the 601 – 800 group, nine in the 801 – 1000 group and 14 in the 1001+ group. Overall 14 universities from Thailand, 11 from Malaysia, five from Indonesia and two from Singapore and the Philippines (TES Global Ltd, 2018). QS WUR 2019 ranks 41 South East Asian universities, 13 from Malaysia, nine from Indonesia, eight from Thailand, four from the Philippines, three from Singapore, two from Vietnam and one from Brunei (QS Quacquarelli Symonds Limited, 2018).

8.4.2.4 Regional Outcomes

When considering all the quantitative outcomes, the following aspects are noteworthy. In general, respondents from South East Asia seem to report higher median levels for most of the items analysed. Twenty-four out of the 65 questionnaire items analysed by the Kruskal-Wallis non-parametric procedure, to compare the four regional groups, yielded statistically significant results ($p<0.05$). Of the 24 items, which retrieved statistically significant differences in the

distributions of the four regions, 17 items indicated statistically higher mean ranks for South East Asian respondents when compared to one or more groups. These items are listed below.

a) Regional Outcome: Rankings Influence Leadership and Strategy

The results below indicate significantly higher mean ranks and medians for the questionnaire items related to university leadership and university strategy.

- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q1: My institution's strategic plan has a specific rank number as a future target.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q6 'Ranking results are used for internal planning and goal setting' than South Africa, Australia and the Arabian Gulf.
- South East Asia has a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q8: In my institution, ranking results are used to influence funding policies.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q3: My institution's strategic plan has ranking related performance indicators at departmental level.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q25: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) promotes the value of ranking participation to all academics.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q10: In my institution, ranking results are used as evidence to encourage a change in institutional policy.
- South East Asia has a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q26: My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) actively attempts to engage with academics about rankings.

These outcomes are supported by interview excerpts by the respondents from the South East Asian region.

"Universities in Malaysia tend to take rankings very seriously especially the public universities but these days the private institutions as well, because they use it as marketing material". Participant K

"Personally I think that the journey to achieve the rank is perhaps more important than the rank itself. Getting to the top 100 is fine, it is good for branding but along the way, you will have to fix a number of fundamental issues along the way. Fixing those fundamental issues along the way is good for the university." "...another reason for the push for improved ranking outcomes is because of our minister. He wants to lift Malaysian HE to international level and want Malaysia to become a HE hub for international students especially those from the Middle East after 9/11". Participant K

"...in our strategy, things like our visibility, publishing in the right journal being seen at the right conferences. It is important". Participant L

"We use QS criteria to compete between faculties. We distribute equal funds to all budgets but we leave some extra funds for faculties to compete for it. The priority is given to those faculties that scored 5 stars". Participant X

"So in countries like Indonesia where national accreditation or national standards are possibly unclear and maybe not as valued as a benchmark. International rankings play quite an important part". Participant J

"That's another strategy even though we may not be ranked as highly but we are partners with highly ranked institution it may automatically constitute a halo effect of being of credit". Participant J

"The rankers might think that the target market is international students etc. When for me I think the target market is the actual decision makers within the institutions themselves". Participant X

"The problem is the government use ranking as one of their KPI's". Participant S

University leadership is the driver of institutional change and the perceived influence felt by the university whilst participating in HERS. The Top university leadership (VCs and DVCs) in South East Asia are actively using ranking results and criteria, to inform their universities' strategic plan and they are also communicating their rankings aspirations to the rest of the university community. It seems that the university leaderships really value ranking information and place a higher importance on ranking position, than the other regions in the analyses. Ranking criteria are integrated into their institutions' strategic plan at departmental level and faculty level. This alignment of strategy and rankings as metrics and aspirational goals reinforce the first two themes identified in the qualitative analysis 'HERS Influence University Strategy' and 'Leadership Drives Rankings'.

b) Regional Outcome: Increased Knowledge to aid Collaboration

- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q61: Rankings participation increases intra-institutional knowledge.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q62: Rankings participation increases international collaboration.
- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q63: Rankings participation increases regional (country and surrounding countries) collaboration.
- South East Asia has a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q5: In my institution, ranking results are used to increase awareness of other institutions' strengths and weaknesses.

"That's another strategy even though we may not be ranked as highly but we are partners with highly ranked institutions it may automatically constitute a halo effect of being of credit." Participant J

"Another thing I've noticed is that other universities mostly from Eastern Europe want to do this MOU thing with us and collaborate." Participant K

"I was there at international marketing at recruitment at the time so I had to go to China and South East Asia and people were always asking about ranking." Participant G

**Participant G is from a Deputy Vice Chancellor from an Australian University*

The absence of sufficient information about the region's higher education institutions and systems (Altbach, 2017) may also give the HERS results increased importance within the region and the outcomes are therefore used to choose international collaborators.

c) Regional Outcome: Rankings Influence Academics and the Public

- South East Asia has the highest median and a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q52: Rankings participation influences my institution's international graduate employability.
- South East Asia has a statistically higher mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q37: The academics at my institution think the institutional ranking systems are important.

The results support the initial results, suggesting that the South Eastern Region places a higher importance on the ranking systems and their outcomes. The perception of the survey respondents suggest that not only do prospective students care about ranking outcomes but academics and graduate employers as well. Some excerpts that support the outcomes are listed below.

"I was told by an organisation set up by the government to attract international foreign investment into Malaysia. That the rankings of universities matters to investors, because investors would like to know whether the HE can cater for high tech industries which is the kind of industries they would like to attract." Participant K

"Since we are recruiting international students, now 20% of the university population, these students ask where you are ranked in the world." Participant L

8.4.2.5 Discussion

Focusing on the South East Asian region when interpreting the quantitative and qualitative results, it becomes apparent that there seems to be an increased intent on improving rankings for various reasons. The quantitative results show higher mean and median scores for items related to all the themes identified in the qualitative phase. An argument for the seemingly bigger 'buy-in', into the ranking indicators and the results they produce, can be attributed to a number of things. However as mentioned previously, the most important influence on the university, is the role that university leadership plays when deciding and enforcing the direction of the university.

One of the interpretations addressed in the qualitative interview phase suggests that university leaders adopt one of two perspectives regarding HERS. Some university leaders believe that improving performance in ranking criteria, and rank, will lead to improved performance and opportunities to improve their university strategy and the other perspective suggests that improved performance and attainment of goals, as part of the university strategy, will consequentially improve university ranking performance. After analysing the quantitative and qualitative data, one may conclude with a small amount of circumspection, that most of the university leaders in South East Asia, subscribe to the former of the two perspectives, using ranking criteria and information to inform strategy. Clearly, the top leadership of South East Asian universities promote rankings aspects and engage more with staff about rankings than the other regions in the analyses.

One of the possible reasons for this finding may be attributed to a lack of comparable higher education information to inform policymaking and strategy (Altbach, 2017) within the region. The ranking outcomes and criteria are therefore elevated in importance not only for universities but by the public and governing bodies as well.

Boyd (2018) mentions how Thai politicians, policymakers and the media have used the international results to create reform pressure and participants from Malaysia echo these sentiments. Another aspect that should be considered is the issue of increased autonomy. In an increasingly decentralised system where increased autonomy is granted to 'first-tier' research universities (Asian Development Bank, 2011), these institutions are encouraged to obtain world recognition and prestige, which (as previously discussed) is synonymous with a higher

rank. Ranking criteria may be used as a guideline for universities seeking improved research outcomes, collaboration and prestige. The Asian Development Bank (2011) suggest that one way to aid the process of greater autonomy to universities and governments is to improve the access to information models, case studies and expertise that can inform decision making.

8.4.3 Higher Education in Australia

8.4.3.1 Introduction

The Australian higher education system consists of many independent, self-governing institutions of which 38 are public universities and three are privately owned (Group of Eight Australia, 2018). Even though all the Australian institutions are different in terms of size and disciplinary focus, they share the same missions, goals and philosophy as part of the provision in Australian law. For example, all universities should offer at least three Doctoral programs and actively engage in research (Lacy, Croucher, Brettand & Muller, 2016). Australia has a long history of higher education and today Australia is one of the world's top study destinations (Moodie, 2011).

8.4.3.2 Internationalisation

On average, approximately 20.7% of all the higher education students, within the country, are international students (Group of Eight Australia, 2018). Income from overseas students was the largest growing source of revenue, from 2014 to 2017, growing by $2.2 billion (Australian Gowernment: Tertiary Education Quality and Standards Agency, 2018). Australia is also a major exporter of education with a total of $15.7 billion earned for services rendered in 2014 alone (Lama & Joullié, 2015). In 2016, there were over 400,000 overseas students (80.9 per cent onshore enrolments and 19.1 percent being offshore enrolments) studying an Australian course (Australian Government: Department of Education and Training, 2016). The majority of these students were from China (38%) and India (16%).

"The internationalisation of Australia's education system can be traced back to 1950, when the Colombo Plan, an intergovernmental organisation aimed at strengthening social and economic development in the Asia-Pacific region, was implemented" (Moodie, 2011, p. 1). The Australian government regards international higher education as an enabler of productivity and

growth for the economy, providing positive effects in the social, cultural and intellectual life (Australian Government: Department of Education and Training, 2016). The International Education Advisory Council predicted that Australia's export education industry could grow by 30 percent by 2020 to reach $19 billion (Lama & Joullié, 2015), making it the country's third largest industry (Moodie, 2011). However, with the emergence of new Asian competitors combined with more opportunities for students to study online through Massive Open Online Courses (MOOCs), it could result in oversupply. Australian higher education needs to stay cognisant of these developments if it wants to maintain growth within this sector (Lama & Joullié, 2015).

The sector has experienced changes in the last 30 years, including massive domestic growth, and numerous new challenges to, and opportunities for, its primary goals of knowledge generation, dissemination and application (Lacy et al., 2016).

8.4.3.3 Australia and HERS

Australia performs well in rankings, 35 Australian institutions feature in the THE WUR 2019, with nine Australian institutions ranked in the top 200 (TES Global Ltd, 2018). Twenty-eight of Australia's 35 listed universities are ranked in the top 500 universities, according to THE WUR 2019 (TES Global Ltd, 2018). Similarly, nine universities are ranked in the top 200 and eight more are ranked in the top 300 of the QS WUR 2019 (QS Quacquarelli Symonds Limited, 2018). The best Australian university according to the THE WUR is the University of Melbourne, ranked 32nd, followed by the Australian National University (49th), the University of Sydney (59th), University of Queensland (69th), Monash University (84th) and the University of New South Wales (96th).

The ranking results confirm Australia as one of the world's leading centres for higher education and research (Mulquiney, 2018). According to Lacy, et al., (2016) the OECD determines the strength of a country's science base by the number of universities in the Shanghai Ranking's top 500 relative to GDP. On this measure Australia does well to perform well above the OECD median and ahead of Canada, the US and the UK. The latest QS System Strength Rankings ranks Australia third, globally (QS Quacquarelli Symonds Limited, 2017).

8.4.3.4 Regional Outcomes

The respondents from Australia represent six different universities. When considering all the quantitative outcomes, the following aspects are noteworthy.

In general, respondents from Australia seem to report lower median and mean levels for most of the items analysed. Of the 24 items, which retrieved statistically significant differences in the distributions across the four regions, 18 items indicated statistically lower mean ranks for Australian respondents when compared to one or more groups. In fact, Australia did not yield a statistically higher mean rank, as analysed by Dunn Bonferonni's pairwise comparison, than any other region across all 65 items.

a) Regional Outcome: HERS are Considered when Australian Institutions' Conduct Strategic Planning, However not as Much when Compared to Other Regions

- Australia has a joint second highest median (along with South Africa and the Arabian Gulf), however a statistically lower mean rank, as tested by the Dunn Bonferonni pairwise comparison, for item Q1 'My institution's strategic plan has a specific rank number as a future target'; item Q3 'My institution's strategic plan has ranking related performance indicators at departmental level' and 'Q6 'In my institution, ranking results are used for internal planning and goal setting'.

Australian respondents reported high medians for many of the items, however it seems the distributions were always lower than one or more of the other regions denoting a lower mean rank. In the three items above, Australian respondents reported a median of 4; nevertheless the distributions of the responses were lower and the mean ranks were therefore statistically lower than South East Asia's. The three items in question speak to the first theme of the qualitative analysis 'HERS influence university strategy'. The Australian respondents therefore agree that ranking results and metrics play a part in their university strategy and planning processes, however in this case respondents from South East Asia agree significantly more with those items.

"For a transnational institution like us, it very important and for unis that aspire to be global with international strategies it is important". Participant M

"So for us they are important because they are important to students in Asia and their families as one area of where your university sits". Participant I

b) Regional Outcome: Australian Leadership (University Leadership and Government) are Less Focused on HERS and their Outcomes

- Australia has the lowest median of all the regions and a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison, for item Q25: 'My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) promotes the value of ranking participation to all academics' and Q26: 'My institution's top leadership (Vice Chancellors and Deputy Vice Chancellors) actively attempts to engage with academics about rankings'.
- Australia and South Africa have the lowest median and both have statistically lower mean ranks than the Arabian Gulf, as tested by the Dunn Bonferonni pairwise comparison, for the item Q50: 'Rankings participation influences national HE policy set by the government'.

c) Regional Outcome: Australian Academics and Local Employers do not Think the Rankings are Important

- Australia has the lowest median of the four regions and a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison, for item Q37: 'The academics at my institution think the institutional ranking systems are important'.
- Australia has the lowest median of the four regions and a statistically lower mean rank than the Arabian Gulf region, as tested by the Dunn Bonferonni pairwise comparison, for item Q42: 'The academics at my institution are contractually bound to improved ranking performance'.
- Australia has the lowest median of the four regions and a statistically lower mean rank than the all the other regions, as tested by the Dunn Bonferonni pairwise comparison, for item 'Q53: Rankings participation influences my institution's national graduate employability.

It is noteworthy that Australia's median for both the above questionnaire items was '2', indicating that the majority of the respondents either disagreed or strongly disagreed with the three items.

The following interview excerpts from Australian interviewees partially support the quantitative results:

"For example academics ask me why it is important for me to be the top 1% instead of the top 10% and that's a debate occurring within academia. It is real they don't get paid more by being in the top 1% even though they work harder". Participant M

"In Aus we have something called the ERA Excellence Research Australia, similar to the UKs RAE, which is a government function used to compare research performance in different research categories and so that is a much more important exercise for the universities vice chancellors and for academics than the rankings". Participant H

d) Regional Outcome: Collaboration

- Australia has the lowest median of the four regions and a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison, for item Q61: 'Rankings participation increases intra-institutional knowledge'.
- Australia has the lowest median of the four regions and a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison, for item Q62: 'Rankings participation increases international collaboration'.
- Australia and South Africa has the lowest median of the four regions and a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison, for item Q63: 'Rankings participation increases regional (country and surrounding countries) collaboration'.

8.4.3.5 Discussion

When considering all the data regarding the Australian participants, the following can be deduced.

The Australian Higher Education system can be described as one of the most international systems globally. Australian Universities are comprehensive in nature with a strong research footprint. The Australian interviewees suggest that their universities perceive rankings as very important with a specific focus in mind; to attract international students to their universities in Australia or transnationally. International education has always been a key element to Australia's success as education exporter and provider. Investing in student support imperatives to nurture and support students from across the world, Australia has cemented itself as a quality education provider in the pacific, East Asia and South East Asia with the primary goal of developing global citizens. The mature Australian higher education system has top international academics and research collaborators. The systems are frequently described as 'punching above their weight' both in research output, citation impact and in rankings as well.

All interviewees suggest that the HERS are important to most, if not all, Australian institutions because it is important to attract international students. However, the quantitative regional comparisons, which revealed statistically significant differences in the distributions of 24 dependent variables (items), suggest that the response distributions were statistically lower with one or more regions, with most of the dependent variables. If different regions were considered in the analyses, the picture may have looked different, as the South East Asian respondents responded very high to most of dependant variables. The overwhelmingly high responses from South East Asian respondents may create the impression that the other regions are on the opposite end of the scale; disagreeing with the statements. That is the case with only a handful of instances but for many, as explained earlier the response is in the same direction just not as strong (or statistically lower).

As with the majority of the respondents surveyed, the HERS footprint is evident in strategic planning, goal setting and analyses. University leadership does not seem to engage academics about rankings or promote rankings to academic staff as much as some of the South East Asian universities. The respondents are also relatively unsure about whether or not their government's HE policy is influenced by the ranking outcomes. In turn, the academics do not view HERS and their rankings as important even though they report pressures associated with ranking related performance indicators. There does not seem to be too much of a link between ranking outcomes and staff retention or contractual agreements based on rankings. The

participants also seem to be unsure about the value of rankings when collaborating internationally or with regional collaboration when compared to the other regions.

From the outcomes above an argument can be made that the Australian institutions care about the HERS and their outcomes but that they do not give them the same level of importance as South East Asian or even the Arabian Gulf region. One may suggest that because the Australian HE system is so well established is mostly public funded and shares a generic overarching philosophy, they may not be as reactive or susceptible to the influence of the ranking systems and their outcomes. Another finding which may have far reaching implications or be the tip of the proverbial iceberg to the psychology of institutional approaches to rankings could be the fact all the other regions in the study had statistically higher distribution, regarding the item 'Rankings participation influences my institution's national graduate employability'. Just by looking at the medians, a big difference is evident with all of the regions having a median of '4' compared the Australia's '2', denoting Australian respondents mostly 'disagreed' or 'strongly disagreed' with the questionnaire item. This suggests that Australian universities feel secure that ranking outcomes do not influence their graduates' career prospects.

As explained and graphically shown earlier in the study, all of the higher education elements are interlinked by theme. The influences HERS exert, by annually compiling lists of ranked universities affects not only the individual university but also the whole system. For example, should a country's government structures consult the rankings, or even subject rankings, to make a rudimentary decision about where to allocate research funds, or which university is best suited to receive funds for new laboratory equipment, the implications may produce a ripple effect from university management to faculty, institutional planning etc. The evidence seems to suggest that the main 'unintended stakeholders' like the local government and graduate employers are less swayed by rankings in the Australian context.

8.4.4 Higher Education in South Africa

8.4.4.1 Introduction

The first university in South Africa, the University of the Cape of Good Hope was established in 1873. The university was modelled after the University of London, which had no campuses or resident students, instead it functioned as an examining body conferring degrees on students

who passed their examination no matter where they acquired the appropriate knowledge (Carruthers, 2018). Various colleges and schools provided post-school teaching. In 1916, the University of the Cape of Good Hope transformed into a federal university named the University of South Africa (UNISA) and relocated to Pretoria. In due course separate universities were created for Cape Town and Stellenbosch, Johannesburg, Pretoria and others have followed since (Carruthers, 2018).

8.4.4.2 Higher Education: A History of Inequality

During Apartheid, higher education in South Africa was skewed to cement the power and privilege of the white minority. The higher education institutions of that time were fragmented and shaped to serve the goals of the successive apartheid governments (Bunting, 2006). At the beginning of 1985, the government designated 19 higher education institutions for the exclusive use of white students, two for the exclusive use of coloured students, two for the exclusive use of Indians and six to the African students. Institutions were separated into 'universities' and 'technikons'. The primary function of the Technicons was to offer vocational training programmes to the youth, which did not provide a lot of postgraduate training and they did little research (Bunting, 2006; Carruthers, 2018).

Since 1994, the new democratic South Africa reshaped the higher education system to one that met the goals of equality (Bunting, 2006). Students could now apply to the institution of their choice, which resulted in unprecedented student mobility. By 2000, the proportion of black students in the total university enrolment increased from 32% in 1990 to 60%, similarly the proportion of black students in technikons increased to 72% over the same period. Even though the composition of enrolment, in terms of race and gender radically changed, access was still limited to the elite (Cloete, 2006). The period between 1990 and 2009, is characterised as a strong implementation drive comprising mergers and incorporations, the creation of tools to realise HE policy objectives and various initiatives to address inefficiencies and lack of delivery (Lange, 2017). However, Cloete (2006) remarks that even though the changes significantly improved individual access to historically advantaged higher education, it did little to redress systemic imbalances between historically advantaged and disadvantaged institutions (Cloete, 2006; Davids & Waghid, 2016). The same argument can be made regarding the country's knowledge production, with the traditionally white universities still

accounting for the highest research outputs and the previously disadvantaged universities struggling to keep up (Bawa & Mouton, 2006).

8.4.4.3 Contemporary Higher Education Politics: #Feesmustfall Movements and Free Education for the Poor

The most recent "fees must fall" protests have involved students from both historically advantaged and historically disadvantaged universities (Davids & Waghid, 2016). After three years (2015 - 2017) of continuous, violent student protests, calling for 'free higher education', President Jacob Zuma, in what some would call a populist political move, announced 'free higher education for the poor' in mid-December 2017 (Muller, 2018). Consequently, the decision entails the largest reallocation of resources amounting to additional funding of R57 billion over the medium term. Students from households earning less than R350, 000 a year will qualify (SA People News, 2018). Muller (2018) criticizes the decision by highlighting a study by the World Bank, which examined the effect of government spending and taxation on inequality. The study found that higher education was the least progressive of all social expenditure (Muller, 2018). To raise the additional funds required to finance the shortfall, the 2018 budget speech emphasized new tax measures most notably a higher VAT rate (15%) (Phakathi, 2018).

"There's a perverse consequence to all this: 'free higher education' could actually increase inequality" (Muller, 2018, p. 1).

8.4.4.4 South Africa and HERS

The THE WUR 2019, released in 2018, includes nine South African institutions. The overwhelming majority of which stem from previously advantaged institutions. Four universities are ranked in the top 500 globally (TES Global Ltd, 2018). The highest ranked South African university, namely the University of Cape Town was ranked 159th, followed by the University of Witwatersrand (201 – 250), Stellenbosch University (301 – 350) and the University of Kwa-Zulu Natal (401 – 450). The University of Pretoria, the University of Johannesburg and the University of the Western Cape are ranked in the same group (601 – 800), the Tshwane University of Technology were ranked in the 801 – 1000 group, followed by the University of South Africa, in the 1001+ group (TES Global Ltd, 2018).

Similarly, the QS WUR 2019 ranked nine South African institutions as well. The University of Cape Town were ranked in the 200th position, followed by the University of Witwatersrand (381st), Stellenbosch University (405th), the University of Johannesburg (551 – 560), the University of Pretoria (561 – 570), the University of Kwazulu-Natal (751 – 800). Rhodes University, North-West University and the University of the Western Cape are in the bottom group (801 – 1000) (QS Quacquarelli Symonds Limited, 2018).

8.4.4.5 Regional Outcomes

a) Regional Outcome: The South African Government is not Concerned with Rankings

- South Africa has the highest median of the four regions and a statistically higher mean rank than Australia, as tested by the Dunn Bonferonni pairwise comparison, for item Q28: 'My institution's national commitments are at odds with ranking metrics'
- South Africa and Australia have the lowest median and both have statistically lower mean ranks than the Arabian Gulf, as tested by the Dunn Bonferonni pairwise comparison, for the item Q50: 'Rankings participation influences national HE policy set by the government'.

The following excerpts from a South African interviewee supports the above quantitative results.

"Rankings does not take contextual issues into account. It assumes that all operate in the same environment, that the resources and political, social and environmental issues are identical. You cannot compare RSA universities with those in Boston there is a fundamental difference in context. Developmental challenges and how it accounts for the ranking position is one of the major ranking problems". Participant N

"Rankings promote unhealthy competition and it does not promote collaboration. In a developing system with limited resources we need to focus on improving the system as a whole". Participant N

b) Regional Outcome: Academics and University Leadership

- South Africa has a statistically lower mean rank than the Arabian Gulf, as tested by the Dunn Bonferonni pairwise comparison, for item Q44: The academics at my institution are dismissed, in some cases, to improve ranking performance. The median value is '2' suggesting that most of the distribution either 'Strongly Disagree' or 'Disagree' with the item.
- South Africa has a lower median than the Arabian Gulf and South East Asia, as well as a statistically lower mean rank than South East Asia, as tested by the Dunn Bonferonni pairwise comparison for item Q37: The academics at my institution think the institutional ranking systems are important.

The following excerpt from a South African interviewee support the, above, quantitative results.

"There is tension between what management believe is in the best interest of the university and what academics believe is and the academics do not care for rankings". Participant N

c) Regional Outcome: Emphasize Research Outputs

- South Africa has a statistically higher mean rank than Australia, as tested by the Dunn Bonferonni pairwise comparison, for item Q17: 'To improve my institution's rank my institution emphasizes its research outputs'.

The following excerpt from a South African interviewee support the, above, quantitative results.

"I think what we are looking at and I think rankings will in future is the citations from local area. Research impact on the local environment maybe the ones where the innovation is coming from". Participant O

8.4.4.6 Discussion

When considering all the data regarding the South African participants, the following can be deduced.

Perhaps the most common antithesis to ranking South African institution or South African institutions participating in HERS stems from its unique and complex past and tumultuous present. Notably both datasets (interviews and survey results), were collected during countless student protests across most of the country's higher education institutions (2015 – 2017), especially at the ranked universities included in this study. South African higher education institutions face challenges such as increasing access, improving efficiency and improving the contextual relevancy of the curriculum whilst continuing to promote equality in all aspects of the society (Lange, 2017; Bawa & Mouton, 2006).

In an interview Professor Ahmed Bawa, the Chief Executive of Universities South Africa, touched on a number of contextual issues which make it difficult for South African institutions to excel in rankings. "For one, our system is seriously underfunded and this places huge constraints on its ability to take on some of the criteria used in these ranking systems and of course our university sector has to deal with the enormous challenges which apartheid has left behind" (Macupe, 2017, para. 20). Bawa adds that South African institutions will most probably never be as 'research-intensive', as institutions where the majority of the students are postgraduate students (Macupe, 2017). The unique contextual themes of South Africa and more specifically South African higher education delineate the regional outcomes.

It is clear from the literature and the outcomes that rankings do not form part of the national higher education agenda and the commitments of the South African higher education system are not aligned with rankings criteria. The interview excerpts, included above, describe the contextual challenges associated with the practice of ranking universities globally. However, South African universities do participate in rankings and some do quite well in them according to Prof Bawa (Macupe, 2017). As discussed earlier, the overwhelming majority of the respondents agreed or strongly agreed with most of the items, three of the top ten ranked items had to do with top leadership's (Vice Chancellors and Deputy Vice Chancellors) attitude towards rankings and HERS.

South African respondents were no exception, therefore even though the items involving top management showed high medians and mean scores for the South African region, none of them showed statistically significant differences when compared with the other three regions. However, differences were evident regarding items related to academics. Similar to Australia, the South African academics do not attach the same level of importance to HERS as their South East Asian counterparts and there does not seem to be a link between ranking outcomes and job security (i.e. staff are not hired or fired based on outcomes). The aforementioned statement relates to a South African interview excerpt which suggests that where rankings are concerned a mismatch exists between what university management and academics believe is good for the university. The regional comparisons show that the South African respondents feel that their universities emphasize the importance of research outputs in an attempt to improve rank, significantly more than respondents from universities in South East Asian and the Arabian Gulf.

8.5 Summary

Chapter 8 compared the responses of the respondents from Australia, South Africa, South East Asia and the Arabian Gulf to identify differences in the influences experienced or approaches taken, in response to rankings. The researcher conducted non-parametric assessments after noting that the data of the dependent variables were not normally distributed. The Kruskal-Wallis test was deemed suitable to identify items where one region statistically differed from one or more of the other regions. Additionally, the Dunn-Bonferonni were employed to highlight between which regions the statistically significant differences occurred. Twenty-four significant differences were presented and analysed.

The researcher combined the statistically significant results with context-specific interview excerpts and literature to produce four exemplar case studies. The case studies contributed to understanding, interpreting and discussion of the results, as it provides additional background to the results of the data sources. The case studies enabled the researcher to discuss the results from all data sources in depth. The main results of the regional comparisons indicate that the socio-political and economic environment of a region or country can lessen or aggravate the pressure of HERS and rankings on universities. Secondly, South East Asian institutions place a higher importance on HERS and the rankings they produce, when compared to the other regions. Thirdly, Australian institutions place less importance on HERS and the rankings they

produce when compared to the other regions. The fourth result suggest that institutions in the Arabian Gulf use rankings more to recruit or dismiss employees, when compared to South Africa, Australia and South East Asia. Finally, the South African government and university staff are less concerned with rankings than the other regions.

8.6 Conclusion

Chapter 8 provided regional comparisons in the way institutional leaders from universities experience the influence of HERS and their rankings. Statistical comparisons, contextual interview excerpts and contextual literature triangulated most of the results produced by the two phases. Each case study produced a discussion and the main conclusions, concerning regional comparisons, were summarised above. Chapter 9 will discuss the overall findings or inferences generated by the study.

CHAPTER 9: DISCUSSION OF MAIN FINDINGS (INFERENCES)

9.1 Introduction

The themes identified in the first (qualitative) phase of the research, informed the construction of the questionnaire items which serve as dependent variables for the second phase (quantitative). The quantitative results confirmed the majority of the aspects identified by the interviews. In the third and final phase of the study, the researcher compared all the results from the first two phases, across four regions (South Africa, Arabian Gulf, Australia and South East Asia) and discussed the differences in four exemplar case studies.

Chapter 9 will present and unpack the findings of the study for the purposes of addressing the aim, which are to explore and compare perceptions of institutional leaders on the influence of HERS and their rankings, on their work life and their institution's strategy. The findings of the study take the form of an 'inference', which transcends quantitative and qualitative research (Teddlie & Tashakkori, 2003). The findings provide a unique perspective on the changes that occur within these particular institutions in order to excel in the various ranking criteria and overall ranking performance. In the discussion, the researcher combines the empirical and the theoretical by re-contextualising the emerging data with literature (Henning et al., 2004) to shed some light on the viability of the prospective ranking participation and university management practices. As part of the discussion of the findings, the researcher compares experiences from various interviewees in several regions, namely; South Africa, Australia, South East Asia, and the Arabian Gulf.

9.2 Discussion of the Main Findings

The main findings delineate the five major influences on the participating institutions and emphasizes four additional inferences, which emanated from the regional comparisons as unpacked by the exemplar case studies (in chapter 8).

In relation to the aim of the study, the following findings/inferences have emerged.

- HERS, and their rankings, influence the strategy of the universities directly and subtly.
  - Changes are predominantly geared toward increased research production.
- HERS, and their rankings, influence with which institutions universities collaborate.
- Unintended stakeholders like university boards, the government, media and public, influence top leadership (VC & DVCs) and the university.
- Top leadership's (VC & DVCs) approach to rankings determines the extent of rankings pressure on strategy and academics.
- Socio-political and economic environment of a region or country can lessen or aggravate the pressure of HERS and rankings on universities.
  - In general, South East Asian institutions place a higher importance on HERS and the rankings they produce, when compared to South Africa, the Arabian Gulf and Australia.
  - In general, Australian institutions place less importance on HERS and the rankings they produce when compared to institutions South Africa, the Arabian Gulf and South East Asia.
  - Institutions in the Arabian Gulf use rankings more to recruit or dismiss employees, when compared to South Africa, Australia and South East Asia.
  - The South African government and university staff are less concerned with rankings than the other regions.

9.2.1 HERS, and their Rankings, Influence the Strategy of the Universities Internally

The findings encapsulate ways in which ranking information is used that directly or indirectly alters the strategic functioning or direction of the institution. The ranking indicators, criteria and results are subject to various inter-institutional analyses and serve to influence decision-making at management and departmental levels. Many of the findings substantiate the results of previous studies, comments made by higher education and ranking professionals demonstrating that rankings influence decision-making regarding recruitment policies, funding policies, university structure and marketing strategies (Wint & Downing, 2017; Altbach & Hazelkorn, 2017; Espeland & Sauder 2015; Baty, 2013; Hazelkorn, 2013; Rauhvargers, 2013; Scott, 2013; Trounson, 2013). Additionally, the findings are consistent with that of the EUA "Ranking in Institutional Strategies and Processes" (RISP) project which reported that 60% of the universities indicated that ranking play a part in the strategic planning process of their institutions (Wint & Downing, 2017).

Espeland and Sauder (2015; 2007) views rankings as a surveillance mechanism that creates an environment where pressures or influences are sometimes explicit but often subtle. The study echo these sentiments, as respondents agreed that participating in the HERS is changing the overall direction and culture of their institution and the decision-making practices to some extent. Therefore, the findings justify some of the concerns expressed by Marginson (2007) of whether the rankings serve the purposes of higher education or whether institutions are changing to fit the ranking criteria.

The large weightings HERS attach to research related indicators, as discussed in chapter 3, have been widely reported and criticized (Hazelkorn & Altbach, 2017; Downing, 2013; Hazelkorn & Ryan, 2013; Rauvargers, 2013; Marginson, 2013). The increased emphasis by institutions on research output and citations counts have produced the most significant influence on universities, worldwide. Rankings have contributed significantly to the 'Publish or perish' mentality spreading through all fields of study and geographic locations in higher education (Kehm, 2014). All participating institutions are confronted by the need to produce more and better research as increased performance will be reflected in the rankings (Rauhvargers, 2014), it is predominantly this concern which made Altbach and Hazelkorn (2017) suggest that smaller to mid-tier institutions, especially those with a strong social mission, refrain from participating in rankings. However, with the multiplication of HERS, which source their own data, gaining increased recognition, the option to refrain from participating may soon become a myth.

Furthermore, many higher education researchers, like Hazelkorn and Gibson (2017) and Marginson (2007), suggest that the rankings play a large part in the current wave of national policies adopting higher education excellence initiatives (discussed in chapter 4) geared at significantly improving the research production of universities and the competitiveness of nations in the global knowledge economy (Wint & Downing, 2017). Hazelkorn and Gibson (2017) suggest that the today's knowledge economy prefers research to teaching.

As mentioned earlier, some ranking related influences are evident in institutional policies, HR policies finance and planning documentation. The findings relate to Espeland and Sauder's (2007) mechanism of reactivity "Self fulfilling prophecies" and "Commensuration", as ranking related indicators and results are increasingly present institutional planning documentation as performance targets (Lock, 2013) and eludes to increased managerialism on higher education.

The overwhelming majority of the research participants agree that universities capture ranking related indicators and criteria in their strategic plan and intentionally build institutional key performance areas around ranking indicators.

According to interviewees, explicit statements of this nature serve as the visible tip of the iceberg with regard to the relationship between institutional planning and HERS. Additionally, it is included in faculty, departmental and individual KPA and/or KPI's in performance agreements, which in turn affect bonuses, increases etc. In achieving these goals (KPA/KPI's based on improving ranking indicators), the heads of faculties and departments redistribute resources with ranking indicators in mind. For example, faculty Deans are now employing more international staff members, which also brings about new problems in staff management. One of the interviewees suggested that even though diverse staff member bring numerous positives to the table it becomes difficult to manage as different cultures and norms can clash. The information from the ranking results are utilised by institutions, to shed light on previously unknown strengths and weaknesses of the university (Hazelkorn & Altbach, 2017; Yat Wai Lo, 2014). Marginson (2013) and Rauvargers (2013) suggested that universities benefit from improved data management practices and the interviewees affirmed that ranking data led to the establishment of IR or ranking offices. Institutional leadership are forced to adopt and monitor new aspects to strategy such as the institution's performance in subject rankings, student staff ratio's, the income generated from research and continued engagement with employers.

9.2.2 HERS, and their Rankings, Influence with which Institutions Universities Collaborate

Research participants (interviewees and questionnaire respondents) agree that ranking outcomes and/or indicators are powerful motivators to generate change within the organisation, for example, changing the journals in which researchers publish or which departments, schools or researchers receive increased funding (Wint & Downing, 2017; Espeland & Sauder 2015; Hazelkorn, 2014; 2013). Not all departments are generic in the eyes of the HERS as the majority of the research citations considered by HERS are skewed toward the Science Engineering and Technology fields (as delineated in chapter 3). The aforementioned overreliance on the SET fields has been lessened somewhat by the standardisation techniques employed by QS and THE, in addition to the inclusion of more journals by the Elsevier Scopus database (used by both THE WUR and QS WUR).

Research participants (respondents and interviewees) agree that the ranking information contribute to increased awareness of the strengths and weaknesses of peer institutions. Universities benefit from an increased understanding of their national higher education peers as well as increased knowledge of institutions similar to them. Most of the respondents agree that ranking participation leads to increased collaboration with local, regional and international institutions (universities). However, an even larger proportion of the respondents agree that the outcomes are used with international institutions in mind. As mentioned in the discussion of the first theme ('HERS Influence University Strategy'), interviewees alluded to the universities' intent to collaborate with institution ranked higher than themselves, which may increase the difficulty of collaborating with local or regional universities. The results also suggest that rankings participation do not accommodate community service initiatives, which makes it more difficult for institutions to maintain altruistic intentions.

One interviewee questioned, for example, why a top institution in Singapore would want to collaborate with some of its South East Asian counterparts when it is possible to collaborate with peer institutions in the west. The aforementioned phenomenon may be at the expense of regional development of smaller or younger universities, but it will also impede the region's ability to address regional-specific issues. The argument is even more relevant from a subject ranking perspective, where national and/or regional institutions compete directly in a subject or field. Peer institutions may become hesitant to partner with each other on issues in their field affecting their region or country.

9.2.3 Unintended Stakeholders Like University Boards, the Government, Media and Public, Influence Top Leadership (VC & DVCs) and the University

Universities do not change themselves, institutional leadership responsible for the strategic direction of institution are affected by the influence of HERS and their rankings (Locke, 2014). The majority of the interviewees (of the study) are institutional leaders (*VC, DVC, Directors, Dean and Head of Departments),* and they report significant pressure on top leadership (VC and DVCs), by numerous stakeholders like university governing bodies, national governing bodies the public and the media. Who are usually more susceptible to ambitious expectations about where the institution could or should be positioned (Locke, 2014).

Unintended influences and influencers emerge from the annual publication of rankings and may increase some of the pressures felt by the universities. The findings suggest that the local government bodies are finding ways to incorporate ranking information into national HE strategies that may have countless implications for the universities (Wint & Downing, 2017; Hazelkorn & Ryan, 2013; Hazelkorn, 2013; Locke, 2014; Kehm, 2014; Marginson, 2013; Scott, 2013). Governments consult rankings and/or HERS to inform the changes in local HE systems, additionally, rankings are used to inform immigration policies (Griffin, 2018). One of the interviewees suggest that the reason his/her VC has an interest in rankings is because their country's new Minister of Higher Education has an interest in them and makes decisions based on them.

Other unintended influencers confirmed by the present study include scholarship bodies, international investors, overseas governments and local and international employers (Rauvargers, 2013; Downing, 2012). Interestingly most of the regions believe that ranking results affect their graduate employability both nationally and internationally with the exception of the Australian respondents. This is unsurprising, however the interviews suggest that employers do not just look at rankings data to recruit or hire talented students, some have started gauging the HERS to inform potential investment opportunities in an area. Companies consult HERS to decide whether the suitable technical expertise will be in the market of the region they wish to pursue.

Scott (2013) argued that the annual publications of rankings by HERS resulted in unprecedented attention on international higher education. The simple easy-to-reference nature of rankings have made it powerful marketing tools to the benefit of participating institutions (Scott, 2013), which are confirmed by interviewees and questionnaire respondents. However, the constant monitoring of performance by the public, media and governments has made rankings a source of anxiety (Espeland & Sauder, 2015). Therefore, much like a leash resembles a noose, the same aspects which make ranking results quick and easy to reference, for marketing purposes, have created additional stressors from the media and public (Espeland & Sauder, 2015; Scott, 2013).

The aforementioned pressures are creating an environment where ignoring or disagreeing with the HERS have become very difficult for the university, especially the top leadership of the institution. Success in rankings (high rank or increasing rank) reflects favourably on the

leadership of an institution, especially on the reputation of the VC. Additionally, many interviewees suggest that rankings speak to the ego of the VCs and serves as a reflection of their own reputation. The various pressures placed on the shoulders of the top leadership may grow with time. The results of the questionnaire indicated that the top leadership (VC and DVC's) of the respondents' institutions are committed to improve rankings and believe that rankings have strategic value. The aforementioned aspects retrieved mean scores of more than '4' indicating that the overwhelming majority of respondents indicated that rankings are taken very seriously by their leaders.

Interpretation of the interview responses concluded that the top leaders take regarding rankings, firstly; some leaders see rankings as a consequence of performance, meaning that their VC's /DVCs believe that by continued improvement on their university's mission, vision and increased focus on their original higher education goals will translate to improved ranking performance. The second perspective suggest the alternative; that focusing on ranking indicators, attempting to improve rank and building reputation through ranking performance will play a significant role in achieving or supporting their university's strategic objectives. The quantitative results indicate that both perspectives received similar outcomes with the majority of the respondents agreeing with both statements.

Unfortunately, the researcher could not find any link or difference between the two perspectives and regions. Whichever way the leadership of the university views ranking, their actions and communication to the rest of the institution will invariably influence the culture of the university. Both perspectives came out strongly in the interviews and both retrieved high mean responses.

9.2.4 Top Leadership's (VC & DVCs) Approach to Rankings Determines the Extent of Rankings Pressure on Strategy and Academics

The present study found university leadership to be a significant determinant of the aforementioned institutional change and the perceived influence felt by the university. The study highlights the importance of top down communication from leaders to academics. Academics are affected by their institution's participation in HERS and proper exchanges between the leadership and academics can improve the perceived effects or influence of rankings.

This is consistent with the findings of researchers like Espeland and Sauder (2015; 2007) and Yat Wai Lo (2014). It should be noted that the sample population included university management like VCs, DVCs, Faculty Deans, Vice Deans, Heads of Department and some professional management like division heads. The respondents can therefore comment as an academic as most of them come from academic backgrounds or from the experience, they have working with academics. However, none of them were employed as academics when they completed the survey questionnaire.

The findings show that even though a small portion of academics enjoy the prestige a certain rank brings to an institution, and some are unconcerned about rankings, a large proportion of academics disagree with rankings. Academics are pressured to comply with performance targets underpinning ranking related indicators and or criteria. However, they themselves do not attach the same level of importance to ranking performance when compared with institutional leaders (Hazelkorn, 2013). Yat Wai Lo (2014) highlighted the reactions to the research performance driven culture, aggravated by HERS, from Taiwanese academics. The academics feel that researchers are preferred to quality teachers in the tenure process and young academics find it harder to be promoted because of the rigorous publication targets.

Many of the interviewees suggest that strategies, where leaders make academics familiar with the ranking metrics, led to positive outcomes and less tension between university leadership and the academics. Interviewees mentioned a couple of examples where the executive management fostered a culture of teamwork by setting departmental and institutional ranking goals. Other approaches comprise interdepartmental competition, workshops and financial incentives directed toward improved performance in the ranking metrics. These approaches encapsulate ways in which the university leadership can proactively influence the culture of their institutions using aspects of rankings. Therefore, interviewees suggest that an institution's top leadership may be able to mediate the relationship between them, the university and the rankings through their belief and communication.

Furthermore, top leadership faces the risk to be perceived as disingenuous by their own staff if they do not. Lower mean scores suggest that less top leaders engage with academic staff about ranking outcomes, indicators and criteria or promote awareness of outcomes or criteria of rankings internally. The researcher stresses the importance of communication and is of opinion that it may be the catalyst for ranking success and a positive university culture.

The majority of the research participants (interviewees and questionnaire respondents) know of instances where academics were hired with the eye on improved ranking performance but less evidence exist which suggests that academics are contractually bound to improve ranking performance or that they could be dismissed when ranking related outcomes are not desirable. Researchers like Holmes (2017) reported instances where universities employed recruiting practices for the sole purpose of improving their ranking. Additionally, interviewees have alluded to prolific researchers earning way above the pay grade after they established the significance of the researcher with regard to rankings.

9.2.5 Socio-political and Economic Environment of the Region or Country can Lessen or Aggravate the Pressure of HERS and Rankings on Universities

Ranking indicators and criteria can disrupt the participating institutions' intended role from a national perspective (Hazelkorn & Altbach, 2017). Different universities fulfil different societal needs; e.g., some institutions have a predominantly teaching role whereas others may be research institutions. Most of the world university rankings, like QS WUR and THE WUR rank all participating institutions on a generic ranking table. Intentions to improve in the ranking indicators may condition some institutions to shift their focus from other aspects to ranking indicators (Hazelkorn & Altbach, 2017; Marginson, 2013; Downing, 2012).

The findings support these assumptions; obsession with ranking success may blind institutions from their core objectives and university mission. Therefore, interviewees advise that universities participate in the ranking systems with which they are most comfortable or that suits their mission the best. However, the researcher argues that with the multiplication of HERS not requiring consensual participation (Griffin et al., 2018; Hazelkorn, 2013), and production of more nuanced rankings, the aforementioned advocacy is quickly becoming irrelevant. University leaders have to juggle their own unique regional commitments, governmental targets and international aspirations.

The extra pressure produced by the HERS on universities to be nationally relevant and globally competitive makes this balancing act more difficult. One may suggest that the generic challenges brought on by rankings are significantly intensified in some geopolitical contexts, in which increased access to HE and/or teaching is an incremental societal need. Moreover, universities from areas with young HE systems and/or universities from developing nations are

faced with a myriad of challenges to respond to local and regional needs of their society (Yudkevich, 2015; Matthews, 2012; Ndoye, 2008).

Numerous interviewees remarked on the mismatch of responsibilities, suggesting that the absence of indicators like teaching, quality of the curriculum and access may result in an overemphasis of measurable ranking indicators by institutions. Kehm (2014) suggested that an 'Isomorphism' trend occurs, i.e. the lower-ranked institutions trying to imitate the higher ranked ones in order to improve their ranking position. Consequently, the redistribution of resources to ranking-friendly indicator may limit the institutions ability to address immediate or long term, local issues (Visser & Sienaert, 2013). The mismatch of priorities have widely been reported by various academics like, Yudkevich (2015), Rauvargers (2013), Downing (2012), Ndoye (2008), Salmi and Saroyan (2007) to name but a few.

With the significant contextual differences in mind, the researcher compared the extent or perception of the HERS influences on four different regions. The following represent the findings of the regional comparisons.

9.2.6 In General, South East Asian Institutions Place a Higher Importance on HERS and the Rankings they Produce, When Compared to Institutions in South Africa, the Arabian Gulf and Australia

Twenty-four items retrieved statistically significant differences in the distributions of the four regions, 17 of these items indicated statistically higher mean ranks for South East Asian respondents when compared to one or more groups. Therefore, the researcher contends that the South East Asian institutions place a higher importance on HERS and their rankings than the other regions. Additionally, the reason for the bigger buy-in has to do with institutional leadership, the various national governing bodies and the lack of comparable higher education information within the region.

The findings indicate that the top leadership of the South East Asian institutions employ ranking indicators and criteria to inform their internal strategy and planning documentation, to a much larger extent, than to the other regions. Among other results, the statistical analyses (Descriptive statistics, Kruskal-Wallis and Dunn Bonferonni test) suggest that the South East Asian respondents agreed significantly more, than respondents from the other regions, when

asked whether ranking indicators were present in institutional and departmental planning documentation and whether ranking information were used as evidence to bring about institutional change. In addition, the regional comparisons suggest that South East Asian leadership engage more with their staff about rankings and promote the rankings within the institution.

Other questionnaire items South East Asian respondents agreed with significantly more than the other regions had to do with increased awareness of other institution's strengths and weaknesses and deciding with which institutions to collaborate. The contextual literature and interview excerpt provide possible reasons for the outcomes. Many of the governing bodies, like those of Malaysia and Thailand, use ranking results to inform higher education policy reform initiatives (Boyd, 2018; Asian Development Bank, 2011). In addition, some of the interviewees argued that national standards and accreditation criteria could be unclear (Indonesia). Furthermore, last year Altbach (2017) pointed out that there is a lack of comparable higher education information to inform policymaking and strategy within the South East Asian region.

In conclusion, the findings indicate that South East Asian leaders value ranking results and are more open about ranking aspirations in their communication than other regions. This relates to the discussion in chapter 8, where it is theorised that aspects; such as the openness adopted by South East Asian leaders when communicating the importance of rankings with staff and the a need for more comparative information in their HE system (Marginson, 2014) may be related to the bigger HERS 'buy in' from several role players. These role-players include governments, the employers, the public and perhaps most importantly the academics in the South East Asian region.

Regional-specific literature, analyses and interpretation pertaining to the South East Asian region were discussed as an exemplar case study (in chapter 8).

9.2.7 In General, Australian Institutions Place Less Importance on HERS and the Rankings they Produce when Compared to South Africa, the Arabian Gulf and South East Asia

Of the 24 items, which retrieved statistically significant differences in the distributions across the four regions, 18 items indicated statistically lower mean ranks for Australian respondents when compared to one or more groups.

The researcher argues that the Australian institutions care about the HERS and their rankings, as indicated by the quantitative and qualitative results, especially with regards to attracting international students. However, they do not give them the same level of importance as South East Asian or even the Arabian Gulf region. The researcher contends that the reason for the aforementioned is that the Australian HE system is well established, mostly public funded and shares a generic overarching philosophy, they may not be as reactive or susceptible to the influence of the ranking systems and their outcomes.

Even though the results of the questionnaire demonstrate that Australian leadership and institutional strategy are concerned with rankings, that they consider it when making decisions albeit significantly less than South East Asia, their academics, in particular do not think it is important, are not contractually dependant on the outcomes and their graduate employers are not influenced by the rankings. Moreover, Australian respondents also slightly more sceptical as to the value of rankings for information and collaboration purposes. The evidence seems to suggest that the main 'unintended stakeholders', like the local government and graduate employers are less swayed by rankings in the Australian context.

Australia's regional-specific literature, analyses and interpretation of were discussed as an exemplar case study (in chapter 8).

9.2.8 Institutions in the Arabian Gulf Use Rankings More to Recruit or Dismiss Employees, When Compared to South Africa, Australia and South East Asia

The governments and sheiks, which own universities in the Arab region, invest substantial funds into the young HE environment to recruit top academics and attract international students. Even though, the contextual literature and interviewees of the region, suggest that the

higher education system is predominantly geared toward teaching the majority of the respondents from the Arabian Gulf believe that their governments and policymakers are influenced by the HERS and their rankings. This region scored the highest median and mean, for the corresponding questionnaire item, and found to have a significantly higher distribution than both Australia and South Africa.

The importance of improved ranking performance are communicated downward to the academics, which are mostly made up out of highly paid international staff. The respondents from the Arabian Gulf suggest that ranking results affect academics more than any other region. The respondents from the region agreed significantly more, when asked whether some academic's job security are contractually linked to improved ranking performance. Additionally, the region agrees significantly more that some academics are dismissed for failure to improve ranking related performance. A contributing aspect related to the previous finding, is that many of the new higher education institutions within the Gulf are private institutions motivated by financial gains. The privately owned universities in the region have more freedom to set their own agenda.

Regional-specific literature, analyses and interpretation pertaining to the Arabian Gulf region were discussed as an exemplar case study (in chapter 8).

9.2.9 The South African Government and University Staff are Less Concerned with Rankings than the Other Regions

The South African respondents believe their institution's national commitments are at odds with ranking metrics more than any other region, and statistically more than their Australian counterparts. Additionally, South African respondents scored the lowest median and statistically lower mean score than Arabian Gulf for the item rankings participation influences national HE policy set by the government'.

The literature rooted in the redress of historical inequality in access to education and other facets of South African society supports the quantitative results (Macupe, 2017; Bawa & Mouton, 2006). South African higher education institutions face contemporary developmental pressures, like increasing access to higher education, access to funds, and improving the contextual relevancy of the curriculum (Bawa & Mouton, 2006; Lange, 2017). It is clear from

the literature and the findings that rankings do not form part of the national higher education agenda and the commitments of the South African higher education system are not aligned or concerned with rankings criteria. Similar to the views of the Australian respondents, the South African respondents suggest that their academics do not attach the same level of importance to HERS as their counterparts from South East Asia and the Arabian Gulf. However, the regional comparisons show that the South African respondents feel that their universities emphasize the importance of research outputs in an attempt to improve rank, significantly more than respondents from universities in South East Asian and the Arabian Gulf.

South Africa's regional-specific literature, analyses and interpretation were discussed as an exemplar case study (in chapter 8).

9.3 Conclusion

The chapter combined the results of all data sources (interviews and questionnaire responses) and the overall findings were discussed against a backdrop of existing literature. Furthermore, the researcher touched on possible implications emanating from the findings. The following chapter will conclude the thesis and reflect on the findings whilst exploring the limitations of the study.

CHAPTER 10: SUMMATIVE CONCLUSION

10.1 Introduction

Like the water of a river basin, the flow of higher education across the globe is stronger than ever, manifested as the global knowledge economy, countries compete to establish themselves as competitive international HE destinations. In 2008, Adrian Bejan used this analogy to argue that even though the river of education gets greater and more competitive and the streams swell, the size of each, when compared with others, stays the same. However, rivers do change. Rivers change the landscape through which they flow. The energy of the moving water in a river erodes or removes material, rocks, soil, vegetation, from the bed and banks of the river. The landscape alters the force and energy of the river much like the landscape alters the influence of rankings on higher education. Higher Education Rankings Systems have become an imperfect battleground, manufacturing continuous rapids of internationalisation and research across the globe. The study found that there are generic changes affecting all institutions and similar to the analogy will not change the hierarchy of higher education significantly, however the context and type of institution will mediate/change or add influences felt by individual higher education. The study identified and compared these influences.

10.2 Summary

As mentioned during chapter 2, global higher education has been characterised by an escalation in student participation and mobility (Van Damme, 2016). Students are faced with a myriad of education opportunities both local and abroad. Internationalisation and technological advancement makes it possible for both students and universities to transcend their physical boundaries and creates opportunities for students to study just about anywhere (Downing 2013; Hazelkorn, 2011). These changes are some of the main reasons why universities compete globally for prospective international students and partnerships (Yat Wai Lo, 2014; Lee, 2004). If prospective students want to compare programmes or universities, with a lack of any other comparative information, the annual ranking results (ranking tables) are often used as the motivators behind their decision-making (Espeland & Sauder. 2015; Hazelkorn, 2013; Downing, 2012; Dill & Soo, 2005). Universities participate in the HERS by providing information about various aspects of the institution (Rauvargers, 2013) and aim to improve

their rank, annually, by improving their performance in the individual ranking criteria (Locke, 2014).

This competition for academic standing and global talent to become world-class institutions (Wint & Downing, 2017; Hazelkorn & Ryan, 2013) gives the HERS and their rankings relevance (Hazelkorn, 2013). The present research problem emanated from a handful of previous studies which suggest that, participating in HERS influenced not just the strategic functioning or culture of the institutions (Efimova & Avralev, 2013; Hazelkorn, 2013) but staff morale, as well (Espeland & Sauder, 2015; 2007; Locke, 2014). Additionally, participating universities from developing nations experience a mismatch in higher education priorities making them susceptible to the influences of the HERS (Altbach & Hazelkorn, 2017; Downing, 2012; Ndoye, 2008).

The present study utilised interviews in the first phase of the study to explore the influences. The themes identified in the interpretation of the interviews were employed in the construction of a questionnaire aimed at identifying instances of change or influence in institutional functioning as a result of participating in HERS. The 65 questionnaire items required respondents to reflect on their experience as part of the institution and indicate, to what extent, they agree or disagree with each item (statement). As discussed earlier, the respondents agreed or strongly agreed with the overwhelming majority of the items as presented and discussed in chapter 8.

The quantitative results confirmed the majority of the aspects (59 out of 65), which made up the results of the qualitative phase.

In the third and final phase of the study, the researcher statistically compared the outcomes of the four regions (South Africa, Australia, Arabian Gulf and South East Asia) using two statistical tests, namely; the Kruskal-Wallis non-parametric test and the Dunn Bonferonni pairwise comparison. To assess where the regions differ in approach and perspective when dealing with HERS and rankings. The outcomes of the analyses were then combined with the interview excerpts and considered against a contextual backdrop of the region to form exemplar case studies.

The main findings of the study were discussed in chapter 9. The researcher emphasizes five aspects regarding the first objective of the study; exploring the influences HERS, and their rankings, exert on universities directly and indirectly.

The researcher found that HERS, and their rankings, influence the strategy of the universities internally. Most of these changes are geared toward increased research production. Additionally, HERS and their rankings influence the institutions with which the universities collaborate. Unintended stakeholders in the rankings, like university boards, the government, media and public, influence the top leadership (VC & DVCs) and the university. Top leadership's (VC & DVCs) approach to rankings determines the extent of rankings pressure on strategy and academics. Furthermore, the socio-political and economic influences of a region and/or nation can lessen or aggravate the influences of HERS and rankings on universities.

The researcher compared the experiences and opinions of institutional leaders from South Africa, South East Asia, Australia and the Arab Gulf regarding the extent of the rankings related influences on their institution, to address the second objective of the study. Furthermore, the regional comparisons were administered by combining the qualitative results with the quantitative results. Additionally, the researcher employed non-parametric statistics to identify which differences were statistically significant. In presenting the findings the researcher designed four exemplar case studies (in chapter 8), to contextualise the findings in the higher education milieu of each region, emphasizing regional-specific issues, agendas and the relationship of them with the HERS. The findings, as discussed in the exemplar case studies and overall discussion, yielded four major aspects.

The findings emanating from the regional comparisons indicate that South East Asian institutions place a higher importance on HERS and the rankings they produce, when compared to South Africa, the Arabian Gulf and Australia. In general, Australian institutions place less importance on HERS and the rankings they produce when compared to institutions South Africa, the Arabian Gulf and South East Asia. Institutions in the Arabian Gulf use rankings more to recruit or dismiss employees, when compared to South Africa, Australia and South East Asia and the South African government and university staff are less concerned with rankings when compared with the other South East Asia, the Arabian Gulf, Australia and South East Asia.

10.3 Limitations of the Study

The study utilised a mixed method design to identify and compare the influences of HERS and their rankings on the universities. The researcher believes that the second (quantitative) phase of the study would have been optimal with a larger and more diverse sample of questionnaire respondents. The current sample, as explained in chapter 8, violates some of the assumptions to conduct a one-way ANOVA. In light of this, the researcher opted for the Kruskal-Wallis non-parametric assessment, which is a less powerful but a more appropriate statistical procedure given the sample. The Kruskal-Wallis test reduces the probability of making a Type one error, or a false finding, in this case. Additionally, a larger sample would have made regional comparisons using two independent variables possible. For example, future researchers may consider comparing 'region' alongside 'post level or job title'.

The qualitative sample of 25 interviews was large, diverse and all the respondents were employed at a high level, which enabled the researcher to identify generic and contextual influences. However, the sample was not optimal to gauge all the experience and perceptions of academics. One may argue that the interviewees have a good knowledge and understanding of the influences experienced by the academics, however some aspects may exist which the higher level positions are unaware of.

Various institutions and responses make up the regional comparisons, the interpretation of the data is limited to those institutions and even though the comparisons are made in conjunction with contextual/regional literature and interview responses, more research is recommended to support the findings of the study.

The Australian respondents (in general) indicated lower levels of influence, on most fronts, as the other regions and the South East Asian respondents indicated higher levels of influence, on most fronts. In the interpretation and discussion sections, the researcher put forth possible reasons for the differences, however further exploration is needed. Future researchers may consider comparing the perceived influences on several institution types or highly ranked universities compared to lower ranked universities. The latter will substantiate (to a greater extent) the arguments put forward by Altbach and Hazelkorn (2017) which suggest that the rankings are more detrimental to the mid-tier universities than the top ones. Furthermore, when considering the contemporary and prospective macro-economic movements, discussed in

chapter 2, it is recommended that more comparative studies of this nature be done with western and eastern regions, especially Chinese universities.

The landscape of the HERS are young and dynamic, in the past the HERS focused almost exclusively on research performance, however their reach is expanding with the inclusion of more rankings, indicators and sub-rankings. For example, the introduction of the QS Graduate Employability Rankings and the THE University Teaching Rankings (Europe) represent a shift from research-orientated indicators. More studies like this one will be needed to attain a firm grasp of the HERS influence (internally and externally) on higher education, to inform decision makers. Furthermore, it is recommended that future studies look at the strategic planning documents of universities to see which rankings and indicators are influential (occur the most frequent).

The researcher recommends continued use of the compiled questionnaire to collect and compare experiences on various fronts of the university and its stakeholders. The employers' perception of rankings is also an aspect, which had not really been explored thus far, the researcher envision future enquiries of that nature.

10.4 Conclusion

The aim of the research was to identify and compare the influences of HERS on universities and institutional leaders. The study employed a mixed method design assigning three phases to address the research problem and aim of the study. The study found that the institutional leaders experience many changes across the institution, which they consider to be due to rankings influence. Most of these changes are visible in strategic plans and goals of the institutions as well as external communication like marketing material. Moreover, the study explored how institutions use the rankings to choose external collaborators. The study indicates external influences on institutional leadership; especially with regard to their rankings perspective and communication strategies. Most of the findings are supported by existing literature, studies by higher education researchers like Hazelkorn, Downing, Marginson, Espeland & Sauder, Altbach, Rauvargers etc.

The study discussed how these aforementioned influences, are mediated or altered by context and region. The exemplar case studies discussed the differences between the influences

experienced by institutional leaders in South Africa, Australia, Arabian Gulf and South East Asia. Among various findings, the study found that the South East Asian respondents agreed significantly more, with the aspects gauging the influence of rankings. In contrary, the Australian respondents disagreed significantly more, with the aspects gauging the influence of rankings. The respondents from the Arabian Gulf agreed significantly more with the items pertaining to contractual links with ranking performance and South African respondents reported significantly less interest in rankings from their government and academics, when compared with the other regions. The study proposes possible explanations for the discrepancies based on the contextual literature.

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APPENDIX A

NHREC Registration Number REC-110613-036

UNIVERSITY OF JOHANNESBURG

ETHICS CLEARANCE

Dear H Loock

Updated Ethical Clearance Number: 2015-028 now 2017-047

The international influence of Higher Education Ranking Systems: Comparing lived experiences

Ethical clearance for this study is updated subject to the following conditions:

- If there are major revisions to the research proposal based on recommendations from the Faculty Higher Degrees Committee, a new application for ethical clearance must be submitted.
- If the research question changes significantly so as to alter the nature of the study, it remains the duty of the student to submit a new application.
- It remains the student's responsibility to ensure that all ethical forms and documents related to the research are kept in a safe and secure facility and are available on demand.
- Please quote the reference number above in all future communications and documents.

The Faculty of Education Research Ethics Committee has decided to

☒ Grant ethical clearance for the proposed research.
☐ Provisionally grant ethical clearance for the proposed research
☐ Recommend revision and resubmission of the ethical clearance documents

Sincerely,

Prof Geoffrey Lautenbach
Chair: FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE
10 May 2017

APPENDIX B

Ethics Clearance Application – Faculty of Education

I, Petrus Johannes Loock (The researcher) hereby confirm that:

1. The information provided in this ethics clearance application to undertake research with human participants is accurate to the best of my knowledge;
2. I understand the principles of conducting ethical research;
3. I will endeavor to conduct all the research in an ethical manner as prescribed by Faculty and University rules; and
4. I will inform the Faculty of Education Research Ethics Committee (REC) of any substantive changes to the project that might impact on the ethical clearance of the project.
5. This project has not been submitted to another REC or Review Board for review

Signature - Researcher / Student

25 January 2019

Please select one:

☐ This student research project and associated ethics application (up to Masters level) has been approved by the relevant Department of the Faculty of Education for submission to the Higher Degrees Committee and the Faculty of Education Research Ethics Committee.

☒ This student research project (PhD) and associated ethics application has been approved by the relevant Doctoral Committee for submission to the Faculty of Education Research Ethics Committee.

☐ This staff research project and associated ethics application has been approved by the relevant Department of the Faculty of Education for submission to the Faculty of Education Research Ethics Committee.

☐ This student group research project and associated ethics application has been approved by the relevant Department of the Faculty of Education for submission to the Faculty of Education Research Ethics Committee. This application covers the broad ethical issues pertaining to the group project.

☐ This external research project and associated ethics application has been submitted to the Faculty of Education Research Ethics Committee for approval.

☐ This UJICE project and associated ethics application has been approved by the UJICE Management for submission to the relevant committees of the Faculty of Education.

Signature - Supervisor / Staff Researcher / External Researcher

25 January 2019

Research Design

Please supply the relevant information.

1. Data Collection Types
   - ☐ Qualitative
   - ☐ Quantitative
   - ☒ Mixed Methods

2. Research Methodologies/Approaches
   - ☐ Biographical
   - ☐ Phenomenological
   - ☐ Grounded Theory
   - ☐ Ethnographical
   - ☐ Case Study
   - ☐ Design Experiment
   - ☐ Action Research
   - ☒ Survey or other quantitative strategy (please provide details below)
   - ☐ Other (please provide details)

3. Research Instruments/Methods
   - ☒ Document analyses
   - ☒ Questionnaires
   - ☐ Surveys
   - ☒ Individual interviews
   - ☐ Group interviews
   - ☐ Observations
   - ☐ Other (please provide details)

4. Sampling
   - ☐ Random
   - ☐ Targeted
   - ☒ Purposeful
   - ☐ Snow balling
   - ☐ Other (please provide details)

5. Sample size
   - ☐ < 11
   - ☐ 11- 50
   - ☒ > 50
   - ☐ Other (please provide details)

6. Age of participants
   - ☐ < 14
   - ☐ 14-17
   - ☒ >= 18

Please provide the name and designation of an adult who will protect the rights of the child who has neither parents nor a guardian, or who is younger than 18 years of age.

Faculty of Education - Research Project Information

The influence of Higher Education Ranking Systems (HERS): An institutional leadership perspective.

Background to the study including the nature of the research

Dear Sir/Madam, your invited to take part in one of the first Phd studies on Higher Education Rankings Systems. The study seeks valueble input from academic leaders regarding their lived experiences dealing with university rankings.

Like the water of a river basin, education flows across the globe. It flows "well" because of the long history and entrenched geography of the flow network, which is the result of the evolutionary process that brought the sharing of knowledge among people and institutions to its present level of effectiveness. As globalisation of the economy continues, a similar growth in the world knowledge economy is evident. These developments are having a profound impact on higher education. Mass higher education participation has made higher education a popular topic. These mass systems transform higher education from the 'private world', elite education of science and scholarship, to a 'public world' which requires social engagement, not only with regard to the accessibility of participating in higher education but also regarding the accessibility of the various forms of knowledge production. Changes like these, on a global scale, are accompanied by increased internationalization of students and institutional mobility. Globalisation, characterised by the evolution towards a single world market in goods and services, is most recently signified by the rise in global university rankings.The proposed study examines the flow of university ranking systems as they attempt to compare different knowledge institutions with various visions and missions. Each struggling with both unique and overarching contextual issues (geographical and economical) and each containing different views about HE and what constitutes HE excellence and quality.

Intention of the project

Research associated with this project attempts to:

Identify the influences from the different international institutions (context). Additionally the researcher will compare the extent of the influences from various regions in the form of a number of context-specific exemplar case studies. The case studies should contribute rich information of participant experiences, beliefs and opinions of the influence of HERS in their institution. The comparative nature of the study involves juxtaposition of two phenomena previously seen as worlds apart.

Procedures involved in the research

The researcher will commence data collection by examining the HERS and system and institution-specific ranking documentation freely available on the internet. Ethical approval will be obtained from the University of Johannesburg to conduct the research. The population will be purposefully selected to give a more comprehensive picture of the ranking phenomena.

The initial interview process will involve institutioal leaders (Vice Chancelors, Pro-Vice Chancelors and faculty Deans) from several countries to gain a global perspective and identify rich points and foreshadowed problems. The researcher decided to select these participants as they have experience as academics and university managers. The participants have to come from an institution ranked in either the Academic Reputation of World Universities (ARWU), the Times Higher Education (THE) rankings or the Quacquarelli Symonds (QS) rankings.

Thereafter, the researcher will create a questionnaire, based on the findings of the first phase and administer it to a wider population of institutional leaders. The results of the questionnaire from one or two universities in South Africa, Asia, Australia and possible the Arabian Gulf. The selected institutions will be among those institutions that currently participate in one of the big three HERS (ARWU, THE and QS). Because the universities participating in the ranking systems differ substantially with regard to regional/contextual missions, global aspirations and strategy, each institution's participants will elicit unique institution-specific information.

All participants will be given the background and aim of the research before hand, both verbally and in writing, to make sure participants are fully informed.

As a participant you may be invited to take part in an in-depth interview to elicit rich information about your opinion regarding the HERS. Video interaction will be recorded with your separate written consent. The communicative interaction will be recorded verbatim with separate signed consent, coded and analysed.The researcher will keep interviewing until data saturation is reached. Data saturation is obtained when each further interview does not provide new information concerning the lived-experience of participants.

The questionnaire will provide a platform to test and triangulate the aspects identified in the interviews. The questionnaire is ideal to compare responses from different regions, to identify statistically significant differences. The questionnaire participants will be assured that the questionnaire will not take more than 25 minutes that their responses are completely confidential and anonymous and that at no stage will they or their institution be identified. The questionnaire will have a cancel button to make it possible for the participants to opt out at any stage. The first page of the online questionnaire will have a tick mark to provide consent.

All interview recordings, transcripts and data will be held on a private harddrive. The participants will be sent copies of their personal transcripts.

I confirm that I will carry out the project in the ways described above, and that I will request a fresh ethical approval if the project subsequently changes in ways that materially affect the information I have given in this form.

Potential Risks

The findings may impact the reputation of specific national higher education systems. Researcher's interpretations may not always be accurate.

Potential Benefits

The proposed analyses attempt to shed some light on the viability of the prospective ranking participation and university management practises.
The study will contribute to the theoretical body of knowledge about HERS systems.
The study will be one of the very few HERS studies conducted in the South African higher education landscape.
The proposed research will be the first to examine the perspective of South African institutional leaders and the ranking participation. Merely a handful of international studies regarding academic perception on HERS exist. The various opinions should elicit valuable insights regarding the perceived HERS' influence within the university.
The study will help to fill the dearth of social science research on HERS (Marginson, 2011).
The research will provide a unique contribution to the South African higher education context..
The proposed study will be the first study to identify and compare the experiences of institutional leaders of HERS across international boundaries.

Informed consent

We recognize that participants are not capable of consent unless "informed". We have, therefore, disclosed the nature of the research, the aims, the duration, the risks and benefits, the nature of interventions throughout the study, compensations where appropriate, researcher details, and details of the ethical review process. Where appropriate, communities, employers, departments and other instances are also part of the informed consent process.

Confidentiality

Every effort will be made to protect (guarantee) your confidentiality and privacy. I will not use your name or any information that would allow you to be identified. In addition, all data collected will be anonymous

and only the researchers will have access to the data that will be securely stored for no longer than 2 years after publication of research reports, or papers. Thereafter, all collected data will be destroyed. You must, however, be aware that there is always the risk of group or cohort identification in research reports, but your personal identity will always remain confidential. You must also be aware that if information you have provided is requested by legal authorities I may be required to comply.

Participation and Withdrawal
Your participation in this study is voluntary. You may withdraw your consent to participate in the project at any time during the project. If you decide to withdraw, there will be no consequences to you. Your decision whether or not to be part of the study will not affect your continuing access to any services that might be part of this study.

Future interest and Feedback
You may contact me (see below) at any time during or after the study for additional information, or if you have questions related to the findings of the study. You may indicate your need to see the findings of the research in the attached consent form.

Petrus Johannes Loock hannesl@uj.ac.za Dr. Kevin John DOWNING <sckevin@cityu.edu.hk>

25 January 2019

Informed Consent/Assent Form

Project Title:
The international influence of Higher Education Ranking Systems (HERS): Comparing lived experiences.

Investigator:
Petrus Johannes Loock

Date:
25 January 2019

Please mark the appropriate checkboxes. I hereby:

☐ Agree to be involved in the above research project as a participant.
☐ Agree to be involved in the above research project as an observer to protect the rights of:
- ☐ Children younger than 18 years of age;
- ☐ Children younger than 18 years of age that might be vulnerable*; and/or
- ☐ Children younger than 18 years of age who are part of a child-headed family.

☐ Agree that my child, _____ may participate in the above research project.
☐ Agree that my staff may be involved in the above research project as participants.

☐ I have read the research information sheet pertaining to this research project (or had it explained to me) and I understand the nature of the research and my role in it. I have had the opportunity to ask questions about my involvement in this study. I understand that my personal details (and any identifying data) will be kept strictly confidential. I understand that I may withdraw my consent and participation in this study at any time with no penalty.

☐ Please allow me to review the report prior to publication. I supply my details below for this purpose:
☐ Please allow me to review the report after publication. I supply my details below for this purpose:
☐ I would like to retain a copy of this signed document as proof of the contractual agreement between myself and the researcher

Name: .....

Phone or Cell number: .....

e-mail address: .....

Signature: .....

If applicable:
☐ I willingly provide my consent/assent for using audio recording of my/the participant's contributions.
☐ I willingly provide my consent/assent for using video recording of my/the participant's contributions.
☐ I willingly provide my consent/assent for the use of photographs in this study.

Signature (and date): .....

Signature of person taking the consent (and date): .....

* Vulnerable participants refer to individuals susceptible to exploitation or at risk of being exposed to harm (physical, mental, psychological, emotional and/or spiritual).