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From data to insights:
HR analytics in organisations

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ABSTRACT

Despite advances in the application of analytics in business functions such as marketing and finance, and a significant degree of interest in the topic of Human Resource analytics, its usage is still nowhere near where it could be. This study's primary aim was to measure the levels of usage of HR analytics among South African organisations, an exercise that has not been done before.

This qualitative, exploratory study was conducted among 16 senior Human Resource practitioners from large organisations in South Africa. Being qualitative, a limitation of this study is that it is not representative and therefore the results cannot be generalised. Further opportunities therefore exist for quantitative, longitudinal research in this field to objectively ascertain the extent of usage of HR analytics.

It was found that South African organisations' usage of HR analytics is still in its infancy and that the concept and its implications are little understood. It also found that there is consensus regarding the importance for HR analytics in organisations and that the HR analytical skills challenge is the main hindrance to implementation. Importantly, the study demonstrated and that the overall outlook for HR analytics is positive.

The research makes recommendations and proposes a model that should enable organisations, the HR profession and the academic world to implement HR analytics.

Keywords: Analytics, Data, Human Capital, Human Resources, Insights, Metrics, Predictive

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Masenyane Molefe 11 November 2013

DEDICATION

This research is dedicated to my loving parents for instilling in us the value of discipline and the love for education.

This MBA is for you!

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"We want to create a new narrative about the human resource (HR) profession. HR professionals have often been plagued with self-doubts, repeatedly re-exploring HR's role, value, and competencies. If HR is to fully (and finally) become a profession, these self-doubts need to be replaced with informed insights. These informed insights should be based more on global data than personal perceptions so that the emerging narrative for the HR profession has both substance and meaning."

Dave Ulrich, Jon Younger, Wayne Brockbank and Michael D. Ulrich (2013)

1.1 Introduction

This Chapter introduces the research problem. It then examines the rationale and purpose of the research, which will be accomplished in subsequent Chapters. An appraisal of reasons for low level of academic literature is discussed after which the scope for the research is provided as well as its relevance to the body of knowledge. The Chapter then culminates by providing a structure for the rest of the research report.

1.2 Research problem

Creelman (2005) wrote that there was so much talk about Human Resource (HR) metrics that a young HR professional might have been excused for thinking it was a new topic. However, he said, as long ago as 1983, John Boudreau was teaching a course in HR metrics at Cornell University in the United States of America. Furthermore, Creelman (2005) cites Dr Jac Fitz-Enz's work that went back even further, having first published on this topic in 1978. It has thus been over thirty years that academics, consultants and practitioners have been working on how to use HR metrics. However, Creelman (2005) argued that there was a strong sense that there was something more important that HR should be measuring.

Recent research by the Institute for Corporate Productivity (2012) on the analytical practices and capabilities of HR, suggests that most organisations are still woefully unprepared to deal with its rapidly rising ocean of data. It reports that while many HR organisations are proficient at collecting and measuring HR

activities, few have the ability to measure outcomes or identify the factors that most affect results.

There already exists wide, sophisticated usage of analytics in functions such as Finance, Supply Chain and Marketing where there are dependable metrics and predictive data for business decisions (Hoffmann, Lesser and Ringo, 2012b). However, organisations seem to struggle with equivalent models for connecting workforce measures with company performance. The Cornell University (2010) study admits that many companies are slowly evolving their HR analytics into what Fitz-Enz (2010) calls a 'model of predictive management' for human resources. Furthermore, the Cornell University (2010) study on the 'State of HR Analytics' surveyed more than 50 participant companies to understand the application, value, systems and structures; and the future regarding state of HR analytics in their organisations. The main finding from this study was that most HR professionals agreed that the usefulness of HR analytics goes beyond reporting what is; and is about predicting the future.

Harris, Craig and Light (2010) add to this point by saying executives in charge of marketing, finance, information technology, supply chain management and customer relationship management are recognising how data-driven insights can be used to generate impressive business results. The authors contend that human resources departments have lagged. They believe that while HR collects a good deal of data—on employee turnover, cost-per-hire and even the return on investment of their programs, they have a much harder time relating that data to better business performance. As they put it, "marketing, finance, and most other functions have well-developed methodologies for generating the information managers need to make strategic decisions. HR, however, often focuses principally on its own performance….It's time for HR to shift its focus from what it does to the quality of the talent decisions it supports" (Harris, Craig and Light , 2010, p. 2).

An IBM (2009) report also suggests that the HR profession, like other business functions, needs a consistent analytical point of reference to make decisions that impact positively on business results. Many organisations already use dashboards to collect and share HR information but few use this information for proactive planning and predicting the future (Cornell University, 2010).

Some global companies such as Google, Procter and Gamble, Royal Bank of Scotland, Intel and Tesco have all established HR analytics groups to get deeper insights into their people practices (Davenport, Harris and Shapiro, 2010). Examples of HR analytics include identifying potential candidates most likely to succeed in a role, the probability of termination, and attributes of high performing employees (Bassi, 2011).

Besides global companies, professional sports teams have also been the leading users of HR analytics. A soccer team in Italy, AC Milan, draws on 60000 data points per player, measuring each player's health, fitness, probability to succeed in soccer, and ultimately using the information to make contract decisions (Davenport, Harris and Shapiro, 2010).

The book *Moneyball: The Art of Winning an Unfair Game* provides one of the best examples of how data analytics has radically reshaped the way we understand how organisations work. The book and movie chronicle how Billy Beane, General Manager of the Oakland Athletics baseball team, used what many people now call "big data" to analyse and predict the performance of baseball players. By analysing non-traditional statistics, Beane assembled a competitive team that cost a quarter of the player salaries paid by the New York Yankees. Beane's Oakland team ended up winning the same number of games as its New York rivals. By relying on quantitative metrics shown to have predictive value in determining number of wins, the general manager changed human capital analytics and talent recruiting strategies for the baseball industry (Lewis, 2004).

Chaundary, Subramanian, Sinha and Battacharya, (2012) presented a model of social media analytics for behaviour informatics, HR and customers. They suggest that HR analytics can be used for many of the HR value chain elements such as recruitment, selection, performance, development and transitioning. Mondore, Douthitt and Carson, (2011) concur by stating examples of where HR analytics can be used in line with HR processes of selection, on-boarding, performance management, succession and talent planning; and employee engagement surveys.

The drive to manage talent more effectively has been accompanied by an increased emphasis on talent metrics as advocated by Boudreau and Ramstad

(2003). Concurring with this view, Wiblen, Dery and Grant, (2012) state that key capabilities that will be required of HR practitioners in the future are talent analytics, metrics and technology. They state that members of the HR profession should seek to develop these capabilities if they want to enhance their strategic contribution to talent management.

The research problem is therefore evident from IBM (2009); Cornell University (2010); Davenport, Harris and Shapiro (2010); Harris, Craig and Light (2010); (Bassi 2011); Hoffmann, Lesser and Ringo (2012a). The value of HR analytics has been proven, what remains is to gauge how far organisations have gone in adopting this practice, and therein lies the research problem.

1.3 Rationale and purpose of research

The central purpose of this research is to probe the concept of workforce or human resource (HR) analytics in a South African context, as well as advance the limited academic research in this field. Furthermore, the intention of this work was to explore to what degree of sophistication South African organisations are in this realm and what it would take to embrace the usage of HR analytics in South Africa.

Research shows that top-performing companies are three times more likely to be advanced users of workforce analytics than lower-performing companies (LaValle, Hopkins, Lesser, Shockley and Kruschwitz, 2010). LaValle *et al.* (2010) state that these top-performing companies are two times more likely to cite workforce analytics as their competitive differentiator. This indicates that the power of workforce analytics is the core driver of an organisation's success (Visier Inc., 2012).

Visier Inc. (2012) also suggests that with workforce analytics, HR professionals can play a more pivotal role in their organisations to help direct senior management and hiring managers in connecting the dots between their company's overall performance and investment in their workforce. The report puts forward that it is not surprising that workforce analytics has become one of the highly debatable current business topics, as the potential business benefits are too large for enterprises to ignore.

According to Davenport, Harris and Shapiro (2010), high-performance companies use workforce analytics to align their business strategies with their human capital strategies. In their article, they state that “these companies have taken the guesswork out of employee management by leveraging analytics to improve their methods of attracting and retaining talent, connecting their employee data to business performance, differentiating themselves from competitors, and more” (Davenport, Harris and Shapiro, 2010, p 1). HR is a critical partner in these strategic efforts, providing the analytics these organisations need to enhance the overall value delivered by their workforce, and to earn a solid financial return on their human capital investment.

Lawler, Levenson and Boudreau (2004) argue that while the usage of HR analytics is gaining popularity, there is less clarity about how metrics are currently being used and about how strong a relationship there is between the use of metrics and the degree of HR as a strategic business partner. They argue that HR functions often collect data on efficiency and effectiveness but not on the impact and ability of the HR function on the bottom line. The authors proclaim that there is no question that HR executives feel HR should play a key strategic role in organisations: however, that there is less clarity about how metrics are currently being used by HR functions and about how strong a relationship there is between the use of metrics and the degree to which HR is a strategic partner.

Consistent with Lawler, Levenson and Boudreau’s (2004) views that the HR function often collects efficiency data but does not collect data on the impact of HR programs on the bottom-line, Visier Inc. (2012) results revealed high levels of usage of HR efficiency metrics: 68 percent of respondents reported measurements associated with headcount and 67 percent measured employee. With respect to effectiveness, 43 percent of respondents reported feedback on financial measures of HR operations such as cost -per-hire and training costs, and 30 percent reported evaluations of specific HR programs. The impact of HR measures, however, was weaker with only 25 percent of respondents reporting that attempts were made to clearly connect the HR measurement approach with organisational performance.

For decades, common HR metrics such as turnover rates, costs per hire and per full-time employee (FTE) numbers have been successfully gauging the efficiency of internal HR functions, but DiBernadino (2011) posits that they have been insufficient as business investment decision-making tools. While HR continues to measure disjointed efficiencies, decision makers really want a measure of effectiveness, such as return on investment (ROI), to gauge the impact of human capital investments on enterprise-level value. At the Symposium on Human Capital Analytics (2007) held by the Society for Human Resource Management (SHRM), practitioners and thought leaders agreed that traditional HR metrics must evolve into human capital analytics to demonstrate added value and better inform strategic decisions.

1.4 An appraisal of reasons for the low level of academic literature

There has been much business and consultancy work, and somewhat limited academic interest in the topic of HR analytics in recent years as shown by Davenport, Harris and Shapiro (2010); Bassi (2011); Harris, Craig and Light (2011). The many topical journal and business articles written indicate that the topic has prevalent interest worldwide for the HR fraternity.

Gibbons and Woock (2007) concurs with this observation that there is limited academic literature on the topic of HR analytics, the reasons of which remain unclear. Myers (2009) talks about a common complaint in recent times - that of research in business schools becoming more rigorous at the expense of relevance. The general definition of rigour in research is research that meets the standards of academic scientific research, is subject to peer review and is published in academic journals. Myers (2009) says that unfortunately, much of the 'rigorous' research is often seen as too theoretical and of little relevance to business professionals.

The subject of HR analytics seems to have captured the interest of the business world judging from a plethora of business research versus limited academic work available. In his review of relevant recent literature, Fink (2010) found the review of academic literature unsatisfactory as he found captivating methods and relationships, but not being able to connect them to the broader picture of business success or long-term strategy. Fink (2010) found a plethora of popular press books on the topic of analytics generally, as well as an emerging body on

HR analytics specifically. Fink (2010) further found most academic literature to be limited to White Papers from Corporate Leadership Council (CLC) and the Conference Board, and moreover, they did not provide much explanation regarding their results and incorporation into organisational systems in detail. This body of work seems to embrace the term Human Capital, rather than Human Resources.

Myers (2009) advises that research in business and management could be much more relevant than it is right now, and that it should be able to deal with complex, unquantifiable issues that are the reality of businesses. Furthermore, the author advises that this is where the value of qualitative research is.

There is therefore a compelling reason to add to the academic body of knowledge regarding this topic, thus one of the reasons for this research.

1.5 Significance of HR analytics

According to Harris, Craig and Light (2011), many organisations already use dashboards to collect and share HR information but few use this information for proactive planning and predicting the future. The authors purport that the HR fraternity must do more than just use data to report past performance and generate compliance reports, HR need to start using data to ask and answer some hard questions about how employees contribute to business performance. Boudreau and Ramstad (2003) agree that there is no shortage of HR measures, and even no shortage of technology for analysis and reporting further corroborate this view.

Hoffmann, Lesser and Ringo (2012a) say that sceptics of HR analytics claim that the value of employees cannot be measured or predicted, saying that what they describe as workforce analytics is ‘a way of treating people like widgets’. The authors state categorically that this is not what HR analytics is about. They believe that HR analytics is about the basic human and organisational endeavour: putting the right people with the right skills in the right work. More importantly, the authors believe that companies that use HR analytics have the most engaged staff and thrive through difficult times.

As with Hoffmann, Lesser and Ringo (2012a), Bassi (2011) further expands on this argument that this is precisely what HR analytics is not about. From the

author's perspective, this objective calls into question the credibility of any findings and insights that emerge. Doubt is raised once executives view HR analytics as a means of HR justifying its existence and value (Bassi, 2011).

Bassi (2011) asserts that many HR practitioners have argued that there is no need for HR analytics because their senior executives do not need it. He says this is not an excuse for complacency, and besides, the author argues "…how could you expect the CEO to require something that he or she probably does not know exists?" (Bassi, 2011, p. 16). This talks to the subject of return on investment (ROI) - a holy grail of HR measurement. Boudreau and Ramstad (2007) as well concur that doing HR analytics for ROI is the wrong focus, and rather call for a "talent decision science" contrary to the view expressed by Mondore, Douthitt and Carson (2011) who maintain that ROI should be one of the reasons for doing HR analytics.

In its 2009 study, IBM found that there was a strong consensus regarding the important role analytics play in more effectively managing workforce performance and talent management. Three quarters of respondents said that the greatest benefit of HR analytics was a better capacity to manage their workforce, while two thirds cited improved levels of productivity. A large majority considered workforce analytics important in driving a better return on investment for talent management (IBM, 2009).

Yet, despite the recognised promises of greater efficiencies and returns, HR analytics continue to be hindered in both technical and skill-related issues associated with its implementation. These issues include data consistency, systems integration, information accessibility and analytic capabilities of end users (IBM, 2009). According to the study, an integrated approach that combines technology and skilled people is needed to assess, deploy and implement a workforce analytics solution.

Lawler, Levenson and Boudreau (2004) surmise that organisations with data that show the business impact of HR practices report they are much more likely to be a strategic partner than those organisations that do not have such data.

1.6 Scope of the research

The usage levels in terms of the choice, applicability, and application of human capital metrics seems a blur in a South African context. According to South African scholar, Chrysler-Fox (2011), despite the emerging developments and research in developed countries, specifically the USA and UK, human capital measurement is still in its infancy in South Africa.

Chrysler-Fox (2011) adds that by not taking up as it should have, the role of HR is not only negatively impacted, but undesired behaviours are created and/or sustained as human capital cannot be managed and measured to create and extract value to significantly contribute to an organisation's competitive and sustained advantage. The author goes on to cite one of few local academic works in this field by Kasselman (2006), who conducted research on the creation of a framework to enable the inclusion of Human Capital information in company reporting in order to demonstrate the effect on performance. Chrysler-Fox (2011) makes a point that Kasselman's (2006) study does not address the 'what' and 'how' of human capital metrics as part of HR.

Academic research on the extent of HR analytics in South Africa is therefore necessary to determine usage and inform organisations how best to implement and take advantage of this concept.

1.7 Relevance of field of study

The purpose of this research project is to advance knowledge regarding usage of Human Resource (HR) data, metrics and analytics. This research project is academic in nature in that it expands the boundaries of knowledge on the subject of HR analytics. The research seeks to understand current methods that organisations in South Africa are using HR data and it explores the understanding of, as well as usage of HR analytics in organisations. This research will add to this body of knowledge by developing a framework for use for organisations intending to advance their use of HR analytics.

1.8 Structure of research paper

The remainder of the paper comprises six sections. Chapter Two provides an overview of the extant academic and practitioner literature on the subject of HR analytics, paying particular attention to the prevailing understanding of the

concept, its usage and key metrics. The literature review will provide a cursory look at some of the popularly used HR analytics models. Chapter Three presents the research questions flowing from the gaps identified in the literature review. In Chapter Four, the study's methodology and design is outlined. Chapters Five, Six and Seven focus on the presentation and analysis of the research findings and conclude by discussing research limitations and providing recommendations for future research for academics and practitioners.

2 LITERATURE REVIEW

"Leaders need to put their money where their mouth is and get HR to do its real job: elevating employee management to the same level of professionalism and integrity as financial management. Since people are the whole game, what could be more important?"

Jack Welch, former chairman and CEO, General Electric

2.1 Foreword to literature review

An initial high-level overview of the literature identified specific themes that could constitute the potential starting point for discussion regarding the research topic. The themes, discussed in this Chapter, are as follows:

- Definition of HR analytics
- Understanding the importance of HR analytics
- Usage of HR analytics; and commonly used models
- Building blocks to developing HR analytic capability
- Future of HR analytics

2.2 Definition of HR analytics

According to Gustafsson (2012), analytics targeting human resources has been given many names in the past - from Talent Intelligence (Snell, 2011), Talent Analytics (Davenport, Harris and Shapiro, 2010), HR Analytics (Mondore, Douthitt and Carson, 2011) or Workforce Analytics (Hoffmann, Lesser and Ringo, 2012b).

Bassi (2011) suggests that HR analytics ranges from basic reporting of HR management information or metrics, to the end of the spectrum being that of predictive HR. To the predictive modellers, HR analytics involves forecasting, determining consequences of policy changes and looking into "what if" scenarios. HR analytics is sometimes referred to as workforce analytics and involves using statistical models that integrate HR data to predict future employee-related behaviour and events (Deloittes, 2011). Hoffman, Lesser and Ringo, (2012b), further contend that the answer is probably both – that HR analytics is basic reporting as well as predictive modelling, not either. Bassi's (2011) own definition of HR analytics is that it is the application of a

methodology for improving the quality of people–related decisions, using HR metrics all the way to predictive modelling, for organisational performance improvement.

Creelman (2005) surmises the different expert views on the subject of HR metrics and HR analytics as saying that Dr Jac Fitz-Enz describes the difference as being that HR measures tend to look inward towards what the HR department is doing, whereas human capital (HC) measures look outward toward the firm. Bassi (2011) sees the essence of human capital as measures that determine and predict future business results.

Davenport and Harris (2006) define analytics as the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions. Boudreau and Ramstad (2007) accept that there is no widely accepted definition of a talent decision science. Boudreau and Ramstad (2003) have thus coined the term called "*Talentship"* – a combination of the words 'talent' and 'stewardship'. The authors contend that a decision science in human resources (talentship) would help guide and enhance key decisions that depend on or impact talent, and ultimately would require specific measurement techniques.

Worth (2011) concurs with the views advanced by Boudreau and Ramstad (2007) that in HR analytics, it is vital to measure what is important, rather than what is easy. It seems that there is indeed a wide variety of views and opinions regarding what HR analytics really are – HR management information, HR metrics, predictive HR, from data to insights.

In his work, Gustafsson (2012) citing Hoffmann, Lesser, Ringo (2012b) describes workforce analytics as a concept used for denoting analytical techniques and activities used in an organisation's workforce, its employees. It concerns the importance of building a workforce that can achieve current business strategies. These techniques are used to get insight into how to organise and motivate the workforce. Ingham (2011) extends the description by offering that linking various measures to - for example, actual and potential recruitment levels or even something from the rest of the business, such as customer loyalty figures, may start to provide information that is valuable for decision-making.

Given all the various definitions offered, it is perhaps Levenson, Boudreau and Lawler (2005) who offer the most comprehensive definition of HR analytics:

> *"HR analytics transforms HR data and measures into rigorous and relevant insights. It includes statistics and research design, but it goes beyond them to include identifying and articulating meaningful questions, gathering and using appropritate data from within and oiutside the HR function, setting the appropriate standards for rigour and relevance, and enhancing the analytical competencies of HR throughout the organisation" (p. 2)*

Chrysler-Fox (2011) determines that "it is clear from this study that there is still a conceptual confusion regarding the terms *human capital* and *metrics* as presented in literature and understood and applied in practice" (p. iii).

2.3 Understanding the importance of HR analytics

The application of analytics to human resources is not new. For decades, Gibbons and Woock (2007) state that statistics have been used to track such things as the costs of labour and employee benefits, manufacturing downtime, and worker productivity. However, the use of measurement in human resources was revolutionised in 1984 when pioneer Dr Jac Fitz-Enz and his firm, The Saratoga Institute, produced the first national study on HR metrics.

In Bassi (2011), cites Fitz-Enz as advocating that HR activities and their impact on business activities can and should be measured. Fitz-Enz had famously lamented that the days of anecdotal reporting are over, and that hard evidence is the new language. This was the beginning of what is now commonly referred to as HR analytics. The reaction to Fitz-Enz's proposal was then met with "apathy, disagreement and disbelief" (Caudron, 2004, p. 50).

In his book 'Retooling HR', Boudreau takes the step of translating HR discussions into the language that business leaders already speak. (Boudreau, 2011). Visier Inc. (2012) further recommend that when making the case to senior leadership for a major investment in HR solutions, credibility is often on the line and HR needs to speak the language of the executive audience.

The late 1980's and 1990's brought many studies that attempted to link HR practices to organisational performance. However, many of these studies lacked the empirical vigour required as they were limited to finding correlations between two variables, and still left the question of correlation not equating causality open (Bassi, 2011).

According to Harris, Craig and Light (2010), HR departments are now beginning to look beyond historical data that is a by-product of transaction and compliance reporting systems. They are asking important questions about what really matters – questions such as - do our recruiting processes create an adequate leadership pipeline?, do we currently have the right skills mix to achieve our goals?, what skills will we need in five years?, which people and what positions create the most value for our organisation?

It follows then that the ability to effectively manage the organisation's investment in human capital can spell the difference between success and failure.

2.3.1 Evolution of HR's role as a strategic business partner

Many articles have been written about HR's role and in the last decade its aspiration to be seen as a strategic partner and the often quoted 'HR's rightful place at the boardroom table'. Boudreau (2003) frames the distinction in terms of a three-stage evolution of the HR function. In this framework, there was a personnel stage that was focused on control and compliance, the current human resources stage that focuses on delivering HR services and an emerging 'talentship' stage that will focus on making good decisions around human capital.

Bassi and McMurrer (2007) propose that HR professionals need to be working in new, more proactive roles. These roles are necessary in order to bridge the theoretical knowledge gap so that formal training is more consistent with the expectations placed upon them by organisations. However, recent research suggests that not much progress has been made in this regard according to Gardner, McGranahan and Wolf (2011). Lawler, Levenson and Boudreau (2004) contend that at least one possibility for this lack of progress could be that HR lacks the type of analytic and data-based decision-making capability needed

to influence strategy, thus the HR fraternity has not caught up with using the right metrics and analytic models found in other business functions.

Lawler, Levenson and Boudreau (2004) say that having analytic data about strategy is a sure way to gain a seat at the table, while only having data about HR function efficiency is not. The current status quo points to the fact that many organisations have good efficiency data; however, this kind of data does not associate with HR being a strategic partner.

While Boudreau and Ramstad (2003) concede that the HR profession has grown in elegance and sophistication over the years, the trend does not seem to be yielding desired results. Business leaders are measured on success based on qualities such as turnover, employee attitudes, and bench strength, and not on creating organisational change. They argue that many organisations seem to be doing the 'right' things, but there seems to be an increasing gap between what clients expect in terms of measurement systems and their true effects on organisational performance.

Organisations seem to be 'hitting a wall' and on the brink of a paradigm shift according to Boudreau and Ramstad (2004). They equate this paradigm shift to the same that the Finance and Marketing functions went through - Finance from Accounting, and Marketing from Sales. Furthermore, the authors echo the widely held view that the HR profession can evolve into a true decision science of talent and seek to the level of disciplines such as finance and marketing. According to Mondore, Douthitt and Carson (2011), the banking industry already uses predictive models for assessing consumer credit risk, market researchers utilise customer demographics and psychographics to predict buying patterns.

The use of HR analytics to understand impact of HR practices and policies on organisational performance is a powerful way for HR to prove its worth in organisations. Statistical tools and techniques can be used to establish causal relationships as well as predict behaviour (Lawler, Levenson and Boudreau, 2004).

2.3.2 Towards predictive analytics – breakthrough for HR?

The predictability of HR has been a subject of discussion for many years, with models such as the job demands-resources model being used to predict the relationship between job demands and job resources (Bakker, Demerouti and Verbeke, 2004).

La Grange and Roodt (2001) also studied predictability in the HR field by conducting a study to determine whether a measure of cognitive ability would significantly predict job performance among insurance sales people. The study used the statistical method of regression analysis and found that certain dimensions did predict job performance or success in a role, but that 'verbal reasoning ability' did not have a significant impact.

However, according to Ingham (2011) predictive analytics is not all about running statistical models. Ingham (2011) cites Jac Fitz-Enz's conversation with David Creelman (2010) when he said: ''when we talk about predictive analytics everyone thinks you need to be doing statistics, but that is not necessarily the case. There are two steps. First, you need a logical framework or mental model, to think through what your problem is and identify the key variables. Then you may need statistics or metrics to help determine the best decision; but people forget the first part and fixate on the metrics'' (p. 3).

According to Fitz-Enz, Phillips, Ray (2012) predictive analytics moves the human capital practice further by answering questions such as "what could happen" and 'when could it happen". It is not only critical for HR departments to embrace analytics, but to move analytics from beyond analysing what happened or what is happening to predicting and prescribing solutions that align with enterprise-wide goals. The report noted, however, that while there is a strong interest in predictive analytics, the practice in still in its infancy.

In its recent report, the Institute for Corporate Productivity (2012) argues that predictive analytics are underused for human capital measures - even by high performing organisations. The list of HR predictive possibilities is endless as HR organisations can use predictive modelling to better identify candidates for succession planning and career development programs. The Institute believes that with predictive HR analytics, organisations will be able to answer questions such as:

- Where can we find new hires that are more likely to be superior performers?
- Who is most likely to select any new benefit offerings?
- Which employees are at the highest risk of voluntarily leaving the organisation?
- Which reasons have the statistical significance to why employees leave?
- What is the profile of employees most likely to leave?

Fitz-Enz, Phillips, Ray (2012) describe the three levels of analytics as descriptive, predictive and prescriptive. Descriptive analytics answers questions such as “what happened” and “what is happening now”. It is the realm of common HR analytics for many companies which report on people and events in the past or, as they exist today.

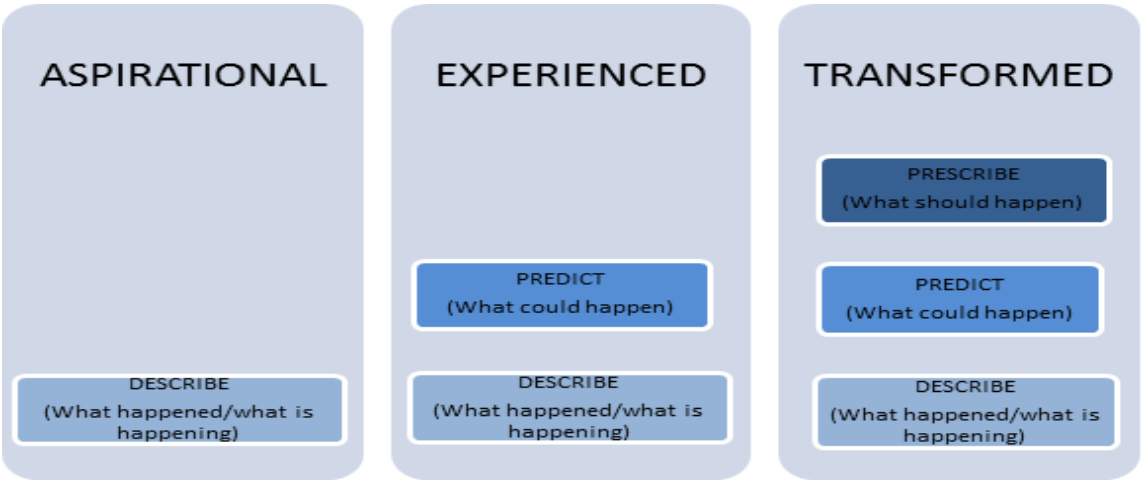
The second level of analytics is predictive. Citing Bassi and McMurrer (2007), Chrysler-Fox (2011) defines prediction as the production of statistics linked to the organisation's desired business results. This helps an organisation predict where it is headed, and is an important attribute of an HR measurement system that will maximise decision support for executives.

The ultimate, most rigorous level of HR analytics according to Fitz-End, Phillips and Ray (2012) is prescriptive analytics. In this case, the data answers the question - what is the best course of action? This level of analytics combines predictions and decision making while taking into account the impact of those decisions. The difference with predictive analytics is that predictive describes what is possible given particular factors, while prescriptive suggests which course of action would be optimal given all the potential combinations of options and outcomes.

Another description of analytical capabilities is offered by LaValle *et al*. (2010). The authors describe the three levels of analytical capabilities as aspirational where an organisation focuses on the ‘then and now’, and then the experienced level where organisations focus on the ‘then and now’ as well as using the information to predict the future. The ultimate level of analytical capability is what the authors describe as ‘transformed’ being where an organisation not looks at the ‘then and now’ and the predictive, but starts using the insights to

prescribe what should happen. LaValle *et al.*'s (2010) levels of analytical capability are shown in Figure 1 below.

Figure 1: Levels of analytical capability



Source: LaValle, Lesser, Shockley, Hopkins, Kruschwitz (2010)

2.3.3 From gut feel to science: towards evidence-based HR

"Faith is the substance of things hoped for,
The evidence of things not seen."
New Testament, Hebrews 11:1

Gibbons and Woock (2007) state that for years, the field of HR has been "a discipline of faith", a Biblical concept described as "the substance of things hoped for, the evidence of things not seen" (p. 5). Yet, they contend, that HR practitioners know that in the business world, business cases are built on empirical evidence of how strategy is implemented into action, and how that action leads to predictable outcomes. They remark that HR practitioners are "now sensing an urgency to move away from casual observation to causal evidence" (Gibbons and Woock, 2007, p. 10).

With advances in research, technology and ways of measuring intangibles, the HR community is beginning to use evidence-based HR. Gibbons and Woock (2007) define this as "applying scientific standards of causality to demonstrate how intangible human capital can be observed and shown to add tangible business result" (p. 5). The authors maintain that practitioners of evidence-based HR are motivated by the need to find critical levers for improving results, and that the methodology applies the tried and tested standards for proving

causation using scientific methods. Furthermore, Gibbons and Woock (2007) state that evidence-based HR serves the important goal of providing genuine insight into how talent drives business.

The array of technology available to organisations and their HR functions continues to expand and advance in sophistication (Davenport, Harris and Shapiro 2010). Wiblen, Dery, Grant (2012) cite Bassi and McMurrer (2007) who share similar views and advise organisations to use technology to facilitate the management of employees like other more traditional financial and physical assets because 'managing human capital by instinct and intuition becomes not only inadequate but reckless' (2007, p. 9).

Kapoor and Sherif (2012) also contend with the view that by applying advanced analytical techniques, HR practitioners can get intelligent insights, predict changes and make informed decisions at operational and strategic levels.

2.4 Usage of HR analytics

Lawler, Levenson and Boudreau (2004) state that HR functions often collect data to measure their own efficiency, but do not measure the business impact of their practices. They argue that three different kinds of metrics are needed by organisations to better understand and evaluate the impact of HR activities on business performance and organisational strategy. Boudreau and Ramstad (2005) define the three anchor points of efficiency, effectiveness and impact as points that connect decisions about resources such as money and people to organisational effectiveness.

a) **Efficiency** – described as productivity metrics such as time to fill position, headcount ratios, and cost metrics such as administrative cost per employee – the measures that Lawler, Levenson and Boudreau (2004) say reveal little about the value added by HR practices.
b) **Effectiveness** – measures whether programs and practices have the intended effect on the people to which they are directed, for example - not measuring training participation, but the impact of that intervention on organisational success.
c) **Impact** – demonstrates a link between what HR does and effects on the organisation's ability to gain competitive advantage, for example - are HR

programs and practices applied to the talent pools where they have the greatest effect on our strategic and organisational effectiveness.

Impact measures go beyond simply showing that HR has reduced its administration costs and improved the quality of the service by measuring the ability of the HR function to show an impact of their activities on the bottom-line. Lawler, Levenson and Boudreau (2004) have argued that this set of impact metrics assist in developing the strategic role for the HR function.

Lawler, Levenson and Boudreau (2004) maintain that most organisations currently focus on efficiency measures, even though there is some attention to effectiveness as well, by focusing on turnover, attitudes, and bench strength. However, organisations often do not usually consider the impact, defined by Boudreau and Ramstad (2003) as the relative effect of different talent pools on organisational effectiveness. Put differently, too often organisations focus on inputs such as hours of training completed rather than outputs and results such as improvements in workforce performance because of training (Harris, Craig and Light, 2010).

Mondore, Douthitt and Carson (2011) believe the two ways that organisations can use to execute on HR analytics are cause-effect analysis and regression analysis. Cause-effect analysis is an approach that allows organisations to consider multi-independent and dependent variables that lead to organisational effectiveness, imply cause-and-effect relationships and calculate a more robust return on investment. On the other hand, regression analysis is used to show for example, correlations between survey variables to turnover intentions.

2.4.1 Key HR metrics being used

Dulebohn and Johnson (2012) contend that over the past three decades, scholars and practitioners have given attention to the need for HR metrics. Metrics are used by all core business functions and since HR represents a core function, a need exists for metrics. They define a metric as an accountability tool that enables the assessment of a function's results. With respect to HR, a primary idea has been that through metrics, HR units could build a business case for their work and this could contribute to an increased partnership between HR and the broader business functions.

Fitz-Enz (2010) outlines three levels of measurement that need to be integrated when using metrics to predict future outcomes: Strategic, HR Operations, and Leading Indicators; each level includes a variety of metrics that are all interrelated with each other. In terms of predictive analytics, HR departments will be able to better understand the connections between these variables and track workforce data in a variety of areas including engagement, absenteeism/turnover, revenue per FTE (full time employee), and other productivity statistics that can be effectively tied back to strategic planning initiatives (Lee, 2011).

Visier Inc. and Fisher Vista (2013) recommend that before moving onto more advanced workforce metrics, companies should focus on the three fundamental HR areas - Turnover, Recruiting and Employee Performance. They warn that the reality is that the most commonly measured workforce metrics do very little to help HR professionals and business leaders achieve real insight into maximising their human capital investment.

Fink (2010) goes further and found that respondents reported a variety of areas where research and analytics were influential in their organisations. Common focus areas for analytics were employee surveys, linkages, manager and leadership assessment, recruitment quality, selection and staffing, retention and turnover, performance management, on-boarding/lifecycle management as well as culture and employee value proposition matters.

Nonetheless, Chrysler-Fox (2011) warns that there are no top measurements or metrics. He found that the importance of measurement and metrics is mediated by an exploratory approach to human capital potential and the unique organisational context and strategic validity.

Vokic (2011) suggested the table below as indicators for valuating individual HR activities such as; controlling of particular HR function, activity, program, policy or process. The assessment is done by assessing HR indicators in specific HR area or sub-area, as suggested in Table 1 below.

Table 1: Examples of indicators by HR functions

HR functions	Examples of indicators
HR planning	• Hours of overtime work per employee per year • Replacement rate • Number of external consultancies in an area per year
Job analysis	• Job description factor • Job analysis costs per job • Time required for job evaluation
Recruitment	• Number of applications per recruitment service • Number of selected candidates per recruitment source • Internal employment rate
Selection	• Employment costs per selection method • Early turn over (within first six months) per selection method • Number of candidates tested, interviewed, etc. • Employees' output (performance) per selection method • Internal clients satisfaction with the selection process
Performance Management	• Percentage of employees which are formally performance appraised • Reliability of performance appraisal • Development and implementation costs of performance appraisal programmes • Average time needed for the performance appraisal
Compensation management	• Total compensation costs per total operating costs • Costs of overtime work in total compensation • Average salary per employee • Number of raises • Number of existing benefits • Employees' satisfaction with salary, rewarding practises, benefits or similar
Training and development (T&D)	• Hours of training per employee • Return in investments (ROI) in training and development • Savings as a result of T&D activities • Annual T&D cost per employee • Changes in knowledge, behaviour, attitudes or work performance as a result of T&D • Employees' satisfaction with T&D programmes
Career management	• Percentage of employees involved in career management programmes • Costs of career management programmes
Health and safety issues	• Number of internal health and safety inspections • Average number of injuries per employee • Average cost of work injury • Time lost due to work injuries

Based on Sikavica et al. 2008. p. 626-629, Adapted from Vokić, N. P. (2011)

Vokic (2011) further states that academics and consultants in the human resources field have been wrestling the attempt to reorient HR departments toward measurements that are more meaningful to the business. HR executives must do more than use data to report on past performance, generate compliance reports and process administrative tasks. They need to start using data to ask some hard questions that are at the heart of how employees contribute to business performance.

2.4.2 HR analytics models commonly in use

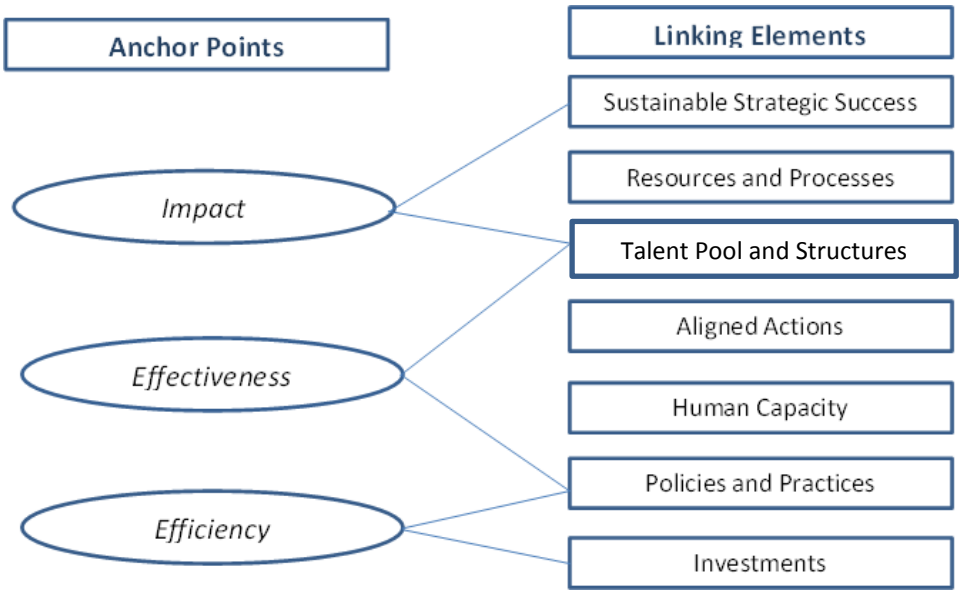
Because of the growing interest in the field of HR analytics, many models and processes have found their way into the human capital investment arsenal (Fitz-End, Phillips, Ray, 2012). This section will cover a few of these models that offer viable options for organisations wishing to venture into HR analytical practice.

2.4.2.1 HC BRidge™

One of the commonly used models to address the challenge of linking HR initiatives to business is the HC BRidge™ framework. Boudreau and Ramstad (2004, 2007) developed the HC BRidge™ framework, which uses the metaphor of a bridge to describe the links between investments in HR programmes and sustainable business success. The model focuses on what the organisation should be doing about human capital and talent rather than on what HR management is doing.

The framework is based on the three generic elements of successful existing decision frameworks, namely efficiency, effectiveness and impact. In the HC BRidge™ framework, each of these fundamental anchor points are broken down further into a set of linking elements that can be used to articulate the framework more explicitly. The HC BRidge™ framework is useful as a planning tool in that it works from sustainable strategic success at the top to derive implications for HR practices and investments at the bottom.

Figure 2: HC Bridge Framework *Source: Boudreau and Ramstad (2004, 2007)*



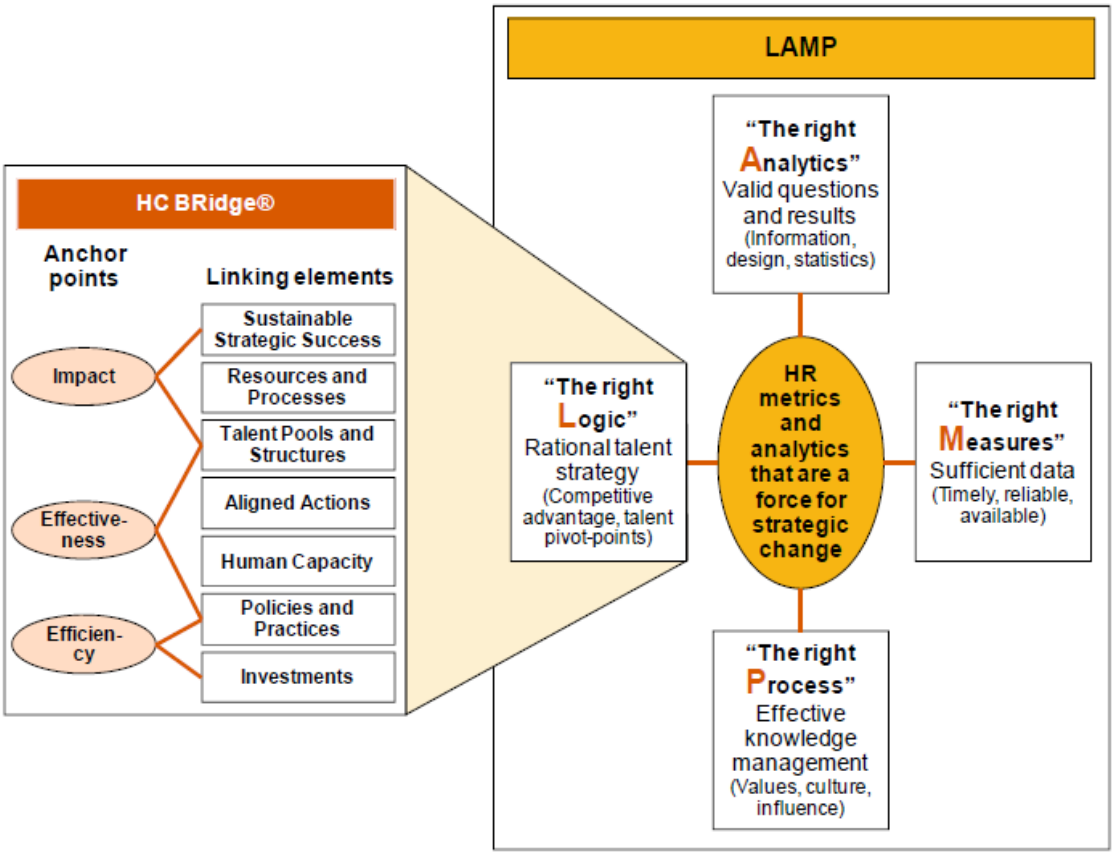
In their research, Magau and Roodt (2010) whose main aim was to determine whether the HC BRidge^{TM} framework can create a useful platform for leveraging human capital solutions and for demonstrating HR value-add, the researchers found that there were statistically significant differences between line management's and HR practitioners' views in respect of HR's strategic business objectives. Their results suggested that HR management was not yet fully aligned to strategic business objectives and of becoming a strategic business partner. The study suggested that the HC BRidge^{TM} framework could be used as a method to connect human capital processes with business strategy to leverage business results and to demonstrate value-add.

2.4.2.2 The Lamp Model

The most widely known model is the "LAMP Model". The model by Boudreau and Ramstad (2007) and Cascio and Boudreau (2008), is a framework that includes their HC BRidge^{TM} decision science, aiming to overcome measurement challenges (e.g., strategic impact, organisational change, validity and rigour, causation, and leading indicators) of scorecards and their predecessors. LAMP is an acronym for four critical components of a measurement system that drives strategic change and organisational effectiveness:

- **Logic:** HC BRidge^{TM} as described in previous section is based on the three generic elements of successful existing decision frameworks, namely efficiency, effectiveness and impact**.**
- **Analytics**: connect the decision framework to the scientific findings.
- **Measures:** considers measures within context.
- **Process:** focuses on effective knowledge management and makes the insights motivating and actionable.

Figure 3: LAMP model

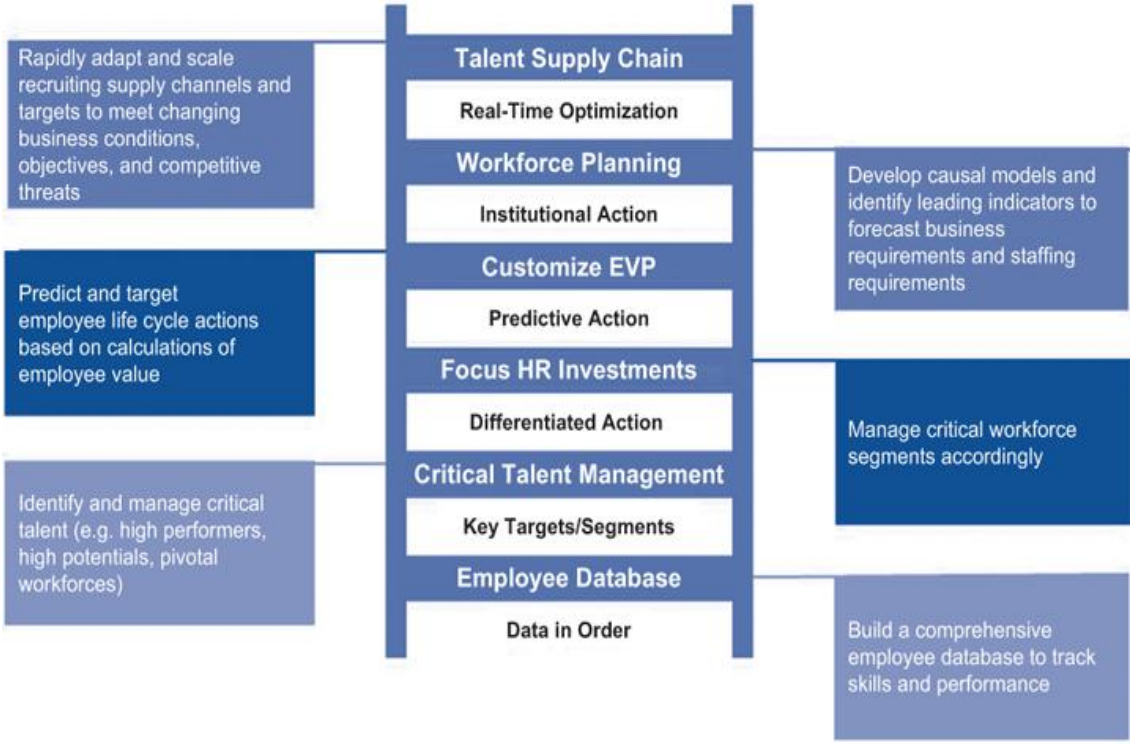


Source: Chrysler-Fox (2011) adapted from Boudreau and Ramstad (2007)

2.4.2.3 Ladder of human capital analytical applications

The model by Davenport, Harris and Shapiro (2010) and Harris, Craig and Light (2011) suggests that there are six levels to track, analyse and use employee data - and these range from simplest level (data in order) to most the sophisticated (real-time optimisation) as shown in the figure 4 below.

Figure 4: Ladder of human capital analytical applications



Note: The ladder shows how analytical capabilities tend to build on each other from a foundation of good data – data that is accurate, consistent, integrated, accessible and relevant

Source: Harris, Craig and Light (2011)

A brief explanation of the different levels follows below:

Data in order: Employee database – single version of the truth - accurate, consistent, integrated, accessible and relevant employee data - speaks to the often-termed 'single version of the truth'.

Key segments: Critical talent management - On the second rung, companies can use analytics to identify key segments of employees.

Differentiated action: Focus HR investments - On the third rung, sophisticated segmentation enables differentiated action. At this level, HR investments can be disproportionately made in the employee groups or workforce segments that create the most value for the firm.

Predictive action: Customising the employee-value proposition - A rung on the ladder in which companies anticipate employees' preferences and future behaviours and tailor HR practices to help them hold on to their valuable talent.

Institutional action: Workforce planning - The next rung on the human capital analytical ladder demands institutional action, in which a sophisticated

workforce-planning process is integrated with a company's strategy, finance and other, planning processes.

Real-time optimisation: Talent supply chains - This most sophisticated level of analytics involves making decisions about talent in real time – much like in supply chain environments. The authors maintain this level of analytics is still in its infancy across the world, but the study found that many organisations are battling with even as far back as level 2 or 3 levels (Harris, Craig and Light, 2011).

2.4.2.4 Talent analytics maturity model

The Bersin and Associates talent analytics maturity model shows the four stages that an organisation goes through as it evolves from a tactical, non-strategic function into a fully integrated value-add business process. This model is shown in Figure 5 below.

Figure 5: Talent analytics maturity model

Source: Bersin & Associates, 2012

The model above provides a way of defining where in terms of talent analytics maturity organisations are. It starts with level 1 as the level of reactive, operational reporting of HR data. Levels move up to 2 where organisations start being more proactive and advanced in their reporting and include benchmarks

and multi-dimensional dashboards. Level 3 is what Bersin (2012) classifies as 'Strategic Analytics' and this involves more use of statistical analysis, development of models and segmentation. The ultimate level of maturity according to Bersin (2012) is predictive analytics which involves predictive models, scenario planning and integrates with strategic planning.

According to Bersin (2012), Level 4 organisations have 38 percent higher retention rates and generate almost three times the revenue per employee of Level 1 HR organisations. At Level 4, which they contend that only fewer than 10 percent of all organisations have achieved, the HR team is not only administering the basic personnel functions, but also staying intimately involved in strategic decisions about where to invest, how to grow the business, and where performance can be improved.

2.4.3 HR Systems used

Bersin' s (2012) research on HR systems shows, in fact, that the average large company has more than ten different HR applications and that their core HR system is more than six years old. It takes effort and energy to bring this data together and make sense of it. Most importantly of all, there is a real discipline to data analytics. It demands skills in data analysis, cleaning, statistics, visualisation and problem solving. Most HR professionals do not yet have these skills, so companies have to find these people and bring them together to work on HR data.

Davenport, Harris and Shapiro (2010) use the acronym 'DELTA' to describe the technology as critical to mastering talent metrics. The authors talk about the importance of 'access to high quality data, enterprise orientation, analytical leadership, strategic targets, and analysts' (p. 57). The model, describes the following fundamentals needed to building analytical capability:

- **D** – Data. Good quality, reliable data from enterprise systems. Since many HR functions still work with fragmented systems, processes, and capabilities, it can be challenging simply to get consistent and reliable data from across the organisation.
- **E** – Enterprise. Strategic perspective- To take advantage of analytics, you need the integration of data, analyses and processes throughout the enterprise. Organisations need access to enterprise wide employee

information for meaningful analytics.

- **L** – Leadership. Advocates for analytics**.** For a human capital analytics program to be successful, it must be led by the right people with the right analytical skills. Success of HR analytics initiative is dependent on support from leaders.
- **T** – Targeting the right analytical opportunities. Organisation's ability to determine which of the six previously mentioned kinds of analytics should be employed and when for the highest likelihood of payoff, particularly as there is not enough HR analytical capability to run with all activities.
- **A** – Analysts: Deep analytical skills. Having disciplined and methodical approaches to measuring and tracking global HR processes, capabilities and outcomes is only half the battle. The other half is building and using analytical skills throughout HR so that the organisation can extract the most value from the data and metrics. For analytical theory to be put into practice, organisations not only need quantitative abilities, but also psychometrics, organisational design specialists and human resource management systems (Davenport, Harris and Shapiro, 2010).

2.5 Building blocks to developing HR analytic capability

Much has been written about how HR analytics should be executed. Lawler, Levenson and Boudreau (2004) believe several things are required to perform the kind of analytics that show a relationship between HR practices and organisational performance. To begin with, good metrics are required, followed by, and perhaps more importantly, good analytic models and valid measures of company performance.

However, Ulrich (2010) warns organisations to avoid HR analytics as a means to an end. He says this is akin to a sports fan being consumed with the detailed statistics of the event, and not whether the team has won or lost. Ulrich (2010) advises to avoid measuring what is easy and rather focus on measuring what is right. In this regard, he urges HR professionals to not focus just on activities, for example the number of people trained, but rather on the outcome of that training. Lastly, the author advises organisations to keep measures simple and to focus on decisions. The ability to show the correlations between HR

activities, HR outcomes and business outcomes is important, but even better would be once causality can be determined.

The most critical building block and challenge posed by analytical talent, according to Harris, Craig and Egan (2010), are the people at all levels that help turn data into better decisions and better business results. They describe 'analytical talent' as the people who use statistics, rigorous quantitative or qualitative analysis and information-modelling techniques to shape and make business decisions - the "quant jocks," "math brainiacs," "Excel ninjas" and other analysts who bring the data, the quantitative analysis and the statistical models that organisations need to improve decisions (p. 4).

While HR dashboards can dissect workforce data in numerous ways, the dashboards cannot decide which information will be of most use to the business – that is the function of HR (Kasselman, 2006). The Deloittes Human Capital Trends (2011) report states that when it comes to workforce analytics, the most important step is the first one: getting started. Most companies already have the data they need and that there really is no excuse for delays. The report quotes one executive saying, "If you're paying people with a payroll system, you have enough data required to begin" (p. 2).

The Delta model alluded to in section 2.5.3 compares well with Deloitte's building blocks, defined in the Deloittes Human Capital Trends (2011) report as:

- **People.** What kind of organisation and specific skills are needed to support an analytics capability?
- **Process.** What's the leading way to improve the impact of decision support tools?
- **Technology.** What tools and systems are necessary for data-driven decisions?
- **Data.** How do we get the most value out of internal and external data?
- **Governance.** How will data guide decisions — and who is accountable for implementing them?

2.6 The outlook for HR analytics

Harris, Craig and Egan (2010) offer that there will indeed be a noticeable take-up and investment in the area of analytics in the next few years, given that in a recent survey of executives at large companies in the US and UK, nearly three-quarters of participants said they are working to increase their company's use of analytics.

Lee (2011) offers that through HR analytics, HR professionals will be able to combat comments such as:

- "HR is for people who aren't good with numbers" with showing their use of analytics; or
- "HR just hires and fires" with forethought on the future workforce and strategic initiatives like internal social media; or
- "They plan parties and don't contribute any value to the business" with the use of insights that quantifiably show HR's value and will allow HR to take on more of a role in business strategy development (p. 6).

Cornell University (2010) found that HR analytics has to move in a number of directions to become beneficial for organisations. Firstly, the survey found that analytics should be used more often for forecasting and generating predictive models. Secondly, including HR analytics and HR data in annual reports (and most participants believe this will happen soon) would effectively spread the HR analytics gospel. Finally, participants agreed that once organisations and HR professionals get better at sharing best practices and developing a common language and standards; this would speed HR analytics' maturation as a discipline.

The IBM (2009) survey noted that of organisations that do not currently have workforce analytics applications in place, more than half plan to develop and deploy such capabilities within the next one to five years. This reflects the significant anticipated increase in the interest, usage and investment in this subject over the next few years.

2.6.1 Challenges and inhibitors

Various suggestions have been made by several authors regarding what could be inhibiting HR analytics in organisations. Table 2 summarises some of these.

Table 2: Challenges and inhibitors

Cornell University (2010)	Davenport, Harris and Shapiro (2010)	Fitz-End, Phillips and Ray (2012)
• Organisational barriers hamper the effective use of HR analytics. • Many managers and front-line HR generalists are not yet comfortable talking about HR in terms of testing and evidence, or lack the skills to know which data to use for the right analyses. • Top executives may shy away from making big decisions using incomplete data. • Culture wary of embracing HR analytics subtly ensures its employees will be wary too. • Managing data from multiple countries • Lack of incentives for others to share data across functions • Lack of sophistication—fear of numbers, poor data analysis and communications skills—among potential data users • Inability to match data across sources • Tailoring and communicating findings to different levels of the organisation • Data credibility concerns, perhaps caused by limited manpower resources, privacy and security issues, legal and financial constraints, old data, employee-driven entry for some of the data, etc.	• Making analytics an excuse to treat human beings like widgets • Keeping a metric alive for no reason • Relying on just a few metrics to evaluate performance (and smart employees can learn to manoeuvre the system) • Insisting on 100% correct data before an analysis is accepted, and thus delaying decision making • Assessing employers only on simple metrics such as grades and test scores – which often fail to predict success • Using analytics to hire lower level staff and not using it for senior levels. • Failing to monitor changes in organisational priorities, thus leading to irrelevant analyses • Ignoring aspects of performance that cannot easily be quantified • Analysing HR efficiency metrics only, and failing to address the impact on performance.	• Getting buy-in from senior leadership about the value of HC analytics • Showing the impact of HC analytics on business outcomes • Aggregating data into a single, centralised database with consistent, quality data • Developing capabilities including systems, technology, skills and resources to conduct analytics • Using tangible measures to measure the intangibles • Moving from being reactive to being predictive.

Source: Own analysis

One constant theme emanating from the table of challenges and inhibitors above is that data credibility is a key challenge. Data concerns take many forms: from matching data from various sources, data from different

geographies, analysis paralysis caused by organisations' insistence to wait for 100 percent data before getting started with analytics. A key challenge is the ability for organisations to aggregate data into a single, centralised database with consistent, quality data.

2.6.2 Outlook: Next five years

Johnson, Gueutal and Marler (2012) have an optimistic outlook of the future regarding HR analytics. The five skills they believe will grow in importance to HR professionals are:

- HR Analytics and Metrics Skills – Accurate, timely, and actionable HR metrics are key to assessing HR's contribution to organisational effectiveness.
- SQL (structured query language) and Reporting Skills – Human Resources professionals will increasingly need to know where the data is stored, how to extract the data from the system, and how to present this data in a form appropriate to each manager's needs.
- Social Networking Skills – HR professionals increasingly need to understand when, where, and how to use these tools to support HR, as well as the legal implications of their use.
- HR Content and Strategy Knowledge – A key requirement for HR professionals today is to couple the specific, detailed, functional knowledge about their organisation's HR practices with an understanding of how they fit within the broader organisational strategy.
- Change Management Skills – The implementation of any new HRIS (HR Information System) brings with it the need for organisational change. HR professionals will need to have the knowledge necessary to help the organisation navigate and implement business process change (Johnson, Gueutal and Marler, 2012).

Johnson, Gueutal and Marler (2012) assert that based on the skills highlighted above, the following initiatives could be expected to unfold in the HR profession:

- Professional associations and universities will continue to make an important contribution to HRIS knowledge.

- The field will move forward through research. For example, in the last 10 years, there have been over 200 scholarly articles focusing on the use of HR technology in organisations.
- Formal education. For example, the University at Albany offers an MBA concentration in HRIS that is in alignment with Society for Human Resource Management's (SHRM) HR curriculum guidelines.
- HRIS content is slowly being integrated into introductory and advanced courses on HRIS.

Most of all, the HR professional fraternity itself will have to make the most advances. Johnson, Gueutal and Marler (2012) conclude that the most effective advances in HRIS knowledge will come through significant investments of time, talent and resources by individual HR professionals themselves.

Lawler and Boudreau (2009) corroborate this - they believe the road map for the future of HR and analytics lies in HR organising itself so that it has skills and expertise to operate at a corporate level; to have metrics and analytics that measure impact of HR practices and to improve decision making by bringing HR analysis to the business.

HR guru Ulrich (2010) profoundly concludes that while many HR professionals went into HR to avoid the quantitative side of business, that it will no longer be possible to "sidestep data, evidence and analytics that bring rigour and discipline to HR". He declares, "Statistics should become *de rigueur* for HR professionals" (p. 18).

2.7 Summary of the literature review

There seems to be a lot of confusion regarding what HR analytics is, is not, should be or could be. Many writers and academics agree on its importance – but there are marked differences in the nuances of the 'what it is' and 'why do it', and thus the purpose for the research.

In summary, it is evident from the literature review that the concept of HR analytics, similar to other concepts is loaded with meaning and applications. However, the literature does provide the description that HR analytics is taking HR from simply reporting on legacy data to probing key questions and conducting predictive modelling into future human capital trends. The literature

further points out that HR analytics is not about either/or about basic reporting and predictive modelling. However, the two should be applied in such a manner that they complement one another.

The literature showed that HR departments globally are adopting HR analytics with the aim of strengthening legacy collected by HR units, providing organisations with a competitive edge over their counterparts who are yet to adopt and apply HR analytics. The literature review further points the impact of HR analytics on business activities and investment decisions where HR analytics data enables organisations to assess the current workforce and performance and make future projections of what they have at their disposal. The question that remains is to what extent the adoption of HR analytics has taken place in South Africa, which will be probed in the study.

Furthermore, the literature points to the importance of HR's role evolving from being an administrative desk towards becoming more of a strategic partner at the boardroom table. The literature points out that HR analytics is the key towards elevating HR's role as being a strategic partner as the data collected for HR analytics purposes is key in that it combines collecting legacy data, current HR data and developing predictive models which would prove to be key in contributing towards the overall business decisions of the organisations. Another complementary factor linked to elevating HR's role to strategic partner is that HR should move from being reliant on a "gut feel" and instead move towards adopting evidence based research to inform their business. The literature alludes to the fact that this is a major challenge considering that HR professionals are largely drawn from the social science and lagging in numerate and statistical skills. The role of HR as a strategic partner, and in particular, the role of HR analytics as an enabler to HR being seen as a strategic partner remains unknown as the literature review was silent in this regard.

The literature identifies that one the most critical building blocks and challenges posed to the implementation of HR analytics is analytical talent who can conduct quantitative analysis using statistical models that organisations need to improve decisions. The extent of the analytical skills challenge is not evident from the literature, and this further represents a gap in the literature.

3 RESEARCH QUESTIONS

"If we knew what it was we were doing, it would not be called research, would it?"

Albert Einstein

Blumberg, Cooper and Schindler (2008) suggest that it is necessary to restate the research question(s) after conducting a literature review as this helps develop the research question through interrogation of existing literature. From the literature review conducted in Chapter Two, five research questions were formulated and subsequent research was conducted in an attempt to answer these questions:

3.1 Research Question 1: Is there a common understanding of the concept of HR analytics in South African organisations?

The question sought to establish whether there was a common understanding when it comes to HR analytics and furthermore, to establish the different concepts or names associated with HR analytics.

3.2 Research Question 2: Is there a perceived need for HR analytics in organisations?

This research question ascertained whether organisations perceived a need to implement HR analytics and incorporate it in their HR processes. The study determined in particular, whether the HR fraternity recognised the need for change for HR to move from gut feel to science. Does the fraternity realise the benefits of statistical techniques such as predictive modelling and regression analysis in HR?

A crucial part of this section of the survey was to determine whether HR analytics could prove to be the key ingredient in positioning HR as a trusted and credible business partner, with value-add to the business.

3.3 Research Question 3: What are key metrics/analytics being used?

The study identified what areas in the HR value chain the HR community finds the most useful for analytics as well HR analytics systems used. The level of sophistication among South African organisations was tested in the study.

3.4 Research Question 4: What should be done to make HR analytics a more useful feature of HR management?

The research aimed to define staffing requirements, skills and capabilities required for maximising HR analytics. Furthermore, building blocks for conducting useful analytics were determined.

Ferguson, Mathur and Shah (2005) offer a model for building blocks for organisational capability for HR analytics. They state that asking the right questions in only part of the equation – and that each provocative idea must be subject to the right analytical vigour to verify a pattern that has predictive value for the future. Much like the Davenport, Harris and Shapiro (2010) and the 'Delta' model as previously discussed, Ferguson, Mathur and Shah (2005) believe that the following are needed as building blocks to implementing HR analytics:

- Equipping everyone with question marks – beyond data availability, organisations need to create a 'what if' culture where idea generation is part of corporate vocabulary and on agenda of every meeting.
- Bringing on the quantitative skill, and
- Pushing information outward.

3.5 Research Question 5: What does the future look like for HR analytics in South Africa?

This question aims to assess whether organisations are moving towards introducing HR analytics and what the future holds for this notion. Challenges faced by HR and using analytics are also explored and overall an outlook into the future is determined.

4 RESEARCH METHODOLOGY

"Not everything that can be counted counts and not everything that counts can be counted."

Albert Einstein

4.1 Introduction

Chapter Four describes the research design and methodology choices that were used to answer the research questions that are stated in Chapter Three. This Chapter outlines the research plan in terms of its approach, rationale and sampling. Details of the research instrument are provided as well as data analysis methods employed. Research limitations will also be discussed.

4.2 Research design

Based on the theories, concepts, and frameworks discussed in the literature review, it was decided to use an exploratory, qualitative method as the primary means of data collection for the study.

The reason for the exploratory approach is that the research was seeking new insights into the subject of HR analytics, asked new questions and assessed the topic in a new light (Saunders and Lewis, 2012). Myers (2009) supports this view and says qualitative research is best used if one wants to study a particular subject in-depth, for example in one of a few organisations. This research method is best used when the particular topic is new or there is not much previously published material on that topic – as was the case for this topic.

Myers (2009) contends that qualitative researchers believe that it is virtually impossible to understand why someone did something or why something happened in an organisation without people talking about it. The author says many crimes would not be solved if police relied on quantitative data, thus the need to talk to suspects or witnesses. The same can be said for the legal profession who have to cross-examine witnesses in court. Myers (2009) further cites Kaplan and Maxwell (1994) who stated that understanding a phenomenon from the point of view of participants and their context is mainly lost when textual data is quantified. Thus, the primary motivation for conducting this

research in a qualitative way rests in what Myers (2009) believes is the one thing that distinguishes humans from the natural world - the ability to talk.

The main disadvantage of qualitative research according to Myers (2009) is that it is often difficult to generalise findings to the general population. The author cites Klein and Myers (1999), Lee and Baskerville (2003) and Yin (2003) and contends that one can still generalise qualitative research to theory. The generalisation of research into theory is induction according to Saunders and Lewis (2012), a 'bottom up' way of research which involves development of theory as a result of analysing data already directed from respondents. Induction process allows flexibility in terms of structure and permits changes to the research as the process is in progress.

In-depth interviews with senior HR practitioners as well as practicing HR analytics experts were conducted to ascertain the level of knowledge that exists regarding the concept of HR analytics. One-on-one, face-to-face interviews were conducted with this select group at their offices at a time convenient to them. The in-depth nature of industry experts' interviews was ideal in this instance since the subject matter seemed nebulous and broad, was possibly complex and there was a need to dig deeper into the context. Insights were sought rather than verified and with qualitative, the research was open to new concepts being discovered that may not otherwise have been established during quantitative research.

4.3 Universe

The universe consists of all survey elements that qualify for inclusion in the research study (Butler in Lavrakas, 2008). It includes the entire repository of information where research finds answers to a problem. Butler (2008) states that the universe is dependent on what the question is – and has an intimate relationship with the 'what' of the survey.

The population for this survey included senior, experienced HR practitioners in South Africa as well as practising HR management information or analytics specialists. Senior was defined as operating at middle or senior management level in an HR role for at least the last five years. Respondents came from large organisations – large being organisations employing more than 5000 people.

The reason for this sample population choice was that, as previously discussed in the introduction section of the paper, many multinationals have established HR analytics functions to get deeper insights into their people practices (Davenport and Harris, 2006). It was therefore believed that it is likely that in South Africa too, only big corporates would be using HR analytics.

It is interesting to note that in a South African study by Viljoen (2012), it was found that the size of a company generally had no statistically significant influence on human capital effectiveness, contradicting the expectation that the size of the company would influence human capital return on investment

HR practitioners were chosen through an information-oriented selection approach, including at least one case from each of the prominent sectors of the economy. Payne and Williams (2005) argue that qualitative data can be utilised to generalise beyond the scope of the research sample itself if the researcher adopts the '*moderatum generalisation'* approach. Moderatum generalisations are limited, tentative and modest compared to classical generalisation. However, they can produce 'testable proposition' thus allowing the generalisability of the findings to be broad.

The research was undertaken on large organisations in South Africa in the most prominent sectors of the economy and a *moderatum generalisation* was sufficient to reach a conclusion concerning challenges with the use of HR analytics as part of the business model.

4.4 Sampling method

Saunders and Lewis (2012) describe a sample as a sub-set of the universe – which was described in section 4.3. The sampling technique used for this study was non-probability judgement and convenience sampling. Zikmund (2003) pronounces that this sampling technique is most appropriate if the sample is selected based on the researcher's judgement about suitability of each respondent. This sampling technique is best suited when collecting qualitative data where the researcher will use their judgement to actively select those that will be able to assist and meet research objectives.

Using non-probability sampling, 16 respondents drawn from 15 companies from prominent sectors of the South African economy were selected, which included

government, telecommunications, manufacturing, construction, state-owned enterprises, financial industry and mining. Senior level HR practitioners were deemed suitable, as they possessed the institutional memory and in-depth knowledge of the level, challenges and practice of HR analytics within their human resource divisions.

Purposive sampling was used to select the respondents. Purposive is when subjects are selected because of who they are and what they know, rather than by chance (Siegle, D. 2002). The sample was obtained conveniently from the researcher's and supervisor's wide network of personal contacts of HR professionals in South Africa and contacts via fellow MBA colleagues. From the respondents identified, snowball sampling was relied upon. Snowballing is sampling by referrals, for example sampling other experts in a field. The researcher was aware of the inherent risk with this method of sampling being that referrals might be homogenous, and took care to mitigate this risk by varying sectors as far as possible.

The question of how many interviews are adequate for qualitative interviews has been debated ad-nauseum in the academic world. Baker and Edwards (2012) offer that the riposte to the question of 'how many' from most contributors is 'it depends'. In considering what 'it depends upon' however, the responses offer guidance on the epistemological, methodological and practical issues to take into account when conducting research projects. According to Couch and McKenzie (2006), a small number of cases - and they suggest less than 20 - will facilitate the researcher's close association with the respondents, and enhance the validity of fine-grained, in-depth inquiry in naturalistic settings. Based on this, a sample size of a minimum of 10 and maximum 16 interviews was targeted, and the ultimate number of interviews conducted for this study was 16.

According to Siegle (2002), the adequate average for qualitative interviews is at which point the research reaches saturation point. Data saturation is the point at which no new information is being obtained, a point at which the researcher may end his or her research or he or she may change his or her methodology.

4.5 Unit of measurement

The unit of measurement for this study was the opinions of HR practitioners on HR analytics in South Africa.

4.6 Research instrument

Data was collected using a discussion guide in order to ensure that all the topics were covered during the interview (Saunders and Lewis, 2012). In-depth interviews using a semi-structured discussion guide were conducted for this research. Questions were themed to cover the five main research focus areas:

1 Is there a common understanding of the concept of HR analytics?
2 Is there a perceived need for HR analytics
3 What are they metrics being used?
4 What should organisations be doing in order to be doing to maximise their HR analytics use?
5 What is the future outlook for HR analytics?

To test reliability and validity, and as a way to determine the construct validity of the instrument and to enhance its effectiveness; a pilot study of the survey was conducted among a few HR professionals including senior executives, HR managers, and HR generalists. Respondents were asked to review the discussion guide and provide feedback on the usefulness of the questions, recommend additional questions, eliminate questions, and determine if the questions collected were appropriate data for the needed to fulfil the purpose of the study. Items that were consistently identified by the focus group were included in the final survey.

The study was especially careful not to use leading questions that imply the response that was being sought. The research avoided loaded questions that contain words, which may bias the responses. Lastly, the way people were asked for their responses was simple, was conducted in a comfortable environment, and with respect and integrity.

The discussion guide appears as **Appendix A** of this report. Furthermore, the respondents were requested to fill in a short questionnaire – **Appendix B** – to gather a small sample of quantitative data. Due to the simplistic nature of the

Bersin model discussed in Chapter Two, the model was used as part of the short questionnaire to gauge sophistication/maturity levels by asking respondents to plot where they perceive their organisations to be on the maturity curve.

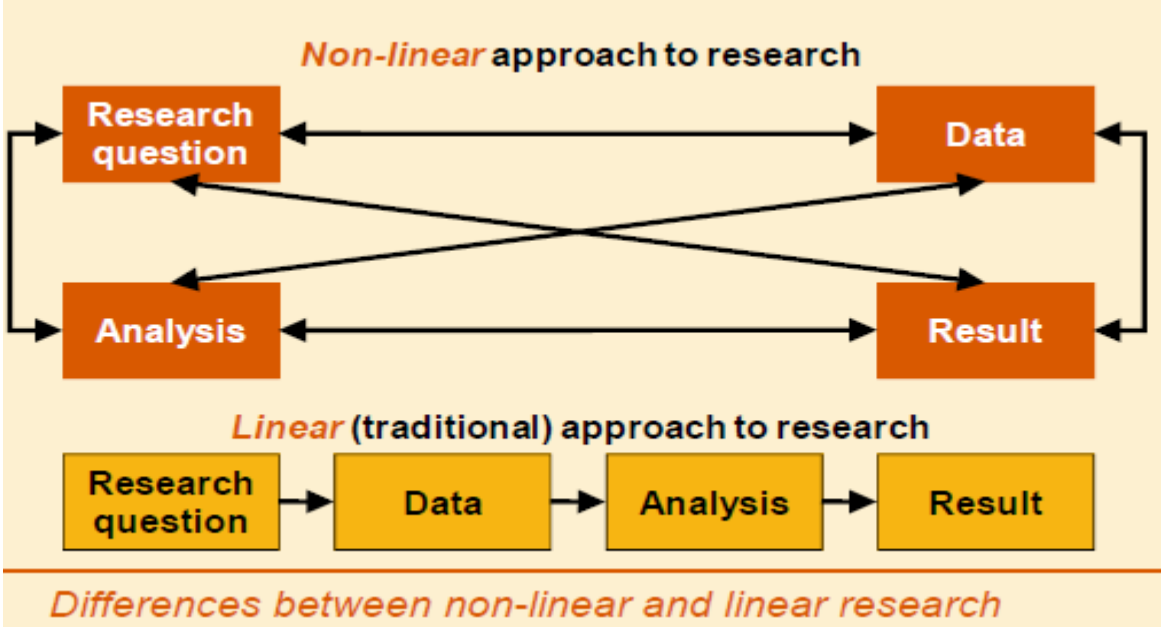
All respondents signed the required research consent forms - **Appendix C -** to assure the respondents of confidentiality and of their voluntary participation. In assuring confidentiality, respondents agreed to their names appearing in the research report, as long as no verbatim quotes could be directly attributed to them.

4.7 Data analysis

One of the challenges with qualitative research is the large amounts of unstructured data it presents, and the researcher's task of making sense of that. This Chapter will highlight the different data collection and data analysis approaches and methods adopted in conducting this research study. The Chapter will provide an analysis of the reliability and validity of the data emerging from the data analysis.

Chrysler-Fox (2011) cites Bergman's (2009) non-linear approach to research - which proposes the continuous assessment of interrelationships between four research components - research question, data, analysis, and results. This contrasts with the linear or traditional approach, which implies a deductive logic. Bergman's (2009) non-linear and linear approaches are shown in Figure 6 below.

Figure 6: Differences between non-linear and linear research



Source: Chrysler-Fox (2011) adapted from Bergman (2009)

The non-linear approach was adopted for this study. Due to the lack of previous research and theory in this field in South Africa, the triangular relationship between the research question, data, and analysis favoured an inductive approach, thus ensuring a link between the research question and the exploratory purpose of the research.

The research study adopted a number of various key qualitative methods in terms of data analysis that are imperative to address the main research questions within the study, which are; induction method; the grounded theory approach, thematic analysis and testing the reliability and validity of the research study.

4.7.1 Induction Method

The inductive method was used in the analysis of the raw research data that was completed through the transcription of research interviews. Zhang and Mildemuth (2011) point out that the inductive method is particularly appropriate for studies that intend to develop a theory, rather than those that intend to describe a particular phenomenon or verify existing theory. Furthermore, Zhang and Mildemuth (2011) point out that in adopting the induction approach to understanding raw data, a constant comparative method should be adopted as the aim is to form and establish boundaries, assign the segments to categories and summarise the content of each category. Furthermore, Thomas (2003)

argues that the primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structured methodologies.

In adopting the induction method for this study, the transcripts were read several times using the constant comparative method to identify themes and categories emerging from the interviews, the categories emerging were then selected and grouped under each research question. This process was then used to develop categories that were then conceptualised into broader themes in order to ascertain the level of application of HR analytics in the different sectors sampled.

4.7.2 Grounded Theory

Grounded theory as defined by Corbin and Strauss, (2008) citing Glaser and Strauss (1967) is a set of inductive and iterative techniques designed to identify categories and concepts within text that are then linked into formal theoretical models. Bernard and Ryan (2010) identify the grounded theory process as involving the reading of verbatim transcripts, identifying possible themes, comparing and contrasting themes, and identifying structure among them and build theoretical models.

In adopting the grounded theory method for this research study, Grounded Theory using the steps of analysis outlined by Dillon (2012) was adopted. Interview recordings were transcribed and a constant comparative analysis between the different transcriptions of interviews was conducted. The raw data was analysed with the goal of developing categories and themes that describe the understanding and application of HR analytics in the sampled sectors. In terms of developing categories and themes the transcribed data was re-read and began to code all different sectors by industry, level of application of HR analytics and processes involved in ingraining HR analytics within the sampled industry sectors and also the future prospects of the HR sector fully incorporating HR analytics within their broader organisational structure. This was done in line with the developed research questions adopted for this study in order to provide guidance for the study in developing categories and themes for each research question.

4.7.3 Thematic Analysis

Thematic analysis is a qualitative method described by Braun and Clarke (2006) as identifying, analysing and reporting patterns, themes within data. It minimally organises and describes your data set in rich detail. However, frequently it goes further than this and interprets various aspects of the research topic. Thematic analysis, as in grounded theory requires more involvement and interpretation from the researcher (Braun and Clarke, 2006). Therefore, thematic analysis moves beyond counting explicit words or phrases and focuses on identifying and describing both implicit and explicit ideas within the data, that is, themes. Codes are then developed to represent the identified themes and applied or linked to raw data as summary for later analysis.

The approach adopted for this research study shares the systematic, flexible and inductive qualities of grounded theory. The analytic approach presented in this data analysis was also systematic in terms of data processing, for example developing a coding framework for the raw data and code application for developing categories and themes. The thematic method adopted for this particular research study does not preclude theoretical development. Instead, its primary usage for the analysis in this study is to understand how organisations view HR analytics, the application thereof within the HR sector and understand the importance of HR analytics in advancing the role of human resources as a strategic partner in the overall organisation.

4.7.4 Reliability and Validity

As pointed out, the research study is not representative and does not adopt an “umbrella approach” in the manner in which HR analytics is viewed, developed and adopted by different organisations in South Africa. It is indicative in that it presents an aerial view of how HR analytics is understood, applied (or lack of application) and the future of HR analytics within the South African context. This section tested the reliability and validity of the data in terms of providing an indication of South African organisations and their interaction with HR analytics. Golafshani (2003) citing Joppe (2000) define reliability as the extent to which results are consistent over time and are an accurate representation of the total population and if the results of the study can be reproduced under a similar methodology, then the research instrument is considered reliable” (p. 1).

Validity on the other hand determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Golafshani, 2003). However, for the purposes of this study the reliability and validity of the study were tested against the context with which the HR sector in South Africa provides room enough for the incorporation of HR analytics and to further prove if there is a solid case to be made to transform the entire sector to incorporate HR analytics. Secondly, reliability and was also tested against the sensitivities and limitations within which the research was conducted and how that will impact on the outcome of the research study.

4.8 Research limitations

Research limitations are premised on the belief that all research is flawed and that there are always trade-offs to be made. The decision to use qualitative research lends itself to trading off breadth of information (quantity) in favour of depth (quality).

The first and major research limitation was that the responses established may not be fully representative of the universe from which it was sampled (Welman, Kruger and Mitchell, 2005). The sampling technique chosen was subjective, non-probability and therefore the results of this study are indicative rather than representative. It cannot be assumed that all South African companies have the same experience regarding HR analytics as the ones that took part in the research.

Another research limitation is the non-response bias created by the universe choice to exclude possible other populations – for example, junior HR practitioners who may in fact have insights to add to the topic, and senior HR practitioners based outside of Gauteng, or smaller size companies.

A further potential limitation in qualitative in-depth interviews that had been anticipated was that of low incidence levels, challenges with accessibility and appointment setting, as well as possible reluctance to disclose information due to HR function been seen as a sensitive matter. Surprisingly and pleasantly, this was not experienced in this study.

Lastly, there was always going to be the risk of structured and unstructured limitations - that is - missing out on things that the interviewer did not anticipate;

as well as missing out on asking the question. The researcher kept an open mind, was mindful of the 'unsaid' things in the survey, and explored those in detail.

5 RESEARCH RESULTS

He who asks is a fool for five minutes. He who does not ask is a fool forever.

Chinese proverb

5.1 Introduction

The purpose of this research was to identify the extent of application of HR analytics amongst large organisations in South Africa. The main themes emerging from the raw data and the discussions were selected in order to provide a better understanding of the application of HR analytics within HR practice within organisations. This Chapter starts with a description of the sample and then explores the research responses grouped by research question.

5.2 Sample description

As already alluded to in Chapter 4, 16 respondents from 15 companies representing prominent sectors of the South African economy were interviewed for this study. The respondents were all interviewed around Johannesburg, South Africa. It is prudent to repeat that given the small sample reflective of qualitative research, the research is laden with rich data nevertheless. The respondents were relatively senior in their roles, with the average tenure in HR being 10 years.

Ulrich, Younger, Brockbank, Ulrich (2013) speak about the 'feminization of the profession' and that in the period from 1997 to 2012, the percentage of males in HR has dropped from 70 percent to 38 percent, while that of females has doubled from 30 percent to 62 percent. This was however not reflected in this research sample, which was split equally with eight females and eight males

The identity of the respondents and organisations interviewed is shown in table 3 below, however, in line with ensuring confidentiality for the respondents, this is not shown in the results analysis. Confidentiality was ensured through respondents providing necessary consent and coding of actual respondents into fictional names such as Respondent 1 and Respondent 2. This process was not only ethically responsible; it assisted in obtaining unbiased responses from

respondents. The respondents are shown in Table 3 below in alphabetical order of name of organisation represented.

Table 3: Particulars of respondents

Name	Designation	Organisation represented
Maryanne Trollope	Head: Learning and Development	Anglo American
Themba Nkosi	General Manager: Corporate Affairs (ex GM: HR)	Arcelor Mittal SA
Candice Watson	HR Executive	Barloworld Logistics
Jane Wish	Executive: Global HR	Barloworld Ltd.
Teboho Mokoena	Deputy Director General: Human Resources	Department of Correctional Services
Howard Ramsden	Talent Manager	Discovery
Bhabhalazi Bulunga	Group Executive: HR	Eskom
Jenny Greyling	HR Director and Learning Leader	EY (Ernest and Young)
Michele Seroke	HR Manager	GE Southern Africa (General Electric)
Laurette Makhubele	HR Manager	Hollard
Nobantu Masebelanga	Head of HR: Retail SA	Liberty Life
Zelia Soares	Executive: Leadership Development	Murray and Roberts
Dean Strooh	Head: Human Capital	MTN Group Management Services
Ian Fuller	General Manager: Business Transformation	Nedbank
Vlam van Rooyen	Global Talent Management	Sasol
Fred Herselman	HR Information Management Manager	South African Breweries Ltd

The sample achieved and input received has enabled each of the research questions to be answered and has therefore met the research objectives.

5.3 Research Question 1 Results: Is there a common understanding of the concept of HR analytics in South African organisations?

Results from the interviews indicate that there was a common, basic understanding of what 'HR analytics' means although there are clear differences in the descriptions of HR analytics. These differences were segmented by organisations in advanced stages of HR analytics and those who

are doing some analytics and would like to do more. These differences are discussed below.

5.3.1 Advanced HR analytics organisations

From the few organisations deemed to be at an advanced stage of HR analytics, the most common definitions deduced from the data are that HR analytics is a quantification of the subjective, statistics to better understand people, as well as the combination of historical reporting and forecasting the future. Some of the comments made in this regard are shown below.

"*Lots of meanings: e-HR, HRIS, difficult part is workforce analytics – hidden but obvious things, stage of usage: basic historical reporting in HR hygiene factors, a little bit of forecasting"* (Respondent 9).

"*For me HR Analytics is the quantification of all aspects of HR, either quantification of the subjective to make it comparable or the analysis and acquisition of metrics that are essentially quantifiable in nature, so it's all metrics but it also includes the quantifiable handling of qualitative material. It incorporates reporting, it incorporates the systems that go with it, it incorporates the research, it incorporates the impartible research body, in other words helping to create the basis on which metrics are created*" (Respondent 3).

"*The way I understand it is various statistics or analytics which helps you get an understanding of your people as components of your business especially in large organisations where you have so much data and so many people. You need something to tell you what is going on. I guess that's how I see it, different ratios and different analysis*" (Respondent 5).

"*So for us is the combination of retrospective reporting and future forecasting. So we use transaction level data, based on human movement and human capital movement, as well as talent management data, to understand what's happened in the past, and we then statistically regress that to understand what will happen in the future, based on the current workforce. So we use a lot of analytics models that we've designed specifically for ourselves, so analytics for us is different from reporting so we separate, we see information management as the overall umbrella in information management"* (Respondent 14).

"*Well HR analytics for me, you could say another area of HR, where you produce statistics about the health of your organisation and your mean capital activities; you can start as basic as your number of leave days. Let me give you an example number where you capture leave days, where you capture and record trends around what's going on, in particular areas of HR and then you are able to use that to analyse and understand what's going on then also start trying to, you can give you indicators where to intervene"* (Respondent 11).

The common thread amongst the sentiments above was that they tended to come from Multinational Corporations (MNCs).

5.3.2 Limited HR analytics organisations

With regards to the majority of the organisations which were not at an advanced stage, their understanding of HR analytics was informed by a general understanding of what HR analytics should be, rather than being informed by practice. Therefore, the responses provided generally lacked as much detail as those of the former group although it is worth noting that some of these organisations do apply some level of what is termed 'HR metrics', which is a subset of HR analytics.

"*HR analytics is same as in business is the same methodology where you use data to get intelligence that could tell you about either past and probably try and predict certain things that you are looking for*" (Respondent 1).

"*What I understand when I think about HR analytics is almost understood fundamentally, where you are going with this organisation, where is your organisation in terms of maturity as far as HR practices are concerned"* (Respondent 4).

"*My understanding on the subject is about HR information - this information can turn into various facets, be it turnover rate, average age of employees, performance measures., How many people are performing at the right level, it's a specific numbers game, you can you use it to determine where your training needs to be, where your interventions need to be directed"* (Respondent 6).

"*My understanding is that HR analytics to me is metrics, HR metrics. The ability to use data to come up with information that managers can use to inform their business decisions. That's my understanding of analytics*" (Respondent 7).

Some of the comments made demonstrate that there is a *general* understanding of what the concept of HR analytics should entail, and what it is supposed to achieve.

5.4 Research Question 2 Results: Is there a need for HR analytics in organisations?

The overwhelming response to this question was that respondents felt that there was a definite need for HR analytics in organisations. As one respondent said:

"Absolutely! HR must move into the 21st century" (Respondent 9).

Those respondents who work for large MNCs spoke about having to keep up with international trends. The challenge for those companies that are not MNCs is that the concept of HR analytics is not fully understood and adopted. However, research findings suggest that all organisations do perceive a need to apply HR analytics in their businesses. The challenge that arises in the application has to do with the current skills set within HR management, which lacks the adequate numeracy and applied statistical skills.

Traditionally and currently, the HR profession largely draws its skills base from the social sciences. The transition to analytics poses a major challenge to the profession because HR still relies on the social and behavioural sciences for its personnel. This provides interesting insights as to why there is reluctance to the concept of HR analytics that requires numeracy and applied statistics competency. Only two out the 15 sampled organisations seemed to be ahead in terms of HR analytics. These organisations' recruitment processes have purposively sourced personnel with numeracy and statistical competencies.

This section will therefore highlight the challenges pointed out by surveyed respondents in adopting and applying HR analytics, especially the skills challenge in transforming the sector.

5.4.1 HR as a strategic business partner

Organisations conceded that HR can go a long way towards becoming a 'strategic business partner' if analytics plays a much more central role in the HR process which would lead towards the HR sector being taken more seriously at the boardroom table. Respondent 2 and 5 noted as follows:

"*So analytics play a big part because that is what businesses understands but the rest of the people don't understand. And you don't need to convince people that I am HR, I know what I'm talking about so please believe me. So once you have proven yourself once or twice that this is my area of speciality and I'm telling you the person what is going to be; then they back-off because they know that you know what you are talking about and you have proven yourself*" (Respondent 2).

"*It's good relationships with senior people. You need to network as much as you can. I think sometimes HR is too black and white and there are too many processes, and that's what frustrates a lot of people. And also, we abide by our processes and that's that to an extent that we are not always willing to listen to other people. So maybe a little solution focused and those solutions must sometimes be unique and not the same type as all*." (Respondent 5)

Other organisations were not convinced that HR occupies space at the boardroom table and to be seen as a strategic business partner. One respondent points out to the challenges hindering strategic business partnership:

"*HR is losing! Do you know that around the world there's been almost I think it was a 40% reduction around the world, of HR people at the top table. In the United States, one of the most favourite places to put HR now is under their Corporate Legal. In other words, there's a legal side because it has a legalistic arm. I've been watching the trends and HR has been losing ground steadily for the past decade"* (Respondent 3).

"HR moved away from the oddly thing of interventions. An intervention cost time and money, its effort, its opportunity cost, because it takes the potential of other things and it has to have a result. That it does need to have and there's a lot of paternalism in HR and right not this company but in many others, there's a high

focus on unionism but outside of those two things, HR has a very, very difficult time justifying it's worth and it's continued expense" (Respondent 3).

There was however one Respondent who differed with the often-quoted view that HR should get a seat at the boardroom table or that HR analytics may assist in that regard.

"By virtue of being the HR practitioner, does not entitle you a seat at the table. Business isn't ready and they are not willing to look at HR as a strategic element. You can have the fanciest system, understand HR analytic, it's not going to happen., Whether we like it or not, the function in itself does not generate revenue, it incurs costs, there is a compliance element in the function- is a legislative function in the country you operate, that's not an easy argument, there is, let's treat people as human beings and not as assets...For me, is HR analytics going to have to give HR practitioners the strategic edge? Is HR analytics going to flick it? If it does I am going to give them a standing ovation" (Respondent 4).

5.4.2 From "gut feel" to evidence based decision making

The common trend amongst sampled organisations is that there is recognition of the importance of HR analytics as a lever towards organisational success.

HR management has traditionally been associated with behavioural science and social sciences. What emerged from the surveyed group is that there is a need for HR as a profession to move away from operating on "gut-feeling", towards an approach that is scientific and is based on evidence.

"*We are approaching the future with a wing and prayer and that unfortunately for me is not the way to go. I need with the fair sense or degree of accuracy to be able to tell the bosses that in the next two years we are going to lose, and we are likely to grow for these following reasons"* (Respondent 6).

However, some organisations argue that there needs to be a balance between gut feeling and science, as they believe that the HR sector is "gut-based". It is believed that numbers or statistics could rather be used to substantiate or disprove the "gut feeling". One respondent argued that:

"*I think you need to be guided by your intuition and your guts and you use the statistics to support what it is that you think needs to be done. See you can't influence necessarily based on your guts. In that you know what needs to be done, but you have to rely on analytics to give you a business case to be more rational. But I think, it is the best of both*" (Respondent 5).

Organisations also argue that in order to achieve this, there is a need to raise the level of awareness and demonstrate the importance of HR analytics. Respondent 6 argues that the lack of awareness is hindering the HR sector from transforming from a "gut feel" to a more scientific sector.

"*For me the biggest thing we should be talking about when we talking about when we do HR standards, should be the HR analytics, the reason why we are not there in the rightful place, is simply because the levels of awareness on this subject and if there is no awareness about this in various HR platforms it is unlikely that it will get off, with awareness comes fact findings trips to different countries to learn about it*" (Respondent 6).

5.5 Research Question 3 Results: What are the key metrics in use?

This research question aimed to determine the key metrics being measured by organisations and usage of analytics in terms of level of sophistication.

5.5.1 Reasons for usage

There are some common trends in the responses regarding the reasons for usage of HR analytics amongst those firms that apply HR analytics. Firstly, it is undertaken for recruitment purposes; secondly, it serves as a tool that identifies and closes the gap in skills within the organisation; thirdly, it is used to identify the organisational training and developmental needs; fourthly, it is used for staff retention; fifthly, it enables the organisation to conduct cost-benefit analyses; and lastly, it is a useful tool for organisational restructuring and forecasting future trends.

"*We do standard analytics like; retention, turn-over, recruitment, what time to place, we look at learning hours and cost per individual* (Respondent 5).

"We report on the mechanics. Mechanics are the normal, usual metrics like turnover, tenure, age profile, salary scale, payroll admin, basics of HR" (Respondent 10).

5.5.2 Level of application

The results demonstrate that the highest level of maturity in terms of application is rare.

"*So that's my thinking of talent analytics and in terms of South African organizations, I believe we're very far behind the mark, I think*" Respondent 4.

For the large part of the respondents, the data shows that their level of sophistication and development is still relatively low when it comes to their understanding and application of HR analytics. In most instances, they use HR analytics for standard historical organisational reporting purposes. However, the data shows that an increasing number of organisations are moving towards the application of HR analytics.

"*We use it in all aspects of making HR decisions, we use it as a contributing factor to making other business decisions, from mergers and acquisitions, to retention and benefits, recognition schemes, reward, training and development, telecom management, organisational restructuring, productivity analysis, labour costs, management, can't think of anything we don't use it for*" (Respondent 3).

The statement above indicates a broad and sophisticated use of HR analytics reporting. In this instance, their use of HR analytics moves beyond the traditional HR data practice, as covered in Chapter Two, to involve areas which were thought to be outside of the scope of the HR process such as "mergers and acquisitions" and reducing costs whilst increasing business productivity and profitability.

What the results indicate with regard to the use of HR analytics is that it is used to meet legislative requirements such as employment equity (EE) targets, number of people employed, and performance scorecards.

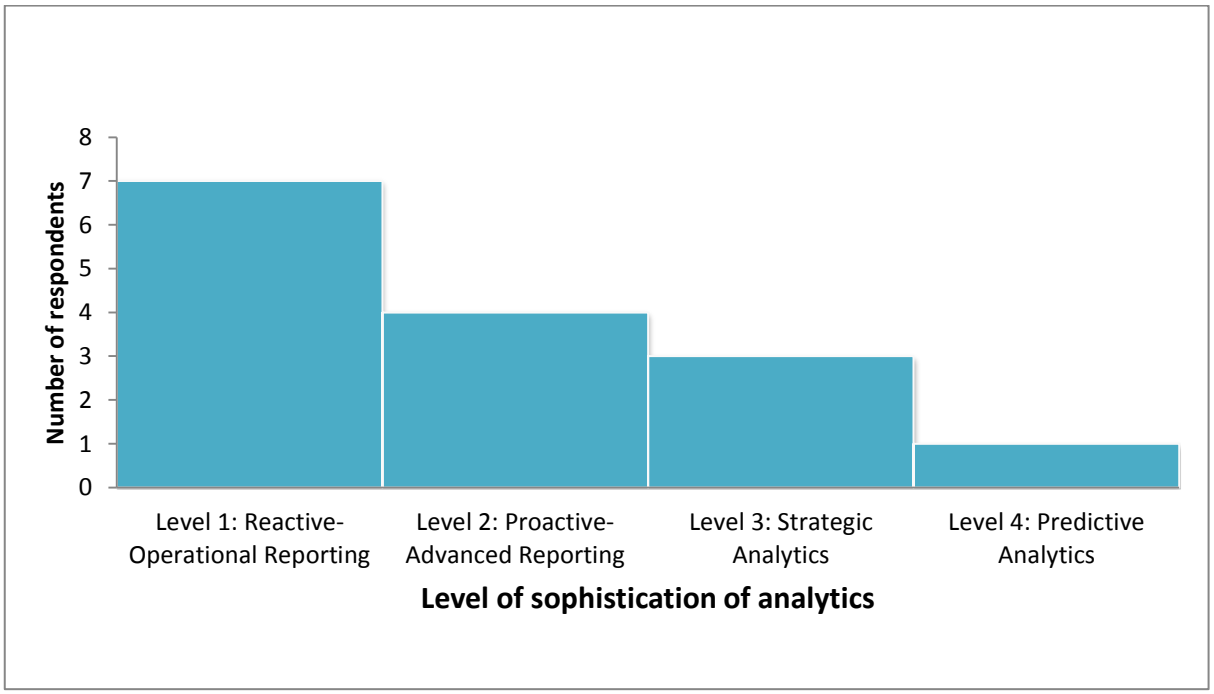
"*So for me I think so far as HR analytics is concerned, we as an organisation know how many people we employ, their identity numbers, who do they bank*

with, and all of those are general information you receive when you employ someone, and we have it on our books" (Respondent 4).

"*So part of it, yes, it is retrospective especially now. If you note the standard HR reporting like our EE Plan ...You know, like there is normal ones, movements on plans and it's all those that are reactive. I find that where we are more pro-active is when we doing our talent analysis. So that is where we send the managers data to say this is what we require from you, so please send it back and we go back to them with the information to say this is type analysis of the people" (*Respondent 2).

It was clear from the data that organisations' usage of HR analytics is still limited, with some progress shown by some organisations in terms of application, maturity and levels of sophistication. This is further evidenced in the questionnaire response where respondents plotted where they believe their organisations fare in terms of the Bersin' s Talent Analytics Maturity Model. The Model was discussed in Chapter 2.

Figure 7: Plotting of organisations on the Talents Analytics Maturity Model



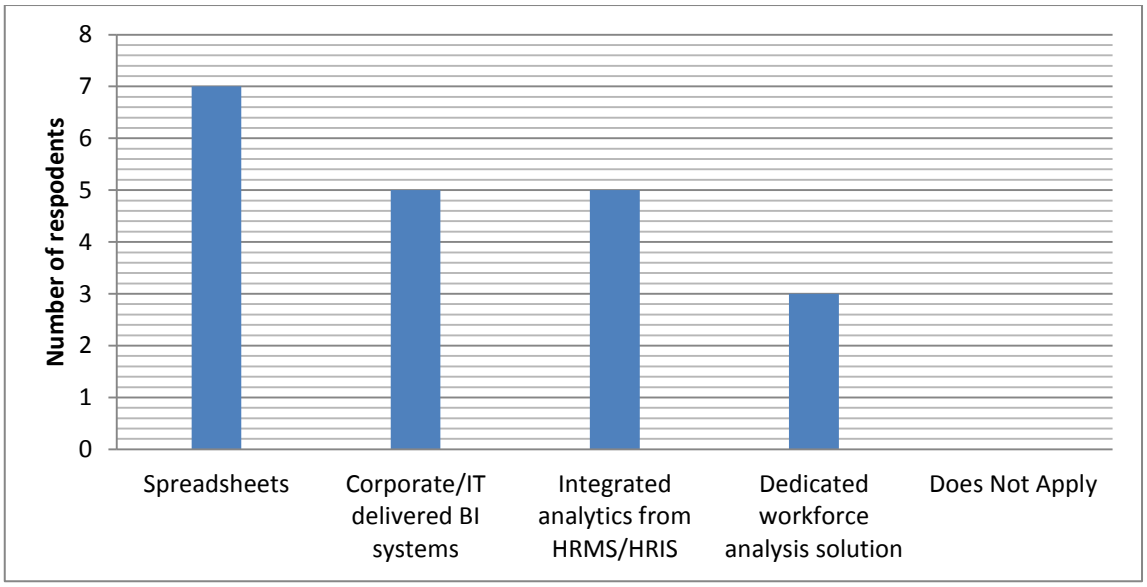
From Figure 7 above, it is evidently clear from the survey results that HR analytics for South African companies has a long way to go to reach the desired level of maturity in terms of its full application and adoption. Out of 15

respondents surveyed, 7 indicated that their organisations are still operating at Level 1 – the reactive, operational reporting. Only 4 reported to be on Level 2 (proactive advanced reporting), and an even smaller number reporting to be in strategic and predictive analytics.

5.5.3 HR analytics systems used

Seven out of the 15 interviewed HR practitioners indicated that their organisations rely on basic spreadsheets for developing their HR analytics. Five organisations reported that they have a 'Corporate/IT delivered BI systems' and the same number reported that they have 'Integrated analytics from HRMS/HRIS'. A smaller number reported using 'Dedicated workforce analysis solution'. The results are shown in Figure 8 below.

Figure 8: Solutions used to manage HR/Workforce analytics



This data indicates that organisations are already using some form of method for collecting HR analytic data. To this end, the HR analytics data used and reported on should strike a balance between using sophisticated data with the need to ensure that it is both understandable and user friendly.

The key lies in ensuring that HR data is not simply taken at face value but can be analysed with the same level of sophistication as with other line functions such as finance and marketing. One respondent from the research argued that:

"…*if you give a non-HR person rubbish data, but they understand the rubbish, you haven't got much. If you use fabulous data and they don't understand it you also haven't got much, its two sides of the same coin*" (Respondent 11).

5.6 Research Question 4 Results: What should be done to make HR analytics a more useful feature of HR management in South Africa?

This section highlights initiatives that are undertaken by the surveyed organisations in an effort to make HR analytics an important and useful feature of HR management in South Africa.

5.6.1 Strategically moving beyond the current retrospective HR practices

Experiences amongst South African organisations are that there is an appreciation of what HR analytics can bring to the HR management processes. As mentioned above, the current practice within the sector does not afford HR management an opportunity to inform business decisions as it based on reporting on what respondents commonly refer to as 'traditional' or 'legacy' data. In most instances, this type of reporting is retrospective.

Respondent 3 points out some of the challenges in making HR analytics a useful feature of HR management in South Africa:

"*Human resources in emerging markets tend to be slightly paternalistic, and it's mostly concerned with development, the ugly side of it which is the downsizing, retrenchments etcetera, nobody talks about, yet both elements are affected by the metrics but people tend not to have the metrics in HR because you have the development or paternalistic focus*" (Respondent 3).

Critically, the challenge is that the HR profession is still drawing its personnel and skills from students that are trained in behavioural and social sciences, such as psychology, legal studies and HR management. The challenge is that they do not bring the required skill set that is necessary to undertake and apply HR analytics. Because of this lack of capacity within the HR cohort, some rely on other line functions within the organisation to undertake HR analytics. Respondent 3 attributes the reluctance to transform the sector to the inherent nature of the skills set within the HR sector in South Africa:

"*In South Africa, HR people are primarily drawn from the ranks of clinical and industrial psychologists and they have as far as I'm concerned; no desire whatsoever to have the hard role of economics, labour economics and metrics attached to their role*" (Respondent 3).

The data indicates that there are organisations that have experimented with HR analytics, but they indicate that it is not fully operationalised. Respondent 8 points out that their organisation had to close down the HR analytics division and transfer it to another division:

"*Analytical capability, we tried having analytical people and it didn't work and we closed it down*" (Respondent 8).

Despite the challenges identified above, the HR practitioners that were interviewed indicated that there is a need to apply and integrate HR analytics within their organisations. This stems from the perceived importance of HR analytics as a model that can influence business decisions, regardless of the size of the institution. Respondent 2 concedes on the importance of HR analytics by stating that this could be a useful feature in HR practice in South Africa:

"*But somewhere in the middle, when you see that something is a good idea, you will see that when you talk start to talk about it everyone else gets to be interested. So those are some things we always need to aspire to be, sophisticated or not. Until maybe they say that thing costs a lot. But the one thing with our team is that some things when you think that they are sophisticated, then they say "no, but it's easy" and they can just go behind the scenes and give you what you want. So sometimes, things are not as hard, but I suppose it's just a trick of knowing who then to speak to, to get what you need. And if you can't what's the next alternative, you work with it and move on*" (Respondent 2).

5.6.2 Skills shortage/challenge

Respondents identified lack of numeracy skills as the main constraint to application and integration of HR analytics within organisations. HR personnel were seen to not be comfortable and trained to deal with numbers, poor statistics acumen and HR personnel shying away from numbers.

Some of the comments summing up the challenge of introducing and applying HR analytics appear below:

"*I think it has to do with a choice of discipline, typically people involved in the HR are from social science degrees (humanities, arts, psychology). And you got your BCom HR's - that sort of thing. Most people in that field, this is now broad generalisation, not based on research, and people in these disciplines are trained in behavioural sciences or trained in law - labour lawyers. So you are not necessarily trained in commercial terms to analyse data, to look at trends, to do statistical analysis*" (Respondent 4).

"*And my experience, typical HR people are not that because they are not numbers people. And we are not trained to be analytics unless maybe if the person did psychometric assessment maybe as a speciality somewhere along the way and they focused heavily on stats and they understand it. But those kinds of people then prefer that kind of a role which more on an assessment point of view. But just numbers, systems; you find that it's maybe someone who studied HR and broke into IT then Actuarial Sciences as well, but got bored and wanted to venture into something that they saw that the business needs. But, not an HR Generalist, like I am because then you grow through the ranks as a Generalist but not being vocal*" (Respondent 2).

A few organisations have identified the need to recruit personnel that would not traditionally be within the HR profession. This shift has seen people in the fields of statistics, finance and IT being recruited within HR departments with the aim of strengthening their HR analytic indices and reporting. As one respondent argued:

"*They're analysts, none of them are HR people, I can teach them HR but I can't teach HR people about analytics, I suppose I could teach them analytics; but I can't teach them a numerate mind-set. They must have a numerate mind set from whichever field I take them. Then I teach them HR analytics and after that I let them understand HR because obviously they would feel it's all worth it, so they get all three, they have to have all three but the numerate capability has to come first* "(Respondent 3).

Respondent 1 argues that due to the lack of adequate skills within the HR cohort to undertake HR analytics they will have to rely on consultants, who do not provide value for money.

"*No! But until such time that it creates value for business, but if you create it just for HR, then No. Some other people that rob money from businesses are consultants, because if they see there is a need then they will create it just they did with Talent Management when they stated there was war for Talent. Every company then went and spent money on war for talent*" (Respondent 1).

Respondents mentioned other skills, which are in short supply and that are required by the HR profession. These included courageousness, business acumen and assertiveness. This was summed up in Respondent 9's response:

"HR suffers from industrial blindness, can't see from outside in. It needs to become as astute as other functions in terms of being objective. HR needs to get out of complacency – the reason HR is still struggling with identity issues, not being taken seriously, etc. is all HR's fault. Also, HR is not assertive enough, very few courageous HR people out there. Furthermore, HR has taken the people-centricity too far – want to be liked by business, unlike other functions who present facts." (Respondent 9)

5.7 Research Question 5 Results: What does the future look like for HR analytics?

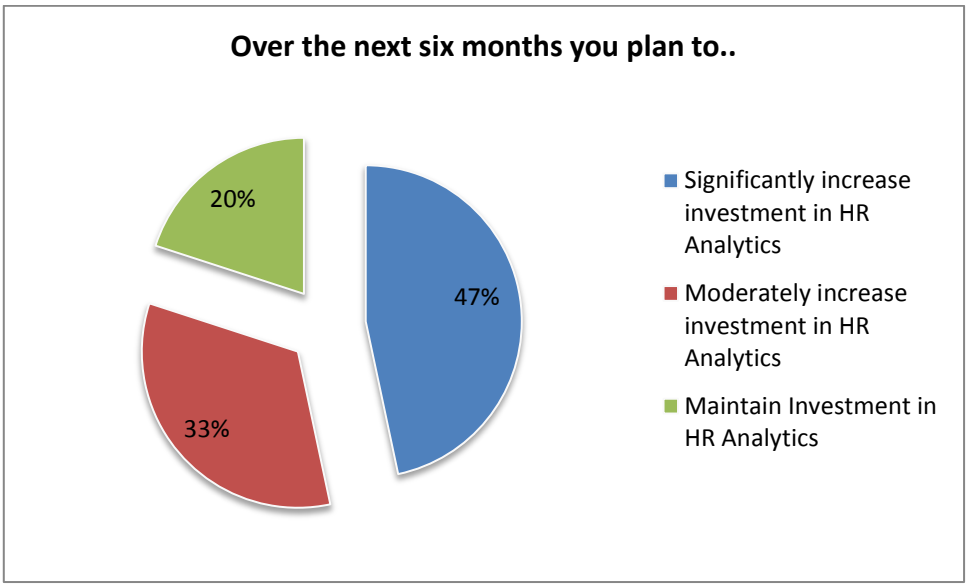
Another trend emerged from the research is that in order for HR analytics to have a future in South African organisations, HR professionals needs to be more technologically savvy and should keep up with all the other professions. Respondent Two and Respondent Eight argue that:

"*It's evolving as well as other professions do, so it's ours as well. Our analytics are important though and are becoming more important. Funny thing is we use numbers all the time. So we just paid bonuses, and if we go to business now and tell them why and how we pay them, we use analytics to go back and say this is the spread; the people we paid and these are the top performers*" (Respondent 2).

"*I think that from a perspective how do I see it – we are going to have to get a far better picture of who we have and what talent we have and how to develop them because as we expand at the rate we are internationally, we are pulling people out left, right and centre and sending them overseas, we don't want to be recruiting there, we want to be more from inside so we going to have to have a far better picture of who we've got*" (Respondent 8).

Survey responses from the short questionnaire revealed that half of all respondents are planning to significantly increase investment in HR analytics over the next six months. A further 33 percent indicated that they are considering moderate increases in HR analytics spend.

Figure 9: Future of HR analytics



Out of the 15 respondents, none indicated that their organisation would decrease the levels of investment in HR analytics. This demonstrates how HR analytics is viewed by organisations as important to adopt and implement.

One respondent mentioned that they see no value in HR analytics, if it is simply done for HR and not for the business.

"No, not until such time that it creates value for business, but if you create it just for HR, No. Some other people that rob money from businesses are consultants, because if they see there is a need then they will create it just they did with Talent Management when they stated there was war for Talent. Every company then went and spent money on war for talent" (Respondent 1).

5.8 Conclusion

The following conclusions can be drawn from the results of the research:

- South African organisations are lagging behind in the applicability and implementation of HR analytics. This is largely due to the fact that the human resource profession is still dependant on reporting traditional historical HR data and submitting compliance reports.
- Another key finding emerging from the research study is that as much as the HR sector is still in its infancy in terms of the adoption and application of HR analytics, it was found that South African based multinational organisations were more advanced in terms of applying HR analytics as part of their human capital data collection. This is can be attributed to the fact that globally HR analytics, as was shown from the literature consulted in Chapter Two, has provided organisations a competitive edge over their counterparts in realising the maximum potential of their human capital which has led to increase business performance and outputs.
- On the contrary to increased global adoption and intake of HR analytics as the literature review conducted in Chapter Two demonstrates, a majority of South African organisations are yet to fully comprehend the use of analytics in human resource sector and the application thereof of analytics in collecting human capital data and utilising the data to elevate the HR sector to being a strategic partner within the organisation.
- The study found that organisations recognise the importance and significance of adopting and implementing HR analytics in placing HR as a strategic business partner. However, they are confronted with a number of challenges; first being the current crop of skills in the HR sector in the country is led by and made up of mostly social scientists who in most cases shy away from anything analytical and statistical; secondly, the culture of South Africa organisations in embracing HR analytics; thirdly, the HR sector data in South African organisations is still very much reliant on gut feeling rather than scientific collection of human data.

6 DISCUSSION OF RESULTS

"Scientific research consists of seeing what everyone else has seen, but thinking what no one else has thought."

Unknown

6.1 Timelines and overview of research experience

The research fieldwork was conducted from the 14th August to the 23rd of September 2013, and the interviews were conducted in respondents' offices in and around Johannesburg, South Africa.

The experience itself was an exciting journey where, contrary to the warnings of qualitative survey in-depth expert respondents often being difficult to contact, there was ease of access, an immense enthusiasm and willingness for interviews to be conducted. The respondents were willing to avail themselves to the research topic and they seemed equally keen as many of them had never had an opportunity to discuss this topic before.

Almost all interviews were conducted in quiet settings of private boardrooms and offices, but occasionally, they were conducted in open areas such as office pause areas and canteens. In the latter instances, the audio quality was compromised, and in fact, in one instance the researcher had to re-interview the respondent one more time. The time taken per interview was on average, approximately forty minutes.

The interviews themselves were recorded through a smart phone software application called the "Rev Recorder". The software worked well in most instances, except on two occasions where the researcher realised post facto that it had not recorded. In these instances, the researcher relied on notes made during the interview and memory.

Cognisance was noted of potential respondent 'fatigue', the 'what's in it for me factor', 'not another request', 'not another student', 'who's going to have access to information', 'time constraints' and gatekeepers (Saunders and Lewis, 2012). To mitigate this, the researcher shared with respondents the importance of this survey, and all respondents were anxiously awaiting the report to use in their own organisations.

Overall, the experience was an incredibly fulfilling one, with humble and helpful respondents. Many respondents voluntarily offered further possible interviewees through snowballing, shared examples of the metrics they used and there was an overall general sense that the respondents were genuinely interested to see this paper and the success of the research. The researcher was left with the feeling that a new, interesting topic of discussion had been started among HR professionals and that many of the respondents would want to see more of it in future.

6.2 Introduction to main themes

This Chapter starts by a discussion of the key themes emerging from the research study that were analysed in Chapter Five. The discussion is to ascertain whether the results addressed the research questions as outlined in Chapter Three and if the results are congruent with emerging literature discussed in Chapter Two.

The key themes emanating from the results were that:

- There is a basic understanding of the concept of HR analytics;
- The usage of HR analytics is still in its infancy;
- There is a perceived need for HR analytics in organisations;
- Skills challenge is hindering organisations from implementing HR analytics;
- The outlook for HR analytics overall is positive.

6.3 There is a basic understanding of the concept of HR analytics but usage of HR analytics still in its infancy

This section of the paper discusses the results from research question 1 which was – is there a common understanding of the concept of HR analytics?

Results from the research have shown that there was a common, basic understanding of what 'HR analytics' means although there are clear differences in the descriptions of HR analytics. This is in line with what was alluded to in Chapter Two of the literature review, there are various terms and concepts used to describe what is understood by the concept of analytics associated to human resources (Davenport, Harris and Shapiro, 2010;

Mondore, Douthitt and Carson, 2011; Gustafsson 2012 and Hoffmann, Lesser and Ringo, 2012b).

Research findings emerging from the research study showed that surveyed organisations used various terms in terms of providing their own definition of what they understood to be HR analytics using various concepts and terms such as; human metrics, workforce analytics, predictive HR and quantification of all aspects of HR.

"Do we know our turnover, yes we do. Do we know what our HIV prevalence is? Yes we do. Do we know the absenteeism rate? Yes we do. Do we know how many people we train? Yes we do. Do we know how that feeds into the scorecard, yes we do? When you drop all the dots on a page, are they connecting and giving you a picture? I think that's the gap in HR analytics" (Respondent 4).

The literature review indicates to the fact that HR analytics ranges from basic reporting of HR management to the end of the spectrum of predictive HR (Bassi 2011). Research findings showed that a majority of those sampled were still applying basic historical reporting of HR data instead of further conducting predictive modelling with the data at their disposal.

Only a limited number of organisations surveyed in this study provided a comprehensive description of not only collecting traditional HR management data but combining the use of statistical models to determining "what if" scenarios and developing predictive models that will then inform organisational business decisions at the board level. This is central to what HR analytics is about, as alluded to by the Deloitte Human Capital Trends (2011). It enables organisations applying to integrate HR data to predict future employee-related behaviour and events that will enable executive management of the organisation to forecast and project future business decisions based on the HR analytics data.

Furthermore, findings emerging from the research data and, in particular to larger South African-based multinational organisations found that these organisations not only use their HR analytics data for basic reporting and predictive modelling but, further utilised their HR analytics data to conduct

research on human capital and using that research to make a scientific case for organisational business decisions (Boudreau and Ramstad 2007; Davenport and Harris, 2006).

Another aspect that emerged from the analysis in terms of analytics associated with human resources was that there was more focus on inward looking of organisations rather than combining both inward and outward outlook for the organisation. The difference between HR metrics and analytics as succinctly described by Jac Fitz-Enz in Creelman (2005) is that the latter is more focused with what the HR department is doing whereas the latter is concerned with what is happening outside of the HR department and overall organisation.

The findings emerging from research results is that only four organisations were adopting the human capital measures, that is HR analytics focusing not within the HR department but combining trends and developing measures that included outward factors and determinants to both the HR department and the organisation as a whole. Though the other eleven organisations did point out that they adopted or applied some form of measurement mostly were more inward focused on HR department such as traditional reporting and submitting compliance reports.

It was clear from the research findings that there was lack of understanding from majority of sampled of organisations in that they mostly understood the concept HR analytics to be the umbrella term or concept used to describe or define human capital measures and human metrics. The conceptual confusion as alluded to by Chrysler-Fox (2011) when he pointed out that with regards to the terms human capital and human metrics in the manner in which it is presented widely in literature and what is understood in practice, was widespread.

What was found from the sampled organisations is that for the mere fact that organisations are already collecting HR data constitutes HR analytics, hence the findings that they are already conducting some form of analytics. However, as pointed out in in the literature review, they fall short of making clear distinctions of what HR analytics in academic terms and what it is understood to in practice, which where a majority of sampled organisations find themselves in terms of providing a clear distinction between reporting on traditional HR data

and conducting a thorough HR analytics as is described in the literature review (Boudreau and Ramstad 2007 and Worth 2011).

The literature review conducted in Chapter Two points to the fact that metrics data is already used by many other business functions in organisations. However, the usage in HR was found to be lagging. Dulebohn and Johnson (2012) in their study argued that HR profession could strengthen the manner in which HR is perceived within organisations in order to go beyond historical reporting towards more insightful management actions.

The study showed that organisations are already using some form of method for collecting HR data. As evidenced in the results emerging from the research, findings demonstrate that the variables identified by Dulebohn and Johnson (2012) are already collected by surveyed organisations, however, the limitation has been that the collected data has been used for reporting and compliance without HR further probing and developing predictive models to feed through the overall strategic business plans.

Fink (2010); Visier Inc. and Fisher Vista (2013) and further argue that in as much as organisations are collecting traditional HR data and metrics for reporting and compliance, these metrics do not go beyond providing the board and executive management of the organisation with tangible insights to real optimisation of their human capital investment. Therefore, the data already collected should further probe and provide analysis of how the collected data will affect organisational performance and outputs.

Research findings emerging from the survey demonstrate that the majority of the surveyed organisations were still performing more of reactive role in terms of the collecting HR data for compliance and reporting. Some organisations surveyed already proved to have moved beyond simply collecting and reporting on traditional HR data. Instead their data was to be utilised to make informed investment decisions and feed through executive management reports to the board.

Lawler, Levenson and Boudreau (2004) state that HR functions often collect data to measure their own efficiency, but do not measure the business impact of their practices. The majority of surveyed organisations were still operating at the

reactive, operational reporting, versus the proactive or even strategic and predictive analytics.

Furthermore the arguments made by Visier Inc. and Fisher Vista (2013) is that the HR units within organisations should focus their energies on the use of metrics around turnover, recruiting and employee performance and further defining "what if" scenarios within the identified variables. This was found to be true from the survey as many organisations did report using metrics for turnover, recruiting and performance, however, few going as far as interrogating and using the data to predict the future.

In conclusion, the survey findings demonstrated a correlation with the academic literature – being that many organisations are generally reporting on conventional metrics, and very few going beyond that.

6.4 There is a need for HR analytics in organisations

This section of the paper discusses the results from research question 2 which was – is there a need for HR analytics in organisations? This question aimed at examining whether South African organisations saw the need for the application of HR analytics and addressed the key question of whether analytics provide the answer to positioning HR as a strategic business partner. What was important for probing this question amongst South African organisations was whether organisations perceived the need to move from a gut-feel function to a more evidence based line function.

As shown in Chapter Five, organisations admitted that HR can go a long way towards becoming a 'strategic business partner' if analytics plays a much more central role. Research emerging from the literature review demonstrates that there have been increased lobbying globally for HR to take on a strategic partner role, this calls come within the context of acknowledging the role of HR in collecting critical data people behaviour which has a correlation between with organisational performance (Lawler and Boudreau, 2009, Bassi and McMurrer, 2007). However, results emerging from the research study demonstrate that the HR field is still yet to establish itself as a strategic partner within the whole organisational strategic planning.

As already mentioned in previous sections of this research study, multinational organisations based in South Africa were already at a stage where HR was viewed by the executive management and board as not only being critical to providing data on traditional HR data, but rather, being perceived as performing a critical role in improving the business performance of the organisation. This is corroborated by Gardner, McGranahan and Wolf (2011), who argue that for HR to evolve as a strategic partner in organisations, they should be performing more proactive roles which are crucial in bridging the knowledge gap with investor expectations.

The literature consulted in Chapter Two argues that the HR sector has traditionally depended on “faith” rather than relying on evidence based data (Gibbons and Woock, 2007). To corroborate the literature, organisations that took part in the survey pointed out that their HR departments were still very much reliant on “gut feel” in making HR decisions. Reasons pointed out were linked to the issues linked to lack of skills to undertake evidence based decision-making. The skills challenge is discussed in more detail in the following section.

It was found from the research findings some organisations were gradually moving towards the direction of implementing HR analytics combined both gut-feeling with evidence based data to get business insights and make strategic business decisions.

6.5 Key metrics in use largely efficiency and effectiveness, and little impact

This section of the paper discusses the results from research question 3 which was – what are the key metrics in use?

The research showed that the metrics most frequently in use were headcount and recruitment numbers, training and development, attrition, performance management, employment equity and time to recruit. These are the kinds of measures that Visier Inc. (2012) describe as the three fundamental HR areas - Turnover, Recruiting and Employee Performance – that companies should focus on before moving onto advanced workforce metrics.

The metrics used by organisations were also aligned to what Fink (2010) describes as common focus areas for analytics - employee surveys, linkages, manager and leadership assessment, recruitment quality, selection and staffing, retention and turnover, performance management, on-boarding/lifecycle management as well as culture and employee value proposition matters.

The findings from the research were consistent with Lawler, Levenson and Boudreau's (2004) views that the HR function often collects efficiency data but does not collect data on the impact of HR programs on the bottom-line. The Visier Inc. (2012) report also reported revealed high levels of usage of HR efficiency metrics.

The research also showed that for the large part of the respondents, the level of understanding and application of HR analytics is still not where it could be. As was shown from the research results, most organisations use HR analytics for standard historical organisational reporting purposes. However, the data shows that an increasing number of organisations are moving towards advanced application of HR analytics.

The movement towards more advanced analytics is supported by Vokic (2011) who advises that HR executives must do more than use data to report on past performance, generate compliance reports and process administrative tasks' but that they need to start using data to get to the heart of how employees contribute to business performance.

In terms of the maturity levels of organisations, the research revealed that South African companies have a long way to go to reach the desired level of maturity in terms of its full application and adoption. This was shown when plotted on the Bersin' s model of talent analytics maturity, many of the organisations indicated that their organisations are still operating at Level 1 – the reactive, operational reporting. Only two organisations were operating at what Bersin (2012) regard as 'the ultimate level' of maturity being predictive analytics which involves predictive models, scenario planning and integrates with strategic planning.

6.6 Skills challenge hindering implementation

This section of the paper discusses the results from research question 4 which was – what should be done to make HR analytics a more useful feature of HR management in South Africa?

As a point of departure, the literature review alludes to the fact that organisations that have adopted and implemented HR analytics have a competitive advantage compared to their counterparts and this is hard to replicate (Davenport, Harris and Shapiro, 2010; Ferguson, Mathur and Shah (2005).

As alluded to previously, the skills challenge was found to be the most compelling reason for HR analytics still being at infancy in South Africa as well as one of the main reasons for HR still operating on gut feel. Surveyed organisations recognised the importance of HR analytics in elevating the human resource sector to a more strategic partner within organisations. However, a number of challenges in adopting and implementing HR analytics confronted them; such as the current skills set possessed by HR personnel that was mostly lacking in analytical and numeracy skills.

The literature review in Chapter Two acknowledges lack of analytically minded personnel with numerate skills in HR (Lawler, Levenson and Boudreau, 2004). It emerged strongly from the research findings that organisations were lacking in required skills for the adoption and the implementation of HR analytics most HR staff was drawn from the social sciences and therefore do not often possess the required analytical and numerate skills that are necessary for the adoption of HR analytics.

Recognising the skills challenge, the study showed that some organisations have transformed their HR departments and brought in HR analytics capability by sourcing personnel with backgrounds in finance, IT and statistics to head their HR analytics department. These are organisations that are attracting the same set of skills and competencies as outlined by Brockbank et al. (1997), which are; strategic contribution, personal credibility, HR delivery, business knowledge and HR technology.

Key to point out from the research findings is that organisations that were in the process of adopting and implementing HR analytics and experiencing a skills challenge were collaborating with other business functions that are heavily reliant on analytical data to inform their business decisions.

6.7 Outlook for HR analytics is positive

This section of the paper discusses the results from research question 4 which was – what does the future look like for HR analytics. Findings emerging from the data demonstrate that there is acknowledgement from surveyed organisations that HR analytics is critical going forward in managing talent in organisations.

The literature consulted in Chapter Two points to the fact that there will be increased intake in HR analytics, particularly in large organisations (Harris, Craig and Light, 2010). Nonetheless, within the South African context, the uptake of HR analytics has been limited largely multinational organisations, as it has been argued in the previous sections that this is due to keeping up with the global trend in terms of increasing competitiveness and making future projections for organisations to be a step ahead of their counterparts.

The arguments made by (Harris, Craig and Light, 2010) coincide with the research findings from the survey that there is acknowledgement of the role of HR analytics in elevating the sector to a more strategic partner in the overall organisations and that this will lead to organisations appreciating the use of HR analytics within the HR sector.

What emerged in terms of the lack of adoption within South African organisations is that the HR sector needs to become more technologically advanced and to possess the required competencies in order for the industry to move towards fully incorporating HR analytics within their HR sector. It can be argued that South African organisations need to draw lessons from South African-based multinational organisations that have already somewhat adopted and applied HR analytics.

Perhaps the most profound admission is one made by Respondent 9 who asserts that:

"Only HR is going to take HR out of the doldrums" (Respondent 9).

"HR suffers from industrial blindness, can't see from outside in. It needs to become as astute as other functions in terms of being objective. HR needs to get out of complacency – the reason HR is still struggling with identity issues, not being taken seriously, etc. is all HR's fault. Also, HR is not assertive enough, very few courageous HR people out there. Furthermore, HR has taken the people-centricity too far – want to be liked by business, unlike other functions who present facts." (Respondent 9)

What the study showed is that HR needs to start with change from within if it is to be taken seriously. This is substantiated by Lawler and Boudreau (2009) who consider that the future of HR and analytics lies in HR organising itself so that it has skills and expertise to operate at a corporate level.

7 CONCLUSIONS AND RECOMMENDATIONS

"This is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning"

Winston Churchill

7.1 Introduction

This Chapter provides once again an overview of the main findings, followed by suggestions regarding building blocks to put in place in terms of getting started with HR analytics. This is then followed by a model that organisations can use and some recommendations to various stakeholders are made. The Chapter concludes with a discussion the limitations as well as recommendations for future research.

7.2 Overall Findings

The results of the research have been dealt with extensively in Chapters Five and Six. To summarise, the results show that there is a limited understanding of the concept of HR analytics, the usage of HR analytics in South Africa is still in its infancy, the importance of HR analytics in organisations is understood, analytical skills challenge is proving to be one of the biggest challenges in implementing HR analytics; and that overall, the outlook for HR analytics overall is positive.

The research findings point to the fact that due to the lack of academic literature alluded to in Chapter Two, HR analytics is still fairly new and more needs to be done to clarify the concept and what constitutes HR analytics. The lack thereof in academic literature can be attributed to the confusion emerging from the research findings where the concept of HR analytics is used interchangeably by surveyed organisations with other constituting concepts such as HR metrics, workforce analytics and traditional HR data collected largely collected by organisations.

Therefore, surveyed organisations used the concept with the understanding that they were already collecting analytics associated with human resources, however, linking it back to the literature review conducted in Chapter Two, South African organisations are still yet to fully adopt and apply HR analytics.

This is not making a generalisation around surveyed South African organisations in that surveyed multinational organisations are already at a somewhat more advanced stage of adopting HR analytics which was in line with the literature consulted in Chapter two, however, majority of the sampled organisations, mostly South African based organisations were still lacking in terms of their understanding of what constitutes HR analytics.

On the critical issue of analytical skills shortage, the study showed that organisations that were already advanced in terms of their adoption and application of HR analytics were acquiring numerate skills and competencies through sourcing from other line functions to complement the work and data already collected by HR practitioners in organisations. This therefore enabled these organisations to integrate HR analytics and complement the data that is already collected within organisations.

7.3 Getting started with HR analytics

Several authors have made recommendations in terms of what is required in getting started with HR analytics. Organisations are urged to follow these building blocks as outlined in Table 4 to initiate HR analytics capability:

Table 4: Building blocks for HR analytics

Kasselman (2006)	Gardner, McGranahan and Wolf (2011)	Mondore, Douthitt and Carson (2011)	LaValle, *et al*. (2010)	Davenport, Harris and Shapiro (2010)	IBM (2009)	DiBernardino (2011)
• Choose metrics that your organisation is willing to set a target result • Take the time to think about how you want to segment your workforce data • Have the ability to drill down through data and apply filters as necessary. • Do not wait until you have 100% of the data before getting started. • Ensure benchmarks (both internal and external) are relevant and of an acceptable sample size.	• Focussing HR on business priorities – HR leaders must view problems and value creation opportunities in the same way as business leaders do. • Start with what you have – source quantitative skills elsewhere in the organisation. • HR and business leaders to work together to address root causes of problems • Make it stick – integrate analytics skills with daily HR practice.	• Determine critical outcomes • Create cross-functional data team • Assess measures of critical outcomes • Conduct objective analysis of key data • Build the program and execute • Measure and adjust/re-prioritise	• Focus on the biggest value opportunities • Within each opportunity, start with the questions, not data • Embed insights to drive actions and deliver value • Keep existing capabilities while adding new ones • Use an information agenda to plan for the future.	• They must have access to high-quality data which is managed at enterprise level, • They must support analytical leaders, • Realistic targets must be chosen for analysis, • They should employ analysts with a broad range of experience.	• Define workforce challenges. • Identify data requirements and ensure consistency in data collection. • Define a common analytics platform. • Make the platform easy to use. • Enhance HR analytic capacity.	• Measure the organisation's entire investment in human capital. • Use standardised, auditable data sourced from the organisation's financial system. • Define and measure data consistently over time. • Yield measures that are few in number, supported by diagnostic layers of detail. • Answer important strategic questions about what drives business results. • Provide a credible and clear line of sight between human capital performance and business performance.

Source: Own analysis

7.4 A model for moving HR from data to insights

As already discussed, the study showed that many organisations were still very much reliant on traditional, historical HR data. Organisations that took part in the survey are already collecting HR data, however, what emerges from the survey findings is that they seem not to be able to utilise the data to incorporate into HR analytics processes. The main inhibitor to this seems to be the somewhat limited awareness of HR analytics in organisations as well as an analytical skills shortage within HR.

Bassi (2011); Boudreau and Ramstad (2007) argue that HR practitioners should not merely report and comply; rather they should prove value for investment or return on investment (ROI) for increased investment in HR sector and therefore, HR analytics provides HR practitioners with the tool to make that case for increased investment either in strengthening their workforce with the required competencies and skills in order to provide organisational management with strategic.

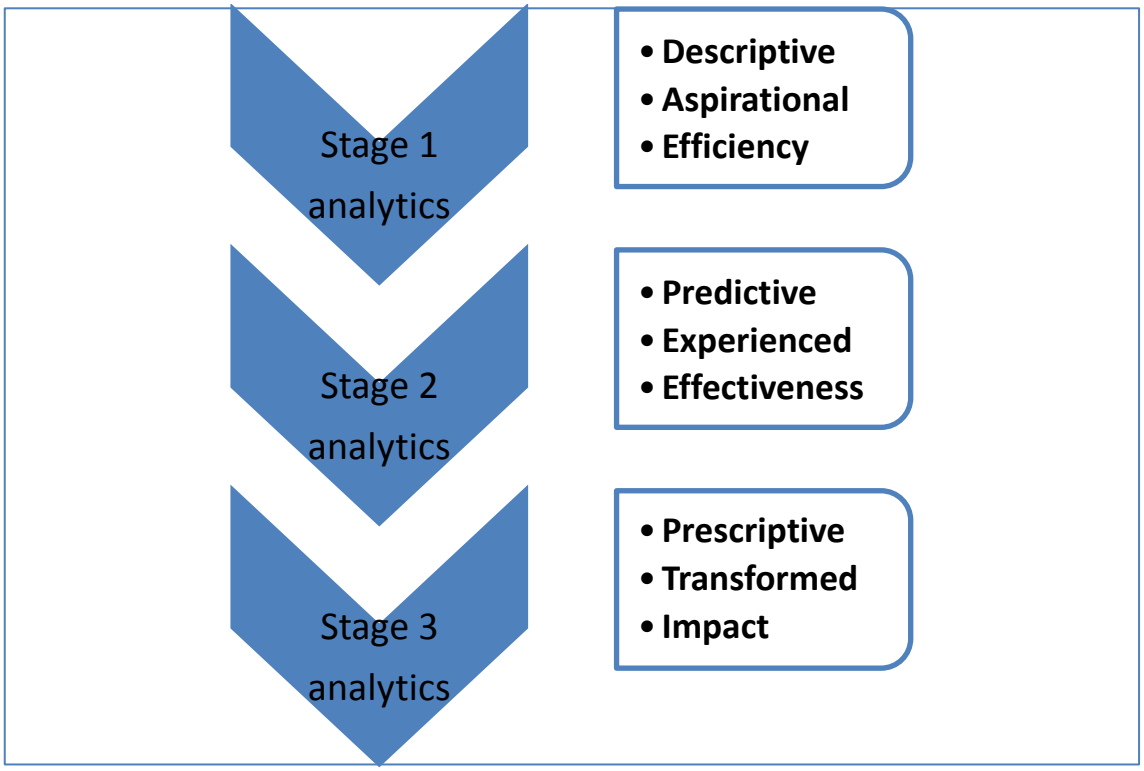
Table 5 below summarises the different levels of analytical capability as discussed in Chapter Two.

Table 5: Summary of levels of analytical capability

Levels of analytical capability and usage			**Author(s)**
Descriptive	Predictive	Prescriptive	Fitz-Enz, Phillips and Ray (2012)
Aspirational	Experienced	Transformed	LaValle *et al*. (2010)
Efficiency	Effectiveness	Impact	Lawler, Levenson and Boudreau (2004)

The model shown in Figure 10 below is based on the levels of analytical ability and levels of usage models as suggested by authors Fitz-Enz, Phillips, Ray (2012), LaValle *et al.* (2010) and Lawler, Levenson and Boudreau (2004) as discussed in Chapter Two.

Figure 10: Model for moving HR from data to insights



Source: Author's own

The different stages of HR analytics are described below:

Stage 1:

Stage 1 level of HR analytics is descriptive, aspirational, relies on lagging indicators and focuses mostly on HR efficiency reporting. This stage is preoccupied with HR reporting of the 'as is' situation, or as LaValle *et al*. (2010) describe it, the 'then and now'. As the research found, this is the realm where most organisations operate in currently. An example of analytics usage here is reporting on headcount, time taken to recruit, attrition levels and tenure. This stage is useful for organisations to have a snapshot of a point in time in terms of where an organisation is regarding its people metrics.

Stage 2:

Stage 2 of HR analytics is predictive, experienced, leading and focuses on measuring HR effectiveness. As Chrysler-Fox (2011) defines it, prediction is the production of statistics linked to the organisation's desired business results. In this stage, according to LaValle *et al.* (2010), organisations focus beyond the 'then and now' and start using the information to predict the future. Stage 2

involves use of statistical models based on existing HR data to start providing insight not usually found in raw historical data.

Some examples of analytics at this stage are probability of success in a role, probability of termination (in a similar manner that customer and credit analytics professionals can predict customer default rates in the credit lending industries), what factors have a high correlation with sales capability, relationships between engagement and other factors, and links between score on experiences and coaching to engagement scores.

Stage 3:

LaValle *et al.* (2010) describe as the ultimate level of analytical capability the 'transformed' level, which is an organisation not looks at the 'then and now' and the predictive, but should start using the insights to prescribe what should happen. Fitz-End, Phillips and Ray (2012) describe this stage as prescriptive analytics – which focuses in answering the question - what is the best course of action? This level is strategic in nature and moves beyond HR reporting on its own efficiency and effectiveness, and beyond correlations and predictions, but goes into the impact of HR and people management processes on organisational success.

7.5 Demonstrating World-Class Analytics – practical examples

7.5.1 Case study 1: Google

To demonstrate an example of an organisation that has used HR analytics effectively, Sullivan (2013) talks about Google's success being attributed in large part to the fact that it has the world's only data-driven HR function.

Sullivan (2013) further highlights Google's Top Ten past and current people management practices to demonstrate its data-driven approach. This is shown in Table 6 below:

Table 6: A case study of world-class HR analytics – Google's Top 10 people management practices

1. ***Leadership characteristics and the role of managers*** *– "Project oxygen" research analysed reams of internal data and determined that great managers are essential for top performance and retention. It further identified the eight characteristics of great leaders. The data proved that rather than superior technical knowledge, periodic one-on-one coaching which included expressing interest in the employee and frequent personalised feedback ranked as the No. 1 key to being a successful leader. Managers are rated twice a year by their employees on their performance on the eight factors.*
2. ***The PiLab*** *— Google's PiLab is a unique subgroup that no other firm has. It conducts applied experiments within Google to determine the most effective approaches for managing people and maintaining a productive environment (including the type of reward that makes employees the happiest). The lab even improved employee health by reducing the calorie intake of its employees at their eating facilities by relying on scientific data and experiments (by simply reducing the size of the plates).*
3. ***A retention algorithm*** *— Google developed a mathematical algorithm to proactively and successfully predict which employees are most likely to become a retention problem. This approach allows management to act before it's too late and it further allows retention solutions to be personalized.*
4. ***Predictive modeling*** *– People management is forward looking at Google. As a result, it develops predictive models and use "what if" analysis to continually improve their forecasts of upcoming people management problems and opportunities. It also uses analytics to produce more effective workforce planning, which is essential in a rapidly growing and changing firm.*
5. ***Improving diversity*** *– Unlike most firms, analytics are used at Google to solve diversity problems. As a result, the people analytics team conducted analysis to identify the root causes of weak diversity recruiting, retention, and promotions (especially among women engineers). The results that it produced in hiring, retention, and promotion were dramatic and measurable.*
6. ***An effective hiring algorithm*** *– One of the few firms to approach recruiting scientifically, Google developed an algorithm for predicting which candidates had the highest probability of succeeding after they are hired. Its research also determined that little value was added beyond four interviews, dramatically shortening time to hire. Google is also unique in its strategic approach to hiring because its hiring decisions are made by a group in order to prevent individual hiring managers from hiring people for their own short-term needs. Under "Project Janus," it developed an algorithm for each large job family that analyzed rejected resumes to identify any top candidates who they might have missed. They found that they had only a 1.5% miss rate, and as a result they hired some of the revisited candidates.*
7. ***Calculating the value of top performers*** *– Google executives have calculated the performance differential between an exceptional technologist and an average one (as much as 300 times higher). Proving the value of top performers convinces executives to provide*

the resources necessary to hire, retain, and develop extraordinary talent. Google's best-kept secret is that people operations professionals make the best "business case" of any firm in any industry, which is the primary reason why they receive such extraordinary executive support.

8 ***Workplace design drives collaboration*** *– Google has an extraordinary focus on increasing collaboration between employees from different functions. It has found that increased innovation comes from a combination of three factors: discovery (i.e. learning), collaboration, and fun. It consciously designs its workplaces to maximize learning, fun, and collaboration (it even tracks the time spent by employees in the café lines to maximize collaboration). Managing "fun" may seem superfluous to some, but the data indicates that it is a major factor in attraction, retention, and collaboration.*

9 ***Increasing discovery and learning*** *– Rather than focusing on traditional classroom learning, the emphasis is on hands-on learning (the vast majority of people learn through on the job learning). Google has increased discovery and learning through project rotations, learning from failures, and even through inviting people like Al Gore and Lady Gaga to speak to their employees. Clearly self-directed continuous learning and the ability to adapt are key employee competencies at Google.*

10 ***It doesn't dictate; it convinces with data*** *—The final key to Google's people analytics team's success occurs not during the analysis phase, but instead when it presents its final proposals to executives and managers. Rather than demanding or forcing managers to accept its approach, it instead acts as internal consultants and influences people to change based on the powerful data and the action recommendations that they present. Because its audiences are highly analytical (as most executives are), it uses data to change preset opinions and to influence.*

Source: Sullivan (2013)

7.5.2 Case study 2: Leading global manufacturer of electronic components

Case study two exhibits another example of linking HR measurement to strategic outcome as in the case of one global electronic component manufacturer.

Table 7: A case study of linking HR measurement to strategic differentiator

Electrosupport (not the company's real name) is a employing several tens of thousands of employees in plants in many countries around the world including Ireland and Central Europe.

The company has recently implemented a new HR system that incorporates analytic capabilities and HR is finding value from the information these provide. The system's ability to display and render graphs and to drill down into the data is being seen as particularly helpful. And the

organization has also been able to construct a standardized dashboard displaying related metrics that provides important information on people management within the business. For example, rather than just turnover, the company now reports on cost of turnover and has found this has helped gain business leaders' attention, particularly as it has started to draw links with other measures on quality of performance reviews, amount of training and so on.

But the company suggests that what has been most helpful in ensuring that measures drive decision making has been focusing on only measuring things they believe will be valuable to them, for example they do not measure things they know they will not do anything about (reward, for example).

Electrosupport's HR measurement is therefore concentrated on the things that will drive its business performance. The company's strategic differentiator is its ability to manufacture new products quickly and efficiently and it has therefore focused on HR information that will inform decisions in this area. For example, the HR team is now able to compare productivity rates across different manufacturing plants in different countries for different products and use this to support decisions on which new products will be manufactured where.

The company also sees developing measurement as an iterative process. With hindsight, it wishes it had focused more heavily on defining measures to ensure an "apples with apples" comparison, as it is currently limited in comparing some of its data across countries. And it now plans to better integrate HR information with the data from other business management systems to further improve the quality of decision that it is able to take.

Source: Ingham (2011)

7.6 Recommendations

This section makes recommendations from the research results for use by organisations, the HR fraternity as well as for academics.

7.6.1 Organisations

The enablers listed below, adapted from a study by Cornell University (2010), are recommended for organisations to successfully implement HR analytics:

- Centralised and consistent, good quality data;
- Field training of HR in the area of analytics; and an educational drive to get the HR professionalise to internalise the viability of the possibilities offered through HR analytics;
- Support from senior leaders—which brings credibility and resources;
- Enhanced technology; and

- Culture. An organisational culture that endorses HR analytics at the highest levels, and communicates this widely, provides a supportive environment for employees to experiment and test hypotheses in real workforce situations.

7.6.2 HR Professionals

It is imperative for organisations to understand that globally organisations are gaining a competitive edge over their counterparts through the use and adoption of HR analytics in reporting and conducting predictive modelling which is critical to enabling the HR sector in being perceived as a strategic partner providing critical data in informing business decisions and for future planning. Therefore there is a need to reskill the current HR personnel by providing them with basic HR analytics course on what entails HR analytics.

HR professionals should bridge the knowledge gap and align that with formal training in order to meet to expectations placed upon them by potential investors. These are some of the lessons that can be adopted by organisations aspiring to graduate from collecting traditional HR data for compliance and reporting towards improved human capital data through the adoption and application of HR analytics.

As the research results have shown, some organisations have realised the skills shortage challenge among HR professionals and some have gone to borrow analytical skills from other parts of their organisations or externally to draw inferences, run statistical models and transform HR data to insight. This was found to be another approach which organisations could draw lessons from going forward with adopting and implementing HR analytics to addressing the issue of the skills gap.

7.6.3 Academics

As it was pointed out in Chapter Six, skills challenge in terms of HR practitioners not having the required competencies for the adoption and application of HR analytics is one of the major themes coming out of the research.

There is therefore a case to be made to the higher education sector to include HR analytics course as part of any Human Resource qualification in order to provide HR students with the background around HR analytics and application.

This may require that HR students be compelled to study basic Statistics to become more relevant for the working world.

It is therefore imperative for universities to start introducing HR analytics in the HR course as HR analytics is still a very much a scarce skill within many organisations as it was pointed out in the research findings.

7.7 Limitation of Research Study

Given that the study was qualitative in nature, the results are indicative and not representative of organisations. There may be more organisations that are advanced in terms of having adopted and applied HR analytics exist.

The literature review consulted was limited in that there was not adequate academic literature available and therefore, lack of accredited academic journals to provide an academically accepted definition of HR analytics. These posed challenges for the research study to provide a detailed academic literature around the subject of HR analytics; hence a dependence on literature drawn from researchers and organisations that are experienced in the adoption and application of HR analytics.

The study was conducted only in Johannesburg, and among respondents from large organisations and with extensive HR experience. The limitation here is that the study did not extend beyond Johannesburg, or to smaller organisations or more junior HR members. The results may well have been different should that have been the case.

7.8 Recommendations for future research

This research project took a broad look at key research questions regarding HR analytics in South African organisations. Furthermore, the findings from this exploratory study could feed into quantitative or could lay a platform for further research quantitatively Given that the subject of HR analytics is still emerging, opportunities for further research are extensive, and the results offer several opportunities for more in-depth analysis in terms of future research, which include:

a) Large-scale, quantitative survey across the country to determine usage and level of advancement of HR analytics in South Africa;

b) Research among HR data users (outside of HR) to understand what they would value beyond data and moving into insights;
c) A study among those companies that do have developed HR analytics functions, the governance around these – how are they organised, funded, and reporting structures;
d) A case study on an organisation conducting world-class HR analytics - what different analytics techniques are being used? What are they finding most useful? How, by whom and how are these being actioned?; and
e) What are the best practices in terms of internal collaborations regarding analytical skills and outputs?

7.9 Concluding remarks

The research problem as set out in Chapter One and all the research questions in Chapter Three were answered as per the research findings in Chapter Five. The study was able ascertain the levels of application and adoption of HR analytics in South Africa, which was the main objective of the paper.

In as much as the concept of HR analytics is being gradually adopted within the different organisations sampled, progress of fully incorporating the concept of HR analytics was found to be moving at a slow pace. It was found that South African organisations' usage of HR analytics is still in its infancy and that the concept and its implications are little understood. It also found that there is consensus regarding the importance for HR analytics in organisations and that the HR analytical skills challenge is the main hindrance to implementation. This appears to pose a challenge and would require that HR transforms itself to ensure that it attracts the required skills from the higher education sector and also capacitate HR practitioners in numeracy and metrics in order to fully incorporate the concept of HR analytics in all levels of the HR process.

The general stance on the future of HR analytics is that this is a field that will continue to grow within organisations. More research on this subject can therefore be expected.

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APPENDICES

Appendix A: Discussion guide

Discussion guide: HR analytics in organisations

Introduction

Thank you for allowing me your precious time today. My name is Masenyane Molefe and I am currently in my final year of my MBA with GIBS. The purpose of our discussion today is to gather your thoughts and opinions on the topic of HR analytics as it is used in your organisation. I would like to go over a few logistical points before we begin the interview:

- The interview will last approximately one hour.
- This interview is for research purposes only. Please be assured that everything we discuss during this interview will be kept in strict confidence and your real name will not appear in any of our results. As such, please make every effort to be open and honest when responding to the questions.
- For data capture purposes, I do need to record the interview on audio tape, and I will also be making notes as we go along. Would you be agreeable to this?
- If you would like to receive a copy of the research results please contact me via return e-mail.
- By agreeing to take part in this survey and completing the short questionnaire, you indicate that you voluntarily participate in this research.

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Topics to be covered

- Importance of HR analytics
- From gut feel to science: towards evidence-based HR
- Usage of HR analytics
- Effective approaches to analytics
- Building capability for HR analytics
- Future of HR analytics

What do you understand by the concept of HR analytics in South African organisations?

- Probe difference in understanding in HR management information, metrics, workforce analytics.
- Determine stage of usage - from basic reporting of HR management information or metrics; to the end of the spectrum being predictive HR using sophisticated statistical tools.
- Explore usage of HR analytics in own organisation, for what purposes – differentiate between historical reporting and insights, evidence-based HR.
- How are other leading SA organisations using HR analytics? What do companies find most useful to do?
- Can you name a few companies in SA who are leading in terms of HR analytics?
- Does your organisation have dedicated HR analytics department?

Structure of HR analytics function in your organisation

- Skills required
- Typical person
- Reasons for low HR interest

Is there a perceived need for HR analytics in organisations? Is there an appreciation for the value of HR analytics?

- Some people have said that HR needs to move away from gut feel to being more scientific. What are your thoughts about this statement?

- Is there any value in statistical techniques such as predictive modelling and regression analysis in HR?
- Is HR analytics the answer that HR needs to being rightfully seen as a strategic partner?

What do you perceive as the key HR metrics/analytics (know your numbers) required by South African organisations? Why?

- Time to recruit
- Attrition levels
- Employment Equity figures
- Performance management
- Probability to succeed
- Probability to terminate
- Talent management
- What questions should analytics answer in your view?

What should be done to make HR analytics a more useful feature of HR management in South Africa? What are the building blocks to building a strong HR analytical capability in organisations?

- What should organisations be doing to maximise their HR analytics?
- Infrastructure?
- Data integrity/quality?
- Technology?
- Governance structures?
- Organisational culture?
- Do you have adequate HR analytical ability within HR?
- Would you source analytical competence from elsewhere in organisation?

Future of HR analytics

- How do you see this field developing in the next 3 years?

Appendix B: Short questionnaire

FROM DATA TO INSIGHTS:

HR ANALYTICS IN ORGANISATIONS

Respondent Name:	
Title:	
Tenure in role:	
Organisation:	
Total number of employees:	
Industry:	

Q1. Do you manage and report analytics about your workforce?

Yes	
No	

Q2. If yes, which solution do you use to manage your HR/workforce analytics? Pick all that apply

Spreadsheets	
Corporate/IT delivered BI systems	
Integrated analytics from HRMS/HRIS	
Dedicated workforce analytics solution	

Does not apply	

Q3. In what areas would you be interested in expanding your HR analytic capabilities? Pick all that apply

Standardising HR systems and reports	
Predictive analytics	
Workforce planning	
Reporting to executive management and line managers	
Other – please specify	

Q4. Which of the following would most help your success with HR analytics? Please pick one

Faster access to data	
Easier to use analytics tools	
Improved ability to interpret and present data	
Improved ability to predict outcomes and impacts	
Other – please specify	

Q5. Over the next 6 to 12 months you plan to...:

Significantly increase investment in HR analytics	
Moderately increase investment in HR analytics	
Maintain investment in HR analytics	
Decrease investment in HR analytics	
Other – please specify	

Q6. If you were to plot your organisation on this scale, where would you say you are in terms of this maturity model?

Q7. Do you have any further comments or suggestions to make about the subject HR analytics?

Appendix C: Research Consent Form

Research Consent Form

Dear colleague/HR Head

I am conducting research regarding the usage of Human Resource (HR) data, metrics and analytics in organisations. Our interview is expected to last about an hour, and will help us understand the extent of use of HR analytics in SA organisations. **Your participation is voluntary and you can withdraw at any time without penalty.** Of course, all data will be kept confidential. If you have any concerns, please contact me or my supervisor. Our details are provided below.

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I hereby give consent to participate in this survey.

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Appendix D: Research alignment matrix

RQ #	Research question - Chapter 3	Literature Review - Chapter 2	Research Results - Chapter 5	Results Discussion - Chapter 6
1	3.1 Is there a common understanding of the concept of HR analytics in South African organisations?	2.2 Definition	5.3 Common understanding	6.2 Common understanding, metrics vs. analytics
2	3.2 Is there a need for HR analytics in organisations?	2.3 Evolution of HR, towards predictive analytics, from gut feel to science	5.4 HR as business partner, From gut feel to science	6.3 Evolution of HR, Reliance on gut feel,
3	3.3 What are key metrics/analytics being used?	2.4 Usage, Key metrics, Level of sophistication	5.5 Usage reasons, Level of application, Systems used	6.4 Metrics used, Infancy of usage
4	3.4 What should be done to make HR analytics a more useful feature of HR management?	2.5 Building blocks	5.6 Move beyond historical reporting, Address skills shortage	6.5 HR analytics to be ingrained, Skills challenge
5	3.5 What does the future look like for HR analytics in South Africa?	2.6 Outlook, challenges, enablers	5.7 Positive outlook	6.6 Future outlook