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Strategies for Using Analytics to Improve Human Resource Management

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Abstract

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Abstract

The use of analytics in human resource (HR) management has proven successful in improving company performance by reducing workforce costs, improving the quality of recruitment, improving talent management and employee engagement, and generally improving productivity. The purpose of this qualitative, multiple-case study was to explore how HR managers use analytics to improve company performance using the contextually based human resource theory as the conceptual framework. The target population comprised a purposeful sample of 5 HR managers in Washington DC; the United States; and Lagos, Nigeria, who had experience using analytics for HR management. Data were collected through semistructured interviews using face-to-face, telephone, and Internet communications and a review of company documents and websites. Data analysis included content and thematic analysis. Four themes emerged from data analysis: the need for HR analytics to align with organizational strategy, the need for understanding HR metrics and how insights derived from HR analytics improve company performance, influencers of HR analytics adoption, and the barriers to HR analytics adoption. The findings and recommendations of this study can assist HR managers in implementing HR analytics successfully. The implications for positive social change include the potential for increased employee satisfaction, improved productivity, and enhanced prosperity in local communities, leading to positive socioeconomic indicators.

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Dedication

I dedicate this study to my late parents – Udo Luke and Mercy Emem Etukudo, who left a legacy of a desire for continuous learning and improvement in their children. Mum and Dad, you made me believe there is nothing I cannot achieve with God. As I fulfil my dream of becoming a Doctor, I regret you are not here to share the joy, but I thank you for giving me the foundation that made this possible.

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Section 1: Foundation of the Study

Companies in recent times encounter challenges from globalization, talent wars, recessionary economies, and advances in technology, knowledge-based environments, and changes in workforce demographics. To remain competitive, companies are using more complex and analytical decision-making tools. Akter, Wamba, Gunasekaran, Dubey, and Childe (2016) posited that analytics are vital for improving company performance. Managers who apply business analytics use relational database systems to establish causal relationships between input, processes, outputs, and outcomes, thereby facilitating accurate decisions. From survey results, Narula (2015) observed that companies who use analytics generated higher stock market returns while low performing companies did not make analytics a priority. This trend is creating a demand for company leaders to base business decisions on evidence and data in all spheres of operations. As benefits of using data to drive decision-making become pronounced, the use of analytics has escalated in other functions.

Human resource analytics (HRA) is the process of obtaining, integrating, and analyzing data from human resources, finance, and business applications to derive actionable insights on how a range of factors influence workforce and business performance (Sant, 2016). Scholars and practitioners have conducted studies suggesting benefits from implementing HRA (Kapoor & Kabra, 2014; Momin & Mishra, 2016). Based on a literature review of empirical and nonempirical case studies, Marler and Boudreau (2017) discovered support for a cause and effect relationship between the use of HRA and financial performance. However, human resource (HR) managers are

lagging in using analytics to drive more insightful and meaningful decisions. Lawler and Boudreau (2015) reported an HRA adoption rate of less than one third from survey results of over 100 Fortune 500 companies.

The use of analytics in HR is in its initial stage and is limited to managers using descriptive analytics to collect and report activities instead of outcomes (Pape, 2016). Considering most companies now use HR management information systems, HR managers can generate big data, use them more efficiently for decisions, and provide evidence of the impact of HR initiatives on business outcomes and performance (Narula, 2015). Such capabilities would improve the strategic focus of HR and eradicate the perception that HR does not add value to the company's bottom line.

Some of the major factors hindering the adoption of HRA discovered in previous studies include the lack of a simple paradigm that informs the use of HRA and lack of skills (Lesser & Hoffman, 2012; Narula, 2015). From survey results, Vidgen, Shaw, and Grant (2017) postulated the principal obstacles for using analytics were managerial and cultural, mainly a lack of knowledge regarding how to use analytics to improve the business. Kapoor and Kabra (2014) suggested the barriers to adoption of HRA were lack of resources and managerial support, real or perceived lack of skillset, and lack of technology and corporate culture. A gap exists in scholarly literature regarding methodologies guiding the use of analytics to deliver practical and operational evidence for optimal HR management decisions.:

Background of the Problem

Company leaders make significant investments in their HR; however, most HR leaders are unable to prove the value and return on such investments in employees. Human capital influences company performance the most (Momin, 2015), and HR managers risk making wrong or inefficient decisions without detailed investigation of people related issues. Many HR leaders still use past trends, intuition, copying best practices, and benchmarks as the basis for decisions (Reddy & Lakshmikeerthi, 2017). While some HR leaders use metrics based on past data, the failure to integrate data from other sources limits the usefulness of metrics alone for HR managers to use to deliver performance-enhancing observations. HR related costs are among the highest costs for most companies and the inability to use HRA to understand the critical components and drivers of workforce costs may lead to unprofitable investment decisions (Jones & Sturtevant, 2016). In the current competitive environment, company leaders and HR managers should adopt HRA to maximize the potential of their HR.

Scholars have advocated that HRA is context-specific (Reddy & Lakshmikeerthi, 2017). HR managers should customize HR practices to the organizational context to meet the needs of the specific company. In this study, I explored the factors that facilitate the adoption of HRA relative to operational contextual dynamics by studying the strategies that HR leaders in the United States and Nigeria adopted to implement HRA successfully. The study also contributes to the limited academic literature on this subject. My goal was to motivate HR professionals and organizations and provide a guide for the adoption and use of HRA to improve company performance.

Problem Statement

Organizations whose leaders fail to use data analytics for their HR decisions are more likely to be behind their competitors with financial performance (Kapoor & Kabra, 2014). From a global survey, 89% of respondents believed that company leaders who do not implement analytics risked losing market share and competitive drive (Akter et al., 2016). The general business problem is without using data-driven analytics, HR leaders can fail to provide strategic insights for improving investment returns in HR. The specific business problem is that some HR managers lack strategies for implementing HRA to improve business performance.

Purpose Statement

The purpose of this qualitative, descriptive multiple case study was to explore the strategies HR managers used for implementing HRA to improve business performance. The targeted population for the study was five HR managers in Washington D.C., United States and Lagos, Nigeria, who had successfully used HRA to make strategic decisions. More HR practitioners and company leaders in the United States and Nigeria may be motivated by this study to implement HRA suitable for their national context. The implication for social change is improved labor productivity from more efficient HR management.

Nature of the Study

The three primary research methods are qualitative, quantitative, and mixed. I decided to use a qualitative method because of the need to explore the successful strategies HR managers use to integrate analytics in organizational conditions. HRA is a

developing phenomenon in HR practice, not yet adopted extensively by HR professionals (Marler & Boudreau, 2017). The emergent nature of the subject warranted a qualitative approach. According to Marshall and Rossman (2016), qualitative research is suitable for exploring, explaining, or describing research problems relating to complex circumstances unexplored in literature. A quantitative approach was not suitable as the purpose of this study was not to test theories relating to HRA but rather to identify and explore successful strategies for adopting HRA in organizations. Park and Park (2016) posited that using the quantitative method in social science is suitable for forecasting and controlling events using hypothesis testing in structured and regulated environments. Mixed-method researchers adopt the pragmatic worldview and focus on using pluralistic approaches to derive knowledge regarding the problem. Johnson and Onwuegbuzie (2004) noted that mixed methods research involves finding patterns and testing theories and hypotheses to derive understanding. Mixed methods research includes deductive inquiry and was not appropriate for this study.

I selected a descriptive multiple-case study design because case studies assist researchers in providing enlightenment through complete and meaningful descriptions of a contemporary event within its real-world context (see Yin, 2018). The contextual perspective was critical because HR managers implement analytics in unique organizational settings. A descriptive case study approach enabled me to obtain a detailed understanding of the phenomenon for addressing specific business problems. Petty, Thomson, and Stew (2012) suggested that researchers may use the descriptive case study design to identify what is unique about the case by collecting data on the case from

various sources that deepen understanding. The ethnography, narrative, and

phenomenological strategies were not appropriate because the data required for the study

did not relate to culture, nor the stories of participants' lives, nor the meanings of the

experiences of the individual subjects but rather to the practice of HRA in business

environments.

Research Question

The general research question guiding this study was as follows: What strategies

do HR managers use for implementing HRA to improve business performance?

Interview Questions

The related interviews questions are as follows:

1. What strategies did you use for implementing HRA to improve business
   performance?

2. What is your understanding of HRA?

3. What influenced the adoption of HRA in the organization where you work?

4. What were the key barriers to implementing HRA?

5. How did your organization address the key barriers to implementing HRA?

6. How did HRA improve business performance?

7. What advantages did you obtain from using HRA in the organization?

8. What disadvantages resulted from using HRA?

9. What additional information would you like to share regarding
   implementing HRA to improve business performance?

Conceptual Framework

The conceptual framework for this study was the contextually based human resource theory (CBHRT). Paauwe (2004) developed the CBHRT, which is an analytical framework used to identify major constructs supporting the adoption of HR practices and analytics. The constructs are (a) competitive isomorphism, (b) institutional isomorphism, and (c) company configuration. Competitive isomorphism relates to the demands arising from product market combinations and appropriate technology that influence the development of HR management practices and includes the application of HRA (De Oliveira & Pádua, 2012). The demands articulated as efficiency, effectiveness, flexibility, quality, innovativeness, and speed are the product/market/technology influencers (Buttiens & Hondeghem, 2015). Institutional isomorphism refers to the influence of the social, cultural, and legal environment of HR practices as companies are persuaded to adopt conventional norms and practices in their operational environment. The company configuration relates to the organizational, administrative, and cultural legacy of the company that results in its current culture, structure, policies, values, and norms (Nasief, 2015).

As applied to this study, the proponents of CBHRT suggest I can expect that companies with a profitable financial position are using HRA. The other factors identified under the three constructs, competitive positioning, benchmarking, age, and size of the company, innovation orientation, and high labor ratios, are likely to make the organization a more successful market leader. Management of older, larger, innovative companies are more likely to invest in the time, people, and technological resources

required for using data for more insightful decision-making while the process of using HRA increases the company's competitive advantage and profitability. Falletta (2014) noted only the most successful among the Fortune 1000 companies surveyed, reported that HRA was central to their HR strategy.

Operational Definitions

Big data: The term big data refers to voluminous, high-velocity, and high-variety data that might be structured or semistructured and capable of producing valuable information (Bagshaw, 2017).

Business analytics: Analytics in business is the process by which organizations collect and analyze business-related data from various enterprise systems to generate insights for enhanced understanding and improved decisions (Muiruri, Waiganjo, & Kirinyaga, 2015).

Competitive isomorphism: The principle of competitive isomorphism describes the tendency of managers to imitate other companies encountering common market forces within the same environmental context as they strive to improve efficiency and performance (Pant & Sheng, 2015).

Descriptive analytics: As the most basic form of analytics, descriptive analytics are techniques for translating past data into meaningful information and insights to understand the past and current performance (Kapoor & Kabra, 2014).

Evidence-based human resource management: Evidence-based HR management is a procedure for making decisions using analytical thinking, scientific evidence, and

business information with the objective of understanding the relationship between HR practices and business outcomes (Reddy & Lakshmikeerthi, 2017).

Human resource analytics (HRA): Analytics in HR management combine descriptive, visual, and statistical analysis of data related to the business, HR, finance, and relevant external sources to establish business impact and facilitate improved evidenced-based decisions (Lawler & Boudreau, 2015).

Institutional isomorphism: The concept institutional isomorphism refers to the propensity of different organizations to become similar under the same environmental conditions as they seek to earn social acceptance from key stakeholders in the operational environment (Ward, 2015).

Predictive analytics: Predictive analytics is the application of statistical and forecasting models to past and present data to make predictions regarding future occurrences (Reddy & Lakshmikeerthi, 2017).

Prescriptive analytics: A more advanced form of predictive analytics that combines optimization techniques with statistical analysis to provide for uncertainty in the data (Kapoor & Kabra, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are facts a researcher has assumed are genuine and has not verified (Foss & Hallberg, 2014). One significant assumption supporting this study was that practitioner literature promoting the benefits of using HRA is correct (Akter et al., 2016; Kapoor & Kabra, 2014; Momin & Mishra, 2016). Another assumption was the statement

that the use of HRA results in competitive advantage as suggested in the available

literature (Dlomu & Spears, 2015; Marler & Boudreau, 2017; Sant, 2016) was accurate

and would continue over time. I also assumed the HR managers interviewed for this

study participated significantly in implementing HRA in their companies and had

adequate knowledge to provide useful insights. The final assumption was that people

interviewed responded to the interview questions honestly and candidly. To foster

truthfulness, I ensured participation was voluntary and reassured the participants of

confidentiality.

Limitations

Qualitative researchers acknowledge limitations of their studies. Limitations refer

to factors outside the researcher's control that might affect the study's validity (Soilkki,

Cassim, & Karodia, 2014). The first limitation was the small sample size of HR managers

derived from purposeful sampling. The use of multiple cases results in more robust and

replicable conclusions than single case research. Heyler, Armenakis, Walker, and Collier

(2016) suggested a small distinct sample is a research limitation. My research covered

five cases, which enabled me to capture the complexity and contextual reality of the

firms' operational environments without losing the cognitive ability to process all the

information.

A second limitation was that the interviews were restricted to HR managers

whereas a possibility existed that other employees might have alternative views or

significantly contributed to the successful implementation of HRA. I reviewed secondary

archival data to increase reliability. Another limitation was that the research study was

limited to the United States and Nigeria and may not reflect findings in other countries or

other industries. I used interviews as the primary means of data collection and recognized

that certain factors limit interview results, including bias, time, honesty, transcription

errors, distractions, and willingness to participate. To counter this potential limitation, I

used member checking and peer reviews for control purposes.

Delimitations

Delimitations refer to the confines or scope of the study determined by the

researcher (Marshall & Rossman, 2016). I used the overarching research question and

conceptual framework to establish the boundaries of the study. The purpose of this study

was to enable exploration of the strategies HR managers used for implementing HRA to

improve business performance. I interviewed only HR managers of the companies and

did not include the perceptions of other professionals engaged in HRA. Another

delimitation was restricting the geographical scope of the study to the United States and

Nigeria.

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Significance of the Study

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The study is of potential value to business because some authors (Kapoor &

Kabra, 2014) suggested that using HRA creates competitive advantage. Lesser and

Hoffman (2012) reported from a global survey that over 1,700 chief executive officers

(CEO) recognized that HR is an essential element for sustained competitive advantage.

The use of HRA can enable managers to improve returns from investments in HR and

catalyze employee engagement (Lal, 2015). The findings of this study may enable

business leaders to use HRA to discover new methods to manage their employees to

foster strategic alignment and increase the value HR adds to the company for achieving or sustaining a competitive advantage.

Contribution to Business Practice

Using HRA can improve business performance by using evidence to support HR decisions, in place of intuition, and could bring rigor to HR by increasing objectivity (Rasmussen & Ulrich, 2015). HR leaders may use this study to improve business practice by applying data-driven analytical models to increase operational efficiencies by establishing connections between HR programs and business outcomes. HR managers already collect and store vast amounts of data relating to employees, and some companies use HR management information systems. Identifying strategies for improving the adoption and effectiveness of HRA can enhance business performance by enabling organizations to use employee data more efficiently and track multifaceted and contextual employee interactions to improve returns on investments in HR management information systems (Lal, 2015).

Implications for Social Change

The findings of this study may contribute to social change by enabling more HR managers to change from using benchmarks and intuition to using facts and logic to support evidence-based decisions resulting in increased productivity. Increases in productivity will have a positive influence on the socioeconomic environment. Kapoor and Kabra (2014) reported that leaders of companies who use analytics claimed they gained competitive advantages. Lawler and Boudreau (2009) discovered that the use of metrics and analytics increases HR's strategic influence. Improving HR's strategic focus

can also create a positive effect on the organizational value system as relates to HR

management.

A Review of the Professional and Academic Literature

Economic growth, new technology, increased competition, and knowledge-based

economies have resulted in companies taking advantage of big data and analytics for

improved decision-making. Business leaders have begun to demand HR managers focus

on developing HR strategies that add value and measure the impact of HR activities on

organizational performance. The use of analytics in HR has been acknowledged to

improve decision-making quality, objectivity, timeliness, and increases HR's strategic

focus by demonstrating the effect of HR strategy on business performance (Fenzig, 2015;

Mishra & Lama, 2016; Muiruri et al., 2015). Despite the current realization of the

importance of HRA, adoption has been slow (Collins, Fineman, & Tsuchida, 2017;

Lismont, Vanthienen, Baesens, & Lemahieu, 2017; Marler & Boudreau, 2017).

The purpose of this study was to explore strategies HR managers use for

implementing HRA to improve business performance. In this literature review, I focused

on previous research on HRA, the evolution and historical antecedents of HRA, and

industry-specific trends. Previous research noted that the uptake of HRA has been slow;

therefore, I investigated barriers and challenges of using HRA as well as HRA models

and uses. Based on prior research, suggested obstacles to HRA adoption include

organizational culture, lack of analytical capability, data quality, and top management

support (Angrave, Charlwood, Kirkpatrick, Lawrence, & Stuart, 2016; King, 2016;

Minbaeva, 2017; Shah, Irani, & Sharif, 2017). These factors are part of the operational

context of the organization and led me to select Paauwe's (2004) CBHRT as the conceptual lens through which to view the topic. Scholars have also posited that successful adoption of HRA requires an understanding of the business and its organizational contextual factors (Jones & Sturtevant, 2016; Minbaeva, 2017; Reddy & Lakshmikeerthi, 2017).

To explore the current body of knowledge relating to HRA, I conducted a literature review by searching various online databases available through the Walden University Library, such as Emerald Management Journals, Business Source Complete, Academic Search Complete/Premier, Sage Journals, and ProQuest Central. I also used Google Scholar, MIS Quarterly, as well as practitioner-focused websites. I used relevant keywords and phrases including *HR/people/workforce/talent analytics, HR metrics, HR ratios*, and *HR measurement*. The literature review contains material from 90 peer-reviewed articles and books, with 85% of the articles published within the last 5 years. The entire study includes references from 149 peer-reviewed articles and books, 85% of which were published within 5 years.

Contextually Based Human Resource Theory

The CBHRT is an attempt to explain the reasons organizations adopt certain HR practices. Paauwe (2004) developed the CBHRT, which suggests that the factors that determine HR policies in organizations are the external and internal environments, the social, legal, and cultural contexts, as well as the dominant stakeholders. CBHRT seeks to rationalize the choices for HR policy by examining various aspects of the company's operational context and by considering the influence of dominant stakeholders (Buttiens

& Hondeghem, 2015; Decramer, Smolders, Vanderstraeten, & Christiaens, 2012; Ullah, 2013; Veld, Paauwe, & Boselie, 2010). Reviewing the literature on this topic deepened my understanding of the concept and constructs of HRA, its uses, the advantages of using HRA, best practices for implementing HRA, and the reasons behind the low-level of HRA adoption despite the benefits. The propositions advanced by Paauwe's CBHRT allowed me explore and understand how the market and institutional and configurational factors may lead business leaders and HR managers to adopt specific HR practices, including HRA.

CBHRT provides a holistic picture of the various internal and external pressures that influence the development of organizational structures and responses. Researchers have proposed that HRA is context specific (Heuvel & Bondarouk, 2017; Madsen & Slåtten, 2017; Minbaeva, 2017; Reddy & Lakshmikeerthi, 2017; Zhang & Bramwell, 2016). HR managers should understand the economic, technological, cultural, and political drivers and influencing factors of their operational environments, making CBHRT appropriate for studying HRA. Reddy and Lakshmikeerthi (2017) suggested that HRA should incorporate contextual evaluations as part of data exploration for insights on business problems while Schiemann, Seibert, and Blankenship (2017) advised that such environmental analyses are a prerequisite for HRA to be relevant by delivering solutions designed for the specific situation.

Other HR theories have proposed that alternative factors influence organizational performance and strategies. In recognition of prior HR related theories, Paauwe (2004) incorporated aspects of contingency, institutionalism, and the resource-based view (RBV)

approaches in his CBHRT. Paauwe posited that four constructs shape HR management in an organization. The CBHRT constructs are (a) the external market dimension (external product, market, and technology pressures/ developments), (b) the external institutional dimension (external social, cultural, and legal pressures), (c) the internal configuration of the organization (cultural/administrative heritage of the business in terms of culture, structure, and systems), and (d) the dominant coalition. The theory supports the view that people and other resources ultimately create value for the company; however, their operations are constrained by the business environment and the need for conformity to laws and social norms while attempting to be competitive.

Competitive mechanisms. The competitive mechanism construct represents responses aimed at increasing competitiveness. Paauwe (2004) called this construct the product/market/technology (PMT) dimension, a concept similar to competitive isomorphism. Competitive isomorphism represents the trend of competing companies becoming identical as they imitate each other under common business environments (Najeeb, 2014; Pant & Sheng, 2015; Ullah, 2013). Najeeb (2014) explained that competitive isomorphic pressures assume a system of judiciousness and emphasize market competition and niches, noting stakeholders expect companies subject to these pressures to conduct business effectively and efficiently. De Oliveira and Pádua (2012) stated that the PMT dimension reflects the competitive configuration required for economic reasons as companies seek to outperform their competitors by efficiency, effectiveness, agility, quality, innovativeness, and speed.

The PMT dimension influences the adoption and strategies for implementing HRA. PMT factors such as the current volatile, uncertain, complex, and ambiguous economies, big data, technology, and HRIS are catalysts of HRA (Andersen, 2017; Arora & Rahman, 2016; Du Plessis & De Wet Fourie, 2016; Marler & Boudreau, 2017). Madsen and Slåtten (2017) stated that technology has influenced HRA, as technology is an enabler of big data, which was the foundation of HRA.

Institutional mechanisms. The foundation of the CBHRT institutional construct is coercion from the external operational environment. Paauwe (2004) referred to institutional mechanisms as the social/cultural/legal dimension (SCL dimension) reflective of isomorphism by focusing on regulation and moral values such as ethics, fairness, and legitimacy. In CBHRT, institutional mechanisms represent external pressures exerted on the business by professional associations, society, norms, values in a community, and regulations (Paauwe & Boselie, 2005). Paauwe noted that even though businesses are in a competitive situation and continuously strive to outperform their competitors, they are constrained by the sociopolitical, cultural, and legal context (the SCL dimension) to do so in a way acceptable to relevant stakeholders. Companies adhere to the dictates of the SCL dimension to gain legitimacy leading to Paauwe's concept of relational rationality, the establishment of sustainable and trustworthy connections with external and internal stakeholders. Professional associations and regulatory bodies can exert influence over their members by the threat of sanctions for noncompliance while society and other stakeholders also influence business practices. Contemporary business

trends shaped by societal values include corporate social responsibility, transparency, and corporate branding.

HRA system vendors, HR consultants, and large management firms have generated attention and apparent legitimacy for HRA, supporting institutional isomorphism. Madsen and Slåtten (2017) theorized that HRA supply-side actors have influenced the progression of HRA. The activities of management gurus, business schools, consultants, and technology have exerted pressure by making HRA a management fashion. Madsen and Slåtten defined a management fashion as management concepts that quickly dominate public management discourse, creating a wave of interest and triggering a bandwagon effect. The pressure on HR managers to develop analytical skills is another feature of the SCL dimension of HRA. Scholars have opined that the current focus on HRA by business leaders has put pressure on HR professionals to become more data savvy and develop analytical skills if they choose to remain relevant to business (Du Plessis & De Wet Fourie, 2016; King, 2016; Kryscynski, Reeves, Stice-Lusvardi, Ulrich, & Russell, 2018; Subramanian, 2017; Welbourne, 2014).

The legal and regulatory environment restrict the manner managers implement HRA. Marler and Fisher (2010) surmised that national context directly influences HRA by labor laws, education systems, industrial relation systems, and laws addressing storage and use of electronic data. Different regions have regulations that require companies to report specific demographic statistics or make returns on employee tax or that ban the collection of certain types of data. HR managers must ensure legal compliance with

applicable regulations (Jones, 2015; Lakshmi & Pratap, 2016; Marler & Boudreau, 2017) or the company might be liable to legal sanctions and fines.

Organizational, administrative, and cultural heritage. The company configuration construct of CBHRT suggests that the company's history and tradition influence HR policies. Paauwe (2004) described the dimension of organizational, administrative, and cultural heritage as the result of past decisions on structures, methods, values, people, and processes leading to the current administrative or organizational structure and culture. Paauwe related this dimension to the RBV's postulation that unique historical conditions are one of the factors that make a company's resources inimitable. Boselie (2010) explained this construct as the traditional design of the organization, significant major organizational transformation, corporate culture regarding norms, values, and routines, and the mode of work organization and systems. Paauwe noted that HR policies must align with the company's administrative heritage to ensure a vertical or organizational fit, defined as a fit between HR strategies and the administrative/cultural heritage. HR practices, including the use of HRA, operate within the organizational context and must suit the requirements and needs of the users and align with all aspects of corporate operations (Pellet, 2015; Schiemann et al., 2017; Sharma, Mithas, & Kankanhalli, 2014).

Corporate culture and organizational data management capability influence HRA adoption. Scholars noted the need for a supportive organizational culture for success with HRA (Ames, 2014; Dlomu & Spears, 2015; Kapoor & Kabra, 2014; Minbaeva, 2017; Sharma & Sharma, 2017; Tableau, 2016). A company without a data-driven culture is not

likely to have the technology and infrastructure required for HRA and most likely will

not be willing to commit the resources needed to acquire such technology. Pellet (2015)

opined the behavior of leaders creates the company culture; what they pay attention to,

what they reward and punish, and the allocation of resources.

Dominant coalition. The last CBHRT construct is the dominant coalition, which

recognizes the role, influence, and limitations of organizational leadership in determining

HR strategies. The dominant coalition consists of people who hold the decision-making

power regarding HR management in the organization. Leaders make decisions within a

certain amount of leeway, implying other contextual dimensions do not entirely

determine HR policies. Company leaders have a certain degree to maneuver, enabling

them to make choices despite market and institutional forces/influences. The dominant

coalition or the power brokers in the company have overall responsibility for ensuring

HR management achieves a strategic fit with the company's overarching business

strategy, organizational fit with all business systems, environmental fit with the

operational setting, and internal fit for consistency and coherence of people strategies

(Paauwe, 2004). However, in taking decisions to facilitate performance, the dominant

coalition is constrained by the other contextual dimensions. For example, in a monopoly,

the company has a unique advantage of having no competition giving them broad leeway

regarding their HR policies. However, in a situation where labor is highly regulated, the

degree of freedom for crafting HR policies is minor. Paauwe's model identified the

following conditions that determine the amount of leeway; labor-capital ratio, financial

standing, the rate of unionization, and market strategy.

The dominant coalition is unique in every company. Paauwe (2004) identified the dominant coalition includes the Board, management, work councils, shop stewards, HR managers, and union leadership. However, these actors have their norms, attitudes, and values and the interaction between them may cause conflict if not managed properly. The dominant coalition must seek ways to forge conducive working relationships and develop HR policies that encourage the HR outcomes (engagement, motivation, retention, and skills) that result in high-level business performance. Paauwe noted CBHRT highlights the necessity of the dominant coalition seeking a strategic balance to manage the underlying tensions between attempting to achieve economic rationality, relational rationality, and legitimacy by pursuing different and contextually appropriate strategic objectives.

Supporting and Contrasting Human Resource Management Theories

HR management theories could be described as the management theories supporting the knowledge, skills, assets, and experiences that an individual has which add value to an organization (Cohen & Olsen, 2015). The HR management theories associated with the CBHRT include contingency theory, institutionalism, and the resource-based view.

Contingency theory. One of the theories that support CBHRT is the contingency theory. According to the theory different situations and environmental contexts warrant different operational strategies. Proponents of the contingency theory suggest there is no optimal way of organizing business, leading, or making decisions and performance depends on the appropriate alignment or fit of contextual factors with the internal

organization design (Cohen & Olsen, 2015). In designing strategies, managers should consider factors such as the size of the company, age, competition, customers, suppliers, stakeholders, distribution channels, legislation, and technology among others as these factors will affect the results and performance (Feng, Morgan, & Rego, 2017). Contingency theory proponents suggest that organizations achieve performance by designing their internal systems to fit their external environment. The theory proposes a company must change when its situation changes since the environment shapes the company.

The proposition for constant change is one of the disadvantages of the contingency theory as continual change creates a challenge for management and company structures. There is also the challenge of accurately choosing the most appropriate contingency plan in current volatile and uncertain environments. However, Bradford, Guzmán, and Trujillo (2017), noted that various external forces might affect units within a company differently, creating uncertainty as to the appropriate response. Paauwe (2004) also stated the contingency approach does not consider the influence of the company's historical antecedents and culture on performance. CBHRT aligns with the contingency theory by positing external and internal factors such as competition, technology, and products are essential moderators of HR strategy. The CBHRT however, goes further to incorporate the perspective of the influence of business leaders and historical antecedents on HR management.

Institutionalism and new-institutionalism. CBHRT is founded on institutionalism theory principles. Institutional theorists strive to explain organizational

actions from the general systems theory viewpoint and suggest that companies are a component of a more extensive system; companies affect the system and the larger system affects the company. The advocates of these theories suggest organizational procedures are either a direct indication of, or response to, the regulations and structures of the operational environment (Najeeb, 2014; Popadiuk, Rivera, & Bataglia, 2014). As a result, the operational environment becomes the source of legitimization, rewards, and constraints for organizational activities leading companies to exhibit isomorphism. Marler and Boudreau (2017) defined isomorphism as the process by which parts of a population become similar when they encounter the same environmental situations. Isomorphic pressures maybe coercive, mimetic, or normative (Marler & Boudreau, 2017; Najeeb, 2014; Popadiuk et al., 2014).

Coercive forces relate to formal and informal external pressures exerted on organizations by other organizations and the broader society. Mimetic factors lead to imitation among firms, commonly triggered by environmental uncertainty. The rationale for mimetic pressure is organizational leaders tend to imitate other companies they perceive to be successful or legitimate in their sector (Popadiuk et al., 2014). Normative factors derive from a shared cognitive base and emerge primarily from professionalization. Scholars advise HR Managers to align HR and the overall corporate strategy and take an outside-in approach by considering the business environment and stakeholders (Rasmussen & Ulrich, 2015; Ulrich & Dulebohn, 2015). The limitations of institutional theories are the failure to explain differentiation and unique value-adding attributes of companies. Institutional theorists do not consider the internal factors that

influence the selection of HR strategies. Kim and Wright (2011) stated that institutional

approaches are concerned more with the process by which companies transform and

adopt HR practices to gain legitimization but do not contribute knowledge on how HR

practices result in desired business outcomes.

Resource-based view. The resource-based view (RBV) was one of the

foundations for the CBHRT relating to the 'inside-out' perspective. RBV theorists

purport an organization's internal resources, including HR, possess the qualities: value,

rareness, inimitability, and nonsubstitution that create competitive advantage (Lee &

Kramer, 2016). The RBV is a leading strategic management theory used to explain how

business achieves competitive advantages. RBV advocates posit that a company's

tangible and intangible resources create value when they are valuable, rare, and

inimitable (Popadiuk et al., 2014). RBV supporters suggest the resources and capabilities

must also be heterogeneously spread and immovable between organizations. Lee and

Kramer (2016) emphasized the major limitation of the RBV is the internal focus, noting

that the operational environment might constrain the delivery of value by internal

resources. Further, Paauwe (2004) observed companies must embed resources and

competencies within an appropriate culture, corporate, and management systems to

support the required superior performance.

A connection exists between RBV and CBHRT as both theories emphasize the

importance of people in achieving organizational success. Paauwe's (2004) CBHRT

relies on the RBV to underscore the importance of people from two dimensions. One

dimension is recognition that it is the skills and competencies of employees that result in

performance. The other is the importance of cooperation between all the parties comprising the dominant coalition. The people who form an organization must work together to achieve objectives, and Paauwe noted such people have their interests and may at times compete and ultimately hinder progress if not appropriately managed. The CBHRT proponent's advice that HR policies should consider the organizational power relationships as these would influence the culture and attitude to HR policies.

Advantages and Limitations of CBHRT

The CBHRT incorporates both inside-out and outside-in approaches to HR management making it superior to theories that adopt a single approach. Buttiens and Hondeghem (2015) postulate that CBHRT approach is beneficial as it takes a multidimensional approach to designing HR strategy more likely to result in high performance because of consideration of the individual, organizational, and societal contextual perspectives and striking a balance between economic and relational rationalities. The CBHRT approach is vital to HRA because scholars discovered PMT dimensions such as technology and software, SCM dimensions such as data quality and culture, as well as historical antecedents /configuration such as skills and top leadership support, all influence the adoption and success of HRA (Reddy & Lakshmikeerthi, 2017). Considering the SCL perspective, the applicable legal regulations could either compel or constrain specific HRA activities. The Economist Intelligence Unit Reporters (2016) emphasized the differing legal rules for HRA by region noting that in the United States, collecting personal information on employees is legitimate providing managers do not use it for discriminatory purposes. However, in the European Union, companies must

justify why they need to collect personal data from their employees. Legal regulations could also influence the way employees perceive HRA, as a value-added tool or as intrusive. By exploring all relevant dimensions, the HR manager could discover such nuances and plan efficiently to mitigate risks and resistance.

The operational context affects the implementation and success of HR policies, including HRA. As noted by Kim and Wright (2011), by incorporating the influence of both internal and external factors, Paauwe's (2004) CBHRT explains variances in the results of using the same HR management policies across different operational contexts. For example, consider the mixed reception and efficiency of a system of team leadership in a knowledge-based environment and a low-tech production environment with strong labor unions. Nasief (2015) postulated the leeway for the dominant coalition to select HR strategy in Paauwe's CBHRT supports its role as an active agent in setting strategic direction, suggesting the environmental factors are challenges the company encounters rather than determinant constraints. The company leadership, therefore, can maneuver within its environment to set HR strategy that facilitates achievement of desired results.

The force field analysis required by the CBHRT is a powerful corporate diagnostic tool. As noted by Veld et al. (2010), the force field analysis provides a logical overview of the forces and actors having an influence on HR management in the company. This examination will reveal the key challenges and issues in the environment that require resolution for the HR strategy to work. This process will result in a more customized HR strategy development process to ensure alignment between the organizational environment and management of employees. Royal and O'Donnell (2008)

suggested that this process illustrates the catalysts of HR strategy and the importance of the inter-related features that recur throughout a company's history. Royal and O'Donnell posited that such a process helps manage emerging trends in HR that ultimately affect the company's financial performance.

One limitation of CBHRT is the failure to consider the restraining effect of relational dynamics on the leeway of the dominant coalition. Some scholars argue that while CBHRT indicates companies achieve performance by ensuring the dominant coalition uses appropriate leeway to select HR practices that align with the internal and external environments and its culture, it ignores the issues of relational dynamics in organizations (Kim & Wright, 2011). Citing HR attribution theory, Kim and Wright (2011) discovered perception and acceptance of HR management practices are moderated by the employee's diverse interpretations of the employers underlying motivations for introducing the practice or policy. Therefore, HR policies, including HRA, might result in vastly divergent results, depending on the meaning employees attribute to the policy. People need to trust the HRA process and the results to accept the insights provided, and employees need to trust management to be responsible regarding their ethical and moral obligations with additional staff related data. Green (2017) advised that employee trust is critical for sustainable and successful HRA. Baesens, De Winne, and Sels (2017) noted the importance of understanding the social influence and impact employees have on each other as actions affecting employees who are social influencers within an organization could have an adverse companywide effect.

Evolution of HRA

HR metrics were designed to measure HR efficiency. In a seminal work on HR metrics, Fitz-enz (1984) worked with the Saratoga Institute to create HR metrics that could determine the value and effectiveness of HR initiatives on areas such as turnover, training, return on human capital, costs of labor, and expenses per employee. HR metrics evolved and attained some level of standardization enabling organizations to use HR metrics as benchmarks of efficiency, effectiveness, and impact that resulted in competitive advantages (Handa & Garima, 2014). The disadvantage of using metrics as benchmarks was the belief that all organizations are similar, and the same solution would work for all companies regardless of the organizational context.

While HR managers may find HR metrics convenient to measure the effectiveness of HR initiatives, the challenges with metrics are they are of limited strategic value. The basis of metrics is past data, the method of calculation uses nonstandard idiosyncratic computations, and they are usually not business focused (Harris, Craig, & Light, 2011; Nienaber & Sewdass, 2016). However, as noted by Nienaber and Sewdass, measurement of the impact of people initiatives on organizational performance is a necessity for promoting competitive advantage and facilitating business performance. Metrics alone are not adequate as they do not provide insights into casual factors, do not explain differences in outcomes, nor can they predict the likelihood of future recurrences (Heuvel & Bondarouk, 2017). HR metrics alone could not provide the answers asked by business leaders regarding the value of HR to the company's performance.

During the 1990s, HR thought leaders intensified efforts to manage and measure the returns on investment in people. Such efforts resulted in a shift to viewing people as a valuable organizational resource with the capability to create competitive advantage (Barney, 1991; Huselid, 1995). Research on high-performance work systems by Huselid (1995) established the relationship between HR management systems and organizational performance. Another significant development in the field of measuring HR effectiveness, compared to efficiency, was Kaplan and Norton's (1996) balanced scorecard that focused on indicators of HR effectiveness from critical organizational perspectives.

HR scholars and practitioners continued to seek improved methods for measuring the effect of HR activity on organizational performance. By mid-2000s, the practice of using scientific methods to evaluate management practices emerged as evidenced-based management (Madsen & Slåtten, 2017). This practice caused an increased demand for more scientific and evidence-based methodologies for HR management (Boudreau & Ramstad, 2007; Madsen & Slåtten, 2017). Reddy and Lakshmikeerthi (2017) defined evidenced-based management as using scientific evidence as the basis for managerial decisions. Rousseau and Barends (2011) described evidence-based management as using the best evidence from multiple sources for the process of appraising decisions and then evaluating the results of the decisions taken. Evidenced-based management results in improved organizational performance and extending the use of evidence-informed resolutions to HR facilitates success and a more engaged workforce (Reddy & Lakshmikeerthi, 2017). Madsen and Slåtten (2017) noted evidence-based management

trends, and the ongoing quest for HR to become strategic were the foremost drivers of

HRA gaining the status of being critical for competitive advantage. In contemporary

competitive and knowledge-based environments, HR can no longer afford to base

decisions on the manager's experience, intuition or best practice, but must use more

logical and scientific approaches to decision-making. In resource-constrained

environments, HR, as with any other resource, must provide evidence of a superior return

on investment or risk losing support for investments in HR.

      Advancements in technology enabled HR managers to maximize data for

improved performance. Increase in IT capabilities, HR information systems (HRIS), and

big data contributed to propelling the HRA drive (Dlomu & Spears, 2015; Du Plessis &

De Wet Fourie, 2016; Schiemann et al., 2017). Handa and Garima (2014) noted

technology provided automation, powerful HRIS, and various data collection systems

resulting in extensive HR data. Advances in IT increased computing power and

connectivity, enabling an organization to obtain, and process voluminous data quickly,

and cheaper. Technology influences modern-day strategic planning, as more companies

are making efforts to capture and manage people-related data through HR information

systems (Du Plessis & De Wet Fourie, 2016; Lal, 2015). Modern enterprise resource

planning (ERP) systems with enhanced statistical calculation capability and which enable

the combination of HR data with operational and financial data, create vast opportunities

for companies to gain advanced insights about drivers of performance through HRA (Du

Plessis & De Wet Fourie, 2016; Togt & Rasmussen, 2017). Gathering and analyzing big

data provides vital information HR managers can use to understand trends and uncover

critical insights to shape HR policies and practices to drive the behaviors that result in profitable business results.

Characteristics of HRA

Scholars and practitioners have not yet agreed on standards or a general definition for HRA. Researchers identified lack of a simple paradigm as one of the barriers to adoption of HRA (Fink, 2017; Narula, 2015; Reddy & Lakshmikeerthi, 2017). Levenson and Fink (2017) noted that because of limited standard HRA frameworks, the concept of HRA currently covers a wide range of numerical practices and processes related to HR work. Definitions of HRA cover a broad spectrum of activities including metrics and statistics and covering different perspectives. Fitz-enz and Mattox (2014) described HRA as a means of communications and concurred with Sesil (2014) that HRA is both art and science. Narula (2015) defined HRA as approaches for combining data into metrics to examine relationships or changes to facilitate managerial decisions based on evidence. Handa and Garima (2014) suggested HRA is a process for reporting HR metrics, a measure of comparison, a predictive tool, a facilitator of performance, and a talent optimization solution. George and Kamalanabhan (2016) defined HRA as a process for providing evidence of the direct impact of HR related activities on business outcomes. Marler and Boudreau (2017) explained HRA is an evidence-based decision-making approach for HR issues consisting of an array of tools and technologies and encompasses simple reporting of HR metrics up to predictive modeling.

The preceding paragraphs reflect the challenges resulting from the lack of a standard definition and frameworks for HRA. Some HR managers who use efficiency

and effectiveness metrics claim to be using HRA. Others who use metrics to measure the impact of HR decisions may also argue they are using HRA. Some models of HRA specify reporting descriptive metrics as the beginning stage of HRA (Fitz-enz, 2010). Minbaeva (2017) conceptualized HRA as organizational capacity in three categories that should exist at three levels: individual, process, and corporate and requiring three elements: data quality, analytical competencies, and strategic determination. These varying definitions and approaches to HRA create difficulties for new users to understand what HRA is and how to appreciate and communicate the value its use creates for business performance.

Another issue with the definitions of HRA arises from the different terms used to describe the process. The common phrases are HRA, workforce analytics, and people analytics, which people use interchangeably. Heuvel and Bondarouk (2017) suggested although the different terminology of HRA may relate to the same processes for a logical and systematic discovery and quantification of people-related catalysts of business results to enable improved decisions, the difference in semantics relates to expected outcomes and determinants of the success of HR/workforce/people analytics. Adding to the controversy, some scholars suggested HRA is merely a fad or a nonrational trend that may not have lasting impact as a management technique (Angrave et al., 2016; Rasmussen & Ulrich, 2015). This situation emphasizes the need for scholarly research in this area and developing standards for HRA.

Certain similarities exist in the various definitions of HRA. Despite the confusion and integration of HR metrics into definitions of HRA, they are not the same. Fitz-enz

(2009) proposed HRA starts with simple metrics, but users must link the data from HR metrics with data from other sources to enable the predictions and insights that propel business outcomes. Supporting Fitz-enz, Sant (2016) posited HRA transforms HR data and measures (HR metrics) by using statistics and research from other functional areas to provide accurate and relevant insights on business performance. Fitz-enz and Mattox (2014) defined HRA as a process for combining disparate data from sources such as surveys and operations' records to develop a cohesive and actionable picture of current conditions and future outcomes. Heuvel and Bondarouk (2017) noted that HR metrics are essential and permit an examination of HR data from different perspectives. However, HRA links HR data with other data and business outcomes; therefore, users should not use HR metrics and HRA interchangeably. Marler and Boudreau (2017) noted that HRA enables managers make superior results compared to HR metrics by connecting HR practices with organizational performance, elevating HR management to a strategic level. Sesil (2014) suggested through HR metrics, HR managers started developing measures of relationships between critical variables and HRA can deepen that understanding to improve decision-making. Considering HR managers use standard HR metrics to report HR data, these simple HR metrics and reporting should form the foundation of HRA while HRA is the process of integrating these metrics with data from other sources and analyzing the information statistically to develop causal associations to critical organizational results.

HRA requires statistical analysis of HR data integrated with data from other sources, to generate the insights that improve company performance. Most definitions of

HRA incorporate the requirement for a sophisticated analysis of HR related data and integration of data from other sources (Marler & Boudreau, 2017; Sant, 2016). Levenson and Fink (2017) observed that one of the significant challenges with HRA, resulting in failed HRA projects, was the misconception that mere measurement of HR activities would lead to actionable and valuable insights. While measurement of HR should result in improved HR efficiency, this may not lead to improved organizational performance. To understand what drives corporate performance, HR managers need to consider all factors that affect the organization, creating a need for the integration of data from internal and external sources, as well as other functional areas. To establish the causal factors of performance requires rigorous statistical analysis to arrive at causal associations. King (2016) posited HRA should include experimentation to identify causes of issues and to quantify returns. Arora and Rahman (2016) asserted it is the integration and analysis of HR data with data from various sources that produces knowledge that creates competitive advantage.

Another important and recurrent feature of the various definitions of HRA relates to the objective of HRA, which is to improve business performance by linking HR decisions to business outcomes and performance. Marler and Boudreau (2017) consider this aspect as the most compelling and creates a strategic focus for HR management. Turner and Zytkowiak (2016) suggested the aim of HRA should be to transform business and not HR. Other scholars noted HRA should help managers create deep insights required to build and preserve competitive advantage (Arora & Rahman, 2016; Kryscynski et al., 2018; Lal, 2015; Levenson, 2017). Managers use information from

HRA to solve business performance issues; this distinguishes HRA from HR metrics and justifies investments in HRA. By enabling managers provide evidence of the factors that facilitate or hinder business results, HRA is a powerful tool to compel actions to improve organizational performance.

HRA Classification and Models

Despite the inconsistency of HRA definitions, scholars and practitioners have developed standard classifications of HRA. Scholars and practitioners classify analytics into three levels; descriptive, predictive, and prescriptive (Fitz-enz, 2010; Kapoor & Kabra, 2014; Narula, 2015; Sant, 2016; Talukdar, 2016). Descriptive analytics is usually the starting point for using data aggregation and mining to provide an understanding of past and current performance to answer questions regarding what happened. Examples of descriptive analytics include employee attrition rate by job function or location, grade or other similar demographics. Predictive analytics involve using advanced statistical methods to analyze data on past trends and relationships to predict the future. Leaders may use predictive analytics to identify employees likely to quit their job or in recruiting to predict which candidates will best fit the position. Prescriptive analytics enable modeling and forecasting for optimization of outcomes by identifying probable future results in terms of probabilities. Prescriptive analytics allow managers to minimize risks and maximize return on investments. With predictive analytics, managers can determine which actions would reduce attrition or build success models to identify the best people to recruit, train, and promote.

HRA models. Just as there is an array of definitions of HRA, there is also no standard approach to HRA. Scholars identified the lack of a simple HRA paradigm that informs how HRA improves business performance as a significant barrier to HRA adoption (Angrave et al., 2016; Handa & Garima, 2014; Lesser & Hoffman, 2012; Reddy & Lakshmikeerthi, 2017; Sharma & Bhatnagar, 2017). The lack of empirical research on HRA further compounds this problem and only a few companies who have successfully implemented analytics have shared their experience of building the analytics' function (Togt & Rasmussen, 2017). Analytics are strategic tools business leaders apply to solve complex problems or to exploit opportunities. However, unlike strategic planning with standardized models established by research, there is a gap regarding empirical literature on HRA models. In this section, I examined some of the established models, as well as practitioner recommended approaches for successful HRA.

Human capital bridge framework. The HC Bridge Framework was one of the first HRA models developed to address the limitations of HR metrics. Boudreau and Ramstad (2002) developed the model and theorized the critical feature of any HR measurement method was the ability to enhance management decisions by establishing a logical connection between HR actions and business results. Boudreau and Ramstad used the metaphor of a bridge to represent the links between HR investments and business performance. The framework considered measures beyond HR activity and focused on what the company should be accomplishing through its people. The focus of the model is three anchors points relevant for virtually all business decisions; efficiency, effectiveness, and impact. Scholars discovered the HC Bridge Framework is useful for linking HR

processes with business strategy to leverage financial performance and demonstrate the value HR adds to the business (Magau & Roodt, 2010; Talukdar, 2016).

       LAMP model. Building on the HC bridge model feedback, in 2004 Boudreau and Ramstad introduced the LAMP model for measuring the outcome of HR actions (Boudreau & Ramstad, 2004). The authors noted HR managers had developed standard and useful measures of HR efficiency and effectiveness, which were limited in their ability to measure the actual effects of HR initiatives to truly enhance people-related decisions. Boudreau and Ramstad developed the LAMP model to enable managers to identify the decisions about people most crucial for organizational success and how to link those decisions logically to organizations effectiveness. The letters in LAMP stand for the four critical components of a measurement system that can cause organizational efficiency; logic, analytics, measures, and process. Boudreau and Ramstad posited logic identifies the questions that reveal the associations between HR investment and corporate performance.

       Boudreau and Ramstad defined analytics as identifying, articulating, and analyzing data on critical issues from HR and other relevant areas to provide insights into the essential logic questions. Measures are required as indicators of progress of programs and results and must be appropriate and accurate. The process reflects the goal of the measurement system, effectiveness, and strategic success. The process elements should reflect the change management efforts reflecting the knowledge and learning from the earlier steps. Marler and Boudreau (2017) suggested these four factors were necessary to

provide evidence of the causal relationships between HR programs, strategic HR management, and business outcomes and thereby improve decisions.

Human capital capability scorecard. The human capital capability scorecard (HCCS) is another HRA model. Bassi and McMurrer (2008) developed the HCCS as a model through which organizations can link critical human capital activities to the outcomes that drive financial performance. Based on research, Bassi and McMurrer (2008) identified the following HR management drivers that affect organizational performance: leadership practices, employee engagement, knowledge accessibility, workforce optimization, and learning capacity. The framework assesses a company's level of HR management maturity in these critical areas and then links the variations to key organizational outcomes. Business leaders operationalize the HCCS by employee surveys that capture essential HR metrics and data to predict future business results. Bassi and McMurrer also suggested that the process enables the development of disaggregated measures of the quality of HR management in the company, creating an opportunity for focus on areas for improvement.

The HCCS is useful for analyzing the effect of HR actions on organizational performance. Based on Bassi and McMurrer's HCCS, scholars conducted studies to establish the impact of the proposed HR related drivers of organizational performance and confirmed significant positive relationships (Odhong, Were, & Omolo, 2014; Salau, Falola, Ibidunni, & Igbinoba, 2016). Bassi and McMurrer's HCCS was a significant development as it provided evidence linking HR management practices to business performance creating an avenue for companies to improve their results by realizing and

focusing on the unique capabilities of their people as a source of competitive advantage. However, managers using the HCCS cannot provide explanations for the perceived relationships between the HR management drivers and performance. Another limitation is HCCS only uses HR information without considering environmental factors that could have a possible influence on HR and performance.

Human capital management for the 21st century model. The human capital management for 21st century (HCM:21) was one of the first comprehensive HRA models. Fitz-enz (2007) introduced the HCM:21 model; a framework for analyzing data at an organizational level allowing HR to focus on corporate level strategic issues. The model was designed to support strategic planning by incorporating processes for market scanning to develop leading indicators, integrating different measurement systems, and auditing HR processes to optimize HR services. The steps of the model are (a) the strategic scan, (b) capability planning, (c) process optimization, (d) integrated delivery, (e) predictive measurement, and (f) analytics (Fitz-enz, 2010). The model is analytical as it uses data from various sources to integrate three levels of assessment; strategic, HR operations, and leading indicators to instigate change and predict future outcomes.

One advantage of the HCM:21 model was the inclusion of leading indicators and consideration of the intangible factors that influence company performance such as leadership and employee engagement, allowing a more holistic analysis. Some scholars described the HCM:21 model as one of the most comprehensive logic frameworks for conducting HRA (Muscalu & Şerban, 2014; Zafor & Shaobo, 2013). The HCM:21 enables managers to gather, organize, and interpret data from various sources for

predictions in support of a broad range of business goals as well as specific HR initiatives. Spahic (2015) suggested the HCM:21 model is complex and presents a challenge as it requires the users to adapt to, and practice, evidence-based HR while developing the measures of HR investments. Jensen-Eriksen (2016) noted the versatility of the HCM:21 model as it can be used for different situations and uses various tools and metrics suitable for the context. However, this versatility also presents a challenge as Jensen-Eriksen noted more complex tools require higher strategic and analytical capability from users. This need for versatility is significant because scholars identified lack of skills of HR managers for using HRA as one of the primary factors preventing its adoption (Marler & Boudreau, 2017).

From the literature reviewed, the actual statistical methods used in HRA to analyze data and provide the required insights depends on the nature of the question the user chooses to answer or the problem you are attempting to solve. Scholars posited that there is no standard HRA application that answers all questions (Schiemann et al., 2017; Sharma & Berger, 2017). From the research, I discovered HRA practitioners adopt a wide range of statistical techniques appropriate for the specific purpose. Schiemann et al. (2017) demonstrated how some HR and business frameworks, including the service-profit chain and people equity model could be used to understand and predict revenue, profit, customer satisfaction, and employee turnover. Fatima and Rahaman's (2014) study explored various data mining techniques and concluded C4.5 algorithms, K-nearest neighbor, and Apriori algorithms were suitable for human talent prediction, workforce planning, and recruitment. Mishra and Lama (2016) developed a decision-making

framework for HR decisions comprising data mining and predictive analytics. Mishra and Lama suggested decision trees, logistic regression, and neural networks are the data mining techniques most suitable for understanding the problem of turnover while classification, clustering, association, and prediction rules are most appropriate for talent management.

In their study, Hirsch, Sachs, and Toryfter (2015) described an HRA project using a multivariate regression model to conduct attrition rate analysis while Sharma and Berger (2017) developed a model for the same purpose but suggested the use of factor analysis or multiple regression analysis. In their research, Xiaojuan et al. (2017) used times series modeling for the same purpose. The wide variety of techniques and processes for statistical analysis required to prove causal associations between HR actions and business outcomes is a challenge for an inexperienced person attempting to start the journey to HRA. From the review, I observed a gap in the literature on the most effectual methodology for guiding the use of analytics to deliver practical and usable information for management decisions.

HRA Value Creation

HRA enables managers focus on improving business performance instead of merely HR management. HR leaders used to focus on establishing the efficiency, effectiveness, or impact of HR initiatives but such standards are no longer acceptable in today's knowledge and data-driven operational environment. The objective of HRA should be to add value by solving business problems, creating competitive advantage or business transformation (Fink, 2017; Levenson, 2017; Turner & Zytkowiak, 2016).

Strategic HR leaders must address the company's overarching business strategy and HRA is a powerful tool for optimizing HR to facilitate achievement of business results and improvement.

The use of HRA creates advantages for the company in a few ways. Researchers indicated that HRA could improve a company's bottom line through effective workforce cost control and improve HR credibility (Jones, 2015; Kapoor & Kabra, 2014). Other benefits of using HRA include allowing segmentation of employees, workforces, talent pools or vital skills for more efficient and impactful HR decisions (Muiruri et al., 2015) making HRA critical for decision-making in the current business environment. Arora and Rahman (2016) discovered HR related data are a component of 'big data' and are unique, valuable firm resources that can provide sustainable competitive advantage.

The HRA process facilitates insightful diagnosis of problems for developing focused solutions. HRA is a management tool for identifying opportunities, solving problems, and predicting returns on investments for obtaining maximum value (Fitz-enz & Mattox, 2014). Supporting the view that people are the most significant factor affecting business performance, scholars opined that HRA enables quantifying, evaluating and controlling human behavior critical for improved workforce performance (Momin, 2015; Momin & Mishra, 2016; Nienaber & Sewdass, 2016). Fitz-enz and Mattox (2014) provided a simple analogy of the workings of HRA as a problem-solving process. The authors noted that if one collects detailed data from various sources regarding a problem (descriptive analytics) and analyze it thoroughly to determine the causes of the problem and the effects of allowing the problem to continue (predictive

analytics) then one could most likely develop a solution and prevent a recurrence of the problem (prescriptive analytics). The use of data in HRA ensures managers are making informed and unbiased decisions about the resource that has the most influence on company performance while the process of causal and statistical analysis increases the likelihood of choices achieving the intended results.

The use of HRA enables detailed segmentation of employees, empowering HR managers to identify and understand the reasons behind the trends and thereby remove the guesswork from finding solutions. Scholars who support the resource-based theory, posit that HRA is associated with or can cause improvement in business performance and competitive advantage by using the insights generated to facilitate unique value (Jones & Sturtevant, 2016; Marler & Boudreau, 2017; McGuire & Ladd, 2014). Some researchers suggest the predictive quality and insights from HRA provide company leaders the ability to identify challenges and opportunities and react to them ahead of competitors (Kapoor & Kabra, 2014; Kryscynski et al., 2018; Lakshmi & Pratap, 2016; Sharma et al., 2014).

Another dimension of HRA's value relates to the improved quality of data supported decisions that are faster and less subjective. A statistical approach to decisions permits business leaders establish correlations among variables and reach more objective decisions (Higgins, 2014; Lipkin, 2015; Mishra & Lama, 2016). HRA supports HR's strategic focus by providing means for HR managers to articulate the impact of HR initiatives on the company's profits in financial terms and using visualization to create a compelling story (Fenzig, 2015; Higgins, 2014; Lal, 2015). Fitz-enz (2009) surmised HRA provides the following benefits (a) a higher return on investments in your data, (b)

enables finding hidden meaning in data, (c) is futuristic and not backward, (d) delivers intelligence in real time, (e) allows managers visualize their assumptions in action, (f) mitigates risk, (g) enables unexpected discovery, and (h) guarantees sustenance of competitive advantage.

From the literature examined, I discovered examples of how companies used HRA to create value, most often in traditional HR processes, but also for enhanced organizational performance. Google's use of HRA to determine the most effective HR strategies and the most and least effective leadership behaviors at their company is well documented (Gobble, 2017). Davenport, Harris, and Shapiro (2010) recorded other companies use of HRA in nontraditional and HR areas; JetBlue used HRA to link employee engagement to predict financial performance, Dow Chemical's used HRA for workforce planning, and Sysco's use of HRA for tracking satisfaction levels of delivery associates to improve retention and generate savings. Coco, Jamison, and Black (2011) provided a detailed case study on Lowe's use of HRA to establish associations between HR management, employee engagement, and store performance. These case studies, while not empirical literature, provide real-life examples of the possibilities from the use of HRA.

More recently, King (2016) presented a case study of a collaboration between academia and management consultants to use HRA to solve an attrition problem. Data analysis revealed that the most significant factor driving attrition at the company was time on the position; the data also enabled the managers to ascertain retention strategies could create savings of between USD 3.1 to USD 9.3 million per annum. Kane (2015)

reported a case of HRA enabling bank leaders determine that staff in more cohesive groups improved communications with callers. The bank then initiated a program to build team cohesion, and within three months, the control group was completing calls 23% faster than others with an added benefit of reducing turnover by 28%. Cava and Fernandez (2017) presented a case study describing how managers used HRA at Starwood Hotels to establish the connection between employee engagement, the guests' experiences, and how the guest's experiences affected company's results.

The literature contained numerous examples of how companies used HRA to their advantage. Lam and Hawkes (2017) detailed the process Shell used to apply HRA to its recruitment process leading to assessments that were more efficient, improved candidate quality, improved candidate experience, increased flexibility, and reduced costs. Togt and Rasmussen (2017) reported how the use of HRA revealed a 1% increase in employee engagement resulted in a 4% decrease in a company's safety metric. Togt and Rasmussen posited that HRA resulted in insights for a rich set of value-creating alternative action plans such as providing evidence of a strong correlation between employee engagement and sales performance, establishing the use of technology drives sales, and identifying staff with a higher cybersecurity risk for tailored on-the-job educational initiatives. Managers may then assess the likely results of such alternative action plans by using more sophisticated predictive and prescriptive analytics.

The sphere of application of HRA is still limited. In their 2017 human capital management survey for Deloitte, Collins et al. (2017) noted that the use of HRA is expanding to cover a wide range of business challenges; however, recruiting remains the

primary area of utilization, followed by performance measurement, compensation, workforce planning, and retention. The report indicated some companies use HRA to link people initiatives to hospital patients' outcomes and results. They stated another firm used HRA to examine customer and employee traffic problems to identify locations for increasing sales staff presence while a sales organization used HRA to develop a model for improving sales productivity. Shah et al. (2017) in an empirical study, used structural equation modeling (SEM) to develop a conceptual model of the behavioral and attitudinal factors that exert a direct effect on staff intentions regarding organizational change.

HR managers can use HRA to improve performance in various ways. Scholars suggested HRA could be used to strengthen strategy implementation (Sant, 2016; Levenson, 2017). Others suggest the most important use of HRA is to enable identification and understanding of the linkages between people and organizational outcomes (Aral, Brynjolfsson, & Wu, 2012; Sharma et al., 2014; Wawer & Muryjas, 2016). Many business leaders identified business intelligence and analytics as their priority for improving competitiveness (Collins et al., 2017; Holsapple, Lee-Post, & Pakath, 2014). Despite the promise of HRA and the benefits identified in the literature, the uptake of HRA remains low and mainly focused on descriptive analytics (Collins et al., 2017; Dlomu & Spears, 2015; Green, 2017; Lipkin, 2015; Marler & Boudreau, 2017; Pape, 2016; Wawer & Muryjas, 2016).

Barriers to HRA Adoption

Despite the studies indicating the benefits of using HRA, a 2017 survey by Collins et al. (2017) revealed that few organizations are successfully using analytics and

the response to HRA is still bleak. HRA is primarily used for enhanced reporting, still

often spreadsheet-based (Jones, 2015). Some of the reasons provided in previous studies

for the failure to use HRA include the lack of a simple archetype that informs the use of

analytics and lack of skills (Angrave et al., 2016; King, 2016; Minbaeva, 2017; Reddy &

Lakshmikeerthi, 2017). From the literature, data issues and lack of skills appeared most

frequently as the reasons behind the failure to adopt HRA. Collins et al. (2017) reported

that while 71% of respondents rated analytics as an area of priority, only 8% believed

they had usable data. Other reasons are costs, challenges of integrating information

systems, and lack of executive management support (Kapoor & Kabra, 2014; Tonidandel,

King, & Cortina, 2016; Vargas, 2015). Some researchers noted emerging ethical issues

and lack of an appropriate legal framework (Fred & Kinange, 2015; Pape, 2016; White &

Ariyachandra, 2016).

Reliable data are fundamental to the successful implementation of any HRA

project since the focus of HRA is to incorporate data from diverse sources to create astute

comprehension of topics and enable enhanced solutions. If data are incomplete or

defective, the process cannot deliver the desired results. Scholars identified data quality is

critical as the usefulness of any analysis depends on the quality of the data (Andersen,

2017; Fenzig, 2015) and referred to the famous adage; garbage in, garbage out. Even with

clean data, without the skills to analyze and transform the data into knowledge,

information, trends, or correlations; the data remains of limited value. Without necessary

analytical skills, HR managers are not likely to take advantage of the analytical

capabilities offered by most modern HR management software (Jones, 2015). Togt and

Rasmussen (2017) suggested companies who already have robust management information systems are deriving value from fact-based decisions but estimated the return on investment at only 80% without advanced analytics. For firms to maximize their big data analytical and HR system investments, HR professionals need to have relevant skills to use the software optimally and analyze the information astutely.

HRA assists business leaders utilize the data they have more effectively. Big data are a facilitator of analytics as most companies now use HR management information technology that generates voluminous data (Lal, 2015). However, for HRA to be successful, the manager must identify the relevant data required to provide insight on the pertinent questions or business problems. The data must also be in a form that allows integration of the disparate datasets to provide a comprehensive and balanced representation of the issues. Outdated or flawed data can cost the organization the time needed to structure and clean the data to make them usable and increases risks. Minbaeva (2017) noted the requirement for successful HRA should not be big data but smart data; defined as methodical, structured data that is updated continuously.

HR managers require a diverse set of skills to be successful implementing HRA. Kryscynski et al. (2018) opined successful HR analysts must have strong analytical skills to produce recommendations supported by empirical evidence. Kryscynski et al. defined required analytical ability as the individual's ability to develop and test causal models using appropriate metrics and incorporating the results into the company decision-making process. Scholars opined that to work with HRA successfully, HR professionals require business acumen and sound understanding of the business drivers, business statistics, data

modeling and interpretation, working knowledge of analytic tools and technology, as well as HR domain expertise (Andersen, 2017; Baesens, De Winne, & Sels, 2017; Green, 2017; Marler & Boudreau, 2017). Other researchers noted the importance of data visualization and storytelling skills needed to induce changes and action (Boudreau & Cascio, 2017; Jones, 2015; Rasmussen & Ulrich, 2015). Kapoor and Kabra (2014) suggested the ability to use HRA to confirm how HR is facilitating improved financial results is a distinguishing factor between high and low-performing companies.

Analytical skills will become even more essential for HR professionals with technological advances and knowledge-based economies. Skills and data are critical to HRA leading Sharma and Bhatnagar (2017) to refer to them as the two most important influences promoting the use of analytics for strategic HR outcomes for enhanced business performance. Further, successful HRA requires a complement of both clean qualitative and relevant data and analytics skills. HR professionals need to upskill themselves in this area or run the risk of statisticians and IT professionals taking over what should be a critical strategic HR role (Marler & Boudreau, 2017).

For successful HRA, scholars noted the need for HR managers to be mindful of the operational context. The literature revealed a theme indicating HRA is context specific (Beygelman, 2014; Jones & Sturtevant, 2016; Kryscynski et al., 2018; Minbaeva, 2017; Reddy & Lakshmikeerthi, 2017; Tableau, 2016). In analyzing data, HR managers require a clear understanding of the business, operational environment, and other contextual factors as these have a bearing on data interpretation results. Jones (2015) noted various locations might have different restrictions or requirements regarding data

collection and use while Lal (2015) emphasized the need for understanding the contextual and complex relationships in the company.

Another common theme in the literature is the influence of organizational culture on HRA. Some researchers supported the view that organizational culture is one of the factors that encourage or hinder HRA (Ames, 2014; Kapoor & Kabra, 2014; Levenson, 2017; Shah et al., 2017; Sharma & Sharma, 2017; Tableau, 2016). Conducting a force-field analysis to identify the contextual factors that could influence HRA would assist HR managers understand the organizational dynamics, identify HRA sponsors, ensure adherence to legal as well as ethical regulations, and develop strategies to support HRA acceptance and implementation. The importance of contextual factors for HRA adoption led to the selection of CBHRT as the conceptual framework for this study.

Limitations of HRA

HRA is the must have capability for future HR management and provides a competitive advantage, yet the adoption level after ten years is still low. This low uptake suggests HRA is not without its challenges leading Rasmussen and Ulrich (2015) to predict that HRA in its current configuration will fail to add continuing value to business results. From the literature review and various definitions of HRA, we realize HR metrics are critical to HRA and Fitz-enz (2010) proposed metrics are the foundation of HRA. However, many companies do not use basic HR metrics; Fitz-enz and Mattox (2014) reported approximately 75% of HR departments do not have practical base metrics. In a survey on HRA, Collins et al. (2017) reported that only 9% of respondents thought they had an understanding of the people factors that facilitate performance of their companies

and only 15% were using HR talent scorecards. If HR metrics are the foundation of HRA, then the implication is many businesses are far from ready to begin the journey to HRA.

The HR "black box" has been a major challenge of HR management for a long time. Boudreau and Cascio (2017) explained the HR black box is the lack of empirical explanation regarding how and why HR initiatives assist organizational performance and the mediating factors. Unfortunately, HRA may not resolve the issue of the HR black-box. In a survey conducted by the Economist Intelligence Unit (2016), researchers observed a lingering mistrust of the HR function among some senior executives, suggesting this would limit investments in HRA.

Lack of standards, generic frameworks, and models are hindering HRA penetration and efficacy. Levenson and Fink (2017) stated HRA is currently in a state of instability with minimal reliable frameworks to compel effective action for corporate improvement. Heuvel and Bondarouk (2017), highlighted the lingering uncertainty regarding what HRA is, its purposes and benefits. Further, empirical research on HRA and its value is practically nonexistent (Marler & Boudreau, 2017; Minbaeva, 2017). While there are numerous examples of other benefits of HRA from practitioner case studies, the literature reviewed revealed only one empirical study by Aral et al. (2012). Aral et al. suggested a strong relationship between the use of HRA and financial performance; however, there were other moderating variables in that study. This lack of empirical research is a significant limitation of HRA leading Minbaeva (2017) to emphasize the need for further theoretical and empirical work to methodically link HRA to organizational results in specific contexts. Other scholars (Boudreau & Cascio, 2017;

Levenson & Fink, 2017) posited that this ability to use logical HRA models showing the

linkages between HR programs and business outcomes is critical for the advancement of

HRA.

In the literature, researchers emphasized HRA should provide solutions to

business problems and not merely HR problems. Angrave et al. (2016) stated it is not

clear if HR has the capabilities to effectively utilize trend data to produce the business

insights required. The issue of lack of analytical skills in HR as one of the barriers to

HRA adoption is prevalent in the literature reviewed. This is a significant limitation for

HRA's delivering value as HR managers are best placed to interpret the data in terms of

their influence on HR initiatives and effect on employees. Data capability alone cannot

deliver value; it is the ability to interpret the data within the company's unique context

that creates value. Angrave et al. (2016) mentioned HR people do not understand

analytics and analytics professionals do not understand HR. Levenson and Fink (2017)

proposed that data scientists, not being skilled at evaluating HR processes and their

effects on organizational systems, often target marginal increases in HR program design

and miss the greater business challenge issues. Kuhn (2016) opined HR managers cannot

provide business relevant information because their HRIS are not designed to generate

such information. As a result, the costly analytics capabilities provided by the latest

forms of HRIS fail to deliver strategic HRA's capabilities. Angrave et al. (2016) noted

the risk of other professionals taking over HRA, further reducing the strategic influence

of HR and eventually leading to HR decisions that might appear advantageous to the

company initially but create more harm for employees in the long-term; eventually leading to poor financial results in the future.

Another challenge most companies encounter with HRA is the lack of an analytical strategy. Taking a strategic approach to HRA is essential for success (Hota & Ghosh, 2013). Levenson and Fink (2017) noted HRA is a complex field incorporating a wide variety of measurement and analytics approaches. Companies require a strategic approach for HRA to be successful and all elements of the analytics strategy must align; the data from disparate sources must be capable of integration, the data collection and management strategy must provide clean, current, and relevant data required for the company's needs, and there must be a deliberate mapping of analytic options against the corporate objectives and business challenges (Rasmussen & Ulrich, 2015). The analytics strategy should include the required technology and skills to provide and communicate the insights in a compelling way. If companies continue to adopt HRA in an ad-hoc manner or because of copying best practices, without a clear strategy, there is a small chance HRA will deliver the desired returns.

Success in HRA requires striking a balance between available data and interpretation of the data. Lipkin (2015) noted the challenge of relying solely on data in HR matters and advised HR managers to balance big data with people centricity. Lipkin recommended HR should leverage their roots in employee advocacy, understanding, and development and ensure HRA results in benefits for both staff and the company. HR managers should not rely solely on data for decisions but should gather insights from the data and make informed decisions combining insights with their experience. Green

(2017) highlighted the need to keep people as the focus of HRA. Even in recruiting, the area in which HRA is most widely used, Staney (2014) advised HRA algorithms should not replace the human interaction in recruiting.

Companies must have a data driven culture for HRA success. Scholars largely support the contextual nature of HRA and the importance of culture (Beygelman, 2014; Jones & Sturtevant, 2016; Kryscynski et al., 2018; Reddy & Lakshmikeerthi, 2017; Tableau, 2016). Minbaeva (2017) advised that success with HRA requires developing it as an organizational capacity while Lismont et al., (2017) noted the importance of making HRA central to the corporate decision-making process. Levenson (2017) criticized current HRA as focusing too much attention at individual level when what is required for success is a multilevel approach that concentrates on individuals and relevant groups. Sharma et al. (2014) discovered the corporate decision-making process influences how insights transform decisions. Boudreau and Cascio (2017) acknowledged situations still exist when the advice of HR managers providing their leaders with evidence is ignored and company leaders decide to copy best practices, adopt the opinions of admired CEOs or management experts. Rasmussen and Ulrich (2015) noted that sometimes HRA insights might be rejected because they threaten existing belief systems and suggest the need for change. Therefore, HRA is limited by the suitability of the operational context, power politics, and willingness of leadership to invest and use the insights generated.

Contextual Factors Influencing HRA

From the literature, the PMT dimension for HRA is characterized by the following critical issues: increased competition, pressure for efficiency, need for

innovation, focus on HR as a tool for competitive advantage, drive for evidence-based management, business analytics, war for talent, big-data capabilities, and technology. Ringo (2017) suggested the analytical capacity of current HRIS' and the need to reduce costs and drive productivity in the volatile, uncertain environment are catalysts of HRA. The SCL is characterized by the following critical issues: increased demand for strategic HR, HRA supply-side actors, social media, organizational culture, data management capacity, desire to develop brand equity, the pressure to acquire HRA skills, success stories of leading companies, legal, and ethical concerns.

The contextual factors influencing the company's operations should guide HR managers in their approach to HRA. Financial standing, age and formalization of HR structures, company size, labor-capital ratio and innovation orientation influence the organizational/administrative/cultural heritage (Reddy & Lakshmikeerthi, 2017; Wawer & Muryjas, 2016). Such information is important for HR managers in making a business case for HRA, as they will influence the reception of a proposal for HRA implementation. For example, a company that is not innovative is not likely to take the risk as an early adopter of HRA. In this case, a more appropriate option might be to make a case based on mimetic factors or suggesting adopting HRA as a best practice. Regarding the dominant coalition, the HR manager would need to cultivate the support of possible HRA influencers. Influencers may include top executive decisions-makers, people who allocate resources, IT, and the heads of the business unit heads (Colegrave, Seasholtz, & Khare, 2016; Collins et al., 2017; Hirsch et al., 2015; Lakshmi & Pratap, 2016; Mishra, Lama, & Pal, 2016; Reddy & Lakshmikeerthi, 2017).

Proposed HRA Model

Use of analytics is improving operations in other functional areas and the literature indicates HRA can help HR managers enhance HR's contribution to corporate performance. Scholars proposed lack of tested HRA models was one of the factors hindering its implementation (Angrave et al., 2016; King, 2016; Minbaeva, 2017; Reddy & Lakshmikeerthi, 2017). Because of the nascent nature of HRA, there are few empirical studies identifying standard models for HRA, while the low adoption level is hindering the emergence of universally accepted HRA best practices. The objective of this dissertation was to explore strategies HR managers used for implementing HRA to improve business performance. A review of the available professional and academic literature revealed a wide array of approaches and methods for performing HRA including theoretical models and recommendations from lessons learned from HRA implementation. From a summary of the suggested approaches in the literature, I have developed an HRA implementation model illustrated in Figure 1.
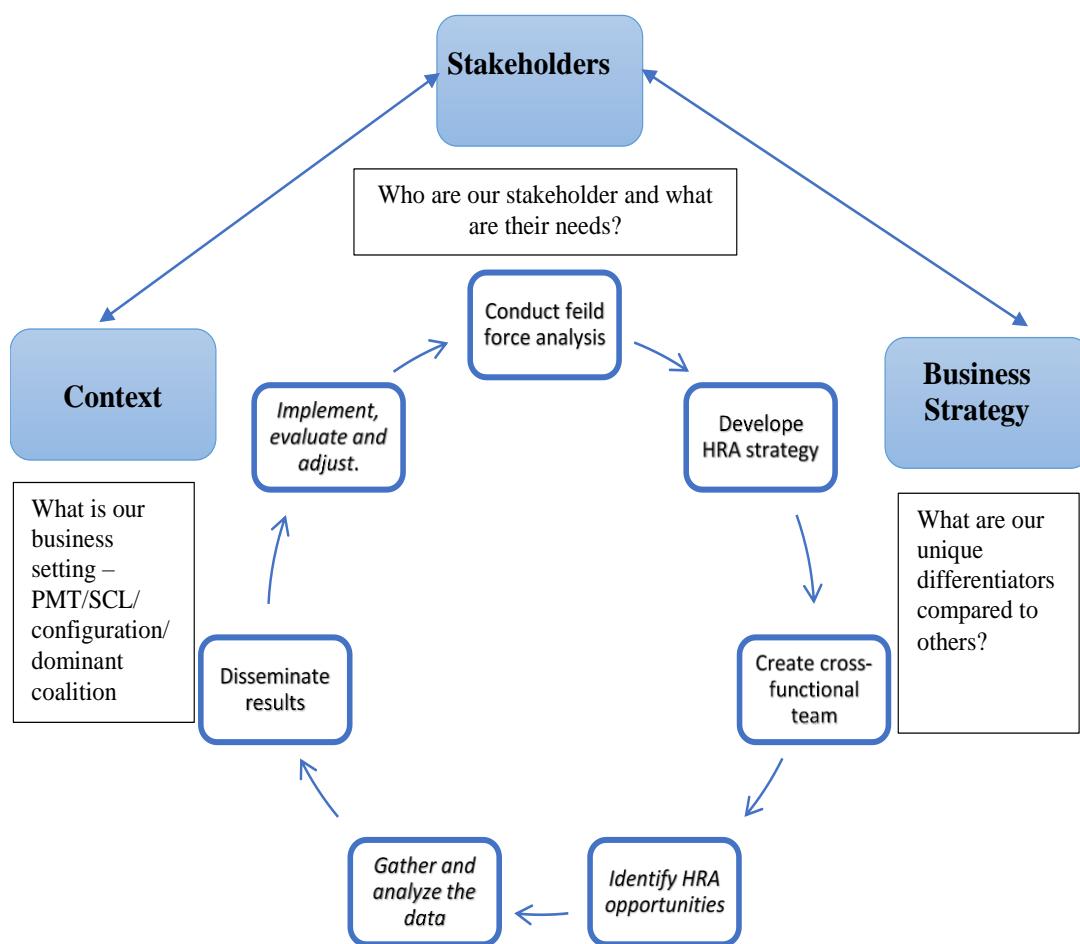
Figure 1. Model for implementing HRA.

The model incorporates essential procedures for success in implementing HRA. From the research reviewed, I noted the importance of approaching HRA from both individual and organizational perspectives (Minbaeva, 2017) and taking contextual factors into consideration. I have explained the steps below.

Conduct a field force analysis. Strategic planning starts with an assessment of the operational field. As advised by Paauwe's CBHRT, HR managers should first conduct a force field analysis to determine the significant factors influencing HR

practices on the external PMT (product/market/technology) and SCL (social, cultural and legal) operational facets as well as the internal organizational/administrative and cultural heritage. These will provide a guiding foundation for developing the HRA strategy while identifying the dominant coalition will reveal the strategic partners required for HRA success.

Develop HRA strategy. The next step requires developing an HRA strategy that aligns with the general business strategy. If HR leaders want HRA to succeed at transforming the organization, they need to adopt a systematic approach after assessing the organizational contextual factors (Levenson & Fink, 2017). Using the field force analysis proposed by CBHRT advocates enables HRA sponsors determine the important contextual factors since HRA requires an in-depth understanding of the business and its context (Fenzig, 2015; Jones & Sturtevant, 2016; Minbaeva, 2017; Tableau, 2016). Taking a strategic approach to implementing HRA will assist the initiators consider all relevant dynamics to ensure an efficient implementation. The strategy should cover HRA objectives, governance model, team membership, resources, skills, data management and integration, legal and ethical issues, change management, metrics, and risks. Starting with developing an HRA strategy would ensure the HRA objectives match the organizational capability. It would not make sense trying to implement HRA in an organization that does not yet have the capability for basic descriptive analysis, or which does not possess an HRIS. Kaur and Fink (2017) advised companies new to analytics to focus primarily on building their descriptive reporting and data infrastructure. Developing an HRA strategy will assist make HRA an embedded, repeatable, and consistent process (Howes, 2014).

Create cross-functional team. The next step would be identifying the HRA team based on the requirements of the HRA strategic plan. Scholars noted the need for ensuring HRA leadership is at a senior executive level to drive a data-based decision-making culture and to ensure the project receives needed resources (Collins, et al., 2017; Green, 2017; King, 2016). Schiemann et al. (2017) advised the HRA team to engage decision-makers in the process so they will own the process and be eager to use the information.

Since HRA should address business problems, scholars recommend using a cross-functional team. The team should represent major operational areas for the organization, along with HR and IT, to provide an understanding of the operational challenges (Colegrave et al., 2016; King, 2016; Narula, 2015). Incorporating influencers and other leaders who could serve as champions of the changes required to the culture and processes would assist communication, re-orientation, and change management efforts. Turner and Zytkowiak (2016) emphasized the importance of getting the right talent and skills, starting small, consulting, networking, and partnering with business leaders.

Identify HRA opportunities. After selection and strategy development, the team can start seeking opportunities to use HRA to solve business problems. Researchers advise HRA implementation should start on a small scale to address the most acute business needs (Ames, 2014; Colegrave et al., 2016; Lipkin, 2015). Levenson (2017) proposed two approaches to identifying HRA opportunities: focusing on strategic change requirements in employee and corporate capabilities or focusing on factors that support

the company's competitive advantage capabilities. Schiemann et al. (2017) suggested initial HRA efforts should focus on the key factors that drive value in the company.

Once the team has prioritized areas for HRA efforts, they need to develop hypothetical questions, the answers of which will provide the needed solutions. The objective of HRA is to establish the connection between HR programs and business results which requires a research approach and statistical techniques to reveal cause and effect linkages and correlations that are distinctive in every company. An HRA project should be approached like a research study; identify the business problem, develop a research question that seeks to address the problem, and identify the relevant variables. The HRA team can then decide what data are needed to explore the problem, gather the data, analyze the data using appropriate statistical methods and present the findings in a manner appropriate for the audience.

The cross-functional team, comprising people with in-depth knowledge of the factors that influence the company's performance will determine the relevant variables relating to the problem. They use hypotheses to make predictions on how the HR variables will affect company outcomes based on experience, intuition, or prior research findings. DiBernardino (2011) emphasized the essence of HRA is to provide evidence of the impact of HR to enable improvement of business performance. Therefore, HRA results must reveal the connections between HR initiatives and business performance. The nature of the question will inform the type of data and the form of analysis required to answer the questions that will generate the most important strategic insights.

Researchers also recommended using a conceptual framework or practical model to guide data analysis (DiBernardino, 2011; Schiemann et al., 2017).

Gather and analyze the data. The team needs to determine the type of data required to answer the research question. The team should confirm what datasets are needed, if they have the data and if not, how to obtain the data. For success, the HRA team needs to focus on what is important to evaluate and is required to inform decision-making instead of what is easy to measure (Fred & Kinange, 2015). The team should base HRA on agreed well-defined metrics that answer the questions, reveal changes in organizational trends, or establish the connection between HR and business results (Handa & Garima, 2014; Higgins, 2014; Sant, 2016). The team should also agree on the business performance metrics they will use to test their HRA models. Even though big-data are vital facilitators of HRA, the operational context and research question might not require big data. Welbourne (2014) posited that small, simple data could lead to the significantly improved results in many organizations.

Because HRA is context specific as noted previously in this study, the HRA team needs to decide the statistical analytical methods that will produce the desired results and answer the question. A common mistake is to allow data or technology determine the approach (Ames, 2014). Angrave et al. (2016) proposed HRA is the result of careful empirical analysis using advanced statistical and econometric techniques that move beyond the analysis of the correlation between variables to using experiments and quasi-experiments to identify how human capital inputs affect the performance of the organization. The HRA team should analyze the data to discover trends, correlations and

new patterns previously unknown to gain deeper understanding of the problem. Krishnamurthy and Desouza (2014) advised the HRA team should use methodological rigor grounded in sound theories, concepts or models and be transparent about the data analysis process to ensure valid conclusions.

Disseminate results. HRA is still a new concept in many organizations, and not many people understand it. In presenting the results, the team should ensure the results are simple and understandable by line managers. Hirsch et al. (2015) emphasized that presentation is critical and half the work of successful HRA is the dissemination and socialization of the results. Scholars advised that to gain acceptance, the HRA team should create a simple, yet compelling, message for managers throughout the organization using visualization techniques to tell compelling stories that evoke personal connections (Green, 2017; Lipkin, 2015; Schiemann et al., 2017).

Implement, evaluate, and adjust. The ultimate objective of HRA should be to compel transformation. HRA cannot be successful unless the users accept the insights provided and use them for making decisions. Boudreau and Cascio (2017) suggested that users must believe the HRA team's suggested outcomes are significant and compelling enough to merit attention or action and HRA should make them appreciate the implications of their actions or decisions. Depending on the possible impact and risks involved in the decision, the company might conduct a pilot to test the conclusions before going company-wide. The results compared to the prior-determined metrics will inform the need for adjustment or scale-up.

HRA Best Practices

During the HRA implementation process, researchers and practitioners identified certain important issues companies need to consider and incorporate to ensure best results.

1. Ease into people analytics, using necessary time and effort to gain employee and management acceptance with the objective of making analytics part of the corporate DNA (Ames, 2014; Colegrave et al., 2016; Fenzig, 2015; King, 2016; Lipkin, 2015). Ensure the HRA team has comprehensive understanding of the business, its facilitators, and problems and keep people as the focus of HRA (DiBernardino, 2011; Green, 2017; Heuvel & Bondarouk, 2017; Levenson, 2017).

2. Ensure adherence to laws and regulations, develop policies to ensure safeguarding privacy, develop data governance and security plans, and maintain ethical responsibility (Fenzig, 2015; McGuire & Ladd, 2014; Patre, 2016).

3. Back-test the impact of your analytical models. The average age of models in consumer analytics is two years and while this might be different with HRA, there is need to constantly test because of the high-risk level of any potential impact (Baesens et al., 2017; Colegrave et al., 2016).

4. Get the basics right; credible integrated data are key. Develop a single platform for integrating and analyzing data from all sources accessible to HR and other stakeholders and take a long-term investment view of analytics (Collins et al., 2017; Green, 2017; Handa & Garima, 2014; Lakshmi & Pratap, 2016; Reddy & Lakshmikeerthi, 2017; Zhang & Bramwell, 2016).

5. Adopt change management strategies and communicate successes internally and

externally (Kaur & Fink, 2017; Lam & Hawkes, 2017; Togt & Rasmussen, 2017).

Gaps in Literature

There was limited empirical and peer-reviewed literature on HRA. Nevertheless,

the available literature provided useful insights into the rationale and logic behind HRA

and accounts of companies who have implemented HRA successfully. However, as noted

by Marler and Boudreau (2017) most of the literature on HRA is not empirical and not

based on standard scientific qualitative research protocols. Most of the literature were

case studies for descriptive and definitive purposes rather than for inductively identifying

relationships between HRA constructs and business performance. Rasmussen and Ulrich

(2015) stated the evidence of the efficacy of HRA is limited; noting that most of the

available literature is published or sponsored by consultants with commercial interest in

the HRA market. Rasmussen and Ulrich further observed that most of the available case

studies focus on the application of HRA in a narrow HR domain, mostly recruiting or

turnover prediction.

Another gap in the literature was most of the articles did not clarify the praxis of

HRA nor specify a process for implementing HRA to reap the proposed competitive

advantage. Angrave et al. (2016) stated that the available literature focuses on the

normative subject of what should be accomplished regarding HRA rather than the

interpretive and analytical issues of how to apply HRA, the expected results and in what

contexts. Angrave et al. suggested the HRA praxis is concealed in the literature for trade

confidentiality. However, the result is while the literature creates interest in HRA, HR

managers searching the literature do not get the information required to implement HRA. This study seeks to provide practical information regarding strategies HR managers have used to implement HRA to reduce these gaps in the academic and professional literature on the topic.

Transition

In Section 1 of this doctoral study, I provided the background of the study, the problem statement, the purpose statement, the nature of the study, research questions, and the conceptual framework. I explained the operational definitions and discussed the assumptions, limitations, and delimitations of the study. I conducted an extensive literature review of the topic, including HRA models, uses, procedures, best practices, and explored the conceptual framework; the contextually based human resource theory (CBHRT). In Section 2, I explored the role of the researcher, study participants, the research methodology and design, ethical procedures, data collection, and analysis. Section 3 contains an overview of the study, methodology, findings, and interpretation of the study.

Section 2: The Project

I decided to use a qualitative, multiple case study for this dissertation, and this section provides information on the project methodology. This section includes the purpose of the study, a description of the researcher's role, and information on participant selection. I discuss the methodology, project design, data collection methods, and the study reliability and validity.

Purpose Statement

The purpose of this qualitative, descriptive multiple case study was to explore the strategies HR managers used for implementing HRA to improve business performance. The targeted population for the study included five HR managers in Washington D.C., United States and Lagos, Nigeria, who had successfully used HRA to make strategic decisions. More HR practitioners and company leaders in the United States and Nigeria may be motivated by this study to implement HRA suitable for their national context. The implication for social change is improved labor productivity from more resourceful HR management.

Role of the Researcher

The researcher performs critical roles in all stages of qualitative research. The researcher's responsibilities include methodology and design selection, selection of participants, data collection, and analysis, as well as interpretation and reporting of themes (Sanjari et al., 2014). I developed appropriate research questions aimed at providing information on the topic and decided to interview people with a working knowledge of the subject to gain an understanding from their experiences. I was the

primary data collection tool and organized semistructured interviews with HR managers. I observed the HR managers at work and reviewed documents relating to the topic available in the participants' organizations to ensure data saturation.

During a qualitative study, the researcher collects data from multiple sources, including interviews and narratives transcribed to describe the experience. Personal data collection makes the researcher a mediator between the participant and the audience (Sanjari et al., 2014). Marshall and Rossman (2016) suggested that qualitative research is subject to the researcher's annotations and analytical abilities. While reviewing the literature on a topic, there is the possibility of the researcher forming opinions and biases. The objective of data collection in qualitative research is to encourage the participants to reconstruct their experiences in their own words (Yin, 2018). The researcher must ensure personal biases do not dominate the study to ensure validity and reliability. Therefore, it is critical for a researcher to strive for objectivity in data collection and analysis.

During the process of reviewing the literature, I gained a deeper understanding of the benefits, challenges, methods, and limitations of HRA. I am an HR practitioner with interest in HRA, and I work in a data-driven environment. This interest is a possible bias, and researchers should identify and discuss how such interest or prior association might influence the research (see Marshall & Rossman, 2016). To remain impartial during data collection, I defined my opinions and preconceptions regarding HRA and remained cognizant of the need to stay objective throughout the study to reach an independent conclusion.

The 1974 Belmont Report summarizes basic ethical principles and guidelines to resolve challenges relating to research with human subjects (Department of Health, Education and Welfare, 2014). The Belmont Report advocates three main considerations for ethical research: respect for people, beneficence, and justice. These principles guided me in conducting the study. I used open-ended questions to allow the participants freedom of expression while using active listening techniques. Yin (2015) stated that skilled researchers should listen with their senses and ask questions to understand participants' innate motives and meanings. Using a protocol during the interviews enabled me to guide the discussions. Advocating the benefits of interview protocols, Yin noted that protocols direct the conversation, provide a mental framework for the interview, and create a sense of a formal inquiry that encourages participants to be more candid. By using an interview protocol (Appendix) with predetermined consistent questions to conduct interviews, my preconceived notions did not cloud the interaction. Recording the interviews ensured I understood and appropriately transcribed the participants' responses, and I used member checking to ensure accuracy.

Participants

The criteria for participant selection for this study was people working in the field of HR management who have working experience using HRA. The research design required purposeful sampling to identify participants who met the criteria to provide elucidation on the topic. Yin (2015) described purposeful sampling as a method of selecting participants deliberately to ensure the generation of adequate and relevant data for the study. HRA is a new practice, not yet adopted by many HR practitioners; a

random sampling method might not have provided the required practical knowledge on the subject.

Participants who met the criteria for participation were identified through my professional association networks in Nigeria and United States. From the literature review, I discovered that HRA is a topic that currently experiences a high-level of attention in the HR profession; therefore, I expected the associations would be interested in supporting the study for the benefit of advancing the HR profession. Email invitations were sent to HR managers identified on social media and association databases to seek participants with working experience of HRA. I obtained additional participants through the snowball sampling method by which identified participants who met the study criteria recommended other participants who might quality (see Robinson, 2014; Yin, 2018).

Yin (2018) noted that a researcher might need to conduct more than one interview with participants to attain data saturation and verify the accuracy of the interview report. Therefore, it was necessary to establish a cordial working relationship with the participants. Once I identified potential study participants, I contacted them personally to describe the purpose of the study, explained participation was voluntary, and informed them of strategies to retain their confidentiality.

Another ethical issue that disturbs many research participants is the possibility of misrepresentation. This challenge was mitigated by giving potential participants assurances that they would have the opportunity to check the interview report. Researchers have emphasized the need to provide adequate information to study participants before their agreement to participate (Robinson, 2014; Sanjari,

Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). By being open and transparent

regarding the study objective and methods, I developed trust with the participants to

encourage free and open discussions. Alby and Fatigante (2014) posited that disclosing

experiences, interests, and personal details builds a bond of intimacy between the

researcher and interviewee and encourages more open discussions.

Research Method and Design

I selected a descriptive qualitative multiple-case study design to explore strategies

used by HR managers for implementing HRA to improve business performance. After

reviewing the different research approaches, I considered a qualitative study the most

appropriate method. HRA is an evolving practice in HR and not yet widely adopted

(Jones, 2015; Lismont et al., 2017; Marler & Boudreau, 2017). Scholars have

recommended a qualitative approach for research topics having limited empirical

knowledge to enable investigation and exploration for elucidation on actual occurrences

and their contextual nuances (Bristowe, Selman, & Murtagh, 2015; Yin, 2015). Kahlke

(2014) noted that qualitative researchers do not use an established set of hypotheses or

theories for their studies. I chose the qualitative research method after considering the

unexplored nature of the research topic, the business problem, and lack of established

theories relating to the use of HRA.

Research Method

The main research methods are qualitative, quantitative, or mixed methods.

Bristowe et al. (2015) defined qualitative research as a method of inquiry by which

researchers seek to describe, explore, comprehend, and rationalize phenomena through

qualitative, nonnumerical data. The authors explained that quantitative research is an

approach used to understand a topic by quantifying it within a specific context, using

statistical analysis and extrapolating the results to a general population (Bristowe et al.,

2015). The research topic was the use of HRA in actual business situations unique to

every company and over which I did not have control. I did not use quantitative data nor

attempt to generalize the research findings to the general population because of the

contextual nature of HRA. The data required to address the business problem related to

real life experiences was not quantitative and could not be controlled, making a

quantitative approach incompatible.

Another factor I considered in selecting a qualitative approach was the small

number of users of HRA and limited literature on the topic. Yin (2015) suggested

difficulty in accessing an adequate sample of respondents and unavailability of sufficient

data series to determine appropriate variables as conditions that warrant a qualitative

approach. A mixed-methods approach combines both the qualitative and quantitative

approaches. The factors that made a quantitative approach unsuitable to address the

business problem also precluded using a mixed-methods' approach. I decided the

qualitative method was the correct method to explore this emerging trend and the

meaning and feelings of HR practitioners regarding HRA.

Research Design

The most used qualitative designs are case studies, ethnography, and

phenomenology (Bristowe et al., 2015; Yin, 2018). Bristowe et al. (2015) recommended

the use of case studies to explore the topic in-depth in a natural environment.

Ethnographic and phenomenological designs are suited for exploring culture and meaning attributed a specific phenomenon. Scholars have recommended using a case study design if the objective of the study requires addressing how or why questions, the researcher has minimal control over the situation, and the phenomena are contemporary in an actual context (Yates & Leggett, 2016; Yazan, 2015; Yin, 2018). The objective of this research was exploratory, making the case study the best style and the other designs unsuitable. My aim was to understand the how and why of HRA and its influence on business performance using a case study to obtain data from interviews with experienced users of HRA.

I decided to use a descriptive multiple-case study design for this study. Yin (2018) noted that case studies maybe exploratory, descriptive, or explanatory. Kahlke (2014) defined a qualitative descriptive study as research designed to produce a low inference description of a phenomenon. The objective is to seek an accurate accounting of the events and interpretative validity. Knowledge of HRA practice is limited; previous authors have noted a lack of standardization, and the process is complex. I used a descriptive approach to reveal the HRA process and the situational context in which HR managers apply HRA. Yates and Leggett (2016) noted that the research setting is critical to provide the context for a case study. Researchers have also suggested that HRA is context specific (Reddy & Lakshmikeerthi, 2017; Tableau, 2016), leading me to adopt a multiple-case study design to discover implementation strategies for HRA in different contextual settings in the United States and Nigeria.

One of the challenges with case study research is reaching data saturation due to small sample sizes. Yin (2018) advised that researchers should obtain data for case studies from manuscripts, records, interviews, direct and participant observation, and physical objects, and researchers should use multiple sources. Using various sources of data in a case study and discovering a convergence of the evidence displays quality and rigor with the research effort. In this study, I collected data through interviews, participant observation, and review of published documents. Yazan (2015) opined that using multiple sources of data assists the researcher to record the case in its complexity and entirety.

Triangulating data from multiple sources will create a more convincing study and assist data saturation. Scholars have recommended using data triangulation to ensure data saturation (Fusch & Ness, 2015; Yates & Leggett, 2016). Fusch and Ness (2015) posited that data saturation would vary across research studies; but generally, a researcher can assume the point of data saturation by lack of new data, lack of new themes, no new coding, and the ability to repeat the study. I ensured data saturation by interviewing five HR managers in different companies and reviewing available documents until no new themes appeared. These combined evidence collection methods produced quality, detailed, and rich data from exploring different levels and perspectives of the topic and supported the study validity.

Population and Sampling

The goal of this research was to understand how the use of HRA can improve business performance. The nature of the topic limited participants to employees who

were responsible for human resource management in a business organization and who

had working experience with HRA. Scholars have suggested that the successful use of

HRA requires a deep understanding of the business' operations and context (King, 2016;

Minbaeva, 2017; Schlechter, Syce, & Bussin, 2016). The objective of qualitative inquiry

is to contribute to the knowledge of the research topic by gaining in-depth understanding

(Palinkas et al., 2015; Yin, 2018). The population used for the study must have extensive

experience of the topic to make useful contributions to the body of knowledge. I was

seeking employees in an HR functional role with more than five years' experience who

had a valuable understanding of the company dynamics. The study population consisted

of HR managers from Washington D.C., United States, and Lagos, Nigeria.

　　　　Researchers opined there is no standard regarding the minimal sample size for

qualitative studies (Johnson, 2015; Yin, 2018). Various scholars have suggested different

participant numbers are adequate: Johnson (2015) suggested 20 to 30 participants; Yin

(2018) suggested 1 to10 participants while Gentles, Charles, Ploeg, and McKibbon

(2015) suggested 4 to 10 participants are adequate. Authors have agreed researchers

should determine sample size by the ability to reach data saturation (Etikan, Musa, &

Alkassim, 2016). Yin (2018) posited that two or more cases in a multiple case study

could achieve data saturation. Malterud, Siersma, and Guassora (2016) advised that

researchers should determine sample size based on information power; therefore, the

more relevant information the sample holds, the lower the number of participants

required. The proposed sample size of five HR managers fit the range suggested by

scholars, and because the participants were conversant with the subject information power ensured data saturation.

Yates and Leggett (2016) emphasized the importance of the research settings in qualitative research. I intended to interview the participants in their work environment to permit me to observe them in their natural settings. Where personal interviews were not possible, Skype or telephone interviews were used as alternative means of data collection. A review of relevant published documents on each company assisted me to gain further understanding of their business operations and provided more background for the study and conversations.

Ethical Research

Qualitative research creates ethical challenges for the researcher and participants throughout the research process. These include preventing researcher bias, avoiding deception, ensuring accuracy, protecting the participants by maintaining confidentiality, anonymity, obtaining their informed consent, addressing risks, and an ethical review of research proposals (Dongre & Sankaran, 2016; Mooney-Somers & Olsen, 2017; Sanjari et al., 2014; Yin, 2018). Yin (2018) stated that qualitative researchers exercise their discretion in the study design, and case study researchers are at risk of using the case study to corroborate a predetermined position. During the research, the researcher and participant may develop relationships capable of influencing the research process. Such challenges require researchers to adopt the highest ethical standards in their work.

Professional associations usually have ethical standards enforced by an Institutional Review Board (IRB) to ensure ethics in research, mainly relating to human

subjects. To provide assurance this study met ethical standards, the Walden IRB reviewed the research procedures and approved data collection. The IRB members reviewed participants' selection, data collection, participants consent, data integrity, and confidentiality to assess the risks and effectiveness of mitigation strategies. Upon approval, the IRB provided an approval number for inclusion in this study. The IRB approval number for this study was 11-09-18-0543529.

Once I identified participants who met the selection criteria, I sent them an invitation and information letter by email explaining the purpose of the study, the benefits, research processes, confidentiality measures, withdrawal procedures, and interview checking process. The email confirmed findings would be shared with participants; however, there was no compensation for participation. Researchers have advised providing as much information as possible before seeking consent to participate in research (Robinson, 2014; Sanjari et al., 2014). After IRB approval, I sent the participants an approved consent form for signing. The consent form provided further details including the nature of their participation, risks of participation, right to withdraw at any time by sending me an email, and the method for ensuring confidentiality. Sanjari et al. (2014) noted that the principle of informed consent was vital to ethical research and imposed a duty on the researcher to inform research participants of all facets of the research in a way they understand.

Ethical research requires protecting participants from harm, protecting their privacy, and keeping the discussions private. Participants were informed of strategies to maintain their privacy to build trust and encourage open and frank discussions. The

participants selected the interview venue to ensure privacy and for their comfort and convenience. As suggested by Marshall and Rossman (2016), alphanumerical codes to identify the participants instead of their names will keep participants' identities private. Grossoehme (2014) noted the need to safeguard privacy throughout data collection, transcription, storage, and analysis processes. My plan was to keep all hardcopy documents relating to the study in a locked office safe and electronic data stored on my password protected computer with a copy retained on a password protected external hard-drive kept in the safe. As required by Walden IRB standards, I must retain all research documents for 5 years and destroy them by shredding hardcopy and deleting softcopy files after the allotted period.

Data Collection Instruments

I was the primary data collection instrument for this study by conducting semistructured interviews with five HR managers, observing the participants at work with HRA, and reviewing available published company documents. Researchers usually obtain data for qualitative studies from documents, archival records, direct and participant observations, artifacts, and interviews (Cronin, 2014; Yin, 2018). Data collection started with visiting the participant's websites and reading published materials on the company to understand the operational environment.

The next step was holding semistructured interviews with each participant using nine open-ended questions to frame the discussions. Semistructured interviews and open-ended questions provide the participants freedom of expression when discussing the topic which supports the objectives of qualitative research; to obtain the participants

perspective of the subject (Yin, 2015). The interview process is challenging because the researcher is attempting multiple tasks at the same time; asking questions and follow-on questions when necessary, taking notes, as well as listening attentively. As advised by Yin (2018), the use of an interview protocol to facilitate the interviews ensured I followed the same procedure and asked all participants the same questions. An interview protocol is a set of procedures for conducting interviews and contains opening comments designed to gain rapport with the participant, the interview questions, post-interview comments, and exit procedures (Dikko, 2016; Yin, 2018). The interview protocol is a means for increasing reliability of a case study (Cronin, 2014; Yin, 2018). The interview protocol for this study was included as the Appendix.

During the interviews, with the consent of the participants, the discussions were recorded to ensure accurate transcription. After the interviews, I transcribed the interviews and checked them and compare to my interview notes. After the transcript review, the report was shared with the participants for their comments. Cronin (2014) opined that to ensure trustworthiness and rigor in qualitative studies; the researcher must ensure the data are credible and factual representations of the participants' opinions and experiences. The process of member checking with the participants ensured the collected and transcribed data were accurate and without prejudice. Triangulation by multiple data collection tools is another method researchers use to improve reliability and validity (Cronin, 2014; Yin, 2018). Data from multiple sources, including reports and documents shared by participants', published documents, as well as observation, facilitated validation.

Data Collection Technique

I started collecting data after I received IRB approval and obtained a list of possible participants in Lagos and Washington DC from HR professional associations and HR social media groups. Prospects received an email explaining the purpose of the study and inviting those who had experience with HRA to contact me. The respondents who met the participation criteria received an information pack as advised by Maramwidze-Merrison (2016). The information packet contained a detailed introduction to the study, the expected outcomes, and expectations of the interviewee. The information pack included the interview questions, consent form, and emphasized the participants' rights to withdraw and to review the data before publication. This detailed information pack ensured the study met the informed consent standards of full disclosure and enabled the development of a rapport with the participants (see Dikko, 2016; Mikecz, 2012). The principle of informed concept requires researchers to advise interviewees of all aspects of the study, enabling them to reach a decision based on all available information (Sanjari et al., 2014; Yin, 2018). Once I received the participant's consent, we discussed and agreed methods, times, and locations for interviews.

Where possible, the semistructured interviews were face-to-face; however, we used the Internet and Skype when personal meetings were not possible. Yin (2018) suggested interviews are important data sources for case study research as they enable the researcher to capture the participant's experience, explanations, attitude, and behavior, as well as providing insight into the essential contextual setting. Scholars endorsed Internet interviews using applications like Skype that offer audio and video for research

interviews as they also allow meaningful discussions and interaction, as well as enable researchers observe participants' nonverbal and social cues (Janghorban, Roudsari, & Taghipour, 2014; Oates, 2015; Yin, 2018). Using an interview protocol (Appendix) to guide the interviews ensured consistency in the discussions with all participants.

Yin (2018) suggested that interviews had the advantage of providing focused, insightful information, allowing for obtaining the participants' personal views, and obtaining any required clarification. However, Yin noted the disadvantages of interviews to include possibility of bias from the researcher or participants, inaccurate recording of discussions, and reflexivity. Another challenge with interviews is striking a balance between leading the discussion while encouraging the participants' freedom of expression. The advantages of online interviews include reducing time, eliminating financial and geographical location constraints, as well as encouraging a transparent presentation of the participant's real nature because of the deemed anonymity of online interactions (Seitz, 2016). The disadvantages include loss of vital information from the participant's natural environmental settings. Scholars have proposed research settings provide significant information, particularly in high-context cultures and environments (Yin, 2018; Mikecz, 2012). Seitz (2016) opined that the relative anonymity and lack of intimacy of Internet interactions makes it unsuitable for interviews on sensitive matters while Janghorban et al. (2014) opined that the anonymity could increase the absence rate of participants compared to personal interviews.

The interview protocol enabled me to mitigate the inherent risks with interviews, guide the discussions, and establish a bond with the participants. The meetings were

recorded with permission and transcribed after making backup hard and soft copies. The participants reviewed the transcripts to ensure accuracy while the use of data triangulation assisted to mitigate the risks of bias and reflexivity. I kept a personal reflection diary to record my feelings and thoughts during the study. As suggested by Yin (2015) the reflection diary is essential in qualitative research to capture the researcher's reactions and tendencies since the researcher is immersed in the study and forms relationships with the participants.

Data Organization Techniques

Proper data organization assists the researcher and improves the quality of the study. Qualitative researchers use data from multiple sources resulting in extensive data that must be appropriately organized to enable them retrieve and use the data efficiently (Marshall & Rossman, 2016; Yin, 2018). My various data sources included data from interviews with HR managers, documents, and observations which were stored as transcribed notes, electronic recordings, a reflection diary, notecards, and documents in labeled boxes. Scholars have advised creating a case study database to catalog all data collected in an orderly manner (Snyder, 2012; Yin, 2018). Each participant had a file identified by a unique alphanumeric code and data were grouped by participant using a chronological numeric sequence for ease of reference. Hardcopy documents were scanned and converted into an electronic format, and all data was stored on a password-protected computer with backup copies placed in a locked office safe. I was required to keep all data for 5 years as mandated by Walden IRB.

Data Analysis

In qualitative analysis, the researcher collects different types of data and studies them to present meaningful information relating to the study topic. Data analysis is the process by which researchers examine, categorize, sort, and test the data to produce empirically based themes (Chowdhury, 2015; Yin, 2018). Data analysis entails more than synthesizing the data and requires rigorously seeking patterns and trends to support realistic findings from the fragmented, disparate data. There exist different data analysis strategies, and scholars have recommended data triangulation is most appropriate for case studies (Cronin, 2014; Yin, 2018). Researchers use triangulation strategies to promote research quality by using multiple sources of data, multiple analysts, various theories, or different data collection methods to develop a comprehensive understanding of the research topic (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014; Gringeri, Barusch, & Cambron, 2013). Carter et al. identified four types of triangulation: (a) method, (b) multiple investigators, (c) theory triangulation, and (d) data source triangulation.

For this descriptive multiple-case study, I selected method and data triangulation analysis. Carter et al. (2014) described methodological triangulation as the process of using at least two types of data collection methods to address the research topic while data triangulation is using multiple data sources to ensure consistency of the data. I used different data collection methods such as interviews, observation, and document reviews to collect data from various sources to meet triangulation requirements.

Actual data analysis begins by listening, transcribing, evaluating, and coding the recorded interviews and observations and categorizing them into themes relating to the research questions (Chowdhury, 2015; Yin, 2018). My approach was to read and examine the data intensively to familiarize myself with the contents. Although the NVivo^{TM} software I used for coding has data transcription capacity, manually transcribing the interviews enabled me gain intimacy with the material. Some researchers have advised on manual transcription, which allows the researcher to reflect, re-examine, and listen deeper to the information providing familiarity and richer contextualization (Cleary, Horsfall, & Hayter, 2014; Marshall & Rossman, 2016). A thorough review of all the data enabled me explore themes, codes, and subcodes and examine all alternative understanding. During coding using NVivo™ software, participants' anonymity was maintained by assigning specific names to the categorized data according to the participants' alphanumeric codes. Comparison of the emerging themes from the interviews to the documents and my observation notes allowed me to confirm the point of data saturation when there were no new themes (Fusch & Ness, 2015).

Reliability and Validity

Qualitative researchers must exhibit rigor in their studies and ensure quality by establishing the credibility of their research findings. Some scholars have criticized qualitative research for being unscientific (Cronin, 2014). The quality of the research work is essential for acceptance and to encourage adoption of the results. Scholars judge the value of qualitative research by reliability, validity, and transferability (Anney, 2014; Connelly, 2016; Noble & Smith, 2015).

Reliability

Reliability of qualitative research relates to its consistency and dependability of the results (Noble & Smith, 2015; Yin, 2018). The data, methods, analysis, and processes should be consistent to permit another researcher examining the data in the same context to obtain comparable results. Establishing the reliability of a study involves transparency in the entire research process including acknowledging reflexivity and bias (Hammarberg, Kirkman, & De Lacey, 2016; Noble & Smith, 2015). Hammarberg et al. (2016), advised researchers can establish trustworthiness by creating a robust description of the research processes to enable a reviewer to understand and acknowledge the logic of the methodology and processes leading to the results. Qualitative researchers establish the reliability of their results by verification (Lub, 2015; Park & Park, 2016).

Methods of increasing reliability in qualitative research include using protocols, triangulation, peer de-briefing, audit trails, and member checks (Cronin, 2014; Hammarberg et al., 2016; Lub, 2015; Smith & McGannon, 2017). The strategies I used to establish the rigor of this study included developing and applying detailed protocols for consistency in approaches. Another tactic was to document the logic of all significant decisions and procedures in the study; creating a log a reviewer can follow to access reliability. Scholars have suggested a document trail and keeping meticulous records facilitated the reliability of qualitative studies (Lub, 2015; Yin, 2018). Creating a case study database and member checking were other strategies I used to improve the reliability of my study.

Validity

Validity is a technique for confirming integrity of research results. Researchers consider validity (internal and external) as a means of testing the rigor and value of qualitative research (Yates & Leggett, 2016; Yin, 2018). Leung (2015) defined validity in qualitative research as a measure of the suitability of the research tools, methods, design, processes, and data. Authors consider validity to mean the credibility of the study (Connelly, 2016; Hammarberg et al., 2016; Munn, Porritt, Lockwood, Aromataris, & Pearson, 2014). Validity in qualitative research refers to the extent the findings accurately depict the study subject affecting the confidence in the veracity of the results (Munn et al., 2014; Yates & Leggett, 2016). Credibility is essential for quality assurance of a study as it establishes the logical sequence from research design to data collection and analysis and the results.

Scholars posited that a study is credible when its results, presented with sufficient rich contextual description are recognizable as a truthful and holistic depiction of the constructs of the study (Hammarberg et al., 2016; Smith & McGannon, 2017). Techniques suggested for confirming credibility and validity in research include member checks, prolonged engagement, triangulation, reflective journaling, and peer debriefs (Connelly, 2016; Lub, 2015; Smith & McGannon, 2017). The strategies I proposed were member checking, triangulation, reflective journaling, and prolonged engagement. I aimed to achieve data saturation by using different sources of data and different data collection methods and extensively reviewing the data. Hammarberg et al. (2016) defined data saturation as the point the researcher encounters no new data, repetition, or when the

data stops presenting new focal themes. Prolonged engagement with participants and an extensive review of all materials ensured I achieved data saturation.

Transferability of qualitative research assumes reliability and consistency: implying that in the same context and with the same data, another researcher would derive comparable results. The generalization objective of quantitative research may not be possible with qualitative research because qualitative research is naturalistic and contextual (Lub, 2015). However, transferability refers to the extent scholars can transfer the results to other contexts with other respondents (Anney, 2014). As suggested by Anney, I planned to facilitate transferability by including prolific descriptions and using purposeful sampling. Providing ample contextual descriptions will enable readers appreciate the research findings and understand the contextual nuances, allowing them to apply the conclusions in other suitable contexts.

Confirmability is another aspect of validity. Connelly (2016) defined confirmability as the objectivity or the degree the findings are consistent and replicable. According to Anney (2014) confirmability seeks to establish that research findings are a logical conclusion from the data and analytical process and not a result of the researcher's agenda. The characteristics of qualitative research are that it is subjective, unstructured, inductive, value-laden, and biased, with the researcher interacting with the subjects (Park & Park, 2016). Because of these characteristics, a qualitative researcher may deviate from scientific standards, casting doubts on the integrity of the research findings. By ensuring confirmability, or neutrality of the results, the qualitative researcher eradicates such doubts and proves the study is worthy of acceptance.

Researchers identified methods that support confirmability such as audit trails, research notes, peer-debriefs, member-checking, and keeping reflexive journals (Anney, 2014; Connelly, 2016). Munn et al. (2014) suggested that researchers could promote confirmability by explaining the rationale for the study methodology and design, revealing biases and prejudices, as well as being transparent about inherent assumptions. I addressed confirmability in this study by providing a detailed audit trail accounting for all decisions relating to data collection and analyses. Anney (2014) opined that an audit trail offers visible proof, from the process and product, the study findings are not the result of the researcher's expectations or desires. I kept detailed research notes and a reflexive journal to account for my personal opinions while defining the role of the researcher in the study and revealing all possible bias. I used data and method triangulation strategies to seek convergence of the data to strengthen the confirmability of the study. Anney (2014) suggested that peer-debriefs facilitate confirmability and I consulted professional colleagues and other scholars to review my work before developing the study conclusions.

Summary and Transition

In Section 2, I restated the purpose of the study and discussed the role of the researcher, study participants, the research methodology, and data collection and analysis processes. I also reviewed the ethical dimensions of the study and plans to ensure validity and reliability of the research. In Section 3, I will present the study finding and discuss the implications for professional practice. In addition, Section 3 will include my

reflections, influence on social change, recommendations for further study and

conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative, descriptive multiple case study was to explore the strategies HR managers use for implementing HRA to improve business performance. The data collection methods I used included semistructured interviews, review of company documents, and material from company websites. I recruited participants with experience in using analytics in the HR function to provide the information required to answer the research question. The use of different data collection methods, data triangulation, and member checking ensured validity and data saturation. I discovered the research findings supported the literature and fundamental concepts of the CBHRT. I identified four main themes from the data analysis: (a) HRA must align with organizational strategy, (b) the need for understanding HR metrics and how HRA insights improve company performance, (c) significant influencers of HRA adoption, and (d) barriers to HRA adoption. These four themes provided answers to the overarching research question.

Presentation of the Findings

The central research question of this study was as follows: What strategies do HR managers use for implementing HRA to improve business performance? I sought participants with experience using HRA in Nigeria and the United States and sent out invitations to prospective participants through social media and professional networks. Once the participants confirmed willingness and I confirmed their eligibility, I obtained informed consent from five HR managers and scheduled interviews. I interviewed the HR

managers, transcribed the interviews, and sent the transcripts to the participants to check

accuracy. Scholars have suggested that a sample size of 1 to 10 participants is adequate

for qualitative case study research (Gentles et al., 2015; Yin, 2015). The sample size of

five was sufficient, and I reached data saturation by the fifth interview as no new themes

emerged. I imported the transcripts into Nvivo 11 for analysis and discovered four themes

discussed in the next section. To ensure confidentially, I used codes for the participants

identified as P1, P2, P3, P4, and P5.

Theme 1: HRA Must Align With Organizational Strategy

The purpose of HRA should be to provide insights that inform better decisions in

an organization. HRA should not be focused on just gathering information but on

addressing a compelling business problem, and such issues will derive from the

organization's strategy and objectives. Organizations gain advantages by developing

capabilities to enhance productivity and profitability and to increase shareholders' value.

The company strategy should focus on improving its competitive capabilities and HR

managers should align HR strategy and HRA to deliver value. Vidgen et al. (2017)

opined that analytics should align with business strategy to provide solutions to business

problems in a systematic and coordinated manner.

When discussing strategies for implementing HRA, all five participants

emphasized the need for HRA alignment with business strategy. For example, P4 stated

that HRA is not about collecting interesting data but collecting data that helps us

understand what is going to affect the organization positively. P4 said that the essence of

HRA is to help achieve strategy and accomplish organizational goals. P3 noted,

HRA must start from the business strategy itself and what the business is trying to

achieve. If the strategy is expansion, then the analytics will be different from a

business focused on reducing costs just as they would be different in a business

focused on delivering services.

Reiterating this theme, P1 advised that HRA must align with organizational strategy and

objectives while P2 stated, "You should always start from what is the business need;

what question are we trying to answer."

This theme on the need to align HRA to organizational strategy was pervasive in

the literature reviewed and supported by the interviews. Researchers have proposed that

HRA should derive from the overall corporate strategy and take due cognizance of the

operational environmental context (Akter et al., 2016; Rasmussen & Ulrich, 2015; Ulrich

& Dulebohn, 2015). HRA must focus on addressing a specific issue as this will determine

the type of HRA and data required to address the issue. HRA would not add value by

providing insights on a topic that was of no interest to company leaders. Reiterating this

point, P3 remarked that the specific long and short-term goals of the organization at any

point in time determine the HRA strategy to deploy.

The business need determines the HRA objective, which in turn guides the HRA

data strategy. P4 stated that once you identify the goals, then you decide the type of data

you need to collect to meet those objectives. P2 explained,

The first strategy is to have a clear and unambiguous understanding of the

business question you are trying to answer. Once that is clear, you begin to ask

what bodies of data you need to answer the question and where are those bodies

of data.

Providing a practical example, P3 said,

> You need to spend the time to understand the business and its strategy. For instance, if your business is focused on selling off its assets and you are coming up with HRA concentrating on growing the business, then you do not understand the business needs. If the focus is recruiting young people because most of your senior engineers will soon be retiring and you are putting a lot of attention on measuring the challenges of those older people who will soon be retiring instead of the inflow of new people, then you have got it wrong.

The process of aligning HRA to company strategy creates value by addressing a specific business need and gathering information that can provide insights to resolve that need. Achieving alignment requires a clear understanding of the business strategy as well as the operational context. McIver, Lengnick-Hall, and Lengnick-Hall (2018) suggested that HRA should discover, diagnose, and enable understanding of business problems to design evidence-based solutions that suit dynamic business needs and environments. Starting with a clear objective allows purposeful gathering of relevant data capable of addressing the issue. P2 suggested starting with a clear objective or developing a theory about the question you are trying to answer and testing and disproving that theory to answer the question.

The first theme aligns with the literature and CBHRT, which propose aligning HR strategy with the operational context through the force field analysis. P1 stated that HRA must be tailored to suit the needs of the organization while P2 said that there is no

standard approach. Using a strategic method for HRA improves chances of acceptability while the ability to provide insights into relevant business challenges improves HR's credibility (Dlomu & Spears, 2015; Patre, 2016). Alharthi, Krotov, and Bowman (2017) purported that establishing a connection between analytics and the overall company strategy facilitates, accelerates, and embeds the practice in organizational culture. Supporting this position, P1 emphasized the importance of identifying a major unique selling point to establish a business case on how analytics can drive performance. P1 said that a compelling business case would make analytics acceptable to everybody.

Theme 2: The Need for Understanding HR Metrics and How HRA Insights Improve Company Performance

Supporting the claims discovered in the literature review, all participants agreed that HRA improves company performance. Some of the ways HRA improves company performance identified from the literature include improved workforce cost control, more effective HR decisions, increased employee engagement, and generally focussing HR strategy on business outcomes (Fenzig, 2015; Jones, 2015; Kapoor & Kabra, 2014; Lal, 2015; Muiruri et al., 2015; Reddy & Lakshmikeerthi, 2017). All participants agreed that HRA is a value-adding tool that improves company performance by using data to support decision making, thereby reducing costs and improving the quality of management decisions. P3 disclosed that the ability to collect data, organize them, and find patterns in them to enable you make an informed decision enhances the quality of your management. P4 suggested that decisions based on data have a greater chance of being well implemented and achieving the intended results compared to decisions taken on the spur

of the moment or faulty assumptions, while P1 concluded that HRA provides a competitive advantage.

However, both scholars and the study participants cautioned that it is not HRA on its own that delivers value but its interpretation in relation to the organization's context. McIver et al. (2018) cautioned that concentrating on isolated metrics without considering relevant contextual factors leads to suboptimal decisions. Levenson and Fink (2017) opined that the mere use of HR metrics to measure HR activities does not lead to useful insights that enhance performance. The proponents of CBHRT recommend that HR managers should understand the economic, technological, cultural, political drivers, and influencing factors of their operational environment as these factors affect the proposed responses. Value creation with HRA requires HR managers to understand that HRA creates value by giving meaning to the data after considering all other relevant factors affecting company performance. The manager only generates insights that provide a competitive advantage when HR data are integrated and analyzed with other relevant data (Arora & Rahman, 2016).

The participants reiterated the second theme and collectively agreed that data are not automatically information; they need a process of analyzing and contextualizing to ensure they become reliable information that decision-makers can use to make informed decisions. P3 defined HRA as using available data and organizing them in a way that gives the data meaning for management decisions. P3 explained further that you start with data, turn the data into something measurable (a metric), and then you combine a set of metrics to get analytics. P2 said that the HR person needs to take time to understand

HRA, mostly from the perspective of not only what they measure but from the perspective of why you need them. P4 cautioned against looking at data and jumping to conclusions without further investigation to understand the meaning behind the numbers.

Emphasizing the difference that contextualization can make to data, P5 explained the context reaffirms the data as the data alone may not reveal the whole story. P5 provided an example of a company that was unsuccessful in its attempt to introduce insurance for mobile phones based on data relating to the potential of the Nigerian mobile phone market. P5 noted that the company failed to consider the social context because the average Nigerian is more stoical and places insurance as a low priority.

.   In addition to understanding how HRA improves company performance, HR managers must also understand HR metrics, the business, and the software they are using to derive metrics. P2 recalled an experience when a recruitment algorithm introduced an unintentional bias against women in candidate selection. Highlighting the danger of not having a thorough understanding of HR metrics and HRA, P1 recounted a situation in a company where attrition rates and replacement rates were increasing, but recruitment costs were reducing. P1 said that the abnormality led them to discover the HR software algorithm was faulty. Failure in using correct measures for metrics or lack of understanding of the basis of the calculations can create problems.

These scenarios reinforce the sentiment expressed by some authors against using data alone to make HR decisions (Green, 2017; Lipkin, 2015; Staney, 2014). As stated by P4, data alone does not tell the entire story nor add value. HR managers must combine their understanding of people, knowledge of the business context, and proper analysis of

data to support HR decisions. HR managers use HRA to improve company performance through the combination of all these factors.

Theme 3: Major Influencers of HRA Adoption

As part of this study, I explored how the participant's companies operational contextual factors influenced the adoption of HRA. I used CBHRT as the conceptual lens to examine this topic because some scholars have suggested HRA is context specific (Reddy & Lakshmikeerthi, 2017; Schiemann et al., 2017). CBHRT constructs suggest the factors that influence HRA include the PMT (product/market/technology), SCL (social/cultural/legal), the company's historical antecedents, and the company's dominant coalition. From the literature reviewed, the primary influencer of HRA adoption was the PMT dimension or responses aimed at increasing competitiveness. PMT factors influencing HRA include availability of big data, advances in technology, competitive global markets, and HR management information systems (Andersen, 2017; Arora & Rahman, 2016; Du Plessis & De Wet Fourie, 2016; Madsen & Slåtten, 2017; Marler & Boudreau, 2017). Alharthi et al. (2017) surmised big data are the most important strategic asset similar in importance to gold and oil.

When responding to the question regarding what influenced the adoption of HRA in their organizations, the participants in both Nigeria and the United States referred to PMT, SCL, and dominant coalition factors. However, I identified factors CBHRT classified within the company configuration construct when I examined documents and public financial records on the companies. P1 stated that adoption of technology influences the use of HRA because if you are adopting technology, you should have

derivatives like data from it. P2 explained that people use analytics because they want to make better-informed decisions to thrive and survive by using data to minimize the costs of iterating and guessing what works. P4 suggested the use of HRA influences business financial outcomes and creates a competitive advantage through better planning and execution of decisions as well as enabling forecasting in a VUCA (volatile, uncertain, complex, and ambiguous) environment. P2 added,

> The people that are going to be your competitors are global players so if you want to play and do not want to be a low performing company, your aim should be to grow, thrive, and dominate. You have to make informed decisions; you cannot afford to gamble, iterate, waste money, or you will stunt your growth.

Factors classified within the CBHRT SCL dimension also featured strongly as influencing HRA in both the literature and the interviews. Factors affecting HRA found in the literature include attention generated by HRA system vendors and consultants (Madsen & Slåtten, 2017), legal regulation (Jones, 2015; Lakshmi & Pratap, 2016; Marler & Boudreau, 2017), and isomorphic pressures from the success stories of other big successful companies who use HRA. The influence of SCL factors was also conspicuous in the participants' responses. P1 is an HR consultant and stated most of the HRA projects he was involved in were the result of training on the value of HRA his firm delivered to companies, indicating HRA supply-side influence.

P3 suggested current trends in management and HR practice have a significant effect on HRA adoption. Explaining further, P3 said,

For example, some 15 years ago, everyone started talking about the diversity of

talent, and the critical diversity metrics are gender and age. To measure up to

diversity principles, you need to keep data and have metrics with respect to how

you are making progress with regards to diversity. You would also try and

convince business leaders that it makes sense to hire people with different

backgrounds by comparing your company to other companies who are more

diverse with higher productivity.

Supporting the view that current HR practice trends influence HRA, P2 said that

contemporary HR managers who are effective must be tech-savvy, data savvy, and have

financial acumen. He said they focus on delivering business results through people.

Therefore, the HR leaders of the future who are committed to achieving business results

through people are significant influencers of applying HRA.

Discussing the influence of the social dimension, P3 proposed that unusual social

trends might necessitate adoption of HRA. P3 noted sometime in the past people started

rejecting the company's employment offers leading them to use HRA to understand why

people were rejecting offers from the company, which was classified as an employer of

choice. Using HRA, he confirmed the issues were the insecurity in the region and fears

the company was a target of the Niger-Delta militants. Explaining how the legal and

regularity environment influences HRA, P3 suggested that changes in legislation

influence HRA as this determines what HR must track or what information HR is

required to provide to meet legal obligations.

All the participants identified company leaders as having a significant influence on HRA uptake. P5 identified a new executive leader as the main reason behind the implementation of HRA in the organization while P2 stated that the CFO and CEO were the primary influencers of HRA in their organization. P2 expounded,

> If the CEO is very data and numbers-focused and tends to make decisions based on facts as opposed to emotions, then he will be very influential in your adopting HRA. But if the CEO is more "gut-feel" and emotive, someone who is comfortable planning by the seat of his pants, then he may not be as enthused about going through the pain, efforts, and costs of putting in place a solution that enables him to get insights from HRA. He might be willing to make that kind of investment in finance but not in HR, so it depends on who is at the helm of affairs.

The literature and the research support the view that HRA is context specific and HR managers need to be aware of how the company's environment could influence HRA adoption. The operational context indicates the state of readiness for HRA and identifying the influencers in the organization gives the HR manager understanding of the stakeholders whose support is essential. Using a contextual approach will identify the critical success factors for proper HRA strategy development and implementation.

Theme 4: Barriers to HRA Adoption

The paradox of a low adoption rate of HRA despite scholars having proposed numerous advantages requires an analysis of the reasons or the barriers for adoption of HRA. Understanding the obstacles will assist those planning for HRA to plan how to

overcome these challenges. The main obstacles detected in the literature were lack of

resources, lack of managerial support, unconducive culture, lack of skills, and lack of

technology (Alharthi et al., 2017; Bagshaw, 2017; Ejo-Orusa & Okwakpam, 2018; Fink,

2017; Levenson & Fink, 2017; Reddy & Lakshmikeerthi, 2017; Vidgen et al., 2017).

Other scholars included the lack of standard HRA frameworks as barriers to HRA

acceptance (Angrave et al., 2016; Sharma & Bhatnagar, 2017).

   While the participants acknowledged all the barriers mentioned in the literature,

the lack of knowledge regarding how HRA adds value emerged so strongly that it became

a theme on its own. The high level of importance attached to this challenge is logical

because it affects all other factors relevant to HRA adoption. The HR manager who does

not understand how HRA adds value cannot convince leadership which will result in their

lack of support and failure to allocate needed resources for technology and skills

acquisition for HRA. P4 said that the inability to correctly put a value on data gathering

and analysis to generate analytics that will guide decision making is a barrier because

CEOs may not be willing to invest in what they do not value. P1 advised that the

knowledge around HRA is still evolving and a lot of people, even management, do not

have the full grasp of it; so, in implementing, your first strategy should be to build a

business case to let the stakeholders see the relevance. P5 added there are many ways

analytics can affect the bottom-line but what is difficult is how to express the quantum;

for example, it is difficult to say if we invest X dollars on analytics, we will get Y dollars

back on our bottom line. P2 stated that failure to convince leadership they will gain value

from HRA and that it will make a crucial difference to the company, means the project

will never get approved. P3 suggested many CEOs are still not comfortable with HR data, so you must convince them that HRA adds value.

Other barriers to HRA adoption that HR managers must overcome include the lack of skills by HR practitioners and data issues. Four of the participants mentioned lack of skills as a significant barrier to HRA. P1 suggested that the skillset required for HRA was a challenge for many HR practitioners. P5 held a similar view and said the skills needed for HRA could not usually be found in most traditional HR departments and require engaging someone from outside. P4 explained that the analytical skills needed were the ability to work with data, statistical analysis, economic parameters, and general numerical ability, which is not the forte of most HR professionals. P3 elaborated,

> Nobody loves numbers in HR. You must understand the kinds of people that come into HR are usually those who avoided numeracy right from primary school and studied humanities. They are not comfortable with numbers and so would look for other ways to present their information without analytics. Which is why, for example, engineers and mathematicians coming into HR do better at analytics than lawyers, sociologists, and political scientists.

The reality of these statements was made evident by the fact that of the five participants interviewed, three studied engineering, one studied veterinary medicine, and the other studied agriculture/animal sciences and all transitioned to HR later in their careers.

Another significant barrier to HRA mentioned by the participants was data. While the participants agreed that data required for meaningful HRA was a combination of internal and external data, there was a noticeable difference regarding data issues in

Nigeria compared to the United States. For the Nigerian participants, the challenge

presented by data related to the availability of reliable data. P1 opined that the availability

of data and the ability to process data are a severe challenge for HRA because many

people have data but do not know how to extract meaningful information from that data.

Supporting data as a critical challenge, P3 said that unlike the accounting profession that

has readily available financial information; HR data sources are limited, so most times

HR people must try and generate the data on their own.

Describing the Nigerian peculiarities, P4 stated that gathering data is a problem

and once data collection is not efficient, it will be challenging to implement HRA. P4

added that lack of automated data mining systems is a barrier to HRA implementation. P2

noted the data used for HRA from internal HR information systems was only a small

aspect of the data requirements; data challenges included lack of knowledge and

technological know-how required to mine the data and the legal risks that arise from

obtaining external data. For P5, data challenges mainly related to the ability to accurately

interpret the data to understand what conclusions one could reasonably and logically infer

from the data.

The participants also mentioned a lack of financial and technological resources as

another barrier to HRA. P2 noted that in some cases, the wide gap between the

company's present stage of technology adoption and the requirements needed to

implement competitive HRA presented too much of a chasm that the companies are not

prepared or able to overcome. Suggested strategies for overcoming these barriers

included creating awareness about the value HRA provides, using appropriate software to

mine data, generating stakeholder buy-in, and taking a collaborative approach to HRA.

Comparison of Findings With the Conceptual Framework and Current Literature

The CBHRT was the conceptual framework for this study. The basis of Paauwe's theory is the PMT construct (competitive factors and economic rationality), the SCL construct (relational rationality), as well as the company's historical antecedents, dictate the adoption of HR strategy depending on the degree of leeway the operational environment provides the decisions makers (Paauwe, 2004). Relevant PMT considerations include competitors' products, state of the market, and advantages provided by technology. CBHRT advocates assert that a more competitive environment induces companies to seek value adding HR practices and policies such as HRA to achieve competitive advantage. Madsen and Slåtten (2017) stated technology influenced HRA, as technology is an enabler of big data, which is the foundation of HRA. Arora and Rahman (2016) suggested that HR related data are a component of 'big data' and are unique, valuable resources that can provide sustainable competitive advantage.

The adoption of HRA is a response to increasing competition and advances in technology, leading Nair (2018) to surmise that HRA that is unique and value-based results in enhanced competitive positioning for a firm. This suggestion aligns with the CBHRT as well as the research findings. P1 explained how HRA gave a struggling company competitive advantage by analyzing relationships between age and skills resulting in a strategy of cross-pollination of knowledge that resulted in more experts in the company's pool leading to more sales and a decrease in service turnaround time by 50%. P4 stated that organizations that have started HRA value it because it helps them

ensure their people meet the company's strategic imperatives and plan; providing an advantage for such companies. P2 explained,

> The market forces are already helping tell the story. There are obvious indications that organizations that have invested in HRA tend to outperform their counterparts who have been more lethargic. There are numbers to show that so long as they go about it sensibly, they get significant advantages.

Another facet of the PMT dimension supporting the adoption of HRA was the war for talent. Thunnissen, Boselie, and Fruytier (2013) proposed that talent management has been a critical management issue for over a decade and competition for talent has a significant effect on business. In a survey on HRA, Collins, et al. (2017) indicated that talent and skill shortages are still widespread, and changing employee value propositions, remote working, and other such factors reshaped the workforce, making attracting skilled HR top priority for business leaders. Collins et al.'s (2017) survey also indicated that the highest disruption for talent acquisition is technology, including HRA, and noted recruitment is the leading area of application of HRA. All the participants reported that they used HRA mainly for different aspects of talent management. P5 related the use of HRA to improved employee engagement which should result in a decrease in turnover and less money spent on new hires. P3 suggested that HRA reveals trends in productivity metrics the HR manager can use to improve business performance. P1 proposed the use of HRA enables a deep understanding of people issues and could be used to enhance motivation.

The contextual factors relating to the SCL dimension of HRA include increased

demand for strategic HR management, HRA supply-side actors, social media,

organizational culture, data management capacity, desire to develop brand equity, the

pressure to acquire HRA skills, success stories of leading companies, legal issues, and

ethical concerns. Reddy and Lakshmikeerthi (2017) suggested that some companies are

implementing HRA due to mimetic pressures. Madsen and Slåtten (2017) purported that

the significant promotion of HRA by management gurus, business schools, consultants,

and technology suppliers exerted pressure to adopt HRA by making it a management

fashion and therefore socially desirable and legitimate.

Supporting the influence of HRA supply-side actors on HRA acceptance and

adoption, P1 is a management consultant and confirmed the firm offers training to create

awareness of the value of HRA. While there may not be much coercive pressure for HRA

from regulatory sources, two participants addressed the magnitude of legal issues. P5

discussed the need to adhere to data protection laws and ensure privacy in data collection

and usage. P2 believed the legislative framework to protect data and data privacy is not as

robust as required to protect both the owners and users of the data, so HR managers need

to be careful to avoid exposure to legal liability. P2 also expressed concerns about data

anonymization and the possibility of powerful data mining tools unintentionally

identifying a person and breaching confidentiality agreements.

I discovered the use of HRA lacks standard ethics and guiding regulations. HRA

methods require gathering increasingly vast amounts of personal data for various

purposes, sometimes covert, and sometimes without express consent. Tursunbayeva, Di

Lauro, and Pagliari (2018) noted that some of the methods used to gather data on

employees such as monitoring social media and gaming have implications for privacy while the use of algorithms alone to make decisions relating to people carries some risks. Some countries are developing laws and conventions such as the recent European General Data Protection Directive (European Parliament and of the Council, 2018) to regulate personal data privacy issues and HRA practitioners need to establish ethical guidelines to allay fears and misconceptions of misuse of personal data.

Another premise of the CBHRT is the company configuration, including the age, size, culture, and financial standing of the company, affects the adoption of HR policies. Some researchers have suggested that organizational culture, including structure, is significant to the acceptance of HRA (Ames, 2014; Dlomu & Spears, 2015; Kapoor & Kabra, 2014; Minbaeva, 2017; Sharma & Sharma, 2017; Tableau, 2016). Based on the CBHRT constructs, Reddy and Lakshmikeerthi (2017) suggested that HRA would be applied more in mature organizations to support a formal decision-making methodology. The research study supports this premise as four of the HR managers interviewed for this study work in older more established organizations ranging between 30 to 50 years.

The organization's innovation inclination is another aspect of the CBHRT cultural configuration. HRA is a relatively new and still emerging practice of HR management not yet adopted by many organizations (Marler & Boudreau, 2017). Marler and Boudreau identified early adopters of HRA as risk-takers because the evidence of its value is still sparse. In their survey on HRA maturity, Lismont et al. (2017) discovered HRA was most common among companies they described as disruptive analytics innovators. The participants are all from organizations that cite innovation among their corporate values.

In business documents, the leaders of the organization P5 works for stated they want to revolutionize one of their key business approaches, indicating an innovative culture. The same organization reported measurement as one of their core values supporting the premise that the organizational culture must align with HRA adoption and implementation. P1 and P4 work for HR Consultants and as such must provide cutting edge and innovative HR services including HRA. The leadership of P2's company describe the company as a "first mover" in its industry with the courage to act as a market leader. P3's employers want the company to lead the way and be an example for others employing state-of-the-art methods.

The CBHRT company configuration dimension indicates the financial health of an organization will influence the adoption of HRA. Scholars have corroborated this premise in the literature suggesting companies who use HRA are likely to be ahead of their peers in financial performance (Kapoor & Kabra, 2014) and high performing companies would be mature users of HRA (Falletta, 2014; Reddy & Lakshmikeerthi, 2017). The research findings support this CBHRT premise since the participants were all from successful companies with impressive financial records. The organization P5 works for reported a revenue of USD 652 million in 2015 while the organizations that P2, P3, and P4 work for in Nigeria are all multibillion Naira companies.

According to the Paauwe's CBHRT, another factor that would influence the adoption of HRA would be the labor-capital ratio. Companies with a high labor-capital ratio should adopt HR practices that enable more efficient workforce management practices. Such companies need to maintain better workforce-related information, and

HRA facilitates maximizing HR related data and discovering insights related to

workforce performance drivers resulting in increased organizational effectiveness

(Kapoor & Kabra, 2014; Momin, 2015; Momin & Mishra, 2016; Muiruri et al., 2015;

Nienaber & Sewdass, 2016). Documents reviewed confirmed four of the five participants

worked in companies with high labor figures. P1 is employed by an organization that

works in over 50 countries through a network of over 8,000 people. P3 works for an

organization with more than 2,000 workers and P2's employer is a conglomerate with

over 30,000 employees.

Applications to Professional Practice

From the literature review, I noticed an interesting paradox; the literature is

replete with advantages from using HRA yet the adoption rate remains low. This paradox

persists because the barriers to HRA adoption including lack of skills by HR managers,

lack of organizational support, and lack of established HRA frameworks remain generally

unresolved. Nair (2018) suggested that despite the growing appreciation of the value of

HRA, adoption among HR remains low because most of the literature is promotional and

does not provide information on how to transform theory into practice. Applying HRA

could assist with more insightful management of a significant organizational resource:

people. Since people have the most significant effect on business performance, using

HRA successfully can help ensure organizational agility and optimization of the

workforce resulting in more profitable business (Heuvel & Bondarouk, 2017; Kapoor &

Kabra, 2014; Muiruri et al., 2015). The predictive ability of HRA empowers

organizations to analyze vast amounts of data and predict trends. Such knowledge

provides competitive advantages as the company moves from being reactive to proactive and takes advantage of the identified trend opportunities ahead of their competitors or to mitigate forecasted risks.

In this study, I explored the strategies some HR managers use to implement HRA to improve organizational performance. The findings of this study represent real-life strategies that have been used effectively to apply HRA. The research findings suggest HRA must align with corporate strategy and HR managers must understand and sell how HRA insights improve company performance. Managers should identify the influencers for HRA adoption and overcome challenges relating to knowledge of the HRA praxis, skills gaps, and data. The study findings could guide HR managers and business leaders wanting to implement HRA to improve their competitive position. The goal of HRA should not be to improve HR efficiency but to add value to a company by solving business problems, creating benefits, or business transformation to improve performance (Fink, 2017; Levenson, 2017; Turner & Zytkowiak, 2016). With the introduction of HRA, there are expectations the approach to HR management will change by becoming more strategic and aligned with business objectives. This study provides managers with a process guide for shifting the focus of HR management from efficiency to impact thereby improving HR's strategic influence and measurable contribution to the bottom line.

The theme of HRA being context specific resonates in the literature (Heuvel & Bondarouk, 2017; Madsen & Slåtten, 2017; Minbaeva, 2017; Reddy & Lakshmikeerthi, 2017; Zhang & Bramwell, 2016) and among the research participants. For HR managers to be successful with implementing HRA, they require a deep understanding of the

operational context. The steps for a force field analysis proposed in this study will

provide HR managers with a roadmap to evaluate their current operational context from

the external, internal, historical, and dominant coalition perspectives. The force field

analysis will reveal the state of readiness for HRA and the factors managers can use to

secure management support for a successful HRA project. The details of the barriers to

success with HRA and proffered HRA model will enable HR managers to develop

proactive strategies to reduce the risk of HRA project failures.

Implications for Social Change

If HR managers use HRA to adopt a more evidence-based approach to HR

management, there are significant implications for positive social change. The effects

include an overall enhanced employee work experience from individually tailored

employee policies. By harnessing and facilitating more insightful analysis of HR related

data, HRA enables segmentation of employees, offering differentiated employee policies

and procedures, and customizing employee value propositions (Muiruri et al., 2015). For

example, the use of HRA reduces subjectivity in decision-making, resulting in more

transparent processes and decisions (Shrivastava, Nagdev, & Rajesh, 2018). Removing

bias and guesswork from employee decisions should result in decisions delivering the

desired solutions and ultimately leading to more satisfied employees (Fecheyr-Lippens,

Schaninger, & Tanner, 2015). The use of HRA for recruitment reduces bias and increases

diversity (Hipps, 2017) while its use in performance appraisals increases acceptability of

the appraisal results through a perception of fairness that has a positive influence on the

employees' willingness to improve (Sharma & Sharma, 2017). Zameer, Wang, Yasmeen,

Mofrad, and Waheed (2018) discovered from research that employee engagement and satisfaction could lead to a favorable corporate image and enhanced customer satisfaction. The proper use of HRA could result in employee satisfaction leading to increased productivity and employee wellbeing, which will have a parallel benefit for employees' families and communities.

The use of HRA promotes the strategic importance of the HR function and facilities positive social change of the pervasive opinion of HR as a mere cost center. In a recent global survey for Deloitte, Collins et al. (2017) noted that only 9% of respondents thought they understood the people factors that facilitate performance in their companies. This study supports HR managers to use HRA to develop an insightful understanding of the catalysts of corporate performance and to produce evidence to support their recommendations. Kryscynski et al. (2018) proposed a relationship between the use of HRA and the perception of the HR manager as a strategic and valuable high performer. HR managers who use HRA are likely to be more influential due to their ability to discover insights others may neglect and use data to create momentum and support for their initiatives. Managers who use HRA will be able to communicate more effectively using quantitative terms that appeal to company leadership and other numbers-driven roles including finance, sales, and research. The findings of this study indicate that using HRA supports and enhances the HR value proposition and improves the perception and importance of people in the organizational value chain.

HRA enhances company performance in different ways including improving decisions, engaging employees with a better fit, motivating employees, and enabling

optimal use of resources. Combining data from several sources results in better-informed decisions that improve corporate competence and enhance productivity (Bagshaw, 2017). The findings of this study could motivate business leaders to adopt HRA for improved company results leading to increases in labor productivity, employment rates, and prosperity of the communities. By influencing more companies to use HRA, this study could facilitate improved company performance with a positive effect on several socioeconomic indices such as unemployment, wages and incomes, and company profits.

Recommendations for Action

The objective of this study was to discover strategies for success in implementing HRA. My findings from this study support the benefits of a properly designed and implemented HRA initiative, which should encourage HR managers to adopt the emerging practice. HRA can create competitive advantage and is one of the critical skills required for more focused and strategic HR management. HR and business leaders cannot afford to ignore this growing value-adding trend in current highly competitive environments. HR managers who have not started planning for HRA should realize they are at risk of losing their influence and standing, as HRA is now considered critical for the future success of HR management (Ulrich & Grochowski, 2018). HR and business leaders, including leaders from other functional areas, should review the findings from this study. HRA requires a data-driven organizational culture that must be supported by top management. The focus of HRA should not be HR, rather it should be business performance, so leaders of other functional areas need to collaborate with HR on implementing HRA to solve their business problems.

Based on interview responses and document reviews, I noted the importance of developing the HRA strategy in line with the business strategy as indicated in theme 1. The study findings revealed the importance of the operational context for deploying HRA. Successful HRA requires careful consideration of all the PMT, SCL, configuration, and dominant coalition constructs of the CBHRT using a field force analysis to determine the relevant factors that support or hinder HRA in an organization. The study findings indicated managerial support, analytical skills, and appropriate technology for data generation and mining have the most influence on HRA implementation and success (Angrave et al., 2016; Fink, 2017; Kapoor & Kabra, 2014; Narula, 2015; Reddy & Lakshmikeerthi, 2017).

HR managers and business leaders should begin thinking about how to implement HRA in their organizations. HR management should be moving beyond transactional to strategic considerations; particularly, business impact instead of HR efficiency. HRA is a tool for enabling HR initiatives that link to identified business outcomes and the use of appropriate metrics to assess all people related decisions. I recommend a cross-functional team approach for implementing HRA since HRA requires diverse skills including statistical analysis, sound knowledge of HR management, business knowledge, communication, and change management. A team-based approach would increase the likelihood of securing the required skills for HRA while the diversity would promote innovation and creativity.

The HRA team should use the field force analysis to determine the organization's state of readiness for HRA and develop action plans to address any gaps. I recommend

the HRA team start the journey by deepening their understanding of the business and its

performance drivers. Then start asking the proper questions to address the organization's

challenges, before determining the best metrics and practices required to improve

productivity. The team may adopt the HRA model proposed in this study as a guide for

their HRA project.

The findings of this study could be useful to HR and business leaders seeking to

improve company performance. I plan to disseminate this information through

conference presentations, training sessions, and workshops. Since academic literature on

HRA is limited, the academic community might also benefit from this study, so I will

seek opportunities to publish this study in HR and business journals.

Recommendations for Further Research

HRA is an evolving area and opportunities abound for further research,

particularly regarding the effect of HRA on company performance. One major challenge

is quantifying the impact of HRA on the bottom line, which is a barrier to HRA

acceptance. Unfortunately, most of the available literature and studies on HRA are

qualitative case studies that do not establish a cause and effect relationship that can

contribute to developing theory relating to HRA and to creating HRA standards. Based

on the reviewed literature and the findings of this research, there appears to be a lack of

convincing evidence of positive business outcomes from the use of HRA. I suggest

further academic research to evaluate and empirically establish the claims of the benefits

of HRA to provide legitimacy. Quantitative studies could determine causal associations

between HRA and company performance while moderating the effect of other relevant variables that affect company performance.

I identified various limitations of this study in Section 1 including the small sample size, the limited geographical coverage, and restricting the interviews to HR managers. Limiting the geographic coverage of a study reduces the generalizability of the results (Yin, 2018). This study was limited to two geographic areas, and further research should expand geographic coverage. Expanding the regional coverage is essential considering the contextual nature of the topic; more extensive research might identify significant contextual peculiarities in different locations. Further research with a larger sample size and incorporating other company leaders would also be useful to verify the findings of this study.

Reflections

I found the doctoral degree process difficult and challenging yet rewarding. At the start of the program, we went through an orientation that advised us about the demands on our time, energy, efforts, and finances and suggested coping mechanisms. Despite this initial awareness and preparation, the process still stretched me in every way imaginable. I believe it was my profound desire to study at this highest academic level that kept me going through the challenges. I must also say that I discovered the actual learning process to be motivating and could feel myself change and grow in the process.

I selected this topic because of personal interest; my background training and work environment push me towards evidence-based HR. In the process of the doctoral program, my study of research methods and ethical research practices provided strategies

for mitigating the risks of bias and reflexivity. My doctoral committee was incredibly supportive in this process; their corrections, advice, and coaching assisted me to improve the quality of my work, and I gained a wealth of knowledge and experience from them in the process. Having completed thorough research on HRA, I have broadened my understanding of the topic and strategies for implementing HRA that I hope to share with others.

Throughout the research process, I made sure I focused solely on the interview data and documents reviewed and remained aware of my biases. I was fortunate to interview five HR managers who fit the study criteria although my initial target was four. The fifth interview confirmed the point of data saturation. The study participants who were vastly knowledgeable on the topic represented different industries and countries and provided valuable practical experience and strategies for implementing HRA from diverse perspectives. HRA is the future of progressive and strategic HR management, and no serious HR manager can afford to be complacent about HRA.

Conclusion

As the resource that catalyzes all other resources, I support the view that people have the most significant effect on organizational performance. One of the interview participants explained it this way:

> Just imagine that a business does not know how much money it makes, how much profit and revenue and how much costs it incurred. Without this financial data, the business will not be successful. If we all say business success is dependent on its human resource, why should we not measure the HR part of the business?

In current volatile resource-constrained environments, HR managers must demonstrate we are getting the best returns from our investments in people. HR managers must begin to speak to HR's impact on company performance using acceptable financial terms and appropriate metrics. The data must be contextualized to provide an appropriate interpretation of the numbers and result in meaningful analytics to support improved decisions.

The purpose of this study was to explore strategies HR managers used in implementing HRA to improve business performance. The emergent themes emphasized the need for HRA to align with organizational strategy, the importance of understanding how HRA adds value, alignment of factors that influence HRA acceptance and ensuring plans to overcome the barriers to HRA adoption. Vidgen et al. (2017) suggested that the main reason HR managers were not using HRA was they lacked understanding regarding how to use analytics to improve business outcomes. This study acts as a bridge between academics and practice by providing clear strategies and a process roadmap which HR managers and business leaders may follow to implement HRA. I hope the results of this study influence a change of the perception of the value of people in organizations by encouraging more business leaders to adopt HRA and confirm people are their most prized assets. This realization should facilitate social change by shifting focus to people-oriented policies to motivate employees to be more productive and ultimately improve socioeconomic indices of the company host communities.

References

Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment? *International Journal of Production Economics*, *182*, 113-131. doi:10.1016/j.ijpe.2016.08.018

Alby, F., & Fatigante, M. (2014). Preserving the respondent's standpoint in a research interview: Different strategies of 'doing' the interviewer. *Human Studies, 37*, 239-256. doi:1007/s10746-013-9292-y

Alharthi, A., Krotov, V., & Bowman, M. (2017). Addressing barriers to big data. *Business Horizons*, *60*(3), 285-292. doi:10.1016/j.bushor.2017.01.002

Ames, B. (2014). Building a workforce analytics program–Crawl before you jump. *Workforce Solutions Review, 5*(2), 14. Retrieved from http://www.ihrimpublications.com/WSR_archives.php

Andersen, M. (2017). Human capital analytics: The winding road. *Journal of Organizational Effectiveness: People and Performance, 4*, 133-136. doi:10.1108/JOEPP-03-2017-0024

Angrave, D., Charlwood, A., Kirkpatrick, I., Lawrence, M., & Stuart, M. (2016). HR and analytics: Why HR is set to fail the big data challenge. *Human Resource Management Journal*, *26*(1), 1-11. doi:10.1111/1748-8583.12090

Anney, V. N. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational*

Research and Policy Studies, 5, 272-281. Retrieved from http://

jeteraps.scholarlinkresearch.org

Aral, S., Brynjolfsson, E., & Wu, L. (2012). Three-way complementarities: Performance

pay, human resource analytics, and information technology. *Management Science,*

58, 913–931. doi:10.1287/mnsc.1110.1460

Arora, B., & Rahman, Z. (2016). Using big data analytics for competitive advantage.

International Journal of Innovative Research and Development, *5*, 247-250.

Retrieved from http://www.ijird.com

Baesens, B., De Winne, S., & Sels, L. (2017). Is your company ready for HR analytics?

MIT Sloan Management Review, *58*(2), 20-21. Retrieved from

https://sloanreview.mit.edu/

Bagshaw, K. B. (2017). Workforce big data analytics and production efficiency: A

manager's guide. *Archives of Business Research, 5(7),* 121-131.

doi:10.14738/abr.57.3168

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of*

Management, 17, 99-120. doi:10.1177/014920639101700108

Bassi, L. J., & McMurrer, D. P. (2008). Toward a human capital measurement

methodology. *Advances in Developing Human Resources*, *10*, 863-881.

doi:10.1177/1523422308325611

Beygelman, M. (2014). Cool new uses of big data for HR. *Workforce Solutions Review*,

5(5), 33-34. Retrieved from

http://www.ihrimpublications.com/WSR_archives.php

Boselie, P. (2010). *Strategic human resource management: A balanced approach*.

London, England: Tata McGraw-Hill Education

Boudreau, J. W., & Cascio, W. (2017). Human capital analytics: Why are we not there?

Journal of Organizational Effectiveness: People and Performance, *4*, 119-126.

doi:10.1108/JOEPP-03-2017-0021

Boudreau, J. W., & Ramstad, P. M. (2002). Strategic HRM measurement in the 21st

century: From justifying HR to strategic talent leadership. Retrieved from

http://digitalcommons.ilr.cornell.edu

Boudreau, J. W., & Ramstad, P. M. (2004). Talentship and human resource measurement

and analysis: From ROI to strategic organizational change. *Los Angeles:*

University of Southern California Working Papers. Retrieved from

https://ceo.usc.edu/category/working-papers/

Boudreau, J. W., & Ramstad, P. M. (2007). *Beyond HR: The new science of human*

capital. Boston, MA: Harvard Business School Press

Bradford, H., Guzmán, A., & Trujillo, M. A. (2017). Determinants of successful

internationalisation processes in business schools. *Journal of Higher Education*

Policy and Management, *39*, 435-452. doi:10.1080/1360080X.2017.1330798

Bristowe, K., Selman, L., & Murtagh, F. E. (2015). Qualitative research methods in renal

medicine: An introduction. *Nephrology Dialysis Transplantation*, 3*0*, 1424-1431.

doi:10.1093/ndt/gfu410

Buttiens, D., & Hondeghem, A. (2015). Strategic choices regarding talent management in the Flemish public sector. *Society and Economy*, *37*, 49-72. doi:10.1556/SocEc.37.2015.1.3

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum, 41*, 454-457. doi:10.1188/14.ONF.545-547

Cava, J., & Fernandez, C. (2017). Case study: Starwood hotels: From descriptive to impact: Linking the employee engagement survey to the guest experience. *People & Strategy*, *40*(4), 32-37. Retrieved from https://www.hrps.org

Chowdhury, M. F. (2015). Coding, sorting and sifting of qualitative data analysis: Debates and discussion. *Quality & Quantity*, *49*, 1135-1143. doi:10.1007/s11135-014-0039-2

Cleary, M., Horsfall, J., & Hayter, M. (2014). Qualitative research: Quality results? *Journal of Advanced Nursing*, *70*, 711-713. doi:10.1111/jan.12172

Coco, C. T., Jamison, F., & Black, H. (2011). Connecting people investments and business outcomes at Lowe's: Using value linkage analytics to link employee engagement to business performance. *People and Strategy, 34*(2), 28–33. Retrieved from https://www.hrps.org

Cohen, J. F., & Olsen, K. (2015). Knowledge management capabilities and firm performance: A test of universalistic, contingency and complementarity perspectives. *Expert Systems with Applications*, *42*, 1178-1188. doi:10.1016/j.eswa.2014.09.002

Colegrave, L. F., Seasholtz, M. B., & Khare, C. (2016). Getting started on the journey.

    Chemical Engineering Progress, *112*(3), 41-45. Retrieved from

    https://www.aiche.org

Collins, L., Fineman, D., & Tsuchida, A. (2017). Rewriting the rules for the digital age.

    (Deloitte Report). Retrieved from https://www2.deloitte.com

Connelly, L. M. (2016). Trustworthiness in qualitative research. *MedSurg Nursing*, *25*,

    435-437. Retrieved from https://www.amsn.org/

Cronin, C. (2014). Using case study research as a rigorous form of inquiry. *Nurse*

    Researcher, 21(5), 19-27. doi:10.7748/nr.21.5.19.e1240

Davenport, T. H., Harris, J., & Shapiro, J. (2010). Competing on talent analytics.

    Harvard Business Review, *88*(10), 52-58. Retrieved from https://hbr.org

De Oliveira, L. M. B., & Pádua, M. M. (2012). Contextualized theory as a tool to identify

    the forces of shaping human resource management: An exploratory study in

    wineries from the northeast of Brazil. *Business and Management Review*, *2*(1),

    39-49. Retrieved from http://www.businessjournalz.org/bmr

Decramer, A., Smolders, C., Vanderstraeten, A., & Christiaens, J. (2012). The impact of

    institutional pressures on employee performance management systems in higher

    education in the low countries. *British Journal of Management*, *23*, S88–S103.

    doi:10.1111/j.1467-8551.2012.00820

Department of Health, Education and Welfare. (2014). The Belmont Report. Ethical

    principles and guidelines for the protection of human subjects of research. *The*

Journal of the American College of Dentists, *81*(3), 4-13. Retrieved from

https://www.ncbi.nlm.nih.gov

DiBernardino, F. (2011). The missing link: Measuring and managing financial

performance of the human capital investment. *People and Strategy*, *34*(2), 44-49.

Retrieved from https://www.hrps.org

Dikko, M. (2016). Establishing construct validity and reliability: Pilot testing of a

qualitative interview for research in Takaful (Islamic Insurance). *The Qualitative

Report*, *21*, 521-528. Retrieved from http://nsuworks.nova.edu/tqr/vol21/iss3/6

Dlomu, N., & Spears, M. (2015). Better HR decisions with data and analytics.

Accountancy SA, 49-50. Retrieved from http://www.accountancysa.org.za

Dongre, A. R., & Sankaran, R. (2016). Ethical issues in qualitative research: Challenges

and options. *International Journal of Medical Science and Public Health*, *5*,

1187-1194. doi**:**10.5455/ijmsph.2016.19102015179

Du Plessis, A. J., & De Wet Fourie, L. (2016). Big data and HRIS used by HR

practitioners: Empirical evidence from a longitudinal study. *Journal of Global

Business & Technology*, *12*(2), 44-55. Retrieved from http://gbata.org/journal-of-

global-business-and-technology-jgbat

Ejo-Orusa, H., & Okwakpam, J. A. A. (2018). Predictive HR analytics and human

resource management amongst human resource management practitioners in Port

Harcourt, Nigeria. *Global Scientific Journal*, *6*(7), 254. Retrieved from http://

www.globalscientificjournal.com

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling

    and purposive sampling. *American Journal of Theoretical and Applied Statistics*,

    5(1), 1-4. doi:10.11648/j.ajtas.20160501.11

European Parliament and of the Council (2018). Regulation (Eu) 2016/679 of the

    European Parliament and of the Council. Official Journal of the European Union,

    L 119/1. Retrieved from http://data.europa.eu/eli/reg/2016/679/oj

Falletta, S. (2014). In search of HR intelligence: Evidence-based HR analytics practices

    in high performing companies. *People and Strategy*, *36*(4), 28-37. Retrieved from

    https://www.hrps.org

Fatima, A., & Rahaman, S. (2014). Mining system in HR: A proposed model.

    *International Journal of Computer and Information Technology, 3,*1154-1159.

    Retrieved from https://www.ijcit.com

Fecheyr-Lippens, B., Schaninger, B., & Tanner, K. (2015). Power to the new people

    analytics. *McKinsey Quarterly*, *51*(1), 61-63. Retrieved from

    https://www.mckinsey.com

Feng, H., Morgan, N., & Rego, L. (2017). Firm capabilities and growth: The moderating

    role of market conditions. *Journal of Academy of Marketing Science*, *45*(1), 76-

    92. doi:10.1007/s11747-016-0472

Fenzig, S. (2015). Workforce analytics: Practical guidance for initiating a successful

    journey. *Workforce Solutions Review. (6)*6. 14-17. Retrieved from

    http://www.ihrimpublications.com/WSR_archives.php

Fink, A. (2017). Getting results with talent analytics. *People and Strategy. 40*(3), 36-40.

Retrieved from https://www.hrps.org

Fitz-enz, J. (1984). *How to measure human resources management*. New York, NY:

McGraw-Hill

Fitz-enz, J. (2007). Beyond benchmarking: Value-adding metrics. *College and University*

Professional Association HR Journal, *58*(2), 12-16. Retrieved from

https://www.cupahr.org/knowledge-center/magazine/

Fitz-enz, J. (2009). *The ROI of human capital: Measuring the economic value of*

employee performance. New York, NY: AMACOM-–Division of American

Management Association

Fitz-enz, J. (2010). *The new HR analytics: Predicting the economic value of your*

company's human capital investments. New York, NY: AMACOM–Division of

American Management Association

Fitz-enz, J., & Mattox, J. R. (2014). *Predictive analytics for human resources*. Cary, NC:

John Wiley & Sons, SAS Institute. https://doi.org/10.1002/9781118915042

Foss, N., & Hallberg, N. (2014). How symmetrical assumptions advance strategic

management research. *Strategic Management Journal, 35*, 903-913.

doi:10.1002/smj.2130

Fred, M., & Kinange, U. (2015). Overview of HR analytics to maximize human capital

investment. *International Journal of Advance Research and Innovative Ideas in*

Education, 1(4), 118-122. Retrieved from http://www.ijariie.com

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative

    research. *The Qualitative Report, 20*, 1408-1416. Retrieved from

    http://nsuworks.nova.edu/tqr/vol20/iss9/3

Gentles, S. J., Charles, C., Ploeg, J., & McKibbon, K. (2015). Sampling in qualitative

    research: Insights from an overview of the methods literature. *The Qualitative*

    Report, *20*, 1772-1789. Retrieved from

    http://nsuworks.nova.edu/tqr/vol20/iss11/5

George, L., & Kamalanabhan, T. J. (2016). A study on the acceptance of HR analytics in

    organisations. *International Journal of Innovative Research and Development*, *5*,

    357-360. Retrieved from http://ijird.com

Gobble, M. M. (2017). The datification of human resources. *Research Technology*

    Management, *60*(5), 59-61. doi:10.1080/08956308.2017.1348143

Green, D. (2017). The best practices to excel at people analytics. *Journal of*

    Organizational Effectiveness: People and Performance, *4*, 137-144.

    doi:10.1108/JOEPP-03-2017-0027

Gringeri, C., Barusch, A., & Cambron, C. (2013). Examining foundations of qualitative

    research: A review of social work dissertations, 2008–2010. *Journal of Social*

    Work Education, *49*, 760-773. doi:10.1080/10437797.2013.812910

Grossoehme, D. H. (2014). Overview of qualitative research. *Journal of Health Care*

    Chaplaincy, *20*(3), 109-122. doi:10.1080/08854726.2014.925660

Hammarberg, K., Kirkman, M., & De Lacey, S. (2016). Qualitative research methods:

    When to use them and how to judge them. *Human Reproduction*, *31*, 498-501.

    doi:10.1093/humrep/dev334

Handa, D., & Garima, D. (2014). Human resource (HR) analytics: Emerging trend in

    HRM (HRM). *International Journal of Research in Commerce & Management*,

    5(6), 50-62. Retrieved from http://ijrcm.org.in/

Harris, J., Craig, E., & Light, D. (2011). Talent and analytics: New approaches, higher

    ROI. *Journal of Business Strategy, 32* (6), 4-13.

    doi:10.1108/02756661111180087

Heuvel, S., & Bondarouk, T. (2017). The rise (and fall) of HR analytics: A study into the

    future applications, value, structure, and system support. *Journal of*

    Organizational Effectiveness: People and Performance, *4*(2), 157-178.

    doi:10.1108/JOEPP-03-2017-0022

Heyler, S. G., Armenakis, A. A., Walker, A. G., & Collier, D. Y. (2016). A qualitative

    study investigating the ethical decision making process: A proposed model. *The*

    Leadership Quarterly, *27*(5), 788-801. doi:10.1016/j.leaqua.2016.05.003

Higgins, J. (2014). Bringing HR and finance together with analytics. *Workforce Solutions*

    Review, 5(2), 12-13. Retrieved from

    http://www.ihrimpublications.com/WSR_archives.php

Hipps, C. (2017). The secrets to tapping into data to automate and streamline hiring of

    future leaders. *Strategic HR Review, 16* (2), 93-95. doi:10.1108/SHR-12-2016-

    0107

Hirsch, W., Sachs, D., & Toryfter, M. (2015). Getting started with predictive workforce

    analytics. *Workforce Solutions Review*. *6*(6), 7-9. Retrieved from

    http://www.ihrimpublications.com/WSR_archives.php

Holsapple, C., Lee-Post, A., & Pakath, R. (2014). A unified foundation for business

    analytics. *Decision Support Systems*, *64*, 130-141. doi:10.1016/j.dss.2014.05.013

Hota, J., & Ghosh, D. (2013). Workforce analytics approach: An emerging trend of

    workforce management. *AIMS International Journal, 7(3),* 167-179. Retrieved

    from www.aims-international.org/

Howes, J. (2014). Taking a long data view for effective workforce analytics. *Workforce*

    Solutions Review, *5*(2), 5-10. Retrieved from

    http://www.ihrimpublications.com/WSR_archives.php

Huselid, M. A. (1995). The impact of human resource management practices on turnover,

    productivity, and corporate financial performance. *Academy of Management*

    Journal, *38*, 635-672. doi:10.2307/256741

Janghorban, R., Roudsari, R., & Taghipour, A. (2014). Skype interviewing: The new

    generation of online synchronous interview in qualitative research. *International*

    Journal of Qualitative Studies on Health and Well-being, 9(1), Article 24152,

    doi:10.3402/qhw.v9.24152

Jensen-Eriksen, K. (2016). *The role of HR analytics in creating data-driven HRM:*

    Textual network analysis of online blogs of HR professionals (Master's thesis).

    Retrieved from https://aaltodoc.aalto.fi

Johnson, J. S. (2015). Broadening the application of mixed methods in sales research. *Journal of Personal Selling & Sales Management*, *35*, 334-345. doi:10.1080/08853134.2015.1016953

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26. doi:10.3102/0013189X033007014

Jones, K. (2015). Ready or not? Is HR ready for analytics? *Workforce Solutions Review (November).* Retrieved from www http://www.ihrimpublications.com/WSR_archives.php

Jones, K., & Sturtevant, R. (2016). The cost of the workforce: Understanding the value of workforce analytics. *Workforce Solutions Review*, *7*(3), 18-22. Retrieved from http://www.ihrimpublications.com/WSR_archives.php

Kahlke, R. (2014). Generic qualitative approaches: Pitfalls and benefits of methodological mixology. *International Journal of Qualitative Methods, 13,* 37-52. doi:10.1177/160940691401300119

Kane, G. C. (2015). People analytics through super-charged ID badges. *MIT Sloan Management Review, 56*(4), 1-9. Retrieved from http://ilp.mit.edu

Kaplan, R., & Norton, D. (1996). *The balanced scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.

Kapoor, B., & Kabra, Y. (2014). Current and future trends in human resources analytics adoption. *Journal of Cases on Information Technology, 16*, 50-59. doi:10.4018/jcit.2014010105

Kaur, J., & Fink, A. A. (2017). *Trends and practices in talent analytics*. (Society for Human Resource Management and Society for Industrial and Organizational Psychology, Science of HR White Paper Series). Retrieved from https://www.shrm.org

Kim, S., & Wright, P. M. (2011). Putting strategic human resource management in context: A contextualized model of high commitment work systems and its implications in China. *Management and Organization Review*, *7*, 153-174. doi:10.1111/j.1740-8784.2010.00185.x

King, K. G. (2016). Data analytics in human resources: A case study and critical review. *Human Resource Development Review*, *15*(4), 487-495. doi:10.1177/1534484316675818

Krishnamurthy, R., & Desouza, K. (2014). Big data analytics: The case of the social security administration. *Information Polity: The International Journal of Government & Democracy in the Information Age, 19*(3), 165-178. doi:10.3233/IP-140337.

Kryscynski, D., Reeves, C., Stice-Lusvardi, R., Ulrich, M., & Russell, G. (2018). Analytical abilities and the performance of HR professionals. *Human Resource Management, 57*, 715–738. doi:10.1002/hrm.21854

Kuhn, J. (2016). The strategic advantage of HCM technology-the ability to take business-relevant action with human capital information. *Workforce Solutions Review*, *7*(1), 39-41. Retrieved from http://www.ihrimpublications.com

Lakshmi, P., & Pratap, P. (2016). HR analytics-a strategic approach to HR effectiveness.

International Journal of Human Resource Management and Research, 6(3), 21-

28. Retrieved from http://www.tjprc.org/journals

Lal, P. (2015). Transforming HR in the digital era: Workforce analytics can move people

specialists to the center of decision-making. *Human Resource Management*

International Digest, *(23)*3, 1-4. doi:10.1108/HRMID-03-2015-0051

Lam, S., & Hawkes, B. (2017). From analytics to action: How Shell digitized

recruitment. *Strategic HR Review*, *16*(2), 76-80. doi:10.1108/SHR-01-2017-0005

Lawler, E. E., & Boudreau, J. W. (2009). What makes HR a strategic partner? *People and*

Strategy, *32*(1), 14-22. Retrieved from https://ceo.usc.edu

Lawler, E. E., & Boudreau, J. W. (2015). *Global trends in human resource management:*

A twenty year analysis. Stanford, CA: Stanford University Press.

Lee, Y., & Kramer, A. (2016). The role of purposeful diversity and inclusion strategy

(PDIS) and cultural tightness/looseness in the relationship between national

culture and organizational culture. *Human Resource Management Review*, *26*(3),

198-208. doi:10.1016/j.hrmr.2016.01.001

Lesser, E., & Hoffman, C. (2012). Workforce analytics: Making the most of a critical

asset. *Ivey Business Journal Online, 76*(4). Retrieved from

https://iveybusinessjournal.com

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research.

Journal of Family Medicine and Primary Care, *4*, 324-327. doi:10.4103/2249-

4863.161306

Levenson, A. (2017). Using workforce analytics to improve strategy execution. *Human Resource Management, 57,* 685–700. doi:10.1002/hrm.21850

Levenson, A., & Fink, A. (2017). Human capital analytics: Too much data and analysis, not enough models and business insights. *Journal of Organizational Effectiveness: People and Performance*, *4*, 159-170. doi:10.1108/JOEPP-03-2017-0029

Lipkin, J. (2015). Sieving through the data to find the person: HR's imperative for balancing big data with people centricity. *Cornell HR Review (September)*, 1-5. Retrieved from http://www.digitalcommons.ilr.cornell.edu

Lismont, J., Vanthienen, J., Baesens, B., & Lemahieu, W. (2017). Defining analytics maturity indicators: A survey approach. *International Journal of Information Management*, *37*(3), 114-124. doi:10.1016/j.ijinfomgt.2016.12.003

Lub, V. (2015). Validity in qualitative evaluation: Linking purposes, paradigms, and perspectives. *International Journal of Qualitative Methods*, *14*, 1-8. doi:10.1177/1609406915621406

Madsen, D. Ø., & Slåtten, K. (2017). The Rise of HR Analytics: A Preliminary Exploration. *Global Conference on Business and Finance Proceedings, 12*(1), 148-159. Retrieved from http://www.theibfr.com

Magau, M. D., & Roodt, G. (2010). An evaluation of the human capital bridge TM framework. *South African Journal of Human Resource Management*, *8*(1). 1-10. doi:10.4102/sajhrm.v8i1.276

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative

 interview studies: Guided by information power. *Qualitative Health Research*, *26*,

 1753-1760. doi:10.1177/1049732315617444

Maramwidze-Merrison, E. (2016). Innovative methodologies in qualitative research:

 Social media window for accessing organisational elites for interviews. *The*

 Electronic Journal of Business Research Methods, 14(2), 157-167. Retrieved

 from http:// www.ejbrm.com

Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR analytics. *The*

 International Journal of Human Resource Management, *28*, 3-26.

 doi:10.1080/09585192.2016.1244699

Marler, J., & Fisher, S. (2010). Evidence-based review of E-HRM and strategic human

 resource management. *Human Resource Management Review, 23*(1), 18-36,

 doi:10.1016/j.hrmr.2012.06.002

Marshall, C., & Rossman, G. B. (2016). Designing qualitative research (6th ed.).

 Thousand Oaks, CA: Sage.

McGuire, S., & Ladd, B. (2014). Big data and human capital management. *Workforce*

 Solutions Review, *5*(2), 30-31. Retrieved from

 http://www.ihrimpublications.com/WSR_archives.php

McIver, D., Lengnick-Hall, M. L., & Lengnick-Hall, C. A. (2018). A strategic approach

 to workforce analytics: Integrating science and agility. *Business Horizons*, *61*(3),

 397-407. doi:10.1016/j.bushor.2018.01.005

Mikecz, R. (2012). Interviewing elites: Addressing methodological issues. *Qualitative Inquiry*, *18*, 482-493. doi:10.1177/1077800412442818

Minbaeva, D. (2017). *Building credible human capital analytics*. Manuscript submitted for publication. Retrieved from http:// www.cbs.dk/hc-analytics

Mishra, S. N., Lama, D. R., & Pal, Y. (2016). Human resource predictive analytics (HRPA) for HR management in organizations. *International Journal of Scientific and Technology Research*, *5*(5), 33-35. Retrieved from http://www.ijstr.org

Mishra, S., & Lama, D. (2016). A decision making model for human resource management in organizations using data mining and predictive analytics. *International Journal of Computer Science and Information Security*, *(14)*5, 217-221. Retrieved from https://sites.google.com/site/ijcsis/ ISSN 1947-5500

Momin, W. Y. M. (2015). HR analytics transforming human resource management. *International Journal of Applied Research*, *1*, 688-692. Retrieved from http://www.allresearchjournal.com

Momin, W. Y. M., & Mishra, K. (2016). HR analytics: Re-inventing human resource management. *International Journal of Applied Research*, *2*(5), 785-790. Retrieved from http://www.allresearchjournal.com

Mooney-Somers, J., & Olsen, A. (2017). Ethical review and qualitative research competence: Guidance for reviewers and applicants. *Research Ethics*, *13*(3-4), 128-138. doi:10.1177/1747016116677636

Muiruri, C., Waiganjo, S., & Kirinyaga, R. (2015). Business analytics for decision

    making. *International Journal of Social Sciences and Information Technology,*

    1(12), 1-14. Retrieved from http://www.ijssit.com

Munn, Z., Porritt, K., Lockwood, C., Aromataris, E., & Pearson, A. (2014). Establishing

    confidence in the output of qualitative research synthesis: The ConQual

    approach. *BMC Medical Research Methodology*, *14*(1), 108-115.

    doi:10.1186/1471-2288-14-108

Muscalu, E., & Şerban, A. (2014). HR analytics for strategic human resource

    management. *8th Proceedings of the International Management Conference,*

    Bucharest, Romania, 939-943. Retrieved from

    http://conference.management.ase.ro

Nair, M. (2018). Current status of analytics in HR: Evidence based review. *SCMS*

    Journal of Indian Management, *15*(2), 23-30. Retrieved from

    http://ro.uow.edu.au/buspapers/406/

Najeeb, A. (2014). Institutional theory and human resource management. In H. Hasan

    (Eds.), *Being practical with theory: A window into business research* (25-30).

    Retrieved from http://ro.uow.edu.au/buspapers/406/

Narula, S. (2015). HR analytics: Its use, techniques and impact. *International Journal of*

    Research in Commerce & Management, *6*(8), 47-52. Retrieved from

    http://ijrcm.org.in

Nasief, Y. A. (2015). *The development of Saudisation practices in the Saudi supermarket industry: An institutional perspective*. (Ph.D. thesis) Birkbeck, University of London. Retrieved from http://bbktheses.da.ulcc.ac.uk/127/

Nienaber, H., & Sewdass, N. (2016) A reflection and integration of workforce conceptualisations and measurements for competitive advantage. *Journal of Intelligence Studies in Business, 6*(1), 5-20. Retrieved from https://ojs.hh.se

Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *Evidence-Based Nursing, 18*(2), 34-35. doi:10.1136/eb-2015-102054

Oates, J. (2015). Use of skype in interviews: The impact of the medium in a study of mental health nurses. *Nurse Researcher, 22*(4), 13-17. doi:10.7748/nr.22.4.13.e1318

Odhong, A. E., Were, A., & Omolo, J. (2014). Effect of human capital management drivers on organizational performance in Kenya. A case of investment and mortgages bank ltd. *European Journal of Business Management*, *2*(1), 341-356. Retrieved from http://ejobm.org

Paauwe, J. (2004). *HRM and performance: Achieving long term viability.* Oxford: Oxford University Press. doi:10.1093/acprof:oso/9780199273904.001.0001

Paauwe, J., & Boselie, P. (2005). Best practices … in spite of performance: Just a matter of imitation? *The International Journal of Human Resource Management, 16*, 987-1003. doi:10.1080/09585190500120798

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed

methods implementation research. *Administration and Policy in Mental Health*

   Services Research, 42, 533-544. doi:10.1007/s10488-013-0528-y

Pant, G., & Sheng, O. R. (2015). Web footprints of firms: Using online isomorphism for

   competitor identification. *Information Systems Research*, *26*(1), 188-209.

   doi:10.1287/isre.2014.0563

Pape, T. (2016). Prioritising data items for business analytics: Framework and application

   to human resources. *European Journal of Operational Research, 252*, 687-698.

   doi:10.1016/j.ejor.2016.01.052

Park, J., & Park, M. (2016). Qualitative versus quantitative research methods: Discovery

   or justification? *Journal of Marketing Thought*, *3*(1), 1-7.

   doi:10.15577/jmt.2016.03.01.1

Patre, S. (2016). Six thinking hats approach to HR analytics. *South Asian Journal of*

   Human Resources Management, *3*, 191-199. doi:10.1177/2322093716678316

Pellet, L. (2015). How to get out of the world of swirl and into strategic calm: Today's

   HR imperative. *Workforce Solutions Review*, *6*(5), 4-6. Retrieved from

   http://www.ihrimpublications.com/WSR_archives.php

Petty, N. J., Thomson, O. P., & Stew, G. (2012). Ready for a paradigm shift? Part 2:

   Introducing qualitative research methodologies and methods. *Manual Therapy*,

   17, 378-384. doi:10.1016/j.math.2012.03.004

Popadiuk, S., Rivera, E. R., & Bataglia, W. (2014). Heterogeneity of isomorphic

   pressures: Intertwining the resource-based view and the neoinstitutional approach.

Brazilian Administration Review, *11*(4), 455-475. doi:10.1590/1807-
7692bar2014130003

Rasmussen, T., & Ulrich, D. (2015). Learning from practice: How HR analytics avoids
being a management fad. *Organizational Dynamics*, *44*, 236-242.
doi:10.1016/j.orgdyn.2015.05.008

Reddy, P. R., & Lakshmikeerthi, P. (2017). HR analytics-An effective evidence based
HRM tool. *International Journal of Business and Management Invention, 6*(7),
23-34. Retrieved from https://www.ijbmi.org.

Ringo, T. (2017). HR Analytics: Busting silos and delivering outcomes. *Harvard
Business Review Analytic Services Report.* Retrieved from http://hbr.org/hbr-
analytic-services

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical
and practical guide. *Qualitative Research in Psychology, 11,* 25-41.
doi:10.1080/14780887.2013.801543

Rousseau, D., & Barends, E. (2011). Becoming an evidence-based HR practitioner.
Human Resource Management Journal, *21*(3), 221-235. doi:10.1111/j.1748-
8583.2011.00173.x

Royal, C., & O'Donnell, L. (2008). Emerging human capital analytics for investment
processes. *Journal of Intellectual Capital*, *9*, 367-379.
doi:10.1108/14691930810891983

Salau, O. P., Falola, H. O., Ibidunni, A. S., & Igbinoba, E. E. (2016). Exploring the role
of human capital management on organizational success: Evidence from public

universities. *Management Dynamics in the Knowledge Economy*, *4*(4), 493-513. Retrieved from http://www.managementdynamics.ro

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine*, *7*(14), 1-6. Retrieved from http://jmehm.tums.ac.ir

Sant, S. S. (2016). A study on the HR analytics competitive advantage for organization as a HR strategy. *Journal of Advances in Business Management*, *2*, 9-11. doi:10.14260/jadbm/2016/4

Schiemann, W. A., Seibert, J. H., & Blankenship, M. H. (2017). Putting human capital analytics to work: Predicting and driving business success. *Human Resource Management*, *57*, 795-807. doi:10.1002/hrm.21843

Schlechter, A. F., Syce, C., & Bussin, M. (2016). Predicting voluntary turnover in employees using demographic characteristics: A South African case study. *Acta Commercii - Independent Research Journal in the Management Sciences, 16*(1), Art. 274, 1-10. doi:10.4102/ac.v16i1.274

Seitz, S. (2016). Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: A research note. *Qualitative Research*, *16*(2), 229-235. doi:10.1177/1468794115577011

Sesil, J. G. (2014). *Applying advanced analytics to HR management decisions: Methods for selection, developing incentives, and improving collaboration.* Saddle River, NJ: Pearson.

Shah, N., Irani, Z., & Sharif, A. M. (2017). Big data in an HR context: Exploring organizational change readiness, employee attitudes and behaviors. *Journal of Business Research*, *70*, 366-378. doi:10.1016/j.jbusres.2016.08.010

Sharma, S., & Berger, P. (2017). A predictive workforce-analytics model for voluntary employee turnover in the banking/financial-service industry. *Global Journal of Human Resource Management*, *5*(1), 47-59. Retrieved from http://www.eajournals.org

Sharma, A., & Bhatnagar, J. (2017). Talent analytics: A strategic tool for talent management outcomes. *Indian Journal of Industrial Relations*, *52*(3), 515-527. Retrieved from http://www.publishingindia.com

Sharma, R., Mithas, S., & Kankanhalli, A. (2014). Transforming decision-making processes: A research agenda for understanding the impact of business analytics on organisations. *European Journal of Information Systems*, *23*, 433-441. doi:10.1057/ejis.2014.17

Sharma, A., & Sharma, T. (2017). HR analytics and performance appraisal system. *Management Research Review*, *40*(6), 684-697. doi:10.1108/MRR-04-2016-0084

Shrivastava, S., Nagdev, K., & Rajesh, A. (2018). Redefining HR using people analytics: The case of Google. *Human Resource Management International Digest*, *26* (2).3-6, doi:10.1108/HRMID-06-2017-0112

Smith, B., & McGannon, K. (2017). Developing rigor in qualitative research: problems and opportunities within sport and exercise psychology. *International Review of*

Sport and Exercise Psychology (Online May 2017).

doi:10.1080/1750984X.2017.1317357

Snyder, C. (2012). A case study of a case study: Analysis of a robust qualitative research

methodology. *Qualitative Report 17*(3), 1–21. Retrieved from

http://nsuworks.nova.edu/tqr/vol17/iss13/2

Soilkki, K. K., Cassim, N., & Karodia, A. M. (2014). An evaluation of the factors

influencing the performance of registered nurses at the national referral hospital in

Namibia. *Australian Journal of Business and Management Research*, *4*(2), 47-62.

Retrieved from http://www.ajbmr.com

Spahic, J. (2015). *Exploring HR Intelligence Practices in Fortune 1000 and Select*

Global Firms (Doctoral dissertation, Drexel University). Retrieved from

https://idea.library.drexel.edu

Staney, W. (2014). Big data transforms recruiting practices. *Workforce Solutions Review*,

5(3), 30-31. Retrieved from http://www.ihrimpublications.com

Subramanian, K. R. (2017). Analytical skills–The wake up call for human resource.

International Journal of Engineering and Management Research, 7(1), 14-19.

Retrieved from http://www.ijemr.net

Tableau, J. M. (2016). Fostering an analytic culture from the top. *Workforce Solutions*

Review 7(1), 44-45. Retrieved from http://www.ihrimpublications.com

Talukdar, G. (2016). Human resources analytics: An approach towards business

intelligence. *International Journal of Computer Sciences and Engineering, 4*(7),

125-129. Retrieved from http:// www.ijcseonline.org

The Economist Intelligence Unit (2016). *Use of workforce analytics for competitive advantage* (SHRM Foundation Report). Retrieved from https://www.shrm.org/foundation/ourwork/initiatives/preparing-for-future-hr-trends/Documents/Workforce%20Analytics%20Report.pdf

Thunnissen, M., Boselie, P., & Fruytier, B. (2013). A review of talent management:'Infancy or adolescence?'. *The International Journal of Human Resource Management*, *24*(9), 1744-1761. doi:10.1080/09585192.2013.777543

Togt, J., & Rasmussen, T. (2017). Toward evidence-based HR. *Journal of Organizational Effectiveness: People and Performance*, *4*, 127-132. doi:10.1108/JOEPP-02-2017-0013

Tonidandel, S., King, E. B., & Cortina, J. M. (2016). Big data methods: Leveraging modern data analytic techniques to build organizational science. *Organizational Research Methods, 19*, 1-23. doi:10.1177/1094428116677299

Turner, P., & Zytkowiak, W. (2016). HR Analytics—Turbo charged or stuck in neutral? *International Journal of HRD Practice Policy and Research*, *1*, 101-103. doi:10.22324/ijhrdppr.1.120

Tursunbayeva, A., Di Lauro, S., & Pagliari, C. (2018). People analytics—A scoping review of conceptual boundaries and value propositions. *International Journal of Information Management*, *43*, 224-247. doi:10.1016/j.ijinfomgt.2018.08.002

Ullah, A. (2013). *Assessing the impact of HRM on dairy farm performance: An Australian study* (Doctoral Thesis). Deakin University. Retrieved from http://dro.deakin.edu.au

Ulrich, D., & Dulebohn, J. (2015). Are we there yet? What's next for HR? *Human Resource Management Review, 25*, 188-204. doi:10.1016/j.hrmr.2015.01.004

Ulrich, D., & Grochowski, J. (2018). Building a world class HR department. *Strategic HR Review*, *17*(4), 181-185. doi.org/10.1108/ SHR-05-2018-0046

Vargas, R. (2015). *Adoption factors impacting human resource analytics among human resource professionals.* (Doctoral dissertation). Nova Southeastern University. Retrieved from http://nsuworks.nova.edu

Veld, M., Paauwe, J., & Boselie, P. (2010). Mapping the context: Different scenarios for managing human resources in a changing hospital context. In *HRM, Strategic Climate and Employee Outcomes in Hospitals: HRM Care for Cure?,* 13-44. Institute of Health Policy & Management, University of Rotterdam. (iBMG Working Paper W2010.03). Retrieved from https://www.eur.nl

Vidgen, R., Shaw, S., & Grant, D. B. (2017). Management challenges in creating value from business analytics. *European Journal of Operational Research*, *261*(2), 626-639. doi.org/10.1016/j.ejor.2017.02.023

Ward, R. E., Jr. (2015). Buried accomplishments: Institutional isomorphism in college athletics mission statements. *International Journal of Sport Communication*, *8*(1), 18-45. doi:10.1123/IJSC.2014-0018

Wawer, M., & Muryjas, P. (2016). The utilization of the HR analytics by the high and mid-level managers: Case from Eastern Poland. In Alecar, M. S., (Eds.), *Communication, management and information technology: International*

conference on communication, management and information technology (pp 97-106). London, UK: Taylor & Francis. Retrieved from http://www.iccmit.net/

Welbourne, T. (2014). Does size really matter? Getting to results with small, medium and big data. *Workforce Solutions Review*. *5*(2), 9-10. Retrieved from http://www.ihrimpublications.com/WSR_archives.php

White, G., & Ariyachandra, T. (2016). Big data and ethics: Examining the grey areas of big data analytics. *Issues in Information Systems*, *17*(4), 1-7. Retrieved from http://www.iacis.org

Xiaojuan, Z., Seaver, W., Sawhney, R., Shuguang, J., Holt, B., Sanil, G. B., & Upreti, G. (2017). Employee turnover forecasting for human resource management based on time series analysis. *Journal of Applied Statistics*, *44*, 1421-1440. doi:10.1080/02664763.2016.1214242

Yates, J., & Leggett, T. (2016). Qualitative research: An introduction. *Radiologic Technology*, *88*(2), 225-231. Retrieved from http://www.radiologictechnology.org

Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report, 20*(2), 134-152. Retrieved from http://nsuworks.nova.edu/tqr/vol20/iss2/12

Yin, R. K. (2015). *Qualitative research from start to finish* (2nd ed.). New York, NY: Guilford.

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Thousand Oaks, CA: Sage.

Zafor, A., & Shaobo, J. (2013). Business analytics: Current state & challenges. *The International Conference on Information Resources Management (Conf-IRM) 2013 Proceedings, 12.* Retrieved from http://aisel.aisnet.org

Zameer, H., Wang, Y., Yasmeen, H., Mofrad, A. A., & Waheed, A. (2018). Corporate image and customer satisfaction by virtue of employee engagement. *Human Systems Management*, *37*, 233-248. doi:10.3233/HSM-17174

Zhang, C., & Bramwell, S. (2016). What are the current and emergent HR capability needs (Gaps) for various HR roles? *Cornell University, ILR School*. Retrieved from http://digitalcommons.ilr.cornell.edu

Appendix: Interview Protocol

The purpose of this interview protocol is to ensure consistency and dependability of the study by providing the researcher a guideline for interviewing the participants. The researcher is exploring the strategies HR managers use to implement analytics to improve human resource management. The researcher will interview five human resource managers and ask each the same set of questions indicated in this protocol.

What you will do	What you will say—script
Introduce the interview • I will follow these steps for all participants • I will get the consent form signed and retain a copy	1. I will introduce myself to the participant as a Walden University Doctoral student, explain the purpose of the interview and thank the participant for agreeing to the interview. 2. I will present the consent form to the participant and ask if they have any questions before they sign. 3. I will inform the participant the interview will take approximately 40-60 minutes and seek approval to record the interview
• Ask introductory questions to get the participant talking and to find out more about the participant	1. Ask about educational background 2. Ask about the number of years the participant has worked in HR 3. Ask how long the participant has worked at the current company and in his/her current role 4. Ask about the nature of the participant's work
• Ask main interview questions • Watch for nonverbal queues • Rephrase as needed	1. What strategies do you use for implementing HRA to improve business performance? 2. What is your understanding of HRA? 3. What influenced the adoption of HRA in the

• Ask follow-up probing questions if required	organization where you work?
	4. What were the key barriers to implementing HRA?
	5. How did your organization address the key barriers to implementing HRA?
	6. How does HRA improve business performance?
	7. What advantages have you obtained from using HRA in the organization?
	8. What disadvantages resulted from using HRA?
	9. What additional information would you like to share regarding implementing HRA to improve business performance?
• Wrap up interview by thanking participant	Thank the participant for his/her time and consent to be part of the study
• Schedule follow-up member checking interview	Explain that I will meet the participant again to go over the interview transcript for their opinion

Follow–up Member Checking Interview

• Introduce follow-up interview and set the stage	Greet the participant and remind them of the purpose of the follow-up interview.
• Share the transcript containing a brief synthesis for each individual question	Share the interview transcript and give participant a few minutes to read the document.
• Walk through each question, read the interpretation seek participant's comments.	Is my transcript a fair representation of our discussion on this question? Did I miss anything? Or, What would you like to add?
• After reading and discussing all questions, wrap up the follow-on	Thank the participant once again for their time

interview thanking participant

- If substantial changes are
  required, schedule a further
  member-checking follow-on
  discussion.