The impact of strategic workforce planning and analytics on organisational change success

HENLEY BUSINESS SCHOOL

THE UNIVERSITY OF READING

A thesis submitted in partial fulfilment for the Degree of Doctor of Business Administration

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July 2021

Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Alexander B. Nissen

Acknowledgements

Bringing this thesis across the finish line would not have been possible without the excellent academic support and guidance from the researcher's supervisors Professor Malcolm Higgs and Professor Victor Dulewicz. Dr Richard McBain for encouraging and accepting the researcher into this MSc/DBA programme in the department for “Leadership, Organisations, and Behaviour”. Thanks to Professor Claire Collins for making this entire programme so enjoyable and such a unique experience. Louise Hillier and Becky Kite for keeping us on track and providing support on all fronts. Moreover, a big thanks to the fabulous cohort as well as academics at Henley Business School and Rotman School of Management. Attending the programme at both universities has been a real privilege.

Much appreciation to Robin Johnson, a great friend for putting up with the researcher for two decades and for proofreading a hat-trick of theses at the bachelors, masters and now doctoral-level.

The researcher would also like to thank Mercer and his supervisors for providing the opportunity to conduct this research. Special thanks to Ephraim Patrick and his incredible team in Sydney, Australia: Andrew Corin, Johnson Hii, and Serra Tang.

Thanks to all Mercer's clients, colleagues, and experts that participated in the survey. Moreover, the researcher would like to thank: Navine Arora, Bruce Barge, Christian Doerffel, Norman Draeger, David Elkjaer, Sue Filmer, Julia Howes, Jackson Kam, Brian J. Kelly, Adam Rosenberg, Olivia Tsen, Johannes Walker, and Tatu Westling. The colleagues and former colleagues at Mercer's Workforce Sciences Institute in Los Angeles, New York and Washington, D.C., in particular: Jay Doherty, Dr Stefan Gaertner, and Dr Matt Stevenson.

Finally yet importantly, a big thanks to all experts involved at Mercer's sister companies Oliver Wyman and Promerit for providing their invaluable professional support.

Dedication

This thesis is dedicated to my parents – especially my mother, LTN. Thank you for always believing in your son, for teaching me not only the importance of getting educated but for providing the opportunity of attending schools and universities in Britain, Canada, Germany, Spain, and the US. My family, friends, and loved ones – particularly ST. They have relentlessly supported and encouraged me on this journey, making this entire experience worthwhile.

Abstract

This research study examines the impact of strategic workforce planning and analytics on organisational change success. It is grounded in the theoretical foundations of Strategic Human Resource Management (SHRM) and organisational change literature, also looking at workforce planning and analytics measurement frameworks. This resulted in the articulation of three research questions:

1. What is the impact of strategic workforce planning (SWP) on organisational change success?
2. Do workforce analytics, as part of strategic workforce planning, positively affect change implementation effectiveness?
3. Does commitment to organisational change mediate the relationship between fit, flexibility, HR analytics, and organisational change success?

The research design, data collection, and analysis followed eight clear stages linked with different activities, ensuring an early exchange with practitioners to bridge academic rigour with business relevance. A global survey was launched in January 2019 and remained open until September 2019 to collect data from 348 participants using predominately clients of Mercer, a leading global HR consultancy firm. The empirical investigation involved regression analysis for mediation with the use of the Hayes PROCESS macro and exploratory factor analysis (EFA) in SPSS, as well as confirmatory factor analysis (CFA) and structural equation modelling (SEM) to test the hypotheses in SPSS Amos. This research study addressed method bias, incorporate procedural measures, and statistical remedies, but found no violation of the multicollinearity assumption.

This research model employed SWP related concepts of fit – both vertical and horizontal – flexibility, a dynamic capability, and HR analytics. Vertical fit aligns HR strategies with organisational strategies. Horizontal fit integrates and aligns distinct HR activities, such as several HR practices, referred to as high-performance work systems (HPWS). The research findings confirmed that these concepts support organisations during change initiatives and in their implementation efforts. Affective commitment to change is positive and mediates all relationships. None of the three control variables – organisation size in terms of the number of employees, type of industry, and regional comparisons – affects organisational change success.

The essential contribution to both theory and practice is the development of a framework as a meaningful discussion basis for practitioners and academics. This framework shows the

logical relations of SWP as an enabler of organisational change blending vertical- and horizontal fit with flexible HR practices, as well as utilising HR analytics that ultimately may enhance the overall commitment of employees during change initiatives. Empirical contributions include a potential new validated outcome variable, capturing organisational change success. Methodological contributions comprise of increasing awareness of a not so widely known research method for practitioner-oriented SHRM research by rigorously applying convergent interviewing for the survey feasibility study. Conceptually, a significant contribution to SHRM theory is that this research study combined vertical- and horizontal fit with flexible HR practices and HR analytics.

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List of abbreviations (or symbols)

AMO	Ability, Motivation, Opportunity
C&B	Compensation & Benefits
C2C	Commitment to Change (mediator variable/hypothesis 5a-d)
CFA	Confirmatory Factor Analysis
DBA	Doctor of Business Administration
EFA	Exploratory Factor Analysis
EVA	Economic Value Added
EY	Ernst & Young
HPWS	High-Performance Work Systems
HR	Human Resources
HRA	Human Resource Analytics (independent variable/hypothesis 4)
HRF	Human Resource Flexibility (independent variable/hypothesis 3)
HRM	Human Resource Management
HRP	Human Resource Practices (independent variable/hypothesis 2)
HRS	Human Resource Strategy (independent variable/hypothesis 1)
M&A	Mergers & Acquisitions
MNC	Multinational Corporation
OCS	Organisational Change Success (a potential new dependent variable)
OW	Oliver Wyman
RBV	Resource-Based View
ROI	Return on Investment
SEM	Structural Equation Modelling
SHRM	Strategic Human Resource Management
SWP	Strategic Workforce Planning
WA	Workforce Analytics

1 Introduction

1.1 Background to the research

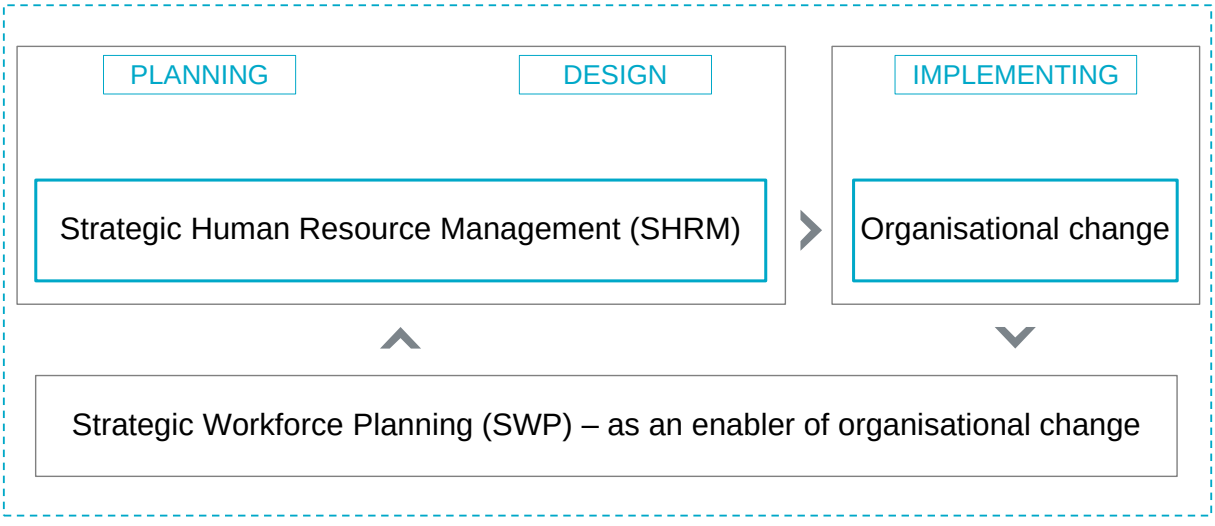
There is a common challenge for organisations across industries all over the globe that is well-published in talent management literature: identifying, attracting, recruiting, developing and retaining talent (Gallardo-Gallardo et al., 2020). This is a central activity in Strategic Workforce Planning (SWP), regarded as a critical resource to achieve lasting competitive advantage (Willis et al., 2018; Goldberg and Boyes, 2019; Gallardo-Gallardo et al., 2020). SWP "builds upon quantitative activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organizational strategy" (Human Capital Institute, 2018). Despite resonating with the current fit and flexibility discussion, SWP is an essential but often missing piece in the SHRM literature. SWP is actively discussed in the practitioner literature and generally discussed as HR planning in academic literature (Boudreau and Cascio, 2017; Armstrong and Brown, 2019; Goldberg and Boyes, 2019; Han et al., 2019). The concept itself is nothing new, and it was referred to as manpower planning in its early stages and since then evolved from HR planning, workforce planning to SWP, used interchangeably in academic literature (Ward and Tripp, 2013; Willis et al., 2018; Ayandibu and Kaseeram, 2020).

SWP enables organisations and "HR professionals to plan for change rather than being surprised by events, as well as provides strategic methods for addressing current and anticipated workforce issues" (Meisinger, 2007: 10). These workforce issues relate to shifting demographics that require organisations to find new ways of working and address the different requirements of their employee population ranging from millennials to aging Baby Boomers (Zoller, 2018). There is a need for organisations to respond better to change since companies still report a high failure rate – up to 70% – of their change initiatives. This number is often questioned (Hughes, 2011; Hughes, 2016) and in contrast, other authors claim that this number is not improving (Stouten et al., 2018; Dao and Bauer, 2020). Irrespective of deriving an exact failure rate figure, be it higher or lower of the 70% mark, Edwards et al. (2020: 1) state that "understanding how and why organizational changes succeed is of paramount importance because many organizational changes do not deliver the expected results". In particular, since it appears that "authors rarely explicitly address the success of change. Although some studies explicitly state that change was unsuccessful, the success of the change remains unclear or ambiguous in most studies" – remaining a critical issue (Kuipers et al., 2014: 14).

1.1.1 Context of the research

The SRHM literature progressed significantly over four decades of research since the 1980s. However, critical empirical issues surfaced in HRM and performance research referred to as the "black box" meaning difficulties in capturing multiple dimensions of fit and not paying attention to context (Farndale and Paauwe, 2018). The importance of understanding context in research is also addressed in related HR disciplines, for example in talent management, leadership and change literature (Oc, 2018; Gallardo-Gallardo et al., 2020). Moreover, "despite the radical change in the pace at which organizations must adapt to rapidly changing competitive environments, mainstream academic SHRM research has largely ignored these changes. The increasing pace means that there are new opportunities for conducting research, both in terms of critical questions to address and previously unconsidered contexts" (Wright et al., 2018: 146). The focus of this research and organisational change context is illustrated in Figure 1.1. Irrespective of different change models available, "if implementation is thought about quite separately from the planning and design of a change initiative, then it is likely that the initiative will already have failed" (Iles and Sutherland, 2001: 60). SWP aligns core business processes to SHRM related changes and organisational needs, hence viewed as an enabler of organisational change in this research. The arrows depict that this is an iterative process in practice, captured in the form of HR flexibility as a construct, acknowledging that organisations interact with an external environment (Ahammad et al., 2020).

Figure 1.1: The focus of this research and organisational change context



Source: Developed by author

1.1.2 The motivation for the research

According to Wright and Ulrich (2017: 46): “As firms seek to compete using all their available resources, their human resources (HR) – or people – have become a more important component to organizational success”. The researcher comes from a corporate finance and M&A background, where human resources are often perceived as a financial liability rather than a source of organisational success and competitive advantage. Not much of a surprise, since traditional accounting and enterprise models regard only revenue and physical (tangible) assets as valuable and recognise people as liabilities or costs rather than essential resources and investments (Levenson and Fink, 2017; Mokhnenko et al., 2019). While workforce analytics is a hot topic in HR management that may overcome the shortcomings of traditional models, “there exists a misunderstanding of how organizations can successfully use workforce analytics to achieve important organizational outcomes” (McIver et al., 2018: 1).

At Ernst & Young (EY), the researcher worked as a senior M&A consultant and wondered how to improve success rates during post-merger integrations. He then went to work as a principal in the career practice at Mercer, a leading global HR consultancy firm, collaborating with Mercer’s sister companies Oliver Wyman (OW) and Promerit on client engagements. Much of the focus was on understanding what makes strategic organisational change initiatives successful and the role strategic workforce planning and analytics play as an enabler of organisational change. The researcher joined Mercer and this MSc/DBA programme in the “Leadership, Organisations and Behaviour” department to focus the study on “The impact of strategic workforce planning and analytics on organisational change success” by bridging academic rigour with practitioner data and business relevance, something that has been recommended as urgently needed in the literature (Hughes, 2016; Van der Tog and Rasmussen, 2017; Wright and Ulrich, 2017; Wright et al., 2018; Armstrong and Brown, 2019; By, 2020).

1.2 Theoretical foundation and research questions

The literature on strategic workforce planning and analytics in light of organisational change spans across a range of management disciplines including strategy, human resources, accounting, finance, and organisational change. However, these domains, schools of thoughts, and concepts, are relatively linked and interconnected. To better reflect this observation, the literature review in Chapter 2 considers three research fields: SHRM, workforce planning analytics and measurement frameworks, and an organisational change lens clustered into 15 themes (Boudreau, 2017; Wright et al., 2018; Levenson, 2018; Han et

al., 2019; By, 2020; Edwards et al., 2020). The theoretical foundations, conceptual models, and debates present the development of each field to understand the key contributions, challenges, and articulation of the research questions. The researcher continued reading relevant literature while engaging with subject matter experts until the final submission of this research study.

The overarching research question was developed based on the SHRM literature by critically reviewing eight themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

What is the impact of strategic workforce planning on organisational change success? (e.g. Markoulli et al., 2017; Wright and Ulrich, 2017; Boon et al., 2018; Boxall, 2018; Jiang and Messersmith, 2018; Wright et al., 2018; Sagar, 2019; Ahammad et al., 2020; Connelly et al., 2020)

The second research question was developed based on the workforce planning analytics and measurement frameworks literature by critically reviewing three themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

Do workforce analytics, as part of SWP, positively affect change implementation effectiveness? (e.g. Rasmussen and Ulrich, 2015; Angrave et al., 2016; Cuozzo et al., 2017; Marler and Boudreau, 2017; Osinski et al., 2017; Pedro et al., 2018; Ben-Gal, 2019; Hamilton and Sodeman, 2020; Kaufman et al., 2020; Lepenioti et al., 2020; Nicolaescu et al., 2020)

The third research question was developed based on the organisational change literature by critically reviewing four themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

Does commitment to organisational change mediate the relationship between fit, flexibility, HR analytics, and organisational change success? (e.g. Herscovitch & Meyer, 2002; Higgs and Rowland 2011; Nasim, 2011; Jacobs, 2013; Kuipers et al., 2014; Al-Haddad and Kotnour, 2015; Bouckenooghe et al., 2015; Da Camara et al., 2015; Soumyaja et al., 2015; Hughes, 2016; Adam et al., 2018; Rosenbaum et al., 2018; Stouten et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019; Ahammad et al., 2020; By, 2020; Edwards, 2020)

1.3 The aim of the research study

The research study aims to answer the research questions by testing the hypotheses, providing recommendations to practice by bridging academic rigour with business relevance,

and contributing to theory and methodology. The detailed literature review formed the basis to develop the initial hypotheses and conceptual model. The research context introduced in Figure 1.1 provided an opportunity to develop a potential new outcome or dependent variable, such as organisational change success, since more relevant and due to issues with existing methods measuring outcomes of SHRM (Wright et al., 2018). According to Kehoe, 2019:12 "while a focus on horizontal fit and vertical fit represents just one of many potential starting points from which we might advance the SHRM literature". Wright et al. (2018: 157): "identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control) but not both". Hence, the following initial hypotheses 1–3 exploring both sides of the tension in the form of vertical fit, horizontal fit and flexibility.

Hypothesis 1 (H1): Vertical strategy fit will have a positive impact on organisational change success

Hypothesis 2 (H2): Horizontal practice fit will have a positive impact on organisational change success

Hypothesis 3 (H3): Flexibility will have a positive impact on organisational change success

HR functions frequently collect data on their efficiency but not on the impact of their practices on the business (Ben-Gal, 2019). However, organisations can collect three different kinds of HR metrics related to efficiency, effectiveness and impact measures (Boudreau and Cascio, 2017; Marler and Boudreau, 2017). In essence, these "HR metrics and workforce analytics can be used as a tool to improve organisational outcomes" or in this research context, organisational change success (Ayandibu and Kaseeram, 2020: 127). Hence, the following initial hypothesis 4 exploring the concept of HR analytics.

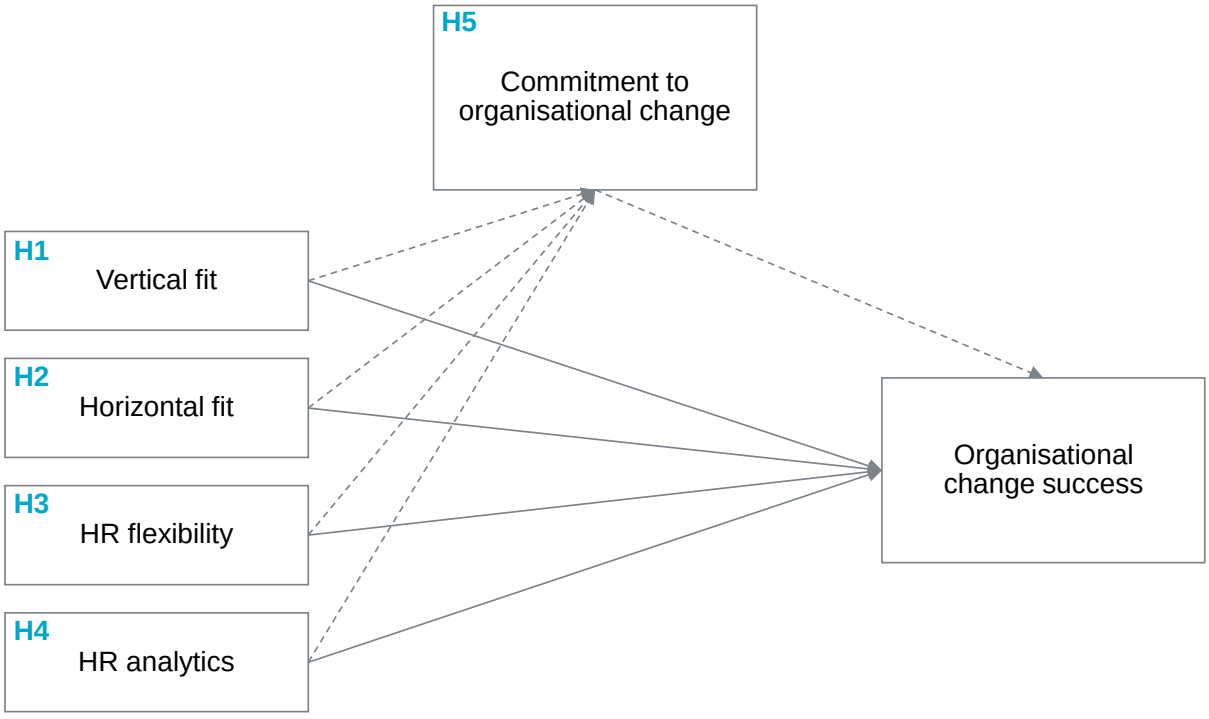
Hypothesis 4 (H4): HR analytics will have a positive impact on organisational change success

Employees' attitudes toward organisational change to support a change initiative is critical for a successful implementation outcome (Bouckenooghe et al., 2015). Generally, commitment to change is widely researched as a mediator in the organisational change literature (Yousef, 2000; Messersmith et al., 2011; Soumyaja et al., 2015; Takaishi et al., 2016; Raveendran and Gamage, 2019). Marchalina et al. (2020: 1) argue that "the successful implementation of change initiative can be done through the commitment to change itself". Hence, the following initial hypothesis regarding commitment to change mediating the relationship between fit, flexibility, HR analytics, and organisational change success.

Hypothesis 5 (H5): Commitment to organisational change mediates the positive relationship between fit, flexibility, HR analytics, and organisational change success

Summarised in Figure 1.2 is the initial conceptual model developed to operationalise the hypotheses. The overarching research question: "What is the impact of strategic workforce planning on organisational change success"? is explored with hypotheses 1-3. The second research question: "Do workforce analytics, as part of SWP, positively affect change implementation effectiveness"? is explored with hypothesis 4. The third research question: "Does commitment to organisational change mediate the relationship between fit, flexibility, HR analytics, and organisational change success"? is explored with hypothesis 5.

Figure 1.2: Initial conceptual model to operationalise the hypotheses

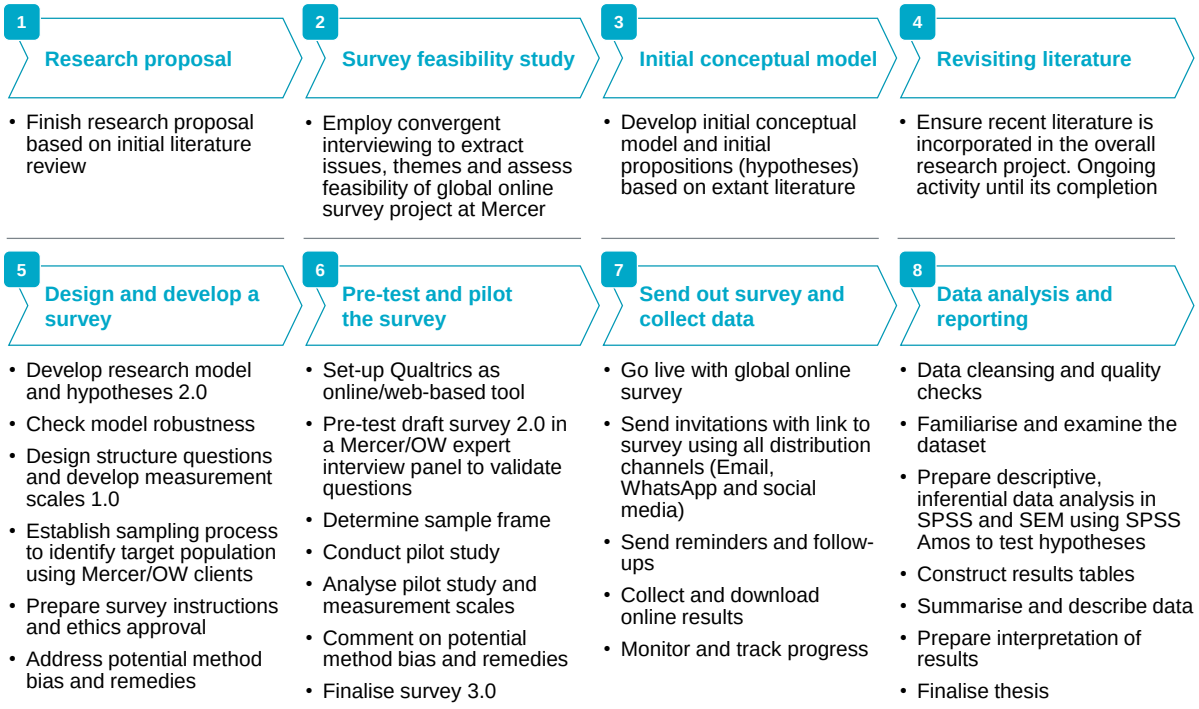


Source: Developed by author

1.4 Practitioner-oriented research design

The reason behind this research design was to make it as relevant as possible, by engaging with practitioners and experts from the beginning to bridge academic rigour with business relevance. The research design, data collection, and analysis followed eight clear stages connected with different activities. This process was embedded in an overall work plan with clear milestones to keep track and monitor progress, outlining how the research questions would be answered and further explored. These proposed activities guided the researcher to complete this research study, see Figure 1.3 and discussed in Chapter 3.

Figure 1.3: Research design to develop the overall research study



Source: Developed by author, based on Rose et al. (2015)

1.5 Limitations of this research study

Despite a detailed research design, no research is free from limitations. “Academic research is never perfect”, and it is about striking the right balance between time and resource constraints that also applies to this research study (Remenyi and Bannister, 2012: 83). Overall, the measures taken in this research study provided enough confidence that the global online survey was fit for purpose. Therefore, this did not present a limitation to the overall research study results, findings, conclusions, implications and recommendations, discussed in Chapter 6.

1.6 Contributions of this research study

The vital contribution to theory and practice is the development of a framework, introduced in Chapter 6 (Figure 6.2), as a meaningful discussion basis for practitioners and academics. This framework shows the logical relations of SWP as an enabler of organisational change, blending vertical- and horizontal fit with flexible HR practices, and utilising workforce analytics that ultimately may enhance the overall commitment of employees during change initiatives. Moreover, this research study made methodological, empirical, conceptual contributions and recommendations to practitioners, discussed in Chapter 6.

1.7 Structure of the thesis

The thesis comprises of six chapters. All appendices, glossary of terms and references are at the end of this thesis.

Chapter 2 critically reviews in detail the academic literature, synthesising current thinking into 15 themes to identify key concepts and debates, gaps and issues. This guided the formulation of initial propositions but also the implications for the overall research study. The second chapter also presents the research questions.

Chapter 3 includes the research philosophy, methodology, process, strategy, tactics, ethics, and design. Based on the existing literature, this chapter presents the hypotheses development, control variables, and overall research model, designed to operationalise the hypotheses. It introduces a detailed section on survey design and development that includes a survey feasibility study, a pre-test of the survey and pilot study of the global online survey. The sampling frame and potential method bias and remedies are also discussed in this chapter.

Chapter 4 deals with data analysis from both the survey feasibility and the main global online study. The crucial objective for the researcher of the feasibility study was to confirm Mercer practitioner interest, and the possibility to conduct a global online survey. For the global survey data analysis, the researcher conducted the quantitative analysis in six steps performing a range of statistical analyses. SPSS regression analysis used the Hayes PROCESS macro and exploratory factor analysis (EFA) and SPSS Amos a confirmatory factor analysis (CFA) and structural equation modelling (SEM) to test the hypotheses.

Chapter 5 discusses the findings from the data analysis and offers possible explanations of the results.

Chapter 6 presents the conclusions and implications alongside recommendations for practitioners. It introduces a framework as a meaningful discussion basis for practitioners and academics. The chapter also outlines the limitations and contributions of this research study, as well as directions for future research before closing the thesis with concluding remarks.

1.8 Chapter summary

This chapter explains the background, context, and motivation to conduct this research. The theoretical foundations, conceptual models, debates, and understanding of key contributions and challenges in the development of each filed helped in articulating the research questions. The aim of the thesis introduced the initial conceptual model to operationalise the

hypotheses. The research design, data collection, and analysis followed eight clear stages connected with different activities. These proposed activities guided the researcher to complete this research study and addressed its limitations and research contributions. In summary, the structure of the thesis is presented including how this is tackled across each chapter.

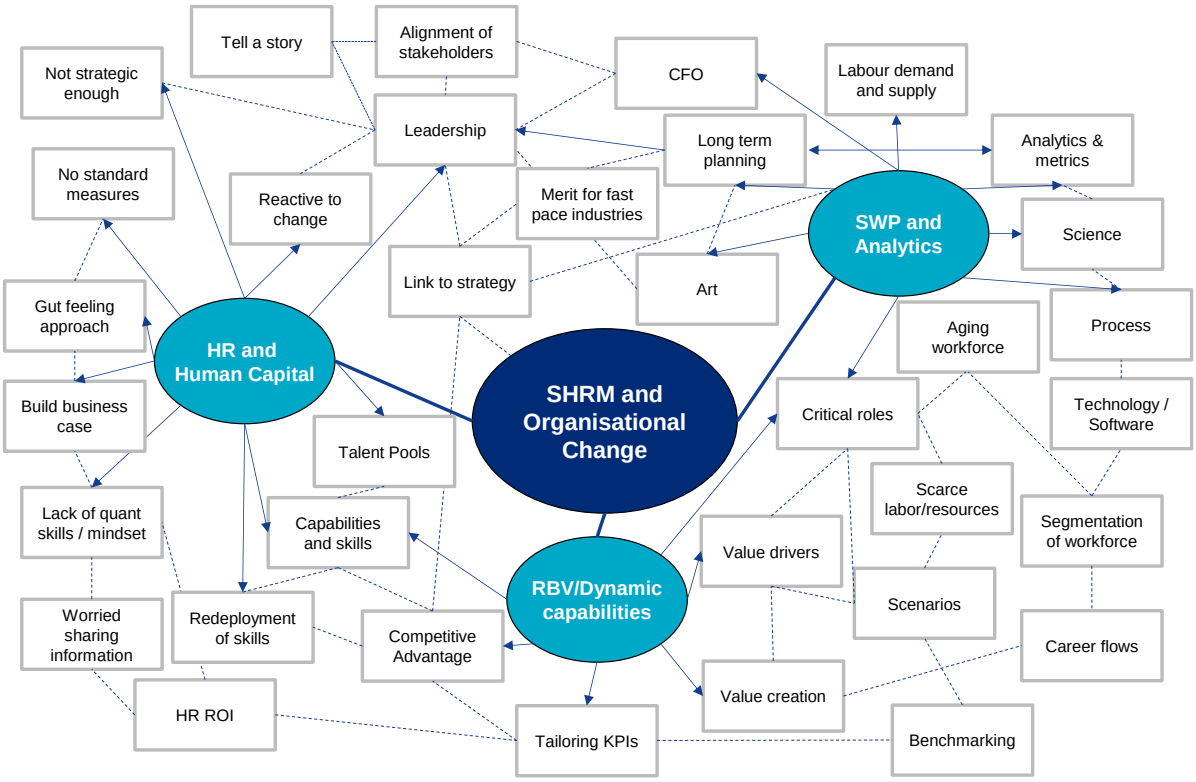
The next chapter will provide a more comprehensive overview of SHRM, workforce planning analytics and measurement frameworks, and organisational change literature. This understands the origins, critically reviews theoretical foundations, concepts and debates, and looks at gaps and issues as well as implications for the research study. The chapter will integrate the research findings to provide support to the proposed conceptual model.

2 Literature review

2.1 Introduction

Chapter 2 provides a comprehensive overview of relevant literature. In conducting this literature review, the researcher used different databases accessed via JSTOR and OneSearch, including journal databases such as EBSCO, Proquest, Emerald, and Science Direct. Search engines like Google Scholar were also used, as well as accessing publishers' websites directly, for example, Sage, Wiley, Taylor, and Francis. Generally, the researcher prioritised top-tier academic journals by looking at journal rankings published on the website of the Chartered Association of Business Schools' (CABS) Academic Journal Guides and the Scimago Journal & Country Rank (SJR) platform, recency of publications but also relevance. Scimago also consists of the Scopus database owned by the publisher Elsevier. Mind maps supported the researcher to summarise search results and to understand theoretical foundations, concepts, current debates and issues in the existing literature, see Figure 2.1.

Figure 2.1: Illustrative mind map based on the existing literature review



Source: Developed by author

Initial search terms included strategic human resource management (SHRM), human capital, HR skills and capabilities, HR practices, HR strategy, strategic workforce planning, workforce analytics, leadership and change, change management and organisational change. The

researcher downloaded academic journals into EndNote version X9, a reference management software, to consolidate and analyse findings. While searching different databases and studying academic journals, it became clear that the literature on strategic workforce planning and analytics in light of organisational change spans across a range of research fields including strategy, human resources, accounting, finance and organisational change. The sheer volume of research published in SHRM alone over the past two to three decades is breath-taking as discussed in recent meta-analytic reviews by Markoulli et al. (2017) and Jiang and Messersmith (2018). To conduct a systematic review of previous studies, the researcher formed clusters of different research fields by relevant disciplines, forming the basis for the literature review (see **Appendix A** for details). Because this chapter critically reviews three research fields separately; inevitably there will be some overlap: SHRM, workforce planning analytics and measurement frameworks and an organisational change lens (Boudreau and Cascio, 2017; Wright et al., 2018; Levenson, 2018; Han et al., 2019; By, 2020; Edwards et al., 2020). Each research field is reviewed by starting with an introduction, essentially, looking at its origins, before critically reviewing theoretical foundations, concepts and debates, and looking at gaps and issues as well as implications for the research study. This chapter concludes with a summary by integrating the research findings to provide support to the proposed conceptual model, introduced in Figure 1.2. The researcher continued reading relevant literature while engaging with subject matter experts until the final submission of this thesis.

2.2 Strategic human resource management

2.2.1 Introduction

The SRHM literature points to the HRM roots originating in the early 19th century with the beginning of personal departments in organisations in the US (Wright and Ulrich, 2017). At the same time, the majority of the academic literature on SHRM was published in the last four decades since modern HR emerged in the 1980s (Wright and Ulrich, 2017; Jiang and Messersmith, 2018). Specifically, the linking of business strategy and human resource management started in the early 1980s, and since then SHRM in particular related to HR has consistently followed developments within the field of strategic management (Devanna et al., 1999; Wright et al., 2001; Wöcke et al., 2007). Wright and Ulrich (2017) provide an overview of the SRHM literature, summarised within three different research focus termed “eras” that somewhat overlap. The era of conceptual models during the 1980s, in particular, linking HR with strategy and aligned HR systems with the business life cycle with seminal contributions by e.g. Miles and Snow (1984); Baird and Meshoulam (1988); Lengnick-Hall and Lengnick-

Hall (1988). The era of empirical examination commencing in the 1990s linked HR practices also termed High Performing Work Systems (HPWS) to measures of organisational and financial performance. Studies further differentiated between universalistic, contingency and configural approaches. In addition this distinguished vertically with strategy and horizontally alignment with seminal authors contributing to that era, e.g. Snell (1992); Snell and Dean (1992); Huselid (1995); MacDuffie (1995); Youndt et al. (1996); Messersmith et al. (2011); Jiang et al. (2012); Kehoe and Wright (2013). The era empirical critique in principle did not reject the idea and significance of HR practices and organisational performance, but critiqued methodological issues and context, see, e.g. Huselid and Becker (2000); Wall and Wood (2005); Wright et al. (2005).

Since 2010, the SHRM literature entered the era or phase of tensions but also brought forward trends to further develop the field (Wright et al., 2018). As SHRM continues to evolve, authors are still struggling to agree on an acceptable definition. Salaman et al. (2005: 3) point out "… because of the important role SHRM plays in theories of, and attempts to describe, understand, critique and change organizations and theories of organizational structures and functioning, it is virtually impossible to define SHRM… it consists of very diverse phenomena: prescriptions, models, theories and critiques". Simply put a commonly used definition of SHRM in the literature is "the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals" (Wright and McMahan, 1992: 298). This definition addresses two vital components that of vertical and horizontal fit (Kehoe, 2019). These concepts of fit but also flexibility are critical conceptual models identified in the literature (Lengnick-Hall et al., 2009; Way et al., 2015).

2.2.2 Theoretical foundations, conceptual models and debates

In a recent meta-review of the SHRM literature of nearly four decades, Jiang and Messersmith (2018) analysed 64 conceptual reviews summarising and synthesising previous studies and four meta-analyses (Combs et al., 2006; Subramony, 2009; Jiang et al., 2012; Rabl et al., 2014), identifying over 20 theoretical foundations. Today, most scholars agree that three theoretical paradigms dominate research in this area: the resource-based view of the firm, human capital theory, and social exchange theory (Wright and Ulrich, 2017). Markoulli et al. (2017) analysed over 12,000 HRM research articles published during the last two decades employing advanced science mapping to reach five major topic clusters: SHRM, experiencing HRM, employment relations, international HRM, and assessing people. Table 2.1 provides an overview of this analysis for the SHRM cluster in terms of concepts, research focus, and academic journals, by no means shown as a ranking since this may

change over time, and a reference to literature, identifying seminal authors contributing to the field.

Table 2.1: Overview of the SRHM field

Broader concepts	Research focus	Academic journals	Reference to literature
Innovation, organizational performance, human capital, leadership, firm performance, communication, competitive advantage, competency, flexibility, power, strategic HRM, managerial practice, compensation, HRM function and organizational culture	Stakeholders: HR manager, leader, HR professional, line manager, CEO, HR practitioner and team member Industries: Manufacturing, engineering, accounting, high technology industry and the pharmaceutical industry Countries/Regions: Developed countries and a strong focus on the US	International Journal of Human Resource Management, Human Resource Management, Personnel Review, International Journal of Manpower, Journal of Business Ethics, Human Resource Management Review, Asia Pacific Journal of Human Resources, Journal of Product Innovation Management, Journal of Management Studies and Human Resource Management Journal	Lengnick-Hall and Lengnick-Hall (1988); Wright and Snell (1991); Wright and McMahan (1992); MacDuffie (1995); Delaney and Huselid (1996); Delery and Doty (1996); Hansen et al. (1999); Boxall and Purcell (2000); Hitt et al. (2001); Way and Johnson (2005); Lepak et al. (2006); Arthur and Boyles (2007); Lepak and Shaw (2008); Bahuguna et al. (2009); Lengnick-Hall et al. (2009); Batt and Banerjee (2012); Kaufman (2012); Jiang et al. (2013); Jackson et al. (2014); Wright and Ulrich (2017)

Source: Developed by author, based on Markoulli et al. (2017: 11-13)

The seminal authors identified in the table above have reviewed SHRM related academic journals in publications such as the “International Journal of Human Resource Management”, “Human Resource Management” and “Personal Review” since the mid-1990s (e.g. Batt and Banerjee, 2012; Kaufman, 2012; Wright and Ulrich, 2017). Of particular relevance to this research is the work conducted by Lengnick-Hall et al. (2009) reviewing SHRM theoretical foundations, concepts and frameworks for the past three decades of research and clustering the existing literature into different themes, as shown in Table 2.2. These themes and concepts are somewhat consistent with current research and supplemented by the researcher to reflect recent discussions in the SHRM literature of the past decade (Markoulli et al., 2017; Wright and Ulrich, 2017; Boon et al., 2018; Boxall, 2018; Jiang and Messersmith, 2018; Wright et al., 2018; Sagar, 2019; Ahammad et al., 2020; Connelly et al., 2020).

Table 2.2: Key themes and concepts in the SHRM literature

Theme and concept	Synopsis of debate and observation	Seminal authors
Shifting from a focus on managing people to creating strategic contributions	The resource-based view of the firm, human capital and social exchange theory as theoretical foundations	Tichy et al. (1982); Kaplan and Norton (1996); Barney and Wright (1998); Colbert (2004); Evans and Davis (2005); Becker and Huselid (2006)
Explaining the contingency perspective, fit and flexibility	Discussion on types of fit, e.g. vertical/horizontal fit but also flexibility and best fit (i.e. contingency perspective) versus best practices (i.e. universalistic perspective) – SWP a vital but often missing piece in the SHRM literature	Miles and Snow (1984); Schuler and Jackson (1987); Delery (1998); Wright and Snell (1998); Boxall and Purcell (2000); de Pablos (2005); Werbel and DeMarie (2005); Kepes and Delery (2007); Christiansen and Higgs (2008); Azmi (2010); Ward and Tripp (2013)
Elaborating HR systems components and structure	Examines the elements and structure of HR systems, also termed high-performance work systems (HPWS)	Schuler (1992); Huselid (1995); Boxall and Purcell (2000); Lepak et al. (2003); Kepes and Delery (2006); Kang et al. (2007); Macky and Boxall (2008)
Expanding the scope and breadth of SHRM	HR function deployed to affect competitive advantage in its value chain. The concept of international SHRM in multinational organisations	Milliman et al. (1991); Schuler and MacMillan (1984); Porter and Millar (1985); Lengnick-Hall and Lengnick-Hall (1999); Björkman and Lervik (2007); Ngo et al. (2008)
Achieving HR implementation and execution	Difference between intended and realised business strategy but also intended and realised human resource strategy – the role of HR as a business partner	Truss and Gratton (1994); Kaplan and Norton (2004); Becker and Huselid (2006); Khilji and Wang (2006); Sheehan et al. (2007)
Measuring outcomes of SHRM	Determining the valid and appropriately representative measure of SHRM activities	Kaplan and Norton (1996); Rogers and Wright (1998); Lawler et al. (2004); Way and Johnson (2005); Boxall and Purcell (2008); Lawler III and Boudreau (2009); Ward and Tripp (2013); Nienaber and Sewdass (2016)
Evaluating methodological issues	Critical empirical issues surfaced in HRM and performance research referred to as the "black box" meaning difficulties in capturing multiple dimensions of fit and not paying attention to context	Gerhart et al. (2000); Huselid and Becker (2000); Kepes and Delery (2006); Arthur and Boyles (2007)
The era of tensions for SHRM research and trends	Four critical tensions are facing the field going forward. There seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control) but not both. A key trend is helping academic research in having real-world relevance and pair rich practitioner data with corresponding academic rigour	Markoulli et al. (2017); Wright and Ulrich (2017); Boon et al. (2018); Boxall (2018); Jiang and Messersmith (2018); Wright et al. (2018); Sagar (2019); Ahammad et al. (2020); Connelly et al. (2020)

Source: Developed by author, based on Lengnick-Hall et al. (2009); Wright et al. (2018); Connelly et al. (2020)

2.2.2.1 Shifting from a focus on managing people to creating strategic contributions

There are many authors who contributed to the theoretical foundations in the early developments of the field, when the SHRM literature progress was by and large fragmented

(e.g. Tichy et al., 1982; Evans, 1986; Wright and Snell, 1991). However, following these developments “more attention was paid to building SHRM theory on the foundation of established theories from other fields” (Lengnick-Hall et al., 2009: 69).

The resource-based view of strategy

A critical development within the strategic literature that supported the process of putting human resources on the leadership agenda is the resource-based view (RBV) of strategy (Barney, 1991; Priem and Butler, 2001; Markoulli et al., 2017). It has significantly influenced the field of SHRM. The concept of the resource-based view takes an internal look at the organisation’s capabilities and resources, both intangible and tangible. The RBV argues that competitive advantage to the extent that it meets the criteria of being valuable, rare, and inimitable as well as challenging to substitute resources can serve as a potential source of sustainable competitive advantage. It provides a framework that identifies the potential sources of sustainable competitive advantage achievable by investing in HR (Barney, 1991; Wright and Ulrich, 2017; Jiang and Messersmith, 2018).

People’s capabilities and competencies are identified as investments in an organisation. Nonaka and Takeuchi (1995) distinguish between tacit knowledge (the expertise that is difficult to duplicate or unique) and explicit knowledge (which is easily transferable). It is interesting that human capital theory differentiates between general skills that can be simply transferred to other organisations and firm-specific skills that provide value to only one firm and are of no value to competitors (Flamholtz and Lacey, 1981). For tacit knowledge and specific skills Barney and Wright (1998) argue that human capital or HR can provide a competitive advantage to the extent that it meets the criteria of being valuable, rare, inimitable and difficult to substitute. It is worth pointing out further to the debate that the terms core competencies and distinctive capabilities are sometimes used interchangeably in the literature. For example, Prahalad and Hamel (1990) argue that one of the critical tasks of management is to create a company that produces products and services meeting the needs of customers that they have not seen or experienced before, known as outputs (enhanced perceived value by the customer). The competencies (and skills) come from the collective learning of individual employees, its human capital, within the organisation, known as inputs.

In contrast, Kay (1993) argues that the distinctive capabilities of the company’s resources are essential in providing a competitive advantage. It follows the concept of sustainability, i.e. persisting over time and appropriable, just benefiting an organisation possessing distinct capabilities. These distinct capabilities derive from three factors: innovation (human capital), reputation (structural capital) and architecture (human and relational capital), whereby architecture refers to the ability of the firm to create organisational knowledge supported by

efficient processes which are more than just the sum of individual employees, as human capital on its own is of little value (Pedro et al., 2018).

Wright et al. (2001) and Boxall and Purcell (2000) invited researchers to utilise the resource-based view of the firm as a theoretical foundation. These authors pointed to the converging of the strategy and strategic human resource management (SHRM) domain via the resource-based view of the firm. According to Chermack et al. (2001: 12-13), there are three primary schools of thought when it comes to different concepts to strategic management and scenario planning: the rationalist "features a tacit and underlying assumption that there is indeed one best solution", the evolutionist "suggests that a winning strategy can only be articulated in retrospect", and the processual perspective. The processual school argues that alternative future scenarios are likely with the use of change management concepts (Chermack et al., 2001). Other authors point out that the processual school views the organisation as a living organism (e.g., Van der Heijden, 1997, cited in Chermack et al., 2001: 13). Colbert (2004) investigated the complex, living-systems extension of the resource-based view – complex systems characterised by an element of unpredictability, non-linearity, and emergent characteristics. Many scholars would agree that there is a broad perception that organisational change is a complex process (Pascale, 1999; Rumelt, 1991; By, 2020).

The resource-based view does not indicate how resources can be developed and changed over time. It also does not adequately capture the dynamics of the workforce within the organisation, and the theory lacks detail and so is difficult to implement. The amount of research within large and complex strategic organisational change programmes is limited (Harwood and Ashleigh, 2005). Most strategies, like most change initiatives, fail due to inadequate planning, but also because of poor execution during the implementation and their lack of suitable measures to track progress (Priem and Butler, 2001). In response to the limitations of the RBV, attention has focused on the need for firms to continuously develop new capabilities or competencies in a dynamic environment (Eisenhardt and Martin, 2000; Teece, 2007).

Dynamic capabilities can be regarded as an applied approach of change management, focusing on firm-level competencies that drive the development of innovative resources by combining distinct capabilities enabling responding to organisational change (Greenwood and Hinings, 1996). Change management is generally seen as a structured organisational process supporting firms heading from a present state to an anticipated future state, defined as "the process of continually renewing an organisation's direction, structure, and capabilities to serve the ever changing needs of external and internal customers" (Moran and Brightman, 2000: 111). Dynamic capabilities are best defined as "the firm's potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely

and market-oriented decisions, and to change its resource base" (Barreto, 2010: 271). This resonates well with the current HR flexibility discussion in the SHRM literature (Wright et al., 2018). However with the dynamic capabilities theory (Whittington, 2006) findings continue to be unrelated, and the antecedents and consequences of dynamic capabilities are still not fully understood. This means the construct continues to be theoretical and so challenging to apply in an organisational setting (Prieto et al., 2009; Barreto, 2010). Moreover, insufficient empirical research on dynamic capabilities concerns numerous academics (Williamson, 1999; Newbert, 2007; Ahammad et al., 2020).

Human capital theory

The concept of human capital theory combines elements of traditional human resource management with the economic principles of asset/capital accumulation, investments, and the creation of value in organisations. Employees rent their human capital to organisations, and it is lost if employees leave. As a result human capital theory suggests that organisations need to strike the right balance between on one had building human capital through training and recruiting – and on the other hand avoiding high levels of turnover to retain human capital investments (Dierickx and Cool, 1989; Bassi and McMurrer, 2007; Fitz-Enz, 2009; Wright and Ulrich, 2017; Jiang and Messersmith, 2018). The introduction of strategic human resource management (SHRM) triggered the HR field to shift from a focus on managing people toward one of human capital contributions, strategic capabilities and an organisation's competitive performance (Lengnick-Hall et al., 2009).

Arguably, these developments guided the role of the HR function in organisations to transform from a small administrative role to becoming central for managing and measuring HR. Moreover, additional HR tasks include implementing strategies and providing business decision-makers with information to steer a company and to respond faster to sudden changes in the external environment and the internal labour market (Boxall, 1994; Wright et al., 2018). The awareness that people or knowledge-based assets are vital for the future success of an organisation increased the importance of managing but also measuring its "human capital", enabling HR practitioners to become recognised as strategic business partners (Ulrich, 1997). Ulrich and Brockbank (2005) made the point that HR needs to become more of a strategic partner by linking HR efforts closer to business strategy. Moreover, HR needs to play a pivotal role in managing strategic change, while organisational change should be aligned to the organisational strategy (Rieley and Clarkson, 2001; Burnes, 2004).

HR is considered part of intangible resources that are generally classified into three components: human capital or HR (such as skills, knowledge, and expertise), structural

capital (such as brand and reputation) and relational capital – sometimes also referred to as customer capital (Skandia, 1995; Cañibano and Paloma, 2001; Lev, 2004). The terms intangible resources, intellectual capital and intangible asset, have been used interchangeably in the literature. Initially, the word intangible asset is an accounting expression and does not fully reflect that these resources are more closely related to an organisation's strategy (Guimón, 2009). Intangible resources are probably best defined as "all non-monetary and non-physical resources that are fully or partly controlled by the organization and that contribute to the organization's value creation" (Ross et al., 2005, cited in Abdullah and Sofian, 2012: 538). HR, or more broadly human capital, is required to leverage structural and relational capital that may result in a firm's competitive advantage because "without human capital neither can work nor be utilised" (Dumay and Edvinsson, 2013: 171).

Social exchange theory

The RBV and human capital theory tend to focus on why human resource management (HRM) systems are essential for organisations. Social exchange theory, as part of the behavioural perspective, asserts how HRM systems support companies to reach strategic goals (Jiang and Messersmith, 2018; Wright et al., 2018). Moreover, "scholars often refer to the behavioural perspective for identifying specific mediators and exploring how HRM systems influence organizational effectiveness by affecting employee behaviors", such as empowerment and affective commitment (Jiang and Messersmith, 2018: 10). Social exchange theory demonstrated that HRM subsystems adjusted to seek better performance created a substantial affective commitment of employees resulting in improved organisational performance and reduced turnover intentions (Gong et al., 2009; Fazio et al., 2017). Empirical evidence also suggests that specific HRM practices cause affective commitment between employees (Kehoe and Wright, 2013; Fazio et al., 2017). In a similar vein, the organisational change literature also discusses how commitment to change as a mediator influences employee performance (Herscovitch and Meyer, 2002; Rosenbaum et al., 2018; Raveendran and Gamage, 2019; Edwards et al., 2020). The commitment to change construct comprises of three items: affective commitment, continuance commitment and normative commitment (Adam et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019). Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly. Normative commitment is the obligation supporting the change initiative. In particular, affective and normative commitment to change was associated with championing change, i.e. higher levels of support for change as opposed to continuance commitment. However, normative commitment is not always applicable in

different cultural settings (Herscovitch and Meyer, 2002; Cunningham, 2006; Raveendran and Gamage, 2019).

Related to the social exchange theory – labelled as a theoretical foundation by Jiang and Messersmith (2018) but probably more of a framework – is the Ability, Motivate and Opportunity (AMO) model, initially developed by Boxall and Purcell (2000). This model offers direction on the specific HR practices that can enhance ability and motivation, as well as provide opportunities to employees (Armstrong and Brown, 2019). However, according to Latorre et al. (2016: 328) “despite the significant focus of the AMO model on employee behaviour, this approach fails to explain the process whereby HR practices affect employee behaviour”.

2.2.2.2 Explaining the contingency perspective, fit and flexibility

Multiple sometimes competing perspectives are available to shed light on the contribution of SRHM to organisational performance (Armstrong and Brown, 2019). The best practice model is commonly associated with a universalistic perspective, while the best fit model is associated with the contingency, configurational, or contextual perspectives (Markoulli et al., 2017). By collecting over 200 responses from a survey of HRM scholars Alcázar et al. (2005) attempted to understand the contributions and issues of the four perspectives, see Table 2.3.

Table 2.3 Contributions and issues with different SHRM research perspectives

Perspectives	Characteristics	Contributions	Issues
Universalistic	Represents the foundation to analyse the relationship, assuming that potential best HR practices are probable	Demonstrated importance of human capital in firms, high level of statistical significance	Lacking theoretical foundations, narrow objectives, mechanistic and rational explanations, conceptual limitations in the establishment of causal relationships, performance measures based exclusively on financial indicators, strategic change not explained, HRM considered as a "black-box"
Contingent	Adds complexity by including interactions omitted by the universalistic perspective	Inclusion of other variables that mediate the relationship between HRM and performance, a more robust theoretical basis	Micro-orientation, the statistical techniques mainly used (regressions) lead to universalistic conclusions, excessive emphasis on "fit" issues, no consideration of political variables, HRM considered as a "black-box"
Configurational	Looking at both universalistic and contingent perspectives, configurational models suggest a detailed analysis of HR strategies and their internal dynamics	Internal analysis of the HRM system, consideration of synergy and interdependence between the different elements of the system, assumption that different HRM configurations can be equally efficient	The definition of management patterns is a simplification of reality, more complex methodologies required, deficient empirical foundations
Contextual	Organisations need to integrate themselves in the social context in which they operate in	Introduction of the social dimension of HRM, integration of the HRM system in a macrosocial context, reconsideration of manager's autonomy of decision, extensive series of data	Deficient empirical treatment, based mainly on descriptive statistical techniques, theoretical foundations differ from the rest of perspectives and are based mainly an industrial relations approach

Source: Developed by author, based on Alcázar et al. (2005: 234-235) and Markoulli et al. (2017)

According to Altarawneh (2016: 488), the concept of best practice focuses on the effectiveness of independent practices that "implies that all organizations will be in a strong situation if they recognize and implement best practice in the way they manage people". The concept of fit further distinguishes between internal fit (often referred to as horizontal fit) and external fit (often referred to as vertical fit) (Altarawneh, 2016; Kehoe, 2019; Soomro et al., 2020). The one-dimensional focus on horizontal fit in studies and less of an attention to vertical fit remains a common critique in the SHRM literature in addition to mostly ignoring flexibility (Lengnick-Hall et al., 2009; Wright et al., 2018). However "to create a sustainable competitive advantage, organizational flexibility (both resource and coordination) and fit (both internal and external) must be achieved simultaneously to create a firm that renews itself and can respond quickly to environmental demands" de Pablos (2005) cited in Lengnick-Hall et al. (2009).

Vertical fit

Vertical fit aligns HR strategies with organisational strategies. HR strategies are programmes dealing with the management of human resources or human capital in a company (Schuler, 1992; Wright et al., 2018). There are many definitions of human capital in the literature (Hitt and Duane, 2002; Hall, 2008). For example, McGregor et al. (2004) define human capital as the size and quality of labour markets and the sum of people's competencies within an organisation. Human capital is used as an expression to define the importance of employees in organisations. It is identified as the vital source of innovation that contributes to the value creation process driven by the knowledge, creativity, and skills of employees (Sveiby, 1997; Bontis and Fitz-Enz, 2002). For example, Christiansen and Higgs (2008) investigated how the alignment of HR strategy and business strategy leads to enhanced organisational performance. Based on Miles and Snow (1986) theories of strategic typologies, the study confirmed that organisations with tight and minimal alignment achieved a higher level of performance in comparison to firms that have a misalignment. Despite numerous studies published, the empirical research that supports the vertical fit perspective is somewhat limited and still has issues with measuring outcomes of SHRM due to limited dependent variables (e.g. Miles and Snow, 1984; Wright et al., 1995; Youndt et al., 1996; Delery, 1998; Batt, 2000; Kepes and Delery, 2007; Kehoe and Collins, 2008; Azmi, 2010; Chadwick et al., 2013; Kehoe, 2019).

Horizontal fit

Horizontal fit integrates and aligns distinct HR activities, such as several HR practices, conceptually referred to as high-performance work systems (HPWS). These HPWS include, for example, selective hiring, extensive training, job design programs, formalised performance appraisal, self-managed teams, performance-based compensation, employment security and internal promotion supporting one another (Altarawneh, 2016). For example, Batt (2002) was one of the first contributors that empirically tested HPWS in a call centre environment and "demonstrated that establishments implementing the high performance work systems had lower employee quit rate and higher sales growth" (Napathom, 2018: 64). The empirical research on horizontal fit, specifically on the concept of a high-performance work system (HPWS), has consistently found that this fit leads to better organizational performance outcomes. However, there are still issues with measuring outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance (e.g. Arthur, 1994; MacDuffie, 1995; Huselid, 1995; Delery, 1998; Batt, 2002; Combs et al., 2006; Chadwick, 2010; Ngo and Foley, 2011).

HR flexibility

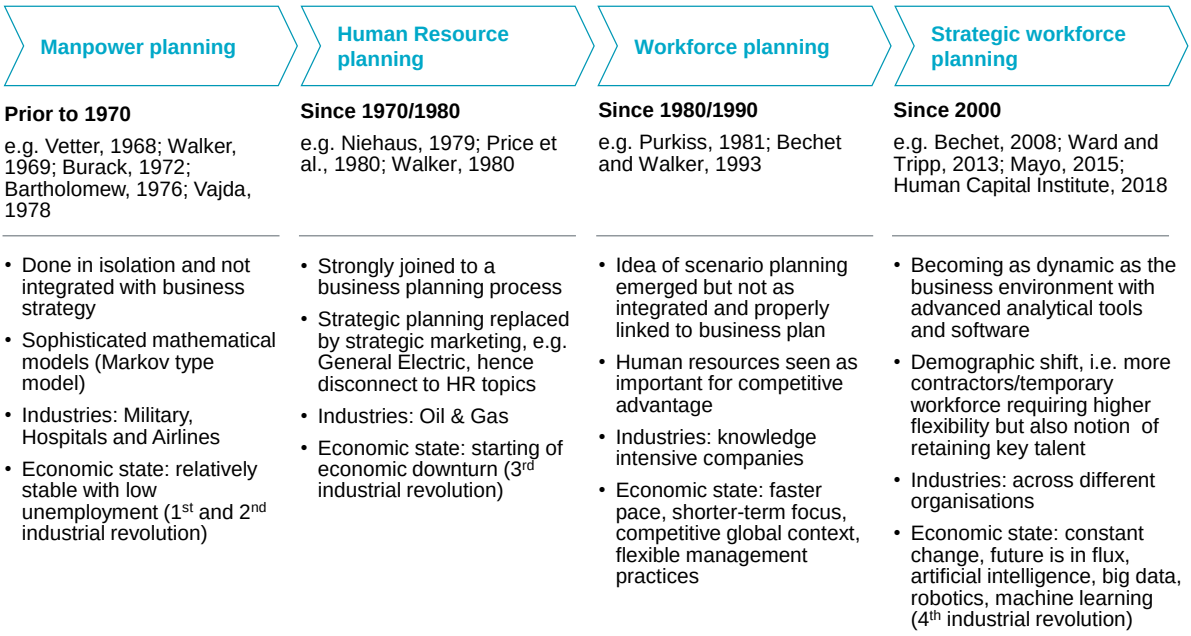
The literature increasingly emphasised the concept of flexibility in SHRM research (Wright and Snell, 1998; Becker and Huselid, 2006; Lengnick-Hall et al., 2009; Wright et al., 2018). The concept of HR flexibility is related to a dynamic capability enabling organisations to respond to changing external but also internal conditions to create sustainable value by also exploring the relationship between HR flexibility and firm performance (Eisenhardt and Martin, 2000; Bhattacharya et al., 2005; Lengnick-Hall et al., 2009). HR flexibility comprises of three dimensions. Employee skills (redeployment and application of different skills), employee behaviour (adjusting to changing circumstances), and HR practices: "the extent to which the firm's HR practices can be adapted and applied across a variety of situations" (Wright and Snell, 1998; Bhattacharya et al., 2005: 33). This HR flexibility reflected in the concept of SWP that "examines the gap between staff availabilities (internal and external to the organization) and staffing requirements (to perform tasks in the organization) over time, and prescribes courses of action to narrow such a gap" or mitigate HR-related risks (Doumic et al., 2017: 11). However, this HR flexibility is not explicitly differentiated by resource and coordination flexibility (Ketkar and Sett, 2009; Way et al., 2015). More recently, the Human Resource Management Review published five articles that underline the importance of the concept of HR flexibility, framing it as strategic agility providing organisations with the opportunity to respond to ongoing changes with HR management (Ahammad et al., 2020). The empirical research that supports HR flexibility is somewhat limited. There are still issues with measuring the outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance (e.g. Wright and Snell, 1998; Bhattacharya et al., 2005; Ngo et al., 2008; Ketkar and Sett, 2009; Way et al., 2015).

SWP a vital but often missing piece in the SHRM literature

Despite resonating with the current fit and flexibility discussion and the impact on organisational performance, SWP is an essential but often missing piece in the SHRM literature. According to Ayandibu and Kaseeram (2020: 127), "a review of empirical literature reveals that workforce planning has a strong relationship with organisational performance as well as productivity". SWP is actively discussed in the practitioner literature and generally discussed as HR or workforce planning in the academic literature (Boudreau and Cascio, 2017; Armstrong and Brown, 2019; Goldberg and Boyes, 2019; Han et al., 2019). SWP aligns core business processes to SHRM related changes and organisational needs (Willis et al., 2018; Goldberg and Boyes, 2019). The concept itself is nothing new, and it was referred to as manpower planning in its early stages (Ward and Tripp, 2013; Willis et al., 2018). The

terms HR planning, workforce planning, and SWP have been used interchangeably in the literature but have distinct characteristics, as illustrated in Figure 2.2.

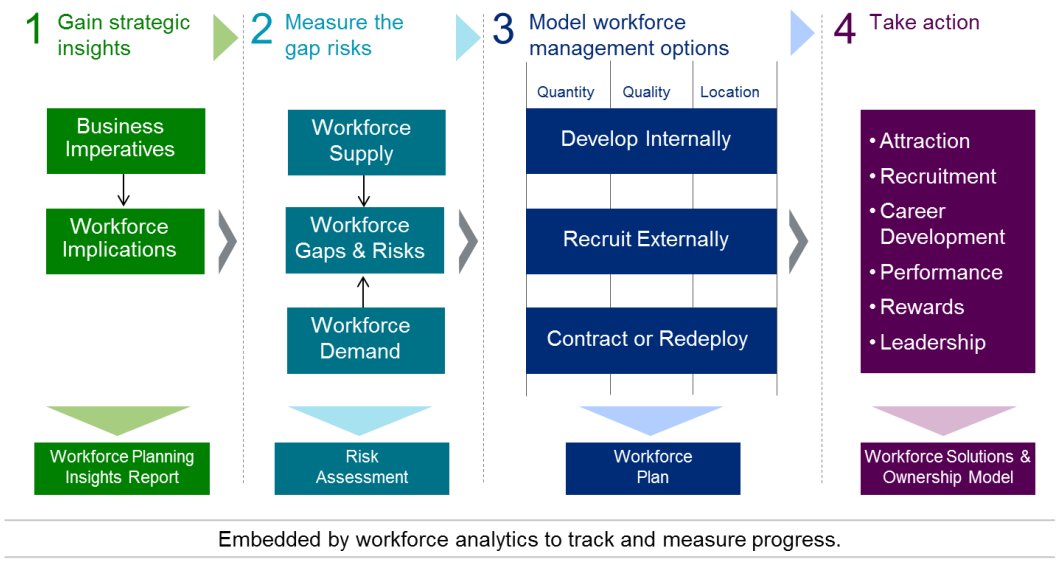
Figure 2.2: The evolution of strategic workforce planning



Source: Developed by author, based on Ward and Tripp (2013)

SWP "builds upon quantitative activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organizational strategy" (Human Capital Institute, 2018). SWP enables organisations and "HR professionals to plan for change rather than being surprised by events, as well as provides strategic methods for addressing current and anticipated workforce issues" especially with shifting demographics (Meisinger, 2007: 10). The literature predominately differentiates between two types of workforce planning models (e.g. Price et al., 1980; Purkiss, 1981; Willis et al., 2018): normative and descriptive (or exploratory) models. Normative models are so-called optimisation tools that "prescribe" policies in order to achieve an ideal HR system. Descriptive frameworks are analytical tools that predict how the HR system potentially reacts in response to changing settings (Zhu and Sherali, 2009; Goldberg and Boyes, 2019). Based on the original work by seminal authors (e.g. Vetter, 1968; Bennison and Casson, 1984; Golden and Ramanujam, 1985; Bechet and Walker, 1993) Mercer developed a strategic workforce planning model consisting of four phases incorporating elements from both optimisation and analytical tools, refer to Figure 2.3. According to Rothwell and Sredl (2000: 241), strategic workforce planning "is an integration of all HR activities with overall strategic plans", the model is an ongoing collaborative management decision-making process between HR and the business enabling the implementation of organisational change.

Figure 2.3: Strategic workforce planning model



Source: Mercer's Strategic Workforce Planning Model (2020), adapted from Vetter (1968) and Bennison and Casson (1984)

It is fair to argue that "for any organisation to manage HR, it must ensure effective workforce planning" to achieve its strategic goals (Ayandibu and Kaseeram, 2020: 128). SWP is a significant enabler of the development of an HR strategy and thus an important sub-set of SHRM, often done in isolation (Mayo, 2015). Consequently, organisations have limited flexibility in understanding all available strategic options, which can slow the value creation process (Sullivan, 2002; Lavelle, 2007). On a similar note "numerous studies and sources indicate that workforce planning is not well executed, systematically applied or indeed tackled at all in the majority of public and private organizations" but seen as critical to managing organisational change successfully (Lavelle, 2007: 371). According to Mayo (2015: 180) "Turbulence and uncertainty are not an excuse for not doing it. Without it, organisations will find themselves firefighting and merely reactive".

2.2.2.3 Elaborating HR systems components and structure

Initial steps were taken by Schuler (1992) to analyse the internal mechanisms of a work or HR system, concluding that these include a philosophy, policies, programmes, practices and processes. For example, HR programmes are deliberate HR actions aligning strategic organisational change efforts to the requirements of a company (Jiang and Messersmith, 2018). In a similar vein, Ulrich (1997) put forward the argument that HR professionals must establish an organisational structure or architecture and be able to translate strategy into action. According to Lengnick-Hall et al. (2009: 72) "many of the questions raised in the exploration of contingency factors and efforts to fit specific aspects of HRM systems to particular organizational outcomes or processes led to the conclusion that HR policies and

practices are complex and interdependent processes that should not be considered independently but, rather, should be examined as a subsystem of bundles". High-performance practices foster two employee behaviours in line with the social exchange theory: affective commitment and empowerment (Para-González et al., 2019; Armstrong and Brown, 2019). Moreover, "employees' affective commitment is achieved providing that employees note that the organization appreciates them, offers them responsibilities and provides them with information, taking into account that they are essential elements for a company. This can be achieved through the adoption of HPWS, which facilitate empowerment as well" (Para-González et al., 2019: 316).

High-performance work systems (HPWS)

The majority of work in the literature on high-performance work systems (HPWS) looked at a direct relationship between specific HR practices and performance outcomes that positively impact the bottom line or contribute to organisational effectiveness, in a way related to horizontal fit (Ramsay et al., 2000; Guthrie, 2001; Para-González et al., 2019). The empirical research on HPWS has consistently found that a statistically significant relationship exists between HPWS and firm performance (e.g. Armstrong et al., 2010; Kim & Wright, 2011; Lee, Lee & Kang, 2012). However, the research predominantly focused on the manufacturing industry and not on, for example, the service sector, such as the education industry (Paracha et al., 2014; Li et al., 2019). For instance, early research by Becker et al. (1998) identified that there is a link between HR practices and an organisation's performance. The impact on high-performance work or HR system on organisational performance was also investigated by Shih et al. (2006), concluding that better performing organisations invested more in advanced HRM practices. According to Messersmith et al. (2011: 1107), "yet, conceptually organizational performance does not stem from HR practices themselves but rather from the human efforts that result from using HR practices". The literature points to the "high-involvement" management model, i.e., not just continuance but also affective and normative commitment (Herscovitch and Meyer, 2002).

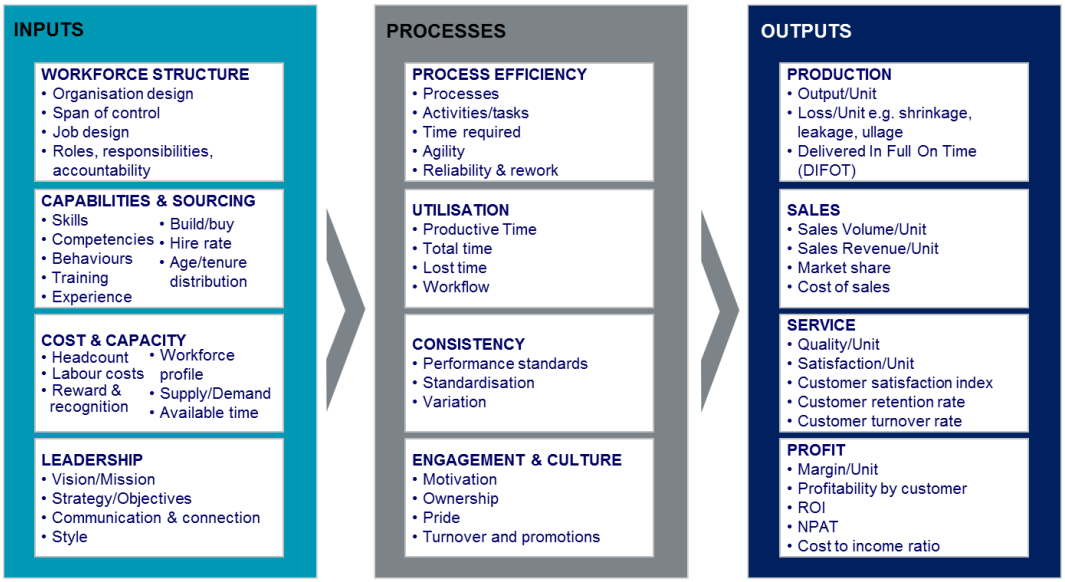
In contrast, others address the "high-commitment" management model, i.e., in essence empowering employees to take own decisions, that are systems of HR practices designed to improve employees skills, commitment and productivity (Ramsay et al., 2000; Datta et al., 2005; Para-González et al., 2019). HPWS comprise of certain distinct but interconnected HR practices designed to enhance the competencies and skills of employees that could also be a potential source for competitive advantage. These competencies and skills are either developed internally, recruited externally or redeployed, refer to the third phase of the SWP model introduced in Figure 2.3 (Becker et al., 1998). These HR practices can consist of

hiring, training, compensation, performance evaluations and career development promoting organisational flexibility, referring to the last phase of the SWP model introduced in Figure 2.3 (Huselid, 1995; Ngo and Foley, 2011).

2.2.2.4 Expanding the scope and breadth of SHRM

The literature (Porter and Millar, 1985) also discusses the specific changes to the HR function to affect competitive advantage by taking into account that traditionally value is created through the value chain. Allee (2002) argues that the value chain as a linear, mechanistic view of a business is based on the industrial age production line and not adequate to analyse intangibles and HR value divers, such as knowledge and skills that develop over time in today's knowledge economy. As Brooking (1997) and Wright and Ulrich (2017) point out, the value of many organisations no longer relates to tangible asset but intangible resources, in particular the employees. For a firm to be successful in a rapidly changing international environment its strategy is significantly influenced by these resources and investments in HR (Levenson, 2018; Ahammad et al., 2020). As Alcaniz et al. (2011) argue, a two-way relationship exists between resources and strategy. Based on the original work by McGrath (1984) Mercer, a global HR consultancy, developed a workforce productivity driver framework that should support analysing "value drivers" in the context of strategic workforce planning, shown in Figure 2.4.

Figure 2.4: Workforce productivity driver framework



Source: Mercer's Workforce Productivity Framework (2020), adapted from McGrath (1984)

SHRM in an international context

With the turn of the new millennium, studies investigated the impact of HRM practices in different countries in particular related to talent management in multinational organisations (Gallardo-Gallardo et al., 2020). Table 2.4 provides an overview of the broader concepts and research focus on these studies (Markoulli et al., 2017).

Table 2.4: Overview of the expansion of SHRM research in an international context

Broader concepts	Research focus	Academic journals	Top articles searched and cited
Culture, globalisation, performance management, international assignment, international HRM, mobility, staffing, expatriation, host country, career development, adaptation, talent management, internationalization, institutional theory and legitimacy	Stakeholders: Expatriate, expatriate manager, spouse, host country national, Chinese employee, mentor Industries: Industrial sector Countries: China, USA, Taiwan, India, Japan, Hong Kong, Asia, New Zealand, South Korea, Singapore, Malaysia, North America, South Africa, Africa	International Journal of Human Resource Management, Journal of World Business, Human Resource Management, Personnel Review, Journal of International Business Studies, Asia Pacific Journal of Human Resources, European Journal of International Management, Human Resource Management Review, International Journal of Manpower, Journal of Management Studies	Influences on human-resource management-practices in multinational corporations by Rosenzweig and Nohria (1994), Toward an integrative model of strategic international human resource management by Taylor et al. (1996), Cross-cultural competence in international business: toward a definition and a model by Johnson et al. (2006), Institutional environments, staffing strategies, and subsidiary performance by Gaur et al. (2007), Career capital during international work experiences: contrasting self-initiated expatriate experiences and assigned expatriation by Jokinen et al. (2008)

Source: Developed by author, based on Markoulli et al. (2017: 11-13)

While this type of research went “global”, predominately conducted in Asian countries as shown in the above table, the majority of topics covered is somewhat different from the SHRM broader concepts, as introduced in Table 2.1. Consequently, SHRM research remains focused on studies centred around the US, in particular research that makes it into the top academic journals (Wright et al., 2018).

2.2.2.5 Achieving HR implementation and execution

According to Lengnick-Hall et al. (2009: 75) “as the conceptual frameworks guiding SHRM became more intricate and more extensive, growing concern with a firm’s ability to actually achieve its intended HR practices and strategic results began to emerge”. The difference between intended and realised business strategy but also intended and realised human resource strategy was an effort to improve the comprehension of vertical fit (Lengnick-Hall et al., 2009; Kehoe, 2019). Understanding the role HR plays as a business partner in supporting “aligning employees toward common organization goals produces synergy and compatibility in organizational direction and ultimately translates to strategic success”, conceptually referred to as employee line of sight (Boswell et al., 2006: 5; Ulrich and

Grochowski, 2018). There is a common challenge for organisations across industries all over the globe that is well-published in talent management literature: identifying, attracting, recruiting, developing and retaining talent, a central activity in Strategic Workforce Planning (SWP), regarded as a critical resource to achieve lasting competitive advantage (Gallardo-Gallardo et al., 2020). Ulrich (1997) made the point that HR needs to become more of a strategic partner linking HR efforts closer to business strategy and playing a key role in managing strategic change. The idea emerged that HR could become a strategic business partner rather than purely a sourcing and training function, specifically the role in the creation and execution of strategy in addition to leading change by fully utilising SWP (Schuler, 1992; Barney and Wright, 1998; Sagar, 2019). The literature suggests that this can be achieved by managing the HR resources (talent pools) vital to support different strategies and by developing the necessary capabilities to implement the strategy with other leaders or decision-makers (Lawler and Mohrman, 2003; Lengnick-Hall et al., 2009; Gallardo-Gallardo et al., 2020). It is somewhat unexpected that studies have identified little change in the HR operating model, implying that the HR function is still primarily focused on the administrative task of HR management and not on strategic workforce planning (Lawler and Mohrman, 2000). There is an increasing agreement in favour of the strategic business partner model, yet HR is not able to execute the model because it is not strategic enough in implementing and executing the HR strategy (Ulrich and Grochowski, 2018; Sagar, 2019). According to Huselid and Barnes (2003: 10), “little academic work has been completed regarding human capital management systems. Practitioners are relatively light years ahead of the academic work in progress or already completed”. The biggest challenge for HR is to develop systems of HR management practices that allow supporting implementation and execution (Armstrong and Brown, 2019). These comprise of leadership practices, employee engagement, knowledge accessibility, workforce optimisation and learning capacity across the organisation, as opposed to developing independent HR management best practices (Bassi and McMurrer, 2007; Armstrong and Brown, 2019). This demands a changing mindset from the traditional sub-functional (such as recruitment, development, staffing, and performance management) silo thinking organisational structure (Wright and Snell, 1991; Lado and Wilson, 1994; Wright et al., 1994; Ahammad et al., 2020). However, “HR managers should consider HPWS as a profitable and valuable approach to optimizing job and organizational outcomes, facilitating these achievements through their HR” (Para-González et al., 2019: 316).

2.2.2.6 Measuring outcomes of SHRM

Finding efficiency and effectiveness measures that establish the outcome of implementing SHRM related changes has been following the evolution of this field since its beginnings (e.g. Kaplan and Norton, 1996; Boudreau and Ramstad, 1997; Lawler et al., 2004; Lengnick-Hall et al., 2009). According to Delery (1998), cited in Lengnick-Hall et al. (2009: 66) "limited dependent variable – failure to consider more than bottom-line performance", somewhat still an issue today and often ignoring the specific research context (Wright et al., 2018). Moreover "organizational performance, in the field of SHRM, remained an imprecise and loose construct; most of the researchers reviewed a great deal of literature on the organizational performance, but its exact definition and measurement are relatively unknown" (Darwish et al., 2013 cited in Soomro, 2020). According to Garcia-Carbonell et al. (2015: 265) "recent reviews of the literature revealed three main issues that limit the progress in clarifying the HRM – performance association: lack of theoretical development, difficulties in measuring performance, and problems to the methods applied to test models", related to methodological issues. Generally, indicators such as sales growth, productivity, e.g. revenue per employee, return on assets (ROA), return on investment (ROI) and shareholder value measure organisational performance (Becker and Huselid, 2006; Ericksen, 2007; Qadir and John, 2019). Today most scholars agree in the SHRM literature that organisational performance consists of HR, operational and financial outcomes (Soomro et al., 2020). Somewhat surprising is that the literature did not give extensive consideration to workforce analytics but identified that "one way for further research to make truly novel contributions may be to research activities HR professionals are regularly involved in" (Markoulli et al., 2017: 18). However there is a "need for further research into workforce and HR analytics and applying 'big data' analytics into strategic HRM research", as introduced in Figure 2.3, a central activity in the SWP model (Jiang and Messersmith, 2018: 20).

Recent developments in the literature suggest to include a multi-stakeholder approach to SHRM and organisational performance outcomes, including not only the organisation but also external stakeholders and employees (Armstrong and Brown, 2019; Jiang and Messersmith, 2018). Recent studies also investigate the relationship between organisational commitment as a mediator and performance, since there seems to be a somewhat indirect relationship on organisational performance (Hendri Muhammad, 2019). According to Wright and Ulrich (2017: 59) "research on the HRM-performance linkage has increasingly attempted to specify the mediating mechanism through which practices impact performance". The type of mediation research also increased in comparison to moderator "mechanisms of the relationship between HRM systems and outcomes over the past ten years" (Jiang and Messersmith, 2018: 17-18). Jackson et al. (2014: 23) confirmed, "Empirical evidence

concerning mediation processes is beginning to accumulate fairly rapidly, and the variety of mediating hypotheses considered is substantial".

2.2.2.7 Evaluating methodological issues

Along with the maturity of this field of research, critical methodological issues began to surface. In particular that of measurement error or common method bias regarding the relationship between HRM practices and performance (Wright et al., 2001; Lengnick-Hall et al., 2009; Kaufman, 2010; Wright et al., 2018). This is often referred to as the "black box", meaning difficulties in capturing multiple dimensions of fit and not paying attention to context (Farndale and Paauwe, 2018). The importance of understanding context in research is also addressed in related HR disciplines, for example in talent management, leadership and change literature (Oc, 2018; Gallardo-Gallardo et al., 2020). This did not reject the idea and significance of HR practices and organisational performance but critiqued methodological issues and context (Wright and Ulrich, 2017; Farndale and Paauwe, 2018; Wright et al., 2018). Already a decade ago, Lengnick-Hall et al. (2009) pointed out that most of the empirical SHRM research published to date is building on existing research. Based on work by Webb (1968) Lengnick-Hall et al. (2009), describe this type of research as "coupling" research. This "involves extending previous worked by (a) using a different subject population, (b) using a different operationalization of one or more variables, (c) including different levels of a variable than were studied previously…" (Lengnick-Hall et al., 2009: 80). Today, there are five frequently debated methodological issues of SHRM: measurement of HRM systems, measurement of performance outcomes, level of analysis, research design and missing variables, while measurement issues dominate this discussion (Jiang and Messersmith, 2018).

2.2.2.8 The era of tensions for SHRM research and trends

In today's fast-changing digitized gig economy, it is essential to understand the relevance of traditional HR management systems and practices (Connelly et al., 2020). Wright et al. (2018: 157) "identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control) but not both". In particular, the tension of fit and flexibility is consistent with the findings discussed, providing an opportunity to employ SWP related concepts of fit – both vertical and horizontal – and flexibility, related to the dynamic capability theoretical foundation (Wright et al., 2018). Wright et al. (2018) also identified four trends: the increasing pace of change in the external environment, increasing globalisation of firms and markets, increasing

importance of talent as a competitive necessity, and increasing skill gaps in the labour markets. In particular, the lack of expanding studies outside the US remains an issue. It is consistent with the findings discussed, providing an opportunity to conduct a global survey with a focus on countries outside the US. Before publishing fundamental tensions and trends in the SRHM field, a year earlier Wright, 2017 identified opportunities for future research: increased rigour, increased multilevel, increased global, increased human capital, increased integration with strategy research and increased integration with practice. Over a decade ago, the concern of Lengnick-Hall et al. (2009: 81) was that without involving practitioners in research this will most likely not lead to significant new insights, explicitly stating that "we really don't know how organizations go about articulating their strategies, and then fitting HR systems components to these strategies", still an issue today (Boxall, 2018).

2.2.3 Gaps and issues

According to Kehoe (2019: 2) "the theoretical soundness and practical relevance of SHRM scholarship have recently come under scrutiny". Not only did SHRM lose its dominating position as evident by a fall in articles produced in the HRM academic field since the 1990s, it "has become mired in its own complexity and lost momentum in its search for managerial insights about how to create and capture organizational value (Markoulli et al., 2017: 23). Moreover, "despite the radical change in the pace at which organizations must adapt to rapidly changing competitive environments, mainstream academic SHRM research has largely ignored these changes. The increasing pace means that there are new opportunities for conducting research, both in terms of critical questions to address and previously unconsidered contexts", the research context was introduced in Figure 1.1. (Wright et al., 2018: 146). The researcher identified gaps and issues for the eight themes in conducting this critical literature review. In the first theme a shift from a focus on managing people to creating strategic contributions, research largely ignored less frequently applied theoretical framework (e.g. dynamic capabilities) which could advance the field further and improve understanding of the processes underlying SHRM (Jiang and Messersmith, 2018). For the second theme, explaining the contingency perspective and fit, research looked at one side of the tension, (e.g. HR practices, fit, and commitment versus human capital, flexibility, and control), not both. SWP is a vital but often missing piece in the SHRM literature (Wright et al., 2018). Regarding the third theme, elaborating HR systems components and structure, research predominantly focused on the manufacturing industry and there is a need to understand interconnected HR practices better to enhance the skills, competencies, and effort of employees that could also be a potential source for competitive advantage (Ngo and Foley, 2011; Paracha et al., 2014; Han et al., 2019). For the fourth theme, expanding the scope of

SHRM, despite the increasingly global landscape, most SHRM research, particularly that which appears in top academic journals, remains centred on the US (Markoulli et al., 2017; Wright et al., 2018). For the fifth theme, achieving HR implementation and execution, research shows that HR is not able to execute the strategic business partner model. Studies show that HR is not strategic enough in implementing and executing HR strategy and aligning employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018). For the sixth theme, measuring outcomes of SHRM, research needs to address issues with limited dependent variables – failure to consider more than bottom-line performance and often ignoring the specific research context. Also looking at mediators such as organisational commitment that impact performance (Delery, 1998, Lengnick-Hall et al. 2009; Wright et al., 2018). For the seventh theme, it was evaluating methodological issues; research needs to address issues with common method bias and enhance rigour and pay more attention to the research context (Jian and Messersmith, 2018). The final theme around since the 2010s, the era of tensions and trends, the issue is to bridge academic research with real-world relevance and pair rich practitioner data with corresponding academic rigour (Wright et al., 2018, Armstrong and Brown, 2019; Ahammad et al., 2020; Connelly et al., 2020).

2.2.4 Implications for the overall research study

Looking back, the SRHM literature progressed significantly over the four decades of research since the 1980s (Wright et al., 2018). Looking to the future, according to Boxall (2018: 27) “while improving the rigour of our research methods is going to be important in the next 30 years, we should spend equal energy on the pursuit of relevance”. In today’s fast-changing digitized gig economy, it will be especially important to understand the relevance of traditional HR management systems and practices (Connelly et al., 2020). Researchers need to address the critical empirical issues that surfaced in HRM and performance research referred to as the “black box”, meaning difficulties in capturing multiple dimensions of fit and not paying attention to context (Farndale and Paauwe, 2018). The research context introduced in Figure 1.1, provides an opportunity to develop a potential new outcome or dependent variable, such as organisational change success, since more relevant and due to issues with existing methods measuring outcomes of SHRM (Wright et al., 2018). Kehoe (2019: 12) states that “while a focus on horizontal fit and vertical fit represents just one of many potential starting points from which we might advance the SHRM literature”. Wright et al. (2018: 157): “identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and

control) but not both". For this reason the following propositions acknowledge both sides of the tension in the form of vertical and horizontal fit and flexibility, see Table 2.5. These propositions support part of the proposed conceptual model introduced in Figure 1.2.

Table 2.5 SHRM propositions and implications based on empirical findings

Proposition	Empirical findings	Implications for the thesis	Studies
Vertical strategy fit will have a positive impact on organisational change success	Empirical research that supports the vertical fit perspective is somewhat limited and still issues with measuring outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance	Exploring the concept of vertical fit related to SWP – the first phase of the SWP model introduced in Figure 2.3; utilising a different outcome variable in this context with SWP and relevant as an enabler of organisational change, introduced in Figure 1.1	e.g. Miles and Snow (1984); Wright et al. (1995); Youndt et al. (1996); Delery (1998); Batt (2000); Kepes and Delery (2007); Kehoe and Collins (2008); Azmi (2010); Chadwick et al. (2013); Kehoe (2019)
Horizontal practice fit will have a positive impact on organisational change success	Empirical research on horizontal fit, specifically on the concept of a high-performance work system (HPWS), has consistently found that this fit leads to better organizational performance outcomes. However, still issues with measuring outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance	Exploring the concept of horizontal fit related to SWP – the last phase of the SWP model introduced in Figure 2.3; utilising a different outcome variable with SWP and relevant as an enabler of organisational change and due to issues with measuring outcomes of SHRM, introduced in Figure 1.1	e.g. Arthur (1994); MacDuffie (1995); Huselid (1995); Delery (1998); Batt (2002); Combs et al. (2006); Chadwick (2010); Ngo and Foley (2011); Paracha et al. (2014); Han et al. (2019)
Flexibility will have a positive impact on organisational change success	Empirical research that supports HR flexibility is somewhat limited and still issues with measuring outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance	Exploring the concept of HR flexibility (dynamic capabilities) related to SWP, in particular, HR practice flexibility a core feature of the SWP model. SWP is an ongoing collaborative management decision-making process between HR and the business, aligning core business processes to SHRM related changes and organisational needs, introduced in Figure 1.1. Utilising a different outcome variable as discussed above	e.g. Wright and Snell (1998); Bhattacharya et al. (2005); Ngo et al. (2008); Ketkar and Sett (2009); Way et al. (2015)

Source: Developed by author, based on Wright et al. (2018); Napathom (2018); Ahammad et al. (2020)

2.2.5 Summary

The literature review started with an introduction, looking at its origins, then critically reviewed theoretical foundations, concepts and debates clustered into eight themes, looked at gaps and issues as well as implications for the research study. It brought forward three propositions around the concepts of vertical fit, horizontal fit, and HR flexibility supporting

part of the proposed conceptual model, introduced in Figure 1.2. The gaps and issues identified, resulted in further implications for this thesis, summarised in Table 2.6.

Table 2.6: SHRM summary of gaps, issues, and implications for the thesis by themes

Theme and concept discussed	Gaps and issues identified	Implications for the thesis
Shifting from a focus on managing people to creating strategic contributions	Research needs to incorporate less frequently applied theoretical frameworks to advance the field further and improve understanding of the processes underlying SHRM (Jiang and Messersmith, 2018)	Opportunity to explore the dynamic capability theoretical foundation with the concept of HR flexibility, enabling organisations to respond to changing external but also internal conditions to create sustainable value
Explaining the contingency perspective, fit and flexibility	Research needs to focus not only on one side of the tension, e.g., HR practices, fit, and commitment or, e.g. human capital, flexibility, and control – but not on both. SWP a vital but often missing piece in the SHRM literature (Wright et al., 2018)	Opportunity to employ SWP related concepts of fit – both vertically and horizontal – and flexibility (dynamic capability)
Elaborating HR systems components and structure	Research predominantly focused on the manufacturing industry and need to understand interconnected HR practices better to enhance the skills, competencies, and effort of employees that could also be a potential source for competitive advantage (Ngo and Foley, 2011; Paracha et al., 2014; Han et al., 2019)	Opportunity to explore HR practices – in other industries outside of manufacturing – including selective hiring, extensive training, job design programs, formalised performance appraisal, self-managed teams, performance-based compensation, employment security and internal promotion referred to as “high commitment” and “high involvement” HR practices, related to horizontal fit
Expanding the scope and breadth of SHRM	Research needs to focus on studies drawn from outside the US. Despite the increasingly global landscape, most SHRM research, particularly that which appears in top academic journals, remains centred on the US (Markoulli et al., 2017; Wright et al., 2018)	Opportunity to conduct a global survey with a focus on countries outside the US, in particular, Europe
Achieving HR implementation and execution	Research shows that HR is not able to execute the strategic business partner model and not sufficiently strategic enough in implementing and executing the HR strategy and align employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018)	Opportunity to explore the state of the strategic business partner model in organisations and enhance the understanding linking HR efforts closer to the business strategy and role in managing strategic change
Measuring outcomes of SHRM	Research needs to address issues with limited dependent variables – failure to consider more than bottom-line performance and often ignoring the specific research context, introduced in Figure 1.1. Moreover, looking at mediators such as organisational commitment that impact performance (Delery, 1998; Lengnick-Hall et al. 2009; Wright et al., 2018)	Opportunity to develop a potential new outcome or dependent variable to fit the research context such as organisational change success due to gaps and issues with measuring outcomes of SHRM, with organisational commitment as a mediator, related to the social exchange theoretical foundation
Evaluating methodological issues	Research needs to address issues with common method bias and enhance rigour and paying more attention to the research context (Jian and Messersmith, 2018)	Opportunity to address method bias and incorporate procedural or preventive measures in the research design process and statistical remedies, as part of the confirmatory factor analysis using SEM, set in a specific research context

The era of tensions for SHRM research and trends	Research needs to help bridge academic research having real-world relevance and pair rich practitioner data with corresponding academic rigour (Wright et al., 2018; Armstrong and Brown, 2019; Ahammad et al., 2020; Connelly et al., 2020)	Opportunity with a thorough research design to engage with practitioners and experts

Source: Developed by author, based on Lengnick-Hall et al. (2009); Wright et al. (2018); Connelly et al. (2020)

2.3 Workforce planning analytics and measurement frameworks

2.3.1 Introduction

The workforce planning literature follows two broad streams (Johanson et al., 1999; Ibarra and Cosico, 2016). The first stream focuses on human resource accounting and costing: the measures of human resource costs and investments so that decisions related to the value of HR are managed appropriately (Monday, 2017). The second stream focuses on indicator and scorecard approaches: connecting the organisation's strategic orientation to various financial and non-financial measures to measure organisational change success (Bozsik et al., 2020). Guthrie et al. (2012) and Dumay and Guthrie (2019) point out that the development of measurement efforts evolved in three stages. The first stage was developed through research conducted before the mid-1990s, characterised by raising awareness and dealing with why HR and related intangibles are essential in the context of competitive advantage. The second stage, carried out from the mid-1990s to mid-2000 dealt with "how" questions, i.e. the process of managing and measuring HR from a top-down perspective. The third stage started from mid-2000 onwards aimed at developing new models from practice; a bottom-up view. The terms HR analytics, workforce and people analytics, talent analytics, HR measurement, HR metrics and Human Capital analytics are frequently used interchangeably in the literature, but generally include descriptive, predictive and prescriptive analytical techniques (van den Heuvel, 2017; Schiemann et al., 2018; Tursunbayeva et al., 2018; El Morr and Ali-Hassan, 2019). According to Nicolaescu et al. (2020: 655) "HR analytics is a method used to improve individual and organizational performance by improving the quality of decision-making. The approach is relatively new, and its use has seen a noticeable rise in popularity recently". In a similar vein, McIver et al. (2018: 1) state that "workforce analytics is a major emerging trend in human resource management. Yet, despite the enthusiasm, there exists a misunderstanding of how organizations can successfully use workforce analytics to achieve important organizational outcomes".

A shift from cost-to-revenue or growth synergies could be observed as a motive for change initiatives following the recent rise of the modern digital knowledge-based economy that is characterised by the availability of vast amounts of data, also termed "big data" (Bersin,

2012; Hamilton and Sodeman, 2020). However growth synergies have been quoted as the hardest to achieve and execute as they mainly relate to intangible resources, in particular, the importance of keeping key talent and top performers, potentially the most significant source of competitive advantage to sustain the business (Wright et al., 1994; Nicolaescu et al., 2020; Gallardo-Gallardo et al., 2020). This is not much of a surprise since the majority of company's value today comprises of intangible assets, such as human capital. Some studies claim that the share of intangibles can be as high as 70 per cent of total assets in organisations (King, 2016).

2.3.2 Concepts, models, measures and debates

There have been many attempts to develop and refine existing tools, frameworks and theoretical foundations related to intellectual capital (IC) measures, such as human capital, but with limited empirical studies to date (Rasmussen and Ulrich, 2015; Cuozzo et al., 2017; Marler and Boudreau, 2017; Osinski et al., 2017; Pedro et al., 2018; Ben-Gal, 2019; Hamilton and Sodeman, 2020; Kaufman et al., 2020; Lepenioti et al., 2020; Nicolaescu et al., 2020). The origins of human resource accounting date back to the mid-1960s and early 1970s (Brummet et al., 1968; Tobin, 1969; Lev and Schwartz, 1971). As a managerial practice, the measurement of HR started in the mid-1990s, trying to understand the impact of HR on organisational performance, although relatively unsuccessfully (Sveiby, 1997; Boudreau and Ramstad, 2007; Fitz-Enz, 2009). According to Nienaber and Sewdass (2016: 5) "this comes as no surprise, as workforce measurement poses a challenge for several reasons: the many different conceptualisations of the workforce, which developed in parallel, and flawed workforce analytics, hence an inadequate workforce intelligence, are among the most significant". This becomes even more problematic with traditional accounting and enterprise models regarding only revenue and physical (tangibles) assets as valuable and recognising people (intangibles) as liabilities or costs rather than essential resources and investments (Levenson and Fink, 2017; Mokhnenko et al., 2019). Accounting rules provide little guidance for managing, measuring and evaluating the return on HR investments that drive an organisation's performance (The International Financial Reporting Standards Foundation, 2020a). Consequently many firms started to develop their own measuring tools (Lev, 2001; Levenson and Fink, 2017). These tools generally take an internal or management accounting view. However, financial accounting reporting informs external stakeholders such as banks, investors, and analysts on the company's performance in the form of financial statements (cash flow, balance sheets and profit & loss statement). Over 100 different frameworks exist in the market (Pike and Roos, 2007; Secundo et al., 2016). The focus in this literature review is on the most prominent frameworks commonly used by practitioners that have somewhat

wider acceptance amongst organisations and are frequently debated in the existing literature (Ibarra and Cosico, 2016; Marler and Boudreau, 2017; Monday, 2017; Levenson, 2018; Bozsik et al., 2020; Lochab and Kumar, 2020). To this end, the literature review looks at three main themes and concepts see Table 2.7.

Table 2.7: Key themes and concepts in the HR analytics literature

Theme and concept	Synopsis of debate and observation	Seminal authors
Accounting and cost-based approaches	Traditional accounting and enterprise models regard only revenue and physical (tangible) assets as valuable and recognise people as liabilities or costs rather than essential resources and investments	Brooking (1997); Stern Stewart & Co (1991); Johanson et al. (1999); Bontis (2001); Levenson and Fink (2017); Mokhnenko et al. (2019); The International Financial Reporting Standards Foundation (2020a)
Scorecard and indicator approaches	Indicators and indices are reported in scorecards or presented graphically. These frameworks tend to combine financial and non-financial data	Tobin (1969); Kaplan and Norton (1996); Roos et al. (1997); Sveiby (1997); Luthy (1998); Sveiby (2001); Williams (2001); Hasan and Chyi (2017); Quesado et al. (2018); Kaufman et al. (2020); Matos and Vairinhos (2020)
New models from practice	HR analytics developed a vast interest, but most organizations still find themselves struggling to move from operational reporting to analytics	Rasmussen and Ulrich (2015), Cuozzo et al. (2017), Marler and Boudreau (2017), Osinski et al. (2017), Pedro et al. (2018), Ben-Gal (2019), Hamilton and Sodeman (2020), Kaufman et al. (2020), Lepenioti et al. (2020), Nicolaescu et al. (2020)

Source: Developed by author

2.3.2.1 Accounting and cost-based approaches

Accounting approaches

IAS 38 deals with intangible assets (Bonham and Young, 2008; The International Financial Reporting Standards Foundation, 2020a). Apart from these standards “there is no other type of international or local regulations governing the identification and measurement of an organisation’s intangibles” that has not changed significantly (Oliveras and Castillo, 2007: 55; Ewens et al., 2020). In a similar vein, “International Accounting Standards are interested only in identifiable intangible assets which have to fulfil the requirements of identifiability, control, and existence of expected future economic benefits. Other intangible resources are part of goodwill” (Pastor et al., 2017: 403). However, the only time that HR (and other intangible assets) shows on the balance sheet is after an M&A transaction, which is governed internationally by business combination accounting standards under IFRS 3 (The International Financial Reporting Standards Foundation, 2020b).

Cost-based approaches

According to Sabol and Sverer (2017: 19) the Economic Value Added (EVA) by Stern Stewart & Co (1991), a consulting firm, a cost-based approach, is "one of the most widely used and accepted measures of overall firm performance, gaining more popularity when coupled with the notions of strategic (financial) management". It is a performance measurement system that incorporates elements such as capital budgeting, financial planning and incentive compensation to measure and quantify the corporate value derived from its intangible assets. However, the book asset relies on historical costs that do not give a proper indication of the current market value of its intangibles. The values this framework produces can be adjusted by its users (over 100 adjustments are possible) making a comparison between companies misleading (Matos and Vairinhos, 2020). Another framework is the Technology Broker (Brooking, 1996) that applies three methods to calculate a monetary value by conducting an Intellectual Capital (IC) Audit. The first method is the cost approach that calculates the replacement cost of the asset, the second method is the market approach that applies market comparables to assess the value, and the third method is the income approach that calculates the net present value. The main limitation is converting the qualitative results from the IC Audit questionnaire into actual monetary values (Pastor et al., 2017).

2.3.2.2 Scorecard and indicator approaches

Indicator approaches

The IC Skandia Navigator model designed by Edvinsson and Malone (1997) was the starting point for the first annual report that dealt with the hidden value of knowledgeable assets and human capital. The model uses over 100 indices and combines financial and non-financial measures into a balance sheet to predict future value. However "it seems that there is no evidence that a better economic performance emerges by using the Skandia Navigator" (Matos and Vairinhos, 2020: 578). The concept of the IC-Index (Roos et al., 1997) attempts to combine all different individual indicators – human and structural capital – into a single index linking it with changes in the market. It is a top-down approach and includes elements of long-term goals. The model is very context-focused and as a result it is challenging to compare with other organisations (Matos and Vairinhos, 2020). The Intangible Asset Monitor (Sveiby, 1997) follows the concept that a company's book value equals tangible assets minus visible debt. However, Sveiby proposed not using money as a proxy for human capital. Within the framework qualitative measures to evaluate intangible assets and quantitative measures to evaluate visible equity are both consolidated to provide specific indices of

financial success and to measure shareholder value. Nevertheless, the framework does not assign a financial value to measure growth, and the selection of indicator depends on the strategy (Silveira and Schnorrenberger, 2017).

Scorecard approaches

Kaplan and Norton (1996) have established the balanced scorecard (BSC) and designed performance indicators around four interconnected dimensions at the individual level – financials, customers, processes and learning – that align managerial incentive systems with the broader future organisational direction (Hasan and Chyi, 2017; Matos and Vairinhos, 2020). Critics claim that there is no cause-and-effect relationship between its dimensions but that instead it follows a logical flow that can be misleading (Nørreklit, 2000; Awadallah and Allam, 2015). Despite its limitations, in their empirical study on Portuguese public and private organisations, Quesado (2005), cited in Quesado et al. (2018: 195) found that benefits of the BSC include an "improvement in organizational performance" and provide "support for the implementation of changes". According to Awadallah and Allam (2015: 98) "within two decades of its inception, the use of the BSC is widespread across all industry sectors". In a similar vein, other studies confirm that the BSC "has become one of the most widely discussed and adopted new management tools of the last 30 years" but "has received surprisingly small attention in the human resource management field" (Kaufman et al., 2020: 2). The exceptions are two seminal books one by Becker et al. (2001) "The HR Scorecard: Linking People, Strategy and Performance" and the other book by Huselid et al. (2005) "The Workforce Scorecards: Managing Human Capital to Execute Strategy". Since then "no research on HR BSCs has been done for 15 years" but this topic was picked up again recently by Kaufman et al. (2020: 24). The HR Scorecard is based on the balanced scorecard replacing certain elements such as learning to workforce success, but the overall focus is on supporting the implementing of HR strategy following the logic that HR is a strategic business partner (Becker et al., 2001; Beatty et al., 2003; Kaufman et al., 2020). The limitations are similar to that of the BSC, however "a well-built HR scorecard is likely to include some external benchmark information as well as some internal references, and that same scorecard is likely to reflect a mix of efficiency, effectiveness, and impact measures" that ideally are also forward-looking (Fink and Sturman, 2017: 8).

2.3.2.3 New models from practice

The Copenhagen Business School organised a conference in October 2016 with HR executives, analytics practitioners, consultants and academics resulting in the publication of a series of articles the following year in the "Journal of Organizational Effectiveness: People

and Performance", (Minbaeva, 2017). It confirmed that HR "is if anything moving further away from the table than closer" with regards to the role HR is playing when it comes to HR analytics (Andersen, 2017: 133). Moreover, there is "continued frustration on the part of many business leaders that HR is not capable of being a true strategic business partner that provides insights where the organization needs them most" (Levenson and Fink, 2017: 149). Part of the problem might be that HR does not possess the competencies required to excel at HR analytics (Green, 2017; Ulrich and Grochowski, 2018). There are a number of pre-requisites to excel in HR analytics: to "have good data, be good at storytelling, have business acumen, master techniques of visualisation, have strong psychological skills, master number and statistics and have expertise in change management to enable insights to be implemented successfully into outcomes" Green (2017: 138-139). A recent survey by Lawler III and Boudreau (2015) confirmed that "90% of large organizations report that they provide HR data to support change management at least to some extent", underlining the importance that HR can play during change initiatives using analytics (Levenson, 2018: 687).

HR analytics is a process: "one that is continuously advanced by improving problem solving through sound measurement, appropriate research methods, systematic data analyses, and technology to support organizational decision making" (McIver et al., 2018). However, the majority of organizations are still unable to make the transition from operational reporting to analytics, while recent research shows that strategic workforce planning is moving further ahead (Levenson, 2018). From the author's review of the existing academic literature this holds for publications in the practitioner literature (Boudreau and Cascio, 2017). It seems that "the popular literature on HR analytics currently resemble more hype than substance, and consultancies and software suppliers have spotted the commercial opportunity, more often than not amplifying the noise rather than clarifying the purpose" (Van der Tog and Rasmussen, 2017: 128).The literature also discusses the importance of bridging academic rigour with business relevance and practice to advance this research field (Van der Tog and Rasmussen, 2017; Jiang and Messersmith, 2018). Table 2.8 provides an overview of new concepts, research focus in the HR measurement field since the turn of the new millennium, and academic journals, by no means shown as a ranking since this may change over time, and a reference to literature, identifying seminal authors contributing to the field.

Table 2.8: Overview of the HR measurement field since 2000

Broader concepts	Research focus	Academic journals	Seminal authors
Industry analysis, workforce planning, job analysis, recruitment and selection, training and development, compensation, performance management, big data analytics, and retention	Stakeholders: HR manager, leader, HR professional, HR practitioner, senior managers Industries: Manufacturing, retailing, financial services Countries/Regions: North America, Europe, Asia, Africa/Middle East	Employment Relations Today, European Journal of Operational Research, Human Resource Management Journal, Human Resource Planning, Journal of Business Strategy, Journal of Cases on Information Technology, Journal of Contemporary Management Issues, Management Science, Organization Dynamics, People & Strategy, Public Manager, Strategic HR Review, Strategy & Leadership, Workforce Asset Management, Workforce Solutions Review and Journal of Organizational Effectiveness: People and Performance	Rasmussen and Ulrich (2015); Angrave et al. (2016); Cuozzo et al. (2017); Marler and Boudreau (2017); Osinski et al. (2017); Pedro et al. (2018); Ben-Gal (2019); Hamilton and Sodeman (2020); Kaufman et al. (2020); Lepenioti et al. (2020); Nicolaescu et al. (2020)

Source: Developed by author, based on Marler and Boudreau (2017) and Ben-Gal (2019)

Since the turn of the new millennium the third stage of the HR measurement movement was arguably led by Boudreau and Ramstad who published a seminal book in 2007 titled "Beyond HR – The New Science of Human Capital", introducing the HC Bridge Decision Framework in addition to the Logical, Analytics, Measures and Process (LAMP) model. Cascio and Boudreau further developed the LAMP model releasing another seminal book in 2011 titled "Investing in People – Financial Impact of Human Resource Initiatives" (Boudreau and Ramstad, 1997; Boudreau and Ramstad, 2002; Boudreau and Ramstad, 2007; Cascio and Boudreau, 2011; Boudreau and Cascio, 2017). Despite these developments a recent study by Lawler III and Boudreau (2015) "report that among HR leaders the 'HR scorecard' was among the more frequent analytics elements listed as existing now" (Marler and Boudreau, 2017: 16).

HC BRidge decision framework

In order to overcome the limitations with existing frameworks, Boudreau and Ramstad developed the "HC Bridge" framework, as research showed that improved decisions on HR investments connecting HR with business strategy were hardly ever achieved (Boudreau and Ramstad, 2002; Lawler et al., 2004). This framework underlines the importance that HR management needs to develop better metrics and analytics in their quest to become a strategic business partner playing a key role in strategic workforce planning and enabling organisations to implement organisational change (Lawler et al., 2004; Weiss and Finn, 2005; Ulrich and Grochowski, 2018; Kaufman et al., 2020). The "HC BRidge" model by Boudreau and Ramstad (2007) consists of a value map connecting human capital investments, activities and the strategic success of the organisation. It is useful as a planning tool and incorporates three elements of decision frameworks referred to as anchor points,

building on the HR scorecard: efficiency – "the frugal use of resources to implement HR programs and practices", effectiveness – "the effect of those programs and practices on the actions and interactions of target recipients" and impact – "the effect of the actions and interactions of organizational outcomes", often measured in the form of an ROI – a return on investment (Boudreau and Cascio, 2017: 123). According to Levenson (2018: 695) "currently, ROI is the gold standard for evaluating the financial benefits of an organizational change or existing process". Efficiency deals with "what is the level and quality of HR practices we produce form the resource that we spend?". Effectiveness deals with "what is the relationship between our HR practices and the quality of our talent pools?". And impact deals with "what is the relationship between the changes in the quality of the talent pools and our competitive success?" (Boudreau and Ramstad, 2002: 10).

Logical, Analytics, Measures and Process (LAMP) model

Conceptually the "HC Bridge" framework fits into the measures element of the "LAMP" model developed by Boudreau and Ramstad (2007) and further developed by Cascio and Boudreau in 2011, consisting of four elements: 1) logic, connections between talent and strategic success, 2) analytics, tools and techniques, 3) measures, numbers and indices and 4) process, communication and knowledge transfer mechanisms. Boudreau and Cascio (2017: 123) point out that while efficiency, effectiveness and impact measures "are valid and useful, analytics can be confusing when measures in one category (e.g., efficiency) are presented or mistaken for another (e.g., impact)", hence making a categorisation somewhat tricky.

Recent developments, trends and challenges

Marler and Boudreau (2017) conducted an interactive synthesis of 60 published peer-reviewed literature on HR analytics but found only four empirical analyses – linking HR analytics to company performance. As a result Marler and Boudreau (2017: 23) concluded that "despite being a very 'hot topic' among HR professionals, a search for peer-reviewed research in listed scholarly journals reveals a strikingly small amount of scholarly scientific research". This is consistent with a recent study by Ben-Gal (2019) which systematically reviewed 80 articles and showed an increase in publications over the past decade. The study concluded that empirical and conceptual research dominate the field in comparison to case-based and technical methodological approaches. The study stressed the importance of conducting more scientific research that also takes into consideration the context, addressing specific challenges and trends, see Table 2.9.

Table 2.9: HR analytics – trends, challenges, and potential outcomes in terms of an ROI

Trends and approach	Challenges	Outcomes (ROI)	Reference to literature
Human resource analytics (HRA) as a strategic management tool	Buy-in from management and role of HR as an interface	May yield a high ROI for the organization because its impact may be on the organization as a whole	Levenson (2005); Levenson (2015); Newcomer and Brass (2015); Welbourne (2015)
An evidence-based approach in HRA	Adoption of a correct tool from various analytical techniques	May yield a high ROI for the organization because it uses a variety of methodological and technological tools to predict improved individual or organizational performance	Bassi (2011); Marler and Boudreau (2017)
HRA as a decision-making support tool	The process, e.g., collecting and analyzing the data, thereby raising issues of efficiency and effectiveness	May yield a high ROI because it suggests efficiency in the decision-making processes	Singh et al. (2012); Dulebohn and Johnson (2013); Holsapple et al. (2014); Rasmussen and Ulrich (2015); Pape (2016)
HRA as a management fad	HRA is not part of HRM and HR professional's role in HRA	May yield a low ROI because it is speculative	Rasmussen and Ulrich (2015); Marler and Boudreau (2017)

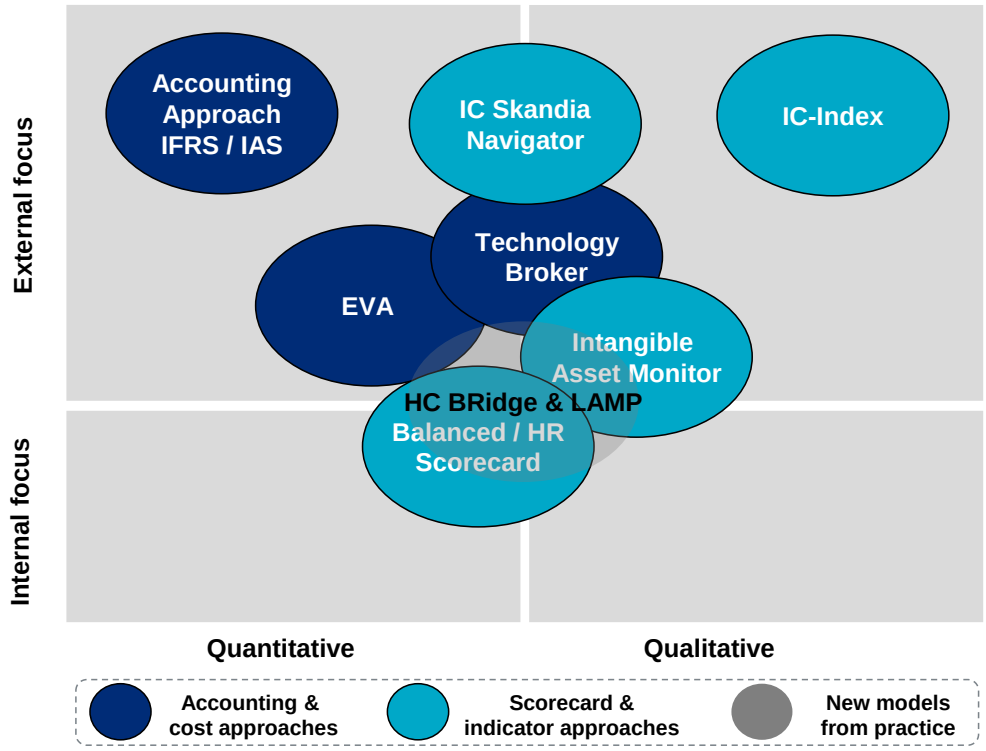
Source: Developed by author, based on Ben-Gal (2019: 1433)

The Human Resource Analytics (HRA) as a management fad argument shared by Angrave et al. (2016: 9) concluded that "contrary to optimistic accounts from industry sources, we can see little evidence that HR analytics is developing into a 'must have capability', which will ensure HR's future as a strategic management function". Since HR analytics is an evolving concept different definitions exits, but in this research context HR analytics best defined as "quantitative and qualitative data information management that aims to gain insight and support decision-making processes with regard to managing people in organizations" (Fitz-enz, 2000; Handa and Garima, 2014; Zhao and Carlton, 2015, cited in Ben-Gal, 2019: 1430). This definition is somewhat consistent with the concept of SWP that "builds upon quantitative activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organizational strategy" (Human Capital Institute, 2018). Lawler et al. (2004) tried to distinguish HR analytics with more sophisticated statistical approaches such as predictive modelling from HR metrics that measure SHRM outcomes in the form of efficiency, effectiveness, and impact. Both concepts are relevant to the SWP model introduced in Figure 2.3. Demand and supply modelling is another crucial feature – this research focuses on HR metrics. To add to the confusion – HR metrics or workforce metrics are also referred to as HR analytics in the literature. According to Marler and Boudreau (2017: 14) "despite this distinction between HR metrics and HR Analytics, there still is definitional ambiguity in the literature".

2.3.3 Gaps and issues

In a recent study of eight organisations using HR analytics for SHRM, Qadir and John (2019) identified reasons why HR analytics is not in use alongside a number of challenges for companies. In this study organisations identified their lack of competencies and complexity as reasons for not using HR analytics, while challenges included cost factor and data quality (Qadir and John, 2019). Despite "claims [that] have been made about the extent to which talent analytics can contribute to business performance, we still lack a theoretical framework that allows one to identify the channels through which the deployment of talent analytics may have an impact on organizational performance" (Nocker and Sena, 2019: 2). The HRA as a management fad argument shared by Angrave et al. (2016: 9) concluded that "contrary to optimistic accounts from industry sources, we can see little evidence that HR analytics is developing into a 'must have capability', which will ensure HR's future as a strategic management function". Futhermore "a little more confrontation here and there could be a good thing to move the practice of workforce analytics further into the realm of improving strategy execution and organizational effectiveness" (Levenson, 2018: 698). The researcher identified gaps and issues for all three themes in the critical literature review. For the first theme, accounting and cost-based approaches, accounting standards are interested only in identifiable intangible assets. Other intangible resources are part of goodwill. While cost-based approached are probably better to capture intangibles, generally these frameworks are not best suited to measure HR alone (Pastor et al., 2017; Mokhnenko et al., 2019). For the second theme scorecard and indicator approaches, critics claim that there is no cause-and-effect relationship between its dimensions but that instead it follows a logical flow that can be misleading (Nørreklit, 2000; Awadallah and Allam, 2015; Fink and Sturman, 2017). For the third theme new models from practice, while the HC Bridge decision framework and LAMP model provide solid theoretical foundations, the HR scorecard remains the most frequent analytics element used by organisations today (Lawler and Boudreau, 2015; Rasmussen and Ulrich, 2015; Angrave et al., 2016; Marler and Boudreau, 2017; Ben-Gal, 2019). Figure 2.5 maps out the most prominent measurement frameworks critically reviewed, taking into consideration the predominant reporting focus in terms of the audience addressed (internal versus external) and type of data used (quantitative versus qualitative).

Figure 2.5: Most prominent measurement frameworks in organisations



Source: Developed by author

2.3.4 Implications for the overall research study

HR functions frequently collect data on their efficiency but not on the impact of their practices on the business (Ben-Gal, 2019). However, organisations can collect three different kinds of HR metrics related to efficiency, effectiveness and impact measures (Boudreau and Cascio, 2017; Marler and Boudreau, 2017). In essence, these “HR metrics and workforce analytics can be used as a tool to improve organisational outcomes”, or in this research context organisational change success (Ayandibu and Kaseeram, 2020: 127). The importance of HR analytics and HR metrics during change initiatives highlighted in a recent study by Lawler III and Boudreau (2015) showed that “90% of large organizations report that they provide HR data to support change management at least to some extent” (Levenson, 2018: 687). Ulrich and Grochowski (2018) in their current study with over 100,000 participants identified nine dimensions required today for an HR department to be effective in organisations: HR reputation, HR context/deliverables, HR strategy, HR design, HR organisation capability, HR analytics/metrics, HR practices, HR professionals, and HR work style. Within each dimension Ulrich and Grochowski (2018) identified four stages of value delivery by HR: on the administrative (efficiency), functional, strategic (both effectiveness) and for stakeholder outside the organisations (impact). For the dimension HR analytics/metrics, in a way, this somewhat resonates with the elements of decision frameworks referred to as anchor points

in the HR BRidge model, building on the HR scorecard: efficiency, effectiveness and impact measure (Boudreau and Cascio, 2017; Fink and Sturman, 2017; Marler and Boudreau, 2017; Ulrich and Grochowski, 2018). The following proposition around the concept of HR analytics in Table 2.10 supports part of the proposed conceptual model, introduced in Figure 1.2.

Table 2.10: HR analytics proposition and implications based on empirical findings

Proposition	Empirical findings	Implications for the thesis	Studies
HR analytics (metrics) will have a positive impact on organisational change success	Empirical research that supports the relationship of HR analytics organisational outcomes is somewhat limited, also due to a lack of a tested theoretical framework	Exploring the concept of HR analytics/metrics (e.g. efficiency, effectiveness and impact measures) a central activity of the SWP model introduced in Figure 2.3; utilising a different outcome variable in this context with SWP and relevant as an enabler of organisational change, introduced in Figure 1.1	e.g. Mondore et al. (2011); Rasmussen and Ulrich (2015); Angrave et al. (2016); Cuozzo et al. (2017); Marler and Boudreau (2017); Osinski et al. (2017); Pedro et al. (2018); Ulrich and Grochowski (2018); Ben-Gal (2019); Hamilton and Sodeman (2020); Kaufman et al. (2020); Lepenioti et al. (2020); Lochab and Kumar (2020); Nicolaescu et al. (2020)

Source: Developed by author, based on Marler and Boudreau (2017) and Ben-Gal (2019)

The literature critically reviewed three themes and identified gaps and issues that lead to further implications for this thesis. Concerning the first theme, accounting and cost-based approaches, accounting rules provide little guidance for managing, measuring, and evaluating the return on HR investments that drive an organisation's performance. On the other hand, cost-based approaches are only partly suitable to conduct a cost-benefit analysis (utility analysis) of HR programs, e.g. training costs, cost-per-hire and HR processes (Pastor et al., 2017; Mokhnenko et al., 2019). For the second theme scorecard and indicator approaches, despite its limitations, scorecards combining external benchmarks and internal metrics such as efficiency, effectiveness and impact measures potentially support companies in their SWP efforts (Nørreklit, 2000; Awadallah and Allam, 2015; Fink and Sturman, 2017). For the third theme new models from practice, they offer the opportunity to explore HR analytics in the form of HR metrics that measure not only efficiency but also effectiveness (e.g. long-term effects of HR programs) and (future) impact of changes in HR programs and processes (Lawler and Boudreau, 2015, Rasmussen and Ulrich, 2015; Angrave et al., 2016; Marler and Boudreau, 2017; Ben-Gal, 2019).

2.3.5 Summary

The literature review started with an introduction, looking at its origins, critically reviewed concepts, and debates clustered into three themes, looking at gaps and issues as well as implications for the research study. It brought forward one proposition around the concept of HR analytics supporting part of the proposed conceptual model, introduced in Figure 1.2.

The gaps and issues identified, resulted in further implications for the thesis, summarised in Table 2.11.

Table 2.11: Summary of gaps, issues, and implications for the thesis by themes

Theme and concept discussed	Gaps and issues identified	Implications for the thesis
Accounting and cost-based approaches	Accounting Standards are interested only in identifiable intangible assets. Other intangible resources are part of goodwill. While cost-based approached are probably better to capture intangibles, generally, these frameworks are not best suited to measure HR alone (Pastor et al., 2017; Mokhnenko et al., 2019)	Accounting rules provide little guidance for managing, measuring, and evaluating the return on HR investments that drive an organisation's performance. Cost-based approaches, partly suitable to conduct a cost-benefit analysis (utility analyses) of HR programs, e.g. training costs, cost-per-hire and HR processes
Scorecard and indicator approach	Critics claim that there is no cause-and-effect relationship between its dimensions but instead following a logical flow that can be misleading (Nørreklit, 2000; Awadallah and Allam, 2015; Fink and Sturman, 2017)	Despite its limitations, scorecards combining external benchmarks and internal metrics such as efficiency, effectiveness and impact measures potentially enable companies in their SWP efforts
New models from practice a bottom-up view	While the HC Bridge decision framework and LAMP model provide solid theoretical foundations, the HR scorecard remains the most frequent analytics elements used by organisations today (Lawler and Boudreau, 2015; Rasmussen and Ulrich, 2015; Angrave et al., 2016; Marler and Boudreau, 2017; Ben-Gal, 2019)	Opportunity to explore HR analytics in the form of HR metrics that measure not only efficiency but also effectiveness (e.g. long-term effects of HR programs) and (future) impact of changes in HR programs and processes

Source: Developed by author, based on Marler and Boudreau (2017) and Ben-Gal (2019)

2.4 Organisational change

2.4.1 Introduction

Research on organisational change commenced around the 1940s. Al-Haddad and Kotnour (2015) reviewed the change literature identifying three core disciplines that contributed to the field over the years: sociology and psychology – the foundation for OD or organisational development (e.g. Lewin, 1946; Schein, 1988; Cummings and Huse, 1989) management and leadership (e.g. Miller and Rice, 1967; Mintzberg, 1979; McCaskey, 1982; Kanter, 1984; Weihrich and Koontz, 1993; Kotter, 1995; Beer and Nohria, 2000; Hamel, 2000) and engineering management and industrial engineering (e.g. Deming, 1986; Sink et al., 1995). For the most part "in the social studies area, the change management literature has been associated with OD studies", yet organisational change management comprises of two perspectives: employees and organisations (Al-Haddad and Kotnour, 2015: 236). Without a doubt organisational change management "has been researched extensively over the course of the last 50+ years, resulting in currently over 2,700,000 references in Google Scholar to the terms "managing change", discussion in much of the prevailing research continues

around the notion of change failure" (Rosenbaum et al., 2018: 287). The number of references increased to over 4,000,000 last time the researcher checked as at 1 October 2020. Especially in today's highly competitive and rapidly evolving global economy it is becoming increasingly critical to international organisations to understand where they envision to be in the future and how to manage ongoing changes in order to succeed (Luecke, 2003; Higgs and Rowland, 2011; Al-Haddad and Kotnour, 2015; Mansaray, 2019). Workforce planning enables organisations and "HR professionals to plan for change rather than being surprised by events, as well as provides strategic methods for addressing current and anticipated workforce issues", especially with changing demographics (Meisinger, 2007: 10).

2.4.2 Concepts, models and debates

Organisational change is complicated, not only for organisations but also for researchers. This poses a great degree of controversial issues and dilemmas because "a debilitating fragmentation of theories of organizational change, with widely different perspectives – sometimes contradictory – blossom side by side in the large organizational change literature" (Jacobs et al., 2013: 773; Caldwell and Dyer, 2020). There are at least ten complementary but often contradicting change models and conceptual frameworks in the literature that aim to provide theoretical foundations and change approaches, e.g. biological, rational, institutional, resource, contingency, psychological, political, cultural, systems, postmodern (Graetz and Smith, 2010; Chinoperekweyi, 2020). Two distinct views of organisational change dominate the discussion in the literature that generally recognise organisational change success: the planned, discontinuous, "top-down" versus unplanned, continuous, "bottom-up" referred to as the emergent view (Edwards et al., 2020). These two views are fundamentally contradictory, yet they coexist in practice and are often difficult to distinguish, as found in a recent empirical study from 1,795 participants in 468 companies by Heyden et al. (2017). What started as planned might evolve into emergent change or vice versa, with Heyden et al. (2017: 20) concluding that "our theory and findings accentuate a blurring distinction between 'thinking' and 'doing' often proliferated in scholarship and management education through dichotomized labels like 'strategy formulation' versus 'tactical implementation'". It is not much of a surprise that this is only one of the paradoxical views dominating the existing organisational change literature identified by Nasim and Sushil (2011). It seems that these paradoxical views still exist today as By (2020: 5) argues that "if we decide to stay the course we are currently on as organizational change and leadership scholars and practitioners, much of our work will quickly become obsolete and irrelevant". Table 2.12 provides an overview of the organisational change field in terms of concepts,

research focus, and academic journals, by no means shown as a ranking since this may change over time, and a reference to literature, identifying seminal authors contributing to the field.

Table 2.12: Overview of the organisational change field

Broader concepts	Research focus	Academic journals	Reference to literature
Planned and emergent change, static and dynamic models, incremental and revolutionary change, piecemeal and holistic view, macro and micro approach, change leadership, organisational change, change management, change failure, employee participation, commitment to change and at least ten different philosophies of change approaches	Stakeholders: Leadership, line and middle management, HR, change agent and employees Industries: Public organisations, financial services, manufacturing, telecommunications and tourism Countries/Regions: United States, South America, Europe and Asia	Journal of Change Management, Journal of Organizational Change Management, Journal of Human Resource Management, Annual Review of Organizational Psychology and Organizational Behavior, Academy of Management Journal, International Journal of Operations & Production Management, Journal of Management Studies, Human Relations, Journal of Business Ethics and The Journal of Applied Behavioral Science	Lewin (1947); Burns (1978); Bullock and Batten (1985); Pettigrew (1985); Tushman and Romanelli (1985); Schein (1988); Cummings and Huse (1989); Leifer (1989); (Beer et al., 1990); Mintzberg and Westley (1992); Wilson (1992); Dunphy and Stace (1993); Garvin (1994); Kotter (1995); Dawson (1996); Galpin (1996); Greenwood and Hinings (1996); Senge (1997); Mintzberg (1998); Pettigrew et al. (2001); Herscovitch and Meyer (2002); Oakland and Tanner (2007); Adcroft et al. (2008); Graetz and Smith (2010); Higgs and Rowland (2011); Nasim and Sushil (2011); Jacobs et al. (2013); Kuipers et al. (2014); Al-Haddad and Kotnour (2015); Hughes (2016); Rosenbaum et al. (2018); Stouten et al. (2018); By (2019); Ahammad et al. (2020); By (2020); Edwards et al. (2020)

Source: Developed by author

Despite the huge number of fragmented research and publications available Al-Haddad and Kotnour (2015) tried to connect separate areas by clustering the organisational change literature into four key themes and concepts: change types, change enablers, change methods and change outcome – somewhat consistent with current studies (Rosenbaum et al., 2018; Stouten et al., 2018; Mansaray, 2019; Caldwell and Dyer, 2020; Edwards et al., 2020), see Table 2.13.

Table 2.13: Taxonomy of organisational change literature

Theme and concept	Synopsis of debate and observation	Seminal authors
Change types	Discussion on the scale of change: small versus larger and duration of change: short versus long term	Meyer et al. (1990); Brigham (1996); Ulrich (1998); Goes et al. (2000); Higgs and Rowland (2005); Boga and Ensari (2009); Boyd (2009); Oldham (2009); Margolis et al. (2010); Harrison (2011); Higgs and Rowland (2011); Moore (2011); Bennett and Segerberg (2012); Rachele (2012)
Change enablers	Three change enablers: knowledge & skills, resources and commitment. Alignment of content, people and process in which systematic planning supports to analyse the gap between where a company is and where it wants to be – SWP a vital but often missing piece in the organisational change literature	Miller and Friesen (1982); LaMarsh (1995); Ackerman et al. (2001); Anderson and Ackerman Anderson (2001); Bridges and NetLibrary (2003); Higgs and Rowland (2005); Chrusciel and Field (2006); Kenny (2006); Griffith-Cooper and King (2007); Higgs and Rowland (2011); Kotnour (2011)
Change methods	Difference between systematic change methods (e.g. the planning method, TQM, Six Sigma) and change management methods (e.g. Lewin, Kotter) that are generally more conceptual of nature	Lewin (1947); Lippitt (1958); French (1969); Schein (1969); Kolb and Frohman (1970); Tichy (1974); Bullock and Batten (1985); Kotter (1995); Galpin (1996); Armenakis and Bedeian (1999); Higgs and Rowland (2005); Singh and Shoura (2006); Zook (2007); Higgs and Rowland (2011); Rosenbaum et al. (2018)
Change outcomes	Achieving project objectives and internal as well as external stakeholders are satisfied with results/outcomes	Sink and Tuttle (1989); Ittner and Larcker (1998); Kendra and Taplin (2004); Higgs and Rowland (2005); Wouters and Sportel (2005); Gunasekaran and Kobu (2007); Nicholas and Steyn (2008); Higgs and Rowland (2011)

Source: Developed by author, based on Al-Haddad and Kotnour (2015)

2.4.2.1 Change types

"Change type can be defined as the essential characteristics that describe the kind and form of change and the qualities that make a change what it is", categorised by scale and duration (Al-Haddad and Kotnour, 2015: 242). The literature generally discusses three different orders, depth of change or types of change: sub-system change (generally referred to as incremental change), organisation change and sector change (both generally referred to as transformational change) (Kuipers et al., 2014; Termeer et al., 2017). The external environment such as political, technological, economic, sociological and shifting demographics factors "play a crucial role in determining the type of change to be implemented and the speed of this change" (D'Ortenzio, 2012, cited in Alrumaih, 2017: 83).

Change scale or scope: small versus large

"Change scale can be defined as the degree of change required to reach the desired outcome" (Al-Haddad and Kotnour, 2015: 242). Incremental change is generally associated with small scale, micro change, and happening within a sub-system. This is different to

transformational change that is generally associated with large scale, macro change where the entire systems change (Kuipers et al., 2014; Termeer et al., 2017). Generally, organisational change occurs on three-levels: at the employee, group and organisational level (Rizescu and Tileag, 2016). For example, M&A transactions that often result in cultural change during the post-merger integration phase are categorised as large-scale change, occurring on all three levels. It involves multiple stakeholders with leadership involvement during the change process, in contrast to small scale change, such as continuous improvement projects, not always occurring on all three-levels (Al-Haddad and Kotnour, 2015). Irrespective of whether it is a small or large-scale change, failure rates tend to be high (McLean et al., 2017; Dao and Bauer, 2020). McLean et al. (2017: 2) argue, "With the majority of Continuous Improvement initiatives reported to end in failure or abandonment, it is clear that a substantial amount of money and resource are being squandered globally every year in the unsuccessful pursuit of organisational change". In a similar vein "M&A are prone to fail, and the regularly reported failure rates range between 40 and 60%", and the rate is even higher for not creating the desired value of the transaction that justified the acquisition (Dao and Bauer, 2020: 1). In addition, "even with the numerous studies and theories tackling large scope change, there are contradicting results about its advantages" (Al-Haddad and Kotnour, 2015: 243).

Duration of change or speed: short versus long term

"Change duration can be defined as the time period over which change takes place" (Al-Haddad and Kotnour, 2015: 243). Incremental change is generally associated with slow, step-by-step, and short-term change. This is frequently referred to as continuous change, in contrast to transformational change that is generally associated with fast, swift, and often discontinuous jumps resulting in long-term change (Kuipers et al., 2014; Termeer et al., 2017; Wee and Taylor, 2018). The literature generally suggests that the longer the duration of a change initiative, the less successful it may become, making short-term change overall more successful (Al-Haddad and Kotnour, 2015). Short-term change may evolve into long-term change over time leading Rizescu and Tileag (2016: 142) to argue for considering an "optimal time" since "the most appropriate pace of change may not correspond to the maximum possible rate. The change can then be introduced too quickly or too slowly". In a similar vein Stouten et al. (2018: 780) argue that "there is little evidence regarding the appropriate speed with which change should be implemented – and even prescriptive models do not agree". Since "organizational change takes place over time; to increase the probability of success, it is important to plan for change, setting a clear timeframe and addressing the critical factors that affect change success", in particular, understanding change enablers (Al-Haddad and Kotnour, 2015: 243).

2.4.2.2 Change enablers

"Studies in the literature offer a broad range of definitions and examples of change enablers including: a stated vision and goals for the change direction, defined roles of employees involved in change, leadership guidance or commitment in involvement, training employees and having strong human resources to measure and evaluate performance" (Al-Haddad and Kotnour, 2015: 243). Organisational change is part of everyday business across different industries. For business leaders there are a number of areas that are vital to implement change, including a perceived need for change amongst the workforce, a commitment by all relevant stakeholders, as well as necessary resources matching HR skills and know-how with crucial success factors linked to performance indicators (Rosenbaum et al., 2018). Similarly Al-Haddad and Kotnour (2015) argue that organisational commitment, having adequate resources, and a combination of knowledge and skills are the three enablers to manage and measure change successful.

SWP a vital but often missing piece in the organisational change literature

According to Odor (2018: 64) "a good planning and genuine implementation of change is something that every organisation must do to remain competitive in the ever dynamic business environment". While "proper planning and analysis help identify the gap between where the organization is now and where it wants to be", a core feature of SWP, this is an essential but often missing piece in the organisational change literature (Al-Haddad and Kotnour, 2015). As discussed, irrespective of different change models available, "if implementation is thought about quite separately from the planning and design of a change initiative, then it is likely that the initiative will already have failed" (Iles and Sutherland, 2001: 60). SWP aligns core business processes to SHRM related changes and organisational needs, hence viewed as an enabler of organisational change in this research. As introduced in Figure 1.1, the arrows show that in practice this is an iterative process, captured in the form of flexibility as a construct, acknowledging that organisations interact with an external environment (Ahammad et al., 2020).

Integrating the SHRM literature with the commitment to change construct

The social exchange theory, as part of the behavioural perspective, asserts how HRM systems support companies to reach strategic goals, resonating well with gaps and issues identified in the SHRM literature (Jiang and Messersmith, 2018; Wright et al., 2018). In addition, "scholars often refer to the behavioural perspective for identifying specific mediators and exploring how HRM systems influence organizational effectiveness by affecting employee behaviors", such as empowerment and affective commitment (Jiang and

Messersmith, 2018: 10). The social exchange theory demonstrates that HRM subsystems that are adjusted to seek better performance create a substantial affective commitment of employees, resulting in improved organisational performance and reduced turnover intentions (Gong et al., 2009; Fazio et al., 2017). Moreover empirical evidence suggests that specific HRM practices cause affective commitment between employees (Kehoe and Wright, 2013; Fazio et al., 2017). Generally, commitment to change is widely researched as a mediator in the organisational change literature as introduced in Figure 1.2 (Yousef, 2000; Messersmith et al., 2011; Da Camara et al., 2015; Soumyaja et al., 2015; Raveendran and Gamage, 2019). As discussed, the commitment to change construct comprises of three items, affective commitment, continuance commitment, and normative commitment (Adam et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019). Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly. Normative commitment is the obligation supporting the change initiative. In particular, affective and normative commitment to change was associated with championing change, i.e. higher levels of support for change as opposed to continuance commitment. However normative commitment is not always applicable in different cultural settings (Herscovitch and Meyer, 2002; Cunningham, 2006; Raveendran and Gamage, 2019).

Constructs enabling organisational change

Employees' attitudes toward organisational change to support a change initiative is critical to achieve the outcome of a successful implementation (Bouckenooghe et al., 2015). Different constructs discussed in the existing literature enabling organisational change – across, readiness for change, openness to change, cynicism and commitment to change, all have specific application and focus (Choi, 2011; Rosenbaum et al., 2018; Luu and Phan, 2020). Table 2.14 provides a comparison of the four constructs. Commitment to change has gained most attention over the other four constructs, in particular in empirical studies (Choi, 2011; Bouckenooghe et al., 2015; Sofat, 2015; Dias and Silva, 2016; Raveendran and Gamage, 2019).

Table 2.14: Comparison of constructs enabling organisational change

Constructs	Readiness for change	Commitment to change	Openness to change	Cynicism about organisational change
Origin of concept	Readiness for individual change	Organisational commitment	Openness to experience	Organisational cynicism
Definition	Evaluation of the individual and organizational capacity for making a successful change, the need for a change, and the benefits the organization and its members can gain from a change (Armenakis and Bedeian, 1999; Holt et al., 2007)	A force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative, making turnover intentions less likely (Herscovitch and Meyer, 2002)	Willingness to support the change and positive affect about the potential consequences of change (Miller et al., 1994)	A pessimistic viewpoint about change efforts being successful because those responsible for making changes blamed for being unmotivated, incompetent, or both (Wanous et al., 2000)
Focus of concept	Change-specific efficacy; appropriateness of the change; management support for the change; a personal benefit of the change	Beliefs in the inherent benefits of the change (affective commitment); a sense of obligation to provide support for the change (normative commitment); recognition of the costs associated with failure to support the change (continuance commitment)	Whether individuals are looking forward to changes in their work role; whether the change would be for the better particularly concerning how they do their job	Pessimism about future change being successful or futile; blaming those responsible – usually management – for one's pessimism
Organisational capabilities to change	For example, flexible policies and procedures (McNabb and Sepic, 1995; Eby et al., 2000; Rafferty and Simons, 2006)	For example, employees are satisfied with HR practices (Conway and Monks, 2008)	Not mentioned	Not mentioned
Reference to literature	e.g. Armenakis et al. (1993); Armenakis and Bedeian (1999); Eby et al. (2000); Jones et al. (2005); Kwahk and Kim (2008); Kwahk and Lee (2008)	e.g. Klein and Sorra (1996); Herscovitch and Meyer (2002); Meyer et al. (2007); Conway and Monks (2008); Parish et al. (2008); Neves and Caetano (2009); Foster (2010); Michaelis et al. (2010)	e.g. Miller et al. (1994); Wanberg and Banas (2000); Axtell et al. (2002); Devos et al. (2001)	e.g. Reichers et al. (1997); Wanous et al. (2000); Bommer et al. (2005); Bernerth et al. (2007); Albrecht (2008); Brown and Cregan (2008); Rubin et al. (2009)

Source: Developed by author, based on Choi (2011: 488); Rosenbaum et al. (2018); Luu and Phan (2020)

2.4.2.3 Change methods

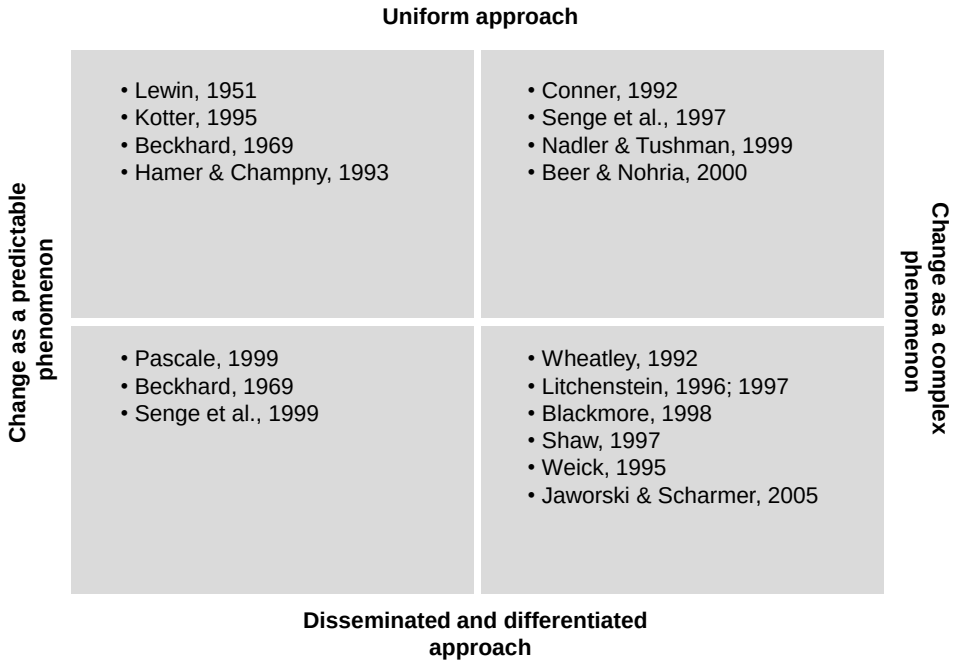
"Change methods can be defined as the actions carried out by managers to deal with change" and generally fall under two categories: systematic change (e.g. the planning method, TQM, Six Sigma, process reengineering and change management approaches) or

prescriptive models that are generally more conceptual of nature such as Lewin and Kotter (Al-Haddad and Kotnour, 2015: 244).

Change methods in different complexities

Higgs and Rowland (2005: 125) provided a summary of the prevailing change methods, arguing "… change may be characterized as lying on two axes. One is concerned with the perception of the complexity of change and the other with the extent to which it is believed that change can be effected on a uniform basis or seen as a more widely distributed activity", see Figure 2.6. In a later paper, Higgs and Rowland (2011) made it clear that it is not the perception of the complexity of change but rather the perception of change as a complex phenomenon in a complex adaptive system. Irrespective of whether it is planned or unplanned "change is only required when linked to organizational purpose and in line with organizational values. Change for the sake of change is harmful and will result in change fatigue" (By, 2020:4).

Figure 2.6: Summary map of literature on change methods



Source: Developed by author, based on Higgs and Rowland (2005: 126)

Lack of significant progress over the past decades

According to Shaw (2019: 60), "the literature from the past 30 years shows that consultants have substantial influence on organisational change projects". Stouten et al. (2018: 752) emphasised that change management practitioners tend to turn to expert views published in popular and practitioner-focused literature as "the fragmented literature on change

management can make it difficult to identify and apply change management principles based on scientific evidence". They argue that "the change management literature is replete with prescriptive models, largely directed at senior management and executives, advising them how to best implement planned organizational change" in their review of the literature on prescriptive change models since the 1990s (Stouten et al., 2018: 753). There are numerous methods and models on planned organisational change reviewed in the existing literature but yet nothing significantly new emerged over the last 50 years or so (Rosenbaum et al., 2018). Rosenbaum et al. (2018: 299) concluded, "Despite the voluminous research and material written regarding planned organisational change, Lewin's approach, when considered in its entirety, is as relevant now as it was during the time of his original writings". Unfortunately with regard to which methods delivers consistent change implementation success "by and large, the empirical literature tends to test fairly small segments of broader change phenomena" according to Stouten et al. (2018: 778).

2.4.2.4 Change outcomes

"Change outcomes can be defined as the consequences of change on the organization" and are "deemed successful if it is completed within the predetermined objectives", such as completed within time and budget or meeting internal and external stakeholder needs (Al-Haddad and Kotnour, 2015: 250-251).

Integrating the SHRM literature with measuring outcomes

Since its beginnings the evolution of this field has been trying to find efficiency and effectiveness measures that determine the outcome of implementing SHRM related changes (e.g. Kaplan and Norton, 1996; Boudreau and Ramstad, 1997; Lawler et al., 2004; Lengnick-Hall et al., 2009). According to Delery (1998), cited in Lengnick-Hall et al. (2009: 66) "limited dependent variable – failure to consider more than bottom-line performance", somewhat still an issue today and often ignoring the specific research context (Wright et al., 2018). Moreover, "organizational performance, in the field of SHRM, remained an imprecise and loose construct; most of the researchers reviewed a great deal of literature on the organizational performance, but its exact definition and measurement are relatively unknown" (Darwish et al., 2013 cited in Soomro, 2020). According to Garcia-Carbonell et al. (2015: 265) "recent reviews of the literature revealed three main issues that limit the progress in clarifying the HRM – performance association: lack of theoretical development, difficulties in measuring performance, and problems to the methods applied to test models", related to methodological issues.

The 70% failure rate debate of change initiatives

As discussed, there is a need for organisations to respond better to change since companies still report a high failure rate – up to 70% – of their change initiatives, although this figure is questioned (Hughes, 2011; Hughes, 2016). However, other authors claim that this number is not improving (Stouten et al., 2018; Dao and Bauer, 2020). Irrespective of deriving an exact failure rate figure, be it higher or lower of the 70% mark, Edwards et al. (2020: 1) state that "understanding how and why organizational changes succeed is of paramount importance because many organizational changes do not deliver the expected results". Consequently, there is an essential focus for companies to understand how to achieve organisational change success (Al-Haddad and Kotnour, 2015; Burnes et al., 2018).

2.4.3 Gaps and issues

Nearly three decades ago Pettigrew (1985), cited in Kuipers et al. (2014: 3) "offered a criticism that research on change was impaired due to its ahistorical, acontextual and aprocessual nature". In a later paper Pettigrew et al. (2001) pointed to six interconnected analytical issues in the organisational change literature which remain underdeveloped, such as bridging efforts from scholars and practitioners. In a similar vein, By (2005: 369) argued that "theories and approaches to change management currently available to academics and practitioners are often contradictory, mostly lacking empirical evidence and supported by unchallenged hypotheses concerning the nature of contemporary organisational change management". This has not improved significantly as according to Evans Thomas (2020: 373) "evidence-based organisational change management is frequently prescribed to improve the likelihood of obtaining desired outcomes; however, its success is dependent upon effectively implementing practices, tools and theories which hold a robust and thus convincing body of evidence", inadequately existing today to inform practice. Moreover, it seems that these paradoxical views still exist today as By (2020: 5) argues that "if we decide to stay the course we are currently on as organizational change and leadership scholars and practitioners, much of our work will quickly become obsolete and irrelevant". The researcher identified gaps and issues for the four themes during the critical literature review. For the first theme, change types, research needs to address change types in terms of scale and duration of the change in research better. This needs to acknowledge that the line between continuous and discontinuous change is too often blurred in practice and hard to distinguish meaningfully (Al-Haddad and Kotnour, 2015, Heyden et al., 2017, By, 2020). For the second theme, change enablers, research needs to focus on the elements that enable and measure successful change and enhance organisational performance. In particular exploring the concept of organisational commitment to change that may enhance organisational change

success. SWP is a vital but often missing piece in the organisational change literature (Al-Haddad and Kotnour, 2015; Lengnick-Hall et al. 2009, Wright et al., 2018). For the third theme, change methods, research needs to integrate systematic change with change management methods better. This needs to acknowledge that irrespective of planned or unplanned "change is only required when linked to organizational purpose and in line with organizational values. Change for the sake of change is harmful and will result in change fatigue" (Al-Haddad and Kotnour, 2015, Ahammad et al., 2020, By, 2020:4). For the fourth theme, change outcomes, research needs to understand organisational change success because many organizational changes do not deliver the expected results or outcomes. In particular, since it appears that "authors rarely explicitly address the success of change. Although some studies explicitly state that change was unsuccessful, the success of the change remains unclear or ambiguous in most studies" (Kuipers et al., 2014: 14; Rosenbaum et al., 2018; Wright et al., 2018; Edwards et al., 2020).

2.4.4 Implications for the overall research study

Employees' attitudes toward organisational change to support a change initiative is critical for a successful implementation outcome (Bouckenooghe et al., 2015). Different constructs discussed in the existing literature enabling organisational change, readiness for change, openness to change, cynicism about organisational change and commitment to organisational change, that all have specific application and focus, as introduced in Table 2.14 (Choi, 2011; Rosenbaum et al., 2018; Luu and Phan, 2020). Commitment to change gained the most attention of the other four constructs, in particular in empirical studies (Choi, 2011; Bouckenooghe et al., 2015; Sofat, 2015; Dias and Silva, 2016; Raveendran and Gamage, 2019). Generally, commitment to change is widely researched as a mediator in organisational change literature (Yousef, 2000; Messersmith et al., 2011; Soumyaja et al., 2015; Raveendran and Gamage, 2019). Marchalina et al. (2020: 1) argue, "The successful implementation of change initiative can be done through the commitment to change itself". This leads to the following proposition regarding commitment to change mediating the relationship between fit, flexibility, HR analytics and organisational change success, see Table 2.15. This proposition supports part of the proposed conceptual model, introduced in Figure 1.2.

Table 2.15: Organisational change proposition and implications

Proposition	Empirical findings	Implications for the thesis	Studies
Commitment to organisational change mediates the positive relationship between fit, flexibility, HR analytics and organisational change success	Empirical research supports a commitment to organisational change. In particular, for affective and normative commitment generally associated with increased positive outcomes (e.g. lower turnover intentions, higher acceptance of change). However, continuance commitment generally produces adverse outcomes (e.g. lower acceptance of change and performance) due to negative or neutral feelings about the change	Exploring the concept of commitment to change acting as a mediator, introduced in Figure 1.2. Resonating well with gaps and issues identified in the SHRM literature and following the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance	e.g. Lau and Woodman (1995); Allen and Meyer (1996); Hartline and Ferrell (1996); Yousef (2000); Neubert and Cady (2001); Herscovitch and Meyer (2002); Ford et al. (2003); Cunningham (2006); Fedor et al. (2006); Chen and Wang (2007); Meyer et al. (2007); Herold et al. (2007); Parish et al. (2008); Neves and Caetano (2009); Jaros (2010); Messersmith et al. (2011); Bouckenooghe et al. (2015); Da Camara et al. (2015); Soumyaja et al. (2015); Adam et al. (2018); Hendri Muhammad (2019); Raveendran and Gamage (2019); Ahammad et al. (2020); By (2020); Edwards et al. (2020)

Source: Developed by author, based on Al-Haddad and Kotnour (2015) and Edwards et al. (2020)

The literature critically reviewed four themes and identified gaps and issues that lead to further implication for the thesis. In the discussion of the first theme, change types, there is an opportunity to differentiate between small-scale change, such as continuous improvement projects versus large-scale discontinuous change such as an M&A in organisations. Regarding the duration of change, three is an opportunity to understand the current position of the change initiative, from recently started to fully completed reflecting that dimension of change (Al-Haddad and Kotnour, 2015, Heyden et al., 2017, By, 2020). For the second theme, change enablers, there is an opportunity to explore SWP (SHRM concepts of fit, flexibility and HR analytics) as an enabler of change with a commitment to change acting as a mediator, introduced in Figure 1.1 and Figure 1.2. Resonating well with gaps and issues identified in the SHRM literature and following the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance (Al-Haddad and Kotnour, 2015; Lengnick-Hall et al. 2009, Wright et al., 2018). For the third theme, change methods, there is an opportunity to reflect the dynamics of change (planned or unplanned) in the form of flexibility as a construct, acknowledging that organisations interact with an external environment – irrespective of change methods employed by organisations (Al-Haddad and Kotnour, 2015, Ahammad et al., 2020, By, 2020). For the fourth theme, change outcomes, there is an opportunity to develop a potential new outcome variable, capturing organisational change success, comprising the achievement of the project objectives and accounting for internal and external stakeholders. This resonates well with the

gaps and issues identified in the SHRM literature, developing a potential new outcome or dependent variable, becoming more relevant due to issues with existing methods measuring outcomes of SHRM (Kuipers et al., 2014; Rosenbaum et al., 2018; Wright et al., 2018; Edwards et al., 2020).

2.4.5 Summary

The literature review started with an introduction looking at its origins, critically reviewed concepts and debates clustered into four themes. This looked at gaps and issues as well as implications for the research study. It brought forward a proposition around the concepts of a commitment to change supporting part of the proposed conceptual model, introduced in Figure 1.2. The gaps and issues identified, resulted in further implications for the thesis, summarised in Table 2.16.

Table 2.16: Summary of gaps, issues, and implications for the thesis by themes

Theme and concept discussed	Gaps and issues identified	Implications for the thesis
Change types	Research needs to address change types in terms of scale and duration of the change in research better. Acknowledge that the line between continuous and discontinuous change, too often blurred in practice and hard to distinguish meaningfully (Al-Haddad and Kotnour, 2015; Heyden et al., 2017; By, 2020)	Opportunity to differentiate between small-scale change, such as continues improvement projects versus large-scale discontinuous change such as an M&A in organisations. Regarding the duration of change, an opportunity to understand the current position of the change initiative, from recently started to a fully completed to reflect that dimension of change
Change enablers	Research needs to focus on the elements that enable and measure successful change and enhance organisational performance. In particular, further, explore the concept of organisational commitment to change that may enhance organisational change success. SWP a vital but often missing piece in the organisational change literature (Al-Haddad and Kotnour, 2015; Lengnick-Hall et al. 2009; Wright et al., 2018)	Opportunity to explore SWP (SHRM concepts of fit, flexibility and HR analytics) as an enabler of change with a commitment to change acting as a mediator, introduced in Figure 1.1 and Figure 1.2. Resonating well with gaps and issues identified in the SHRM literature and following the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance
Change methods	Research needs to integrate systematic change with change management methods better. Expressly, acknowledge that irrespective of planned or unplanned "change is only required when linked to organizational purpose and in line with organizational values. Change for the sake of change is harmful and will result in change fatigue" (Al-Haddad and Kotnour, 2015; Ahammad et al., 2020; By, 2020: 4)	Opportunity to reflect the dynamics of change (planned or unplanned) in the form of flexibility as a construct, acknowledging that organisations interact with an external environment – irrespective of change methods employed by organisations
Change outcomes	Research needs to understand organisational change success because many organizational changes do not deliver the expected results/outcome. In	Opportunity to develop a potential new outcome variable, capturing organisational change success, comprising of achievement of the project

	particular, since it appears that "authors rarely explicitly address the success of change. Although some studies explicitly state that change was unsuccessful, the success of the change remains unclear or ambiguous in most studies" (Kuipers et al., 2014: 14; Rosenbaum et al., 2018; Wright et al., 2018; Edwards et al., 2020)	objectives and account for internal and external stakeholders. It is resonating well with the gaps and issues identified in the SHRM literature, developing a potential new outcome or dependent variable, since more relevant and due to issues with existing methods measuring outcomes of SHRM

Source: Developed by author, based on Al-Haddad and Kotnour (2015) and Edwards et al. (2020)

2.5 Implications from the literature review summary

2.5.1 Strategic human resource management

In retrospect SRHM literature has progressed significantly over four decades of research since the 1980s (Wright et al., 2018). Looking to the future according to Boxall (2018: 27) "while improving the rigour of our research methods is going to be important in the next 30 years, we should spend equal energy on the pursuit of relevance". Especially in today's fast-changing digitized gig economy it is essential to understand the relevance of traditional HR management systems and practices (Connelly et al., 2020). Researchers need to address the critical empirical issues that surfaced in HRM and performance research referred to as the "black box", meaning difficulties in capturing multiple dimensions of fit and not paying attention to context (Farndale and Paauwe, 2018). The research context introduced in Figure 1.1 provides an opportunity to develop a potential new outcome or dependent variable, such as organisational change success, which has become more relevant due to issues with existing methods measuring outcomes of SHRM (Wright et al., 2018). According to Kehoe, 2019:12 "while a focus on horizontal fit and vertical fit represents just one of many potential starting points from which we might advance the SHRM literature". Wright et al. (2018: 157): "identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control) but not both". Hence, an opportunity to employ SWP related concepts of fit – both vertical and horizontal – and flexibility, a dynamic capability.

2.5.2 Workforce planning analytics and measurement frameworks

HR functions frequently collect data on their efficiency but not on the impact of their practices on the business (Ben-Gal, 2019). However, organisations can collect three different kinds of HR metrics related to efficiency, effectiveness and impact measures (Boudreau and Cascio, 2017; Marler and Boudreau, 2017). In essence, these "HR metrics and workforce analytics can be used as a tool to improve organisational outcomes" or in this research context, organisational change success (Ayandibu and Kaseeram, 2020: 127). The importance of HR

analytics and HR metrics during change initiatives was highlighted in a recent study by Lawler III and Boudreau (2015), showing that “90% of large organizations report that they provide HR data to support change management at least to some extent” (Levenson, 2018: 687). In their current study with over 100,000 participants Ulrich and Grochowski (2018) identified nine dimensions required today for an HR department to be effective in organisations: HR reputation, HR context/deliverables, HR strategy, HR design, HR organisation capability, HR analytics/metrics, HR practices, HR professionals and HR work style. Within each dimension Ulrich and Grochowski (2018) identified four stages of value delivery by HR: on the administrative (efficiency), functional, strategic (both effectiveness) and for stakeholders outside the organisations (impact). For the HR analytics/metrics dimension this somewhat resonates with the elements of decision frameworks referred to as anchor points in the HR BRidge model, building on the HR scorecard: efficiency, effectiveness and impact measure (Boudreau and Cascio, 2017; Fink and Sturman, 2017; Marler and Boudreau, 2017; Ulrich and Grochowski, 2018). Therefore, this becomes an opportunity to explore HR analytics in the form of HR metrics that measure not only efficiency but also effectiveness (e.g. long-term effects of HR programs) and (future) impact of changes in HR programs and processes.

2.5.3 Organisational change

Employees’ attitudes toward organisational change to support a change initiative is critical for a successful implementation outcome (Bouckenooghe et al., 2015). Different constructs discussed in the existing literature enabling organisational change, readiness for change, openness to change, cynicism about organisational change and commitment to organisational change, all have specific application and focus, as introduced in Table 2.14 (Choi, 2011; Rosenbaum et al., 2018; Luu and Phan, 2020). Commitment to change has gained the most attention of the four constructs, especially in empirical studies (Choi, 2011; Bouckenooghe et al., 2015; Sofat, 2015; Dias and Silva, 2016; Raveendran and Gamage, 2019). Commitment to change has been widely researched as a mediator in the organisational change literature (Yousef, 2000; Messersmith et al., 2011; Soumyaja et al., 2015; Raveendran and Gamage, 2019). Marchalina et al. (2020: 1) argue, “The successful implementation of change initiative can be done through the commitment to change itself”. This becomes an opportunity to explore SWP (SHRM concepts of fit, flexibility and HR analytics) as an enabler of change with a commitment to change acting as a mediator, which is resonating well with gaps and issues identified in the SHRM literature following the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance.

2.6 Chapter summary

The literature review started with an introduction, looking at its origins, critically reviewed theoretical foundations, concepts, models, and debates clustered into 15 themes, looking at gaps and issues as well as implications for the research study. It brought forward five propositions around the concepts of vertical fit, horizontal fit, HR flexibility, HR analytics, and commitment to change, supporting the proposed conceptual model, introduced in Figure 1.2. The gaps and issues identified, resulted in the articulation of three research questions. The overarching research question was developed based on the SHRM literature by critically reviewing eight themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

What is the impact of strategic workforce planning on organisational change success? (e.g. Markoulli et al., 2017; Wright and Ulrich, 2017; Boon et al., 2018; Boxall, 2018; Jiang and Messersmith, 2018; Wright et al., 2018; Sagar, 2019; Ahammad et al., 2020; Connelly et al., 2020)

The second research question was developed based on the workforce planning analytics and measurement frameworks literature by critically reviewing three themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

Do workforce analytics, as part of SWP, positively affect change implementation effectiveness? (e.g. Rasmussen and Ulrich, 2015; Angrave et al., 2016; Cuozzo et al., 2017; Marler and Boudreau, 2017; Osinski et al., 2017; Pedro et al., 2018; Ben-Gal, 2019; Hamilton and Sodeman, 2020; Kaufman et al., 2020; Lepenioti et al., 2020; Nicolaescu et al., 2020)

The third research question was developed based on the organisational change literature by critically reviewing four themes and concepts, resulting in identifying gaps and issues as well as implications for the overall research study:

Does commitment to organisational change mediate the relationship between fit, flexibility, HR analytics, and organisational change success? (e.g. Herscovitch & Meyer, 2002; Higgs and Rowland, 2011; Nasim, 2011; Jacobs, 2013; Kuipers et al., 2014; Al-Haddad and Kotnour, 2015; Bouckenooghe et al., 2015; Da Camara et al., 2015; Soumyaja et al., 2015; Hughes, 2016; Adam et al., 2018; Rosenbaum et al., 2018; Stouten et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019; Ahammad et al., 2020; By, 2020; Edwards, 2020)

The next chapter will cover the methodology and a rigours research design allowing an early exchange with practitioners to make the research study relevant to business. It will cover

hypotheses development and the research model to address these gaps and issues as well as implications for the research study coming from the literature review. It also deals with survey design and development, including survey pre-testing and survey piloting, the sampling frame, addressing potential method bias and remedies.

3 Methodology and research design

3.1 Introduction

Chapter 1 introduced the research context of SWP viewed as an enabler of organisational change as well as the initial conceptual model. Chapter 2 provided a more comprehensive and systematic literature review critically analysing theoretical foundations, concepts and debates clustered into 15 themes, looking at gaps and issues as well as implications for the research study. It brought forward five propositions around the concepts of vertical fit, horizontal fit, HR flexibility, HR analytics, commitment to change and three research questions. Chapter 3 now includes the methodology, research philosophy, strategy, process, and design. It introduces a section on hypotheses and, the research model that was designed to operationalise the hypotheses. The survey design also includes a survey feasibility study, a pre-test of the survey and a pilot study of the global online survey. The sample frame and potential method bias and remedies are also addressed before closing with a chapter summary.

3.2 SHRM research

Quantitative research is the most used research method in the SHRM field and the dominant paradigm is a positivist one (Markoulli et al., 2017; Jiang and Messersmith, 2018). To put this into perspective, with China as an example, there have been 85 quantitative, deductive and positivistic studies in comparison to only eight qualitative studies (as well as another four were with mixed method research) published since 2006 in two prominent journals – the Human Resource Management and Human Resource Management Journal (Cooke et al., 2020). Most of the empirical SHRM research published to date builds on existing research and publications employing a wide range of different statistical techniques such as partial least squares, structural equation modelling, multiple regression and factor analysis (Lengnick-Hall et al., 2009; Markoulli et al., 2017). Markoulli et al. (2017) analysed over 12,000 HRM research articles published during the last two decades employing advanced science, mapping current HRM research-to-research design and statistical techniques used, see Table 3.1.

Table 3.1: SHRM research design and statistical techniques

Research design	Statistical techniques	Reference to literature
Longitudinal data, in-depth case study, cluster analysis, case study research, quantitative analysis, secondary data, archival data, laboratory, structured questionnaire, cross-section, longitudinal case study, single case study, fictional case study	Partial least squares (PLS), structural equation modelling (SEM), exploratory factor analysis (EFA), confirmatory factor analysis (CFA), regression analysis	Lengnick-Hall and Lengnick-Hall (1988); Wright and Snell (1991); Wright and McMahan (1992); MacDuffie (1995); Delaney and Huselid (1996); Delery and Doty (1996); Hansen et al. (1999); Boxall and Purcell (2000); Hitt et al. (2001); Way and Johnson (2005); Lepak et al. (2006); Arthur and Boyles (2007); Lepak and Shaw (2008); Bahuguna et al. (2009); Lengnick-Hall et al. (2009); Batt and Banerjee (2012); Kaufman (2012); Jiang et al. (2013); Jackson et al. (2014); Wright et al. (2018)

Source: Developed by author, based on Markoulli et al. (2017: 11)

3.3 Research philosophy, methodology, strategy, tactics and ethics

3.3.1 Research philosophy

Ontology and epistemology are the starting points in the philosophical debate on management research and social science (Rose et al., 2015). Ontology deals with the nature of reality and existence while epistemology copes with ways of inquiring about the nature of the world. (Easterby-Smith et al., 2012). There are four different ontologies: realism, internal realism, relativism, and nominalism. Realism focuses on a single truth and revealing of facts. Internal realism accepts that truth exists but it is more ambiguous while facts are specific but are not directly revealed. Relativism is characterised by many truths and facts that are influenced by the perspective of the individual. And in nominalism, there is no truth and facts are a concept by individuals (Easterby-Smith et al., 2012). Epistemology deals with two opposing views. These are positivism (also called objectivism) and social constructionism (or subjectivism), see Table 3.2.

Table 3.2: Implications, strengths and limitations of the two contrasting epistemologies

	Positivism (Objectivism)	**Social Constructionism (Subjectivism)**
The observer	Must be independent	Is part of the observed
Human interests	Should be relevant	Are the primary driver of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progresses via	Hypotheses and deductions	Gathering rich data for ideas generation
Concepts	Need to be defined so that they can be measured (and tested)	Should incorporate stakeholder perspectives
Unit of analysis	Should be reduced to simpler terms (parsimony)	May include the complexity of "whole" situations
Generalization via	Statistical probability	Theoretical abstraction
Sampling requires	Large number selected	A small number of cases chosen
Strengths	Can provide comprehensive coverage; potentially fast and economical; easier to justify policies	Good for processes/meanings; flexible and suitable for theory generation; data collection less artificial
Limitations	Inflexible and artificial; not suitable for the process, meanings or theory generations; implication for action not obvious	Can be very time consuming; analysis and interpretations are complicated; may not have credibility with policy-makers

Source: Developed by author, based on Easterby-Smith et al. (2012: 24-28)

3.3.2 Research methodology

Research methodology is "a combination of techniques used to inquire into a specific situation, while methods are "individual techniques for data collection, analysis, etc.", generally for quantitative or qualitative studies (Easterby-Smith et al., 2012: 18). While research philosophy is not isolated from the methodology, these are somewhat connected, as shown in Table 3.3.

Table 3.3: Bridging research philosophy with methodology and implications

	Ontology	**Realism**	**Internal Realism**	**Relativism**	**Nominalism**
	Epistemology	**Strong positivism**	**Positivism**	**Constructionism**	**Strong constructions**
Methodology / method	Emphasis	Explanation in terms of causal mechanisms	Explanation in terms of universal laws	Understanding the process of social construction	Understanding lived experience and shared culture
	Aims	Discovery	Exposure	Convergence	Invention
	Starting points	Hypotheses	Propositions	Questions	Critique
	Approach	Abduction and inductive	Deductive	Inductive	Inductive
	Designs	Experiment	Extensive survey; multi cases	Cases and survey	Engagement and reflexivity
	Data types	Numbers and facts	Numbers and words	Words and numbers	Discourse and experiences
	Analysis and interpretation	Verification and falsification	Correlations and regressions	Triangulation and comparison	Sense-making and understanding
	Outcomes	Confirmation of theories	Theory testing and generation	Theory generation	New insights and actions
	Method	Qualitative and quantitative	Quantitative with qualitative in a subordinate role	Qualitative	Qualitative

Source: Developed by author, based on Easterby-Smith et al. (2012: 24) and Rose et al. (2015: 16)

Remenyi et al. (2010: 66) point out that "the topic to be researched and the specific research questions are one of the primary drivers in the choice of methodology" and research process. In principle, there are three different research questions: what, why and how to investigate. "What questions seek to generate a detailed description of the characteristics and attributes of some phenomenon of interest", "Why questions are concerned with explaining phenomena" and "How questions offer a different form of explanation by taking a process view" (Rose et al., 2015: 33-35). In line with the SRHM field and the dominance of quantitative research, the research questions introduced in Chapter 2 – in particular the lead research question – point to conducting the research study with a deductive and positivist research process, see Figure 3.1.

Figure 3.1: A deductive and positivist research process

Source: Developed by author, based on Bhattacherjee (2012: 20)

The research process involved three main phases: exploration, research design and research execution. The exploration phase involved identifying the research questions by reviewing the literature and theoretical foundations. The research design phase operationalised measurement constructs and established the research method, sampling strategy, unit of analysis and time horizon of the study. This resulted in a research proposal. Finally the research execution phase involved a pilot test of the measurement instruments, data collection and data analysis, leading to the final research report or thesis (Bhattacherjee, 2012).

3.3.3 Research strategy and tactics

Research questions determine research strategy and tactics. Remenyi et al. (2010) suggest that after articulating the research questions, the researcher needs to assess resource considerations before defining strategy and tactics. For resource considerations, the strengths, limitations, and suitability of research methodologies were assessed at the outset of the research study, specifically in the context of the researcher's organisation Mercer (see **Appendix B**). The researcher joined Mercer to conduct this research, and was provided with access to resources such as experts and clients. As part of the research strategy, these resources were assessed against, time, costs and skills constraints.

Regarding skills, in preparation for the researcher's global online survey and to better understand the quantitative research design process, the researcher took a leading role at Mercer in designing, developing and analysing a survey related to his research area. The survey attracted over 250 participants, mainly HR executives and professionals across the EMEA region. The researcher has co-authored the study that was published and distributed to all major global clients (see **Appendix C**).

Regarding costs, the budget to conduct a research study like this at Mercer was limited, and this this was similar to the time available to conduct the study. For surveys there is always a decision regarding time horizon, studying a specific point in time such as a cross-sectional design or over a period referred to as a longitudinal study (Rose et al., 2015). There have been calls in the literature to conduct more longitudinal studies, especially due to the ongoing changes in the competitive environment (Wright et al., 2018). Nevertheless, cross-sectional studies remain common and still dominate the SRHM field, potentially since these require fewer resources and costs are lower (Jiang and Messersmith, 2018). Based on the research questions, assessment of strategy and organisational settings implied to conduct a large-scale survey with a cross-sectional design, this is a suitable research tactic (Remenyi et al., 2010).

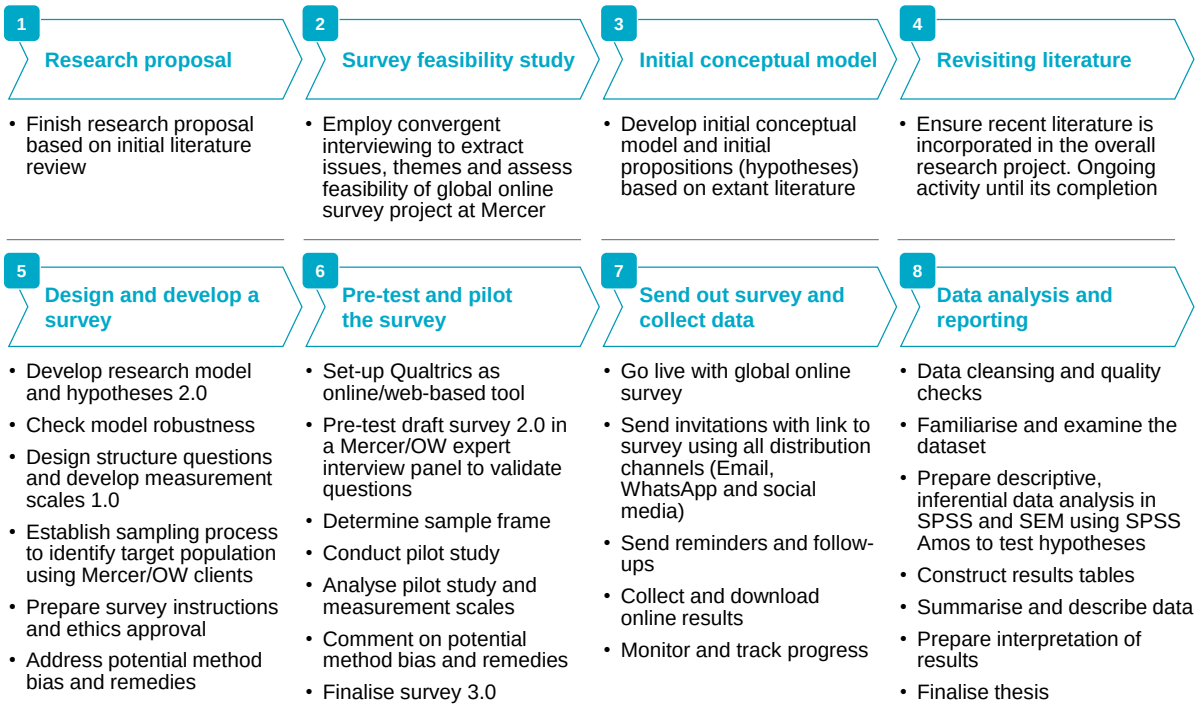
3.3.4 Ethics

According to Hair et al. (2007: 81) “business researchers have several important ethical obligations. They should strive to communicate and develop a consensus reason for the research among all the key actors involved”. This research study followed the ethical guidelines provided by the University of Reading. Before conducting the survey feasibility study and expert interview panel ethics was signed off by supervisors in line with university guidelines (Section A). As part of this process, an email was sent to the participants asking to confirm they were informed and consented to participate. These confirmations were part of Section B of the Ethical Approval Process and were passed to conduct the study. An information and consent email for the remote expert interview panel was also sent out in advance to all participants (see **Appendix D**). All participants confirmed the email before conducting the interviews. It also set out the agenda and objectives for the session with clear timelines and next steps. These confirmations were passed to conduct the study. For the survey pilot and global online survey, the appropriate information and consent text was included in the introduction (see **Appendix E** and **F**).

3.4 Research design

Creswell and Clark (2007: 58) describe research design as “procedures for collecting, analysing, interpreting, and reporting data in research studies”. It is worth pointing out that there are three types of research design to study a business problem: an unstructured approach of exploratory design and structured approaches such as descriptive and causal design. The exploratory design explores ideas in the form of open-ended question and text responses. Descriptive design enables a researcher to understand opinions in the form of multiple-choice questions, and causal design explains cause and effect relationships between variables (Hair et al., 2007). The research design, data collection, and analysis followed eight clear stages connected with different activities, see Figure 3.2.

Figure 3.2: The research design, data collection, and analysis process



Source: Developed by author, based on Rose et al. (2015)

The reason behind this research design was to engage with practitioners and experts. These proposed activities guided the researcher in the completion of this research study. This research design process is embedded in an overall work plan with clear milestones to keep track and monitor progress (refer to **Appendix G**). It outlines how the research questions will be answered and further explored. The research proposal was the starting point in this research study. To conduct a systematic review of previous studies, the researcher formed clusters of different research fields by relevant academic disciplines, which formed the basis for the initial literature review, as discussed in Chapter 2. It allowed the researcher to understand seminal authors in the strategy, HR, accounting and leadership and change field.

The researcher also analysed relevant concepts and approaches in the context of this research, as well as gaps and issues in the literature, and assessed implications for this research study – with the research proposal accepted by the academic supervisor.

3.4.1 Survey feasibility study to conduct research

Salaman et al. (2005: 3) point out "… because of the important role SHRM plays in theories of, and attempts to describe, understand, critique and change organizations and theories of organizational structures and functioning, it is virtually impossible to define SHRM… it consists of very diverse phenomena: prescriptions, models, theories and critiques". Williams and Lewis (2005: 227) make the point that a qualitative technique called convergent interviewing is suitable, "where the area of research does not clearly sit within one particular field of study… and therefore the methodology and method may not be at all clear… a multi-cyclical approach to research". Convergent interviewing is a technique to collect, analyse and interpret expert experiences, opinions and knowledge that converge around a set of interviews in a "reductionist iterative process" Williams and Lewis (2005: 221). The survey feasibility study narrowed down the research focus to develop the global online survey, referred to as a "handmaid" design in the literature in which "one method serves the needs of the other… to yield accurate and reliable data". As a result there is a more substantial weighting or dominance towards the quantitative method, as this will play a more critical role in addressing the research problem in line with the SHRM field (Easterby-Smith et al., 2012: 61).

3.4.1.1 Purpose of the survey feasibility study

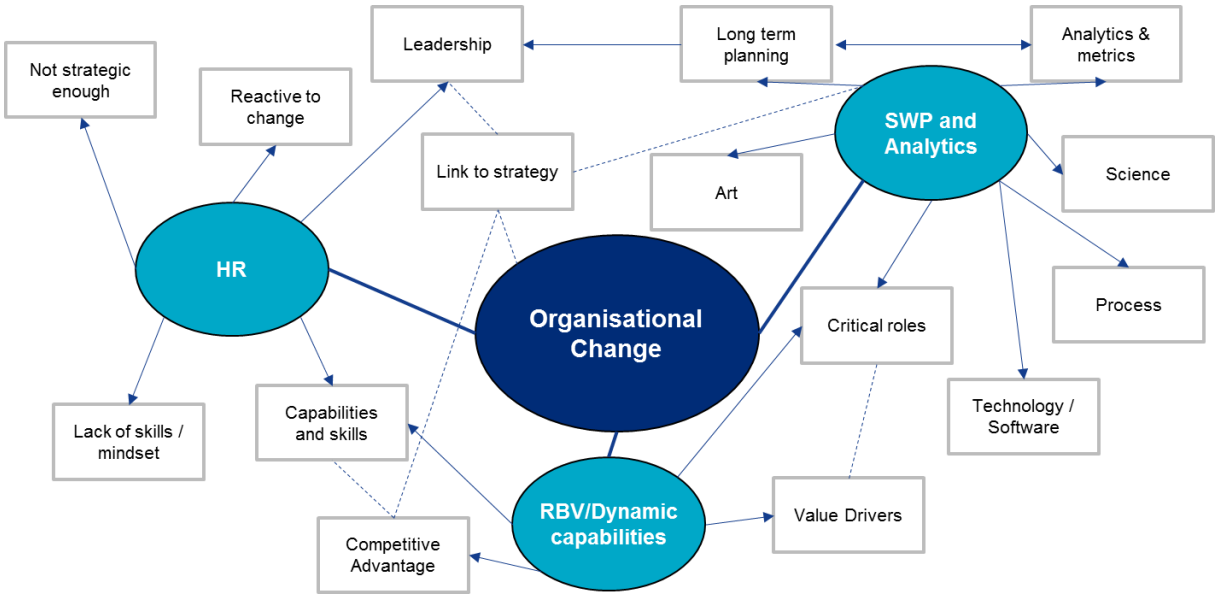
The survey feasibility study confirms Mercer practitioner interest in the research study as a feasible and relevant global online survey. As the researcher plans to use a questionnaire as the main study to collect information from the clients of Mercer and Oliver Wyman, the survey feasibility study should assist in getting insights by identifying key issues, themes, first survey topics and potential questions. From a resource-based and dynamic capabilities view, the survey feasibility study should also investigate and understand the role of strategic workforce planning and analytics in light of organisational change. The linking of business strategy and human resource management started in the early 1980s (Devanna et al., 1999), and the resource-based view of strategy increased the awareness of employees as an essential source of competitive advantage (Wright et al., 2001). Ulrich and Brockbank (2005) also made the point that HR needs to become more of a strategic partner linking HR efforts closer to the business strategy and play a key role in managing strategic change. While there seems to be increasing agreement in favour of the strategic business partner model, the

survey feasibility study seeks to explore the role of HR to manage and measure organisational change.

3.4.1.2 Selection of the interview protocol

The researcher's survey feasibility study follows the convergent interviewing process recommended by Rao and Perry (2003) and convergent interviewing pilot study by Logan et al. (2013). Based on the literature review and mind mapping, see Figure 3.3, the researcher established an appropriate opening research question.

Figure 3.3: Mind Map based on an initial literature review to develop the lead question



Source: Developed by author, inspired by Logan et al. (2013)

The first question's purpose was to engage the interviewees in expressing not only their views but also their own experiences about the research topic:

Can you tell me what do you think of the role of strategic workforce planning and analytics for organisations during change?

Before commencing the actual interviews, the researcher conducted a test interview. Based on feedback from the test interview it was seen as valuable to pose several additional questions to the first opening question: where and what are the shortcomings and limitations?; what are the best-in-class doing in this area?; and what are the issues? These four questions were sent to the interviewees in advance of the actual interviews, as part of the information and consent email. The summary of the interview protocol is presented in **Appendix H**.

3.4.1.3 Sampling criteria of the survey feasibility study

The researcher identified 17 prospects within the organisation, recognised as experts and practitioners in their field. The researcher's former Mercer supervisor being such an expert and practitioner was involved in the interviewee selection process to ensure overall buy-in and getting the right candidates for the survey feasibility study. The researcher employed purposive sampling and participants were informed by email (Easterby-Smith et al., 2012). Within one week, 14 prospects (over 80% of the sample) confirmed their interest in participation. The optimal sampling size was somewhat predetermined. It was agreed with the researcher's supervisors to conduct between 8-12 interviews, giving some leeway in determining the optimal sample size to reach data saturation and stability. Before conducting the interviews, a separate test interview was set-up. After conducting 12 interviews across three regions, representing seven different countries data saturation and stability between the interviews was reached. Each interview lasted between 45 and 60 minutes. On completing the last interview, the researcher had conducted a total of 11.5 hours of interviews over two months.

3.4.2 The survey design process

The initial conceptual model was developed to operationalise the five initial propositions (hypotheses) from the literature review. The initial conceptual model, introduced in Chapter 1, and initial propositions, introduced in Chapter 2, guided the researcher to develop the research model and hypotheses 2.0 as part of this research design process. The researcher continued reading relevant literature while engaging with subject matter experts until the final submission of this thesis. The researcher also used different databases accessed via JSTOR and OneSearch, including journal databases such as EBSCO, Proquest, Emerald and Science Direct, as well as search engines like Google Scholar and accessing publishers' websites directly, for example, Sage, Wiley, Taylor and Francis. Generally, the researcher prioritised top-tier academic journals by looking at journal rankings published on the website of the Chartered Association of Business Schools' (CABS) Academic Journal Guides and the Scimago Journal & Country Rank (SJR) platform, recency of publications but also relevance. Scimago also includes the Scopus database owned by the publisher Elsevier. Initial search terms included strategic human resource management (SHRM), human capital, HR skills and capabilities, HR practices, HR strategy, strategic workforce planning, workforce analytics, leadership and change, change management and organisational change. The researcher downloaded academic journals into EndNote version X9, a reference management software, to consolidate and analyse findings. Mind maps supported the

summary of search results to understand theoretical foundations, concepts, current debates, and issues in the existing literature, as introduced in Chapter 2.

Survey research design is generally grouped into factual (e.g. opinion polls such as employee engagement surveys in organisations), exploratory (e.g. analysing patterns in an extensive data set such as Geert Hofstede's cultural dimensions research) and inferential studies. The researcher used an inferential survey aimed at uncovering relationships between concepts and variables by testing hypotheses relating to the nature of these relationships (Easterby-Smith et al., 2012). In close alignment with his supervisors, the researcher designed survey questions based on the hypotheses and the existing literature measurement scales. The idea of running the main study as a large-scale global survey with Mercer's clients across different regions (e.g. North America, Europe, and the Asia Pacific region) gained support by all participants in the survey feasibility study. To date, the US as a region dominates the majority of research; a global survey could potentially enhance the contribution to both theory and practice. Consequently, the researcher collaborated with Mercer's market leaders in each of the target markets in North America, EMEA, and APAC to ensure targeting of the right participants and thereby enhancing response rates. A sampling process outlined where data would be collected and how much data would be required to ensure the high quality and feasibility of this research study. The researcher also addressed potential method bias as part of the overall research design process. Procedural remedies or preventive measures to reduce common method bias, such as emphasizing anonymity, accuracy in giving responses and careful wording during the survey design and development stage (Podsakoff et al., 2012) were also used in the design process. Statistical remedies exist as part of the confirmatory factor analysis on the results of the full global online survey (Podsakoff et al., 2012).

For the expert interview panel, the researcher made use of Mercer's global Career team and additional subject matter experts from Mercer's sister company Oliver Wyman. The expert interview panel validated and improved the phrasing of questions. The researcher conducted an expert interview panel with four participants moderated by a senior expert in June 2017. Due to time zone differences and hefty schedules, it was not possible to organise a second expert interview panel session in time. Consequently, the researcher conducted two additional individual expert interviews in August 2017 (Olson, 2010). Following the expert interview panel and interviews, the researcher launched an online pilot study to analyse and check measurement scales and the first survey results. After this step the global online survey was finalised and updated in Qualtrics, including invitations to participate and instructions outlining aims and objectives for conducting the survey (Rose et al., 2015). The pilot study was open from February 2018 until May 2018.

During the survey distribution, the researcher collaborated with Mercer's business leaders, Marketing, and the Qualtrics online surveys team. Storing the results in an online database that could be downloaded directly into statistical analysis programs such as SPSS was an advantage of a web-based survey in comparison to a paper-based approach (Easterby-Smith et al., 2012). The global online survey was launched in January 2019 and remained open until September 2019 to collect data. Following data cleansing and appropriate quality checks, and once the researcher familiarised himself with the dataset, statistical analysis of the data for hypotheses testing and findings were reported graphically and incorporated in Chapter 4 and Chapter 5.

3.5 Hypothesis development and research model

Based on the comprehensive and systematic literature review five propositions around the concepts of vertical fit, horizontal fit, HR flexibility, HR analytics, and commitment to change were proposed in Chapter 2. For hypotheses 1-4, the researcher used an exploratory factor analysis (EFA) in SPSS, as well as confirmatory factor analysis (CFA) and structural equation modelling (SEM) as analytical techniques to test the hypotheses in SPSS Amos. For hypothesis 5a-d, the researcher used regression analysis for mediation with the use of the Hayes PROCESS macro (Hayes, 2018).

3.5.1 The independent variables

According to Kehoe, 2019:12 "while a focus on horizontal fit and vertical fit represents just one of many potential starting points from which we might advance the SHRM literature". Wright et al. (2018: 157): "identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control) but not both". The following hypotheses 1–3 explore both sides of the tension in the form of vertical and horizontal fit and flexibility. Exploring the concept of vertical fit related to SWP – the first phase of the SWP model introduced in Figure 2.3; utilising a different outcome variable in this context with SWP and relevant as an enabler of organisational change, introduced in Figure 1.1, hence:

Hypothesis 1 (H1): Strategic workforce planning HR strategy fit (HRS) will have a positive impact on organisational change success (OCS)

Exploring the concept of horizontal fit related to SWP – the last phase of the SWP model introduced in Figure 2.3; utilising a different outcome variable with SWP and relevant as an

enabler of organisational change and due to issues with measuring outcomes of SHRM, introduced in Figure 1.1, hence:

Hypothesis 2 (H2): Strategic workforce planning HR practice fit (HRP) will have a positive impact on organisational change success (OCS)

Exploring the concept of HR flexibility (dynamic capabilities) related to SWP, in particular, HR practice flexibility a core feature of the SWP model. SWP is an ongoing collaborative management decision-making process between HR and the business, aligning core business processes to SHRM related changes and organisational needs, introduced in Figure 1.1. Utilising a different outcome variable as discussed above, hence:

Hypothesis 3 (H3): Strategic workforce planning HR flexibility (HRF) will have a positive impact on organisational change success (OCS)

HR functions frequently collect data on their efficiency but not on the impact of their practices on the business (Ben-Gal, 2019). However organisations can collect three different kinds of HR metrics related to efficiency, effectiveness and impact measures (Boudreau and Cascio, 2017; Marler and Boudreau, 2017). In essence, these “HR metrics and workforce analytics can be used as a tool to improve organisational outcomes” or in this research context, organisational change success (Ayandibu and Kaseeram, 2020: 127). Exploring the concept of HR analytics/metrics (e.g. efficiency, effectiveness and impact measures) a central activity of the SWP model introduced in Figure 2.3; utilising a different outcome variable in this context with SWP and relevant as an enabler of organisational change, introduced in Figure 1.1, hence:

Hypothesis 4 (H4): Strategic workforce planning HR analytics (HRA) will have a positive impact on organisational change success (OCS)

3.5.2 The mediating variable

Employees need a positive attitude toward a change initiative for a successful implementation (Bouckenooghe et al., 2015). Different constructs discussed in the existing literature enabling organisational change, readiness for change, openness to change, cynicism about organisational change and commitment to organisational change, all have specific applications and focus, as introduced in Table 2.14 (Choi, 2011; Rosenbaum et al., 2018; Luu and Phan, 2020). Commitment to change has gained most attention out of the four constructs, especially in empirical studies (Choi, 2011; Bouckenooghe et al., 2015; Sofat, 2015; Dias and Silva, 2016; Raveendran and Gamage, 2019). According to O'Keefe and Jensen (1997) cited in Hayes (2018: 77): “There is a body of research in the persuasion and attitude change literature on the differential effects of gain versus loss framing in influencing

behaviour" and understanding how effects occur relate to mediation, as opposed to moderation answering when or for whom questions. On the one hand, a moderation variable "influences the nature of the relationship between an independent variable and dependent variable", and on the other hand a mediation variable "represents a mechanism through which an independent variable influences a dependent variable" (Rose et al., 2015: 398-399). Conceptually "mediation analysis is a statistical method used to evaluate evidence from studies designed to test hypotheses about how some causal antecedent variable X transmits its effect on a consequent variable Y" fundamentally the reason for the effect (Hayes, 2018: 78). Generally, commitment to change is widely researched as a mediator in the organisational change literature (Yousef, 2000; Messersmith et al., 2011; Soumyaja et al., 2015; Raveendran and Gamage, 2019). Marchalina et al. (2020: 1) argue, "The successful implementation of change initiative can be done through the commitment to change itself". Exploring the concept of commitment to change acting as a mediator, introduced in Figure 1.2. Resonating well with gaps and issues identified in the SHRM literature and following the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance, hence:

Hypothesis 5a-d (H5a-d): Commitment to organisational change (C2C) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)

In Table 3.4, the hypotheses 2.0 are summarised, showing fundamental constructs, a link to the research questions and reference to literature.

Table 3.4: Hypotheses development 2.0

Hypothesis 2.0	Key construct	Link to the research questions	Reference to literature
H1: Strategic workforce planning HR strategy fit will have a positive impact on organisational change success (OCS)	HR strategy "vertical" fit (depicted by **HRS**)	What is the impact of strategic workforce planning on organisational change success?	e.g. Miles & Snow (1984); Schuler (1992); Huselid, (1993); Bechet (2008); Christiansen and Higgs (2008); Lengnick-Hall et al. (2009); Azmi (2010); Higgs and Rowland (2011); Ward and Tripp (2013)
H2: Strategic workforce planning HR practice fit will have a positive impact on organisational change success (OCS)	HR practices "horizontal" fit (depicted by **HRP**)	What is the impact of strategic workforce planning on organisational change success?	e.g. Lui et al (2004); Bhattacharya et al. (2005); Evans and Davis (2005); Subramony (2006); Bechet (2008); Lengnick-Hall et al. (2009); Higgs and Rowland (2011); Ngo and Foley (2011); Ward and Tripp (2013)
H3: Strategic workforce planning HR flexibility will have a positive impact on organisational change success (OCS)	HR flexibility (depicted by **HRF**)	What is the impact of strategic workforce planning on organisational change success?	e.g. Bhattacharya et al. (2005); Lengnick-Hall et al. (2009); Ward and Tripp (2013); Mayo (2015)
H4: Strategic workforce planning HR analytics will have a positive impact on organisational change success (OCS)	HR analytics (depicted by **HRA**)	Do workforce analytics, as part of SWP, positively affect change implementation effectiveness?	e.g. Lawler et al. (2004); Lawler and Bourdreau (2009); Ward and Tripp (2013); Nienaber and Sewdass (2016)
H5a-d: Commitment to organisational change (C2C) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)	Commitment to organisational change (depicted by **C2C**)	Does commitment to organisational change mediate the relationship between HRS/HRP/HRF/HRA and organisational change success?	e.g. Pettigrew et al. (2001); Herscovitch and Meyer (2002); Cunningham (2006); Jaros (2010); Choi (2011); Kuipers et al. (2014); Takaishi (2016)

Source: Developed by author

3.5.3 A potential new outcome or dependent variable

"Change outcomes can be defined as the consequences of change on the organization" and is "deemed successful if it is completed within the predetermined objectives", such as completed within time, budget and meeting internal and external stakeholders needs (Al-Haddad and Kotnour, 2015: 250-251). To find efficiency and effectiveness measures that determine the outcome of implementing SHRM related changes has been part of the evolution of this field since its beginnings (e.g. Kaplan and Norton, 1996; Boudreau and Ramstad, 1997; Lawler et al., 2004; Lengnick-Hall et al., 2009). According to Delery (1998), cited in Lengnick-Hall et al. (2009: 66) "limited dependent variable – failure to consider more than bottom-line performance", is somewhat still an issue today and often ignored the

specific research context (Wright et al., 2018). Moreover, “organizational performance, in the field of SHRM, remained an imprecise and loose construct; most of the researchers reviewed a great deal of literature on the organizational performance, but its exact definition and measurement are relatively unknown” (Darwish et al., 2013 cited in Soomro, 2020). According to Garcia-Carbonell et al. (2015: 265) “recent reviews of the literature revealed three main issues that limit the progress in clarifying the HRM – performance association: lack of theoretical development, difficulties in measuring performance, and problems to the methods applied to test models”, related to methodological issues. There is an opportunity to develop a potential new outcome variable, capturing organisational change success, comprising of achievement of the project objectives and account for internal and external stakeholders. It is resonating well with the gaps and issues identified in the SHRM literature, developing a potential new outcome or dependent variable, since more relevant and due to issues with existing methods measuring outcomes of SHRM (Kuipers et al., 2014: 14; Rosenbaum et al., 2018; Wright et al., 2018; Edwards et al., 2020).

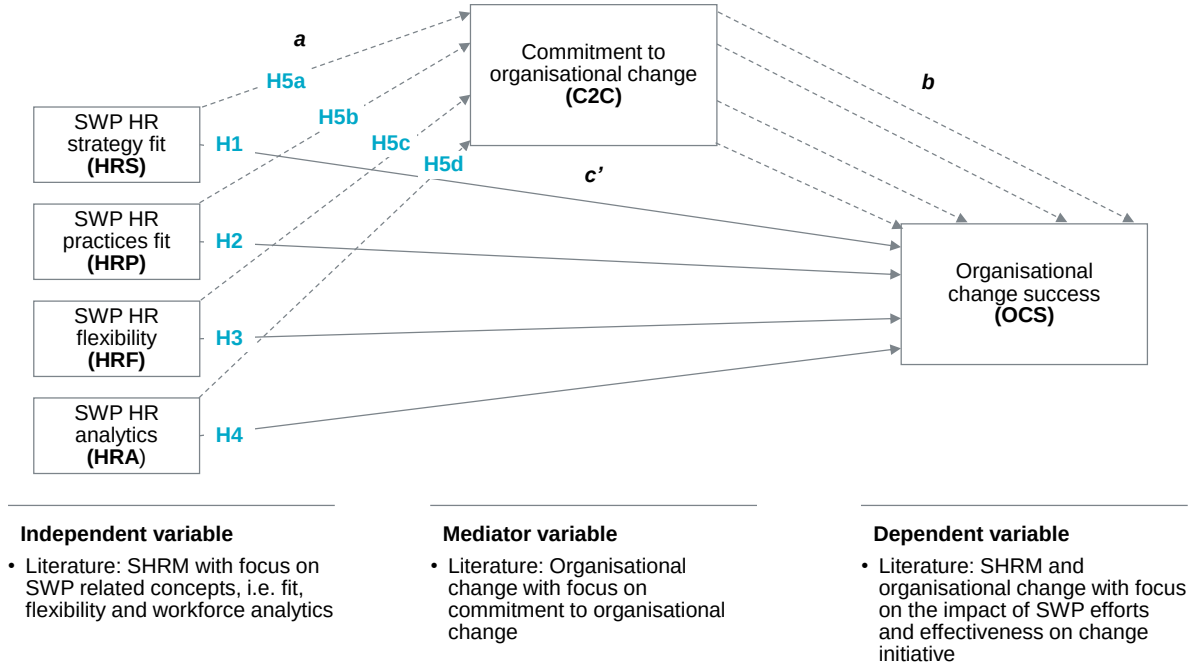
3.5.4 Control variables

Typical control variables in past SHRM research are the size of an organisation, the number of employees working in HR and the organisation, location, type of industry and level of unionization. In particular, there are three control or dummy variables most frequently used: organisation size in terms of the number of employees, one industry in comparison to other industries and comparison of regions (Ngo and Foley, 2011; Bernerth and Aguinis, 2016; Wright and Ulrich, 2017; Cooke, 2018; Wright et al., 2018; Cafferkey et al., 2019; Han et al., 2019; Hauff, 2019; Rogozińska-Pawełczyk, 2020; Yasir and Majid, 2020).

3.5.5 Research model

The research model was developed and designed to operationalise the hypotheses, and to explore the research questions, summarised in Figure 3.4.

Figure 3.4: Overall research model 2.0



Source: Developed by author

3.6 Survey design and development

Although slightly adjusted for fit with this comprehensive research study, the survey design and development process principally followed the steps suggested by Rose et al. (2015):

1. Define study variables
2. Formulate the scale items, establish the level of measurement and define the unit of analysis
3. Structure and layout of the items
4. Pre-test questionnaire
5. Pilot online questionnaire

The steps for administering and distributing the questionnaire as well as the steps for analysing the data and presenting results that are typically included in the survey design and development process were already discussed in the preparation of the research design in Figure 3.2.

3.6.1 Define study variables

3.6.1.1 HR strategy fit – depicted by HRS (Human Resource Strategy)

There have been previous studies that looked at the concept of HRM strategy fit or "vertical fit", and the construct relates to the alignment of HR strategies with business strategies and the relationship between this construct and firm performance (Becker and Huselid, 2006; Lengnick-Hall et al., 2009; Altarawneh, 2016). Based on this ongoing debate Azmi (2010) refined a scale related to HRM-Strategy Fit as part of an overall SHRM Inventory measurement model comprising of 12-items that were later refined to eight-items as part of the scale development process. This employs a 5-point Likert-type scale (1 = 'strongly disagree' and 5 = 'strongly agree'). Sample items from this original scale include "Conscious effort to align business with HR issues" and "HR inputs considered integral to business strategy". The reported Cronbach's alpha was 0.90.

3.6.1.2 HR practice fit – depicted by HRP (Human Resource Practices)

The concept of HR practices fit or "horizontal" fit relates to the alignment of different HR practices, e.g. training, recruiting, compensations, performance appraisals with one another. The construct, known as HPWS or HR practices, is widely established in the existing literature that measures this concept and the impact on firm performance (Lengnick-Hall et al., 2009). Ngo and Foley (2011) measured this variable by a composite index consisting of 18-items selected from Bhattacharya et al. (2005), Evans and Davis (2005) and Lui et al. (2004), using a 6-point Likert-type scale (1 = 'strongly disagree' and 6 = 'strongly agree'). Sample items from this original scale include "We use many different recruitment sources" and "We promote senior people from within rather than hiring from outside". While Ngo and Foley (2011) included the 18-items in the appendices of their study, a Cronbach's alpha was not provided. However, the researcher found a study by Datta et al. (2005) that used the same scale with a reported Cronbach's alpha of 0.78.

3.6.1.3 Adaptability and flexibility in HR – depicted by HRF (Human Resource Flexibility)

The concept of HR flexibility is related to a dynamic capability enabling organisations to respond to changing external but also internal conditions to create sustainable value by also exploring the relationship between HR flexibility and firm performance (Eisenhardt and Martin, 2000; Bhattacharya et al., 2005; Lengnick-Hall et al., 2009). Based on the early work of Wright and Snell (1998) Bhattacharya et al. (2005) developed a 22-item scale exploring three dimensions of HR flexibility: employee skills, employee behaviour and flexibility of HR

practices on a multi-item 7-point Likert-type scale. Sample items from this original sub-scale skill flexibility include “Our firm can shift employees to different jobs when needed” and “We employ people with a broad variety of skills”. For the sub-scale behaviour flexibility, sample items include ”People in our firm change their work habits in response to changes in the competitive environment” and “Most of our employees are flexible enough to adjust to dynamic work requirements”. For the sub-scale HR practice flexibility “Flexibility of our HR practices helps us to adjust to the changing demands of the environment” and “Changes in our HR practices enable us to remain competitive in the market”. The reported Cronbach’s alpha of employee skills, employee behaviour and HR practices flexibility scales were 0.89, 0.92, and 0.90, respectively.

3.6.1.4 Workforce measures – depicted by HRA (Human Resource Analytics)

Regarding metrics and analytics, there are generally three categories of workforce measures: efficiency, effectiveness and impact (Lawler III and Boudreau, 2009). Efficiency measures the relationship between resources that HR uses and the programs and practices that it creates. Effectiveness measures the relationship between HR programs and their effects on those that receive them. Impact measures the relationship between the effects of HR programs and the pivotal elements of business success (Boudreau and Cascio, 2017). The model by Boudreau and Ramstad (2007) consists of a value map connecting human capital investments, activities and the strategic success of the organisation, as a planning tool. It incorporates three elements of decision frameworks: efficiency (delivering HR programs and practice by making use of critical resources), effectiveness (HR change programs that affect employees), and impact (targeting the “right” employees with the most significant impact on the strategy). Lawler III and Boudreau (2009) measured this variable with nine-items exploring these three categories of workforce measures with different strategy activities, e.g. HR’s role in strategy, decide among the best strategy options and plan the implementation of the strategy. For the category efficiency, sample items include “Measure the financial efficiency of HR operations (e.g. cost-per-hire, time-to-fill, training costs?)” and “Benchmark analytics and measures against data from outside organizations (e.g. Saratoga, Mercer, Hewitt, etc.)?”. For the category-scale effectiveness, “Use HR dashboards or scorecards” and “Measure the specific effect of HR programs (such as learning from training, motivation from rewards, the validity of a test, etc.)?”. For the category impact “Measure the business impact of HR programs and processes?” and “Measure the quality of the talent decisions made by non-HR leaders?”. It is however not suggested to use these categories as sub-scales as these: “are valid and useful, but analytics can be confusing when measures in one category (e.g. efficiency) are presented or mistaken for

another (e.g. impact)" (Boudreau and Cascio, 2017: 123). The Cronbach's alpha was not reported.

3.6.1.5 Commitment to organisational change – depicted by C2C (Commitment to Change)

The three-component model of commitment developed by Meyer and Allen (1991) arguably dominates organisational commitment research (Cunningham, 2006; Jaros, 2007; Jaros, 2010). Herscovitch and Meyer (2002) measured this variable with a revised 18-item scale differentiating between three categories of commitment to change: affective, normative and continuance, using a 7-point Likert-type scale (1 = 'strongly disagree' and 7 = 'strongly agree'). Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly. Normative commitment is the obligation supporting the change initiative. In particular, affective and normative commitment to change was associated with championing change, i.e. higher levels of support for change as opposed to continuance commitment. However, normative commitment is not always applicable in different cultural settings (Herscovitch and Meyer, 2002; Cunningham, 2006). For the sub-scale affective commitment sample items include" I believe in the value of this change" and "This change is a good strategy for this organization". For the sub-scale continuance commitment, this includes "I have no choice but to go along with this change" and "I feel pressure to go along this change". For the sub-scale normative commitment "I feel a sense of duty to work toward this change" and "I do not think it would be right of me to oppose this change". Reported alpha coefficients of Affective, Continuance, and Normative Commitment to Change scales were 0.94, 0.94, and 0.86, respectively.

3.6.1.6 Organisational change success – depicted by OCS (Organisational Change Success)

The researcher has developed a potential new six-item instrument to measure organisational change success, to avoid the common measurement error in SHRM literature. It encompasses much written on change success, using a 7-point Likert-type scale (1 = 'strongly disagree' and 7 = 'strongly agree'). Sample items from this potential new scale include "In our organisation the change achieved the objectives that is set out to achieve" and "External stakeholders impacted by the change have accepted the change". The reported Cronbach's alpha for the pilot study was 0.84.

3.6.1.7 Demographics

For the overall research study 10-items have been selected to explore this in the survey: sector, role, tenure, number of people in HR, number of people globally, revenue, employee turnover, headquarter base, global locations and number of years in business (Ericksen, 2007). In summary, the original concepts, variables, number of items, measurement scale, reported Cronbach alpha and link to literature reference are all shown in Table 3.5.

Table 3.5: Original concepts and variables

Concepts and variables	Number of items	Measurement scale	Reported Cronbach's alpha	Key references
HRM strategy fit (depicted by HRS)	**12**	5-point Likert scale	0.90	e.g. Lengnick-Hall et al. (2009); Azmi (2010); Higgs and Rowland (2011); Ward and Tripp (2013)
High-Performance Work Systems (depicted by HRP)	**18**	6-point Likert scale	0.78	e.g. Lui et al (2004); Bhattacharya et al. (2005); Datta, et al. (2005); Evans and Davis (2005); Subramony (2006); Lengnick-Hall et al. (2009); Ngo and Foley (2011)
HR Flexibility (depicted by HRF)	**22** 3 components	7-point Likert scale		e.g. Bhattacharya et al. (2005); Lengnick-Hall et al. (2009); Ward and Tripp (2013); Mayo (2015)
Skill flexibility	7		0.89	
Behaviour flexibility	8		0.92	
Practice flexibility	7		0.90	
Workforce measures (depicted by HRA)	**9**	Nature of measurement and analytics systems based on 7 activities	Apart from one item (benchmark analytics) all other items report significance level *p < .05, **p < .01, ***p < .001	e.g. Lawler and Bourdreau (2009); Ward and Tripp (2013); Nienaber and Sewdass (2016)
Commitment to organisational change (depicted by C2C)	**18** 3 components	7-point Likert scale		e.g. Pettigrew et al. (2001); Herscovitch and Meyer (2002); Cunningham (2006); Jaros (2010); Choi (2011); Kuipers et al. (2014)
Affective commitment	6		0.94	
Continuance commitment	6		0.94	
Normative commitment	6		0.86	
Organisational change success (depicted by OCS)	**6**	7-point Likert scale	Potential new instrument 0.84 for the pilot study	e.g. Pettigrew et al. (2001); Lengnick-Hall et al. (2009); Higgs and Rowland (2011); Kuipers et al. (2014); Al-Haddad (2015)
Total items	**85 + 10 items on demographics = 95**			

Source: Developed by author

3.6.2 Scale items, level of measurement and unit of analysis

The original scale items were adapted to fit the context of the overall research study in close alignment with the academic supervisors. This generally differentiated between category scales that contain little differences and continuous scales that comprise many distinctions. Category scales are typically nominal or unordered and ordinal scales ordered, while examples of continuous scales are interval and ratio measurement levels. For example, a nominal variable is classifying where people live in Germany by the federal states, of which 16 exist. Dichotomous variables are also nominal variables with only two categories, for example, asking participants if they own a car and ownership might categorise with a “Yes” or “No” answer. The year of birth is an example of an interval scale, characterised by having no real zero, as opposed to ratio variables, such as a person’s weight in kilos. There is an ongoing debate in the literature about whether Likert scales are ordinal or interval scales (Easterby-Smith et al., 2012; Rose et al., 2015; Lund and Lund, 2018).

To improve the surveys face validity and comprehensibility the independent, mediator and dependent variables have all been aligned using a 7-point Likert-type scale (1 = ‘strongly disagree’ and 7 = ‘strongly agree’) typically found in the majority of management research (Rose et al., 2015). For the demographic data, a mixture of multiple-choice items in which the respondent has multiple selection options but must choose one category using ordinal data, nominal data, and open questions. For open questions, the researcher ensured to ask participants to provide a single response to a particular question (Rose et al., 2015). The unit of analysis for this research study is the individual and their experience and perceptions on “The impact of strategic workforce planning and analytics on organisational change success”, as an employee working within an organisation (Easterby-Smith et al., 2012).

3.6.3 Structure and laying out the items

In essence, the survey structure mirrors the research model 2.0, introduced in Figure 3.4. Following the suggestion by Rose et al. (2015), the survey starts with an introduction and consent for responses used for this research study and closes with demographic questions. However, after review by the council by the academic supervisors, the demographic section was moved to the front, see Table 3.6.

Table 3.6: Initial survey structure and main contents – draft version 2.0

INTRODUCTION TO SURVEY
• Briefing and consent
PART 1
• Comprises of the demographic questions and control variables
INTRODUCTION TO PARTS 2–4
• The survey asks to respond to a number of statements relating to a change initiative in an organisation that either has been completed or is ongoing. So, the current position of the change initiative that respondents will be referring to is ask from recently started to fully completed using a 7-point Likert-type scale.
PART 2
• Consists of 4 sections to test the independent variables: – HR strategy (HRS) – HR practices (HRP) – HR flexibility (HRF) and – HR analytics (HRA)
PART 3
• Investigates the mediator variable “commitment to organisational change” (C2C)
PART 4
• Relates to the dependent variable “organisational change success” (OCS)
CLOSING COMMENTS
• Thanking respondents for their participation

Source: Developed by author

3.6.4 Pre-test questionnaire

3.6.4.1 Purpose of pre-testing the survey

The survey was pre-tested using an expert interview panel to validate questions and gather feedback on the survey’s comprehensibility and face validity. Face validity is “a subjective judgement of the extent to which a measure appears ‘on the face of things’ to measure what it is supposed to measure” (Rose et al., 2015: 92). Each item was numbered to enable easy navigation during the expert panel interview.

3.6.4.2 Selection of interview protocol

As discussed in the ethics section, an information and consent email for the remote expert interview panel was sent out in advance to all participants. All participants confirmed this

consent email before conducting the interviews. The communication also set out the agenda and three objectives for the session: 1) to validate and improve the phrasing of items, assess the overall flow and clarity of the survey looking at each part (45 minutes); 2) to determine the sample frame and ensure targeting the right participants and thereby enhancing response rates (10 minutes); and 3) to establish an overall timeframe, logistics such as administering, distributing and conducting the global online survey (5 minutes).

3.6.4.3 Recruitment approach

To conduct the interviews, the researcher identified six to eight prospects within Mercer and Oliver Wyman who are recognised as experts in their field. The researcher's former Mercer supervisor was one such expert and was involved in the interviewee selection process to ensure overall buy-in and the selection of the right candidates for the expert panel interview. This expert was also selected as the moderator to facilitate the sessions, see Table 3.7 for the participant's profile.

Table 3.7: Participants profile for survey pre-testing phase

Expert	Position	Role within Mercer and Oliver Wyman	Country
A	Principal	Segment Head Workforce Strategy and Analytics	Australia
B	Partner	Workforce Strategy and Organisational Change	USA
C	Partner	Head of Multinational Client Group (MCG) Europe	Germany
D	Principal	Head of Workforce Planning and Analytics Europe	UK
E	Manager	Corporate Strategy and Operational Efficiency	Germany
F	Partner	Head of Mergers & Acquisitions Europe	UK
G	Partner	Workforce Strategy and Analytics	USA

Source: Developed by author

The researcher conducted the first session as an expert interview panel with experts A-E in June 2017. Before conducting the first session, the researcher aligned with the moderator to ensure understanding of the objectives and address any potential questions. Due to time zone differences and hefty schedules, it was not possible to organise a second expert interview panel session in due time. Consequently, two additional individual expert interviews with experts F and G were conducted in August 2017 to improve the survey further. The expert interview panel and the two separate interviews were recorded using Zoom a video conferencing service that Mercer subscribes to.

3.6.4.4 The outcome of the expert interview panel

All experts agreed that the draft survey 2.0 was too long in terms of its time needed for completion, number items, and overall flow. It was suggested to shorten the survey without

diminishing the existing scales, but to increase response rates. Additionally, it was pointed out that items in the survey needed to be more easily understood for a wider audience, as the target audience is not only HR but also from the wider business. The experts also suggested adding themes or section headings to ease navigation for participants. In terms of the unit of analysis, it was suggested that all survey questions should consistently be from an organisational perspective, i.e. part 3 is from an "I" or employee perspective. After conducting the expert interview panel, all feedback was incorporated into an updated survey in preparation for the individual expert interviews.

3.6.4.5 Introduction to survey and Part 1

It was suggested to complement the introduction to the survey with an email invite containing the survey objectives and research questions (see **Appendix E**). This was branded with the Mercer logo to underline the effort bridging business relevance with academic rigour. All experts agreed that a free Executive Summary should be made available for all participants before the actual publication. It is serving as a courtesy to participants who were willing to spend their valuable time filling out the survey. Part 1 was reduced to the most relevant demographic questions with adapted items. It was recommended to include the “don’t know” option for questions asking for revenue figures, number of employees and country in which the companies headquarter is based. For all other demographic questions, the “other (please specify)” option was added. Another suggestion was to move the demographic section to the end due to the priming and anchoring effect, as this potentially “affects the opinions that individuals express, not by changing their attitudes, but by causing them to alter the criteria they use to evaluate the object in question” (Lavrakas, 2008: 11). Closing the survey with demographic questions is also in line with Rose et al. (2015).

3.6.4.6 Introduction to Parts 2–4

The survey seeks responses to several statements relating to a change initiative in an organisation that either has been completed or is ongoing. Today most scholars would agree that there is a broad perception that organisational change is a complex, open-ended process of continuous adaption. In order to capture this ongoing iterative process or different stages of organisational change in the survey, the current position of the change initiative that participants will be referring to is from recently started to fully completed using a 7-point Likert-type scale. The experts agreed and perceived this as relevant in the context of SWP. As discussed, this research study is a cross-sectional design; however, it aims to mitigate the inherent issue of time by asking the respondent to indicate the current position of the organisational change initiative in the survey introduction. The wording was adapted to fit

research in the context of SWP. Although there are definitions of the terms strategic workforce planning and organisational change given in the survey introduction, the suggestion was made to include three questions to understand the type organisational change initiatives, its drivers and to clarify a specific activity to strategic workforce planning. This enabled clustering of the data, for example by a smaller change scale in an organisation such as continues improvement, versus a larger change scale in an organisation such as restructuring the organisation or cultural change. Similarly, the main activity associated with strategic workforce planning could also be clustered by, for example, low maturity, e.g., budgeting purposes versus high maturity, e.g., headcount planning or workforce metrics and analytics. The experts recommended to include the "other (please specify)" option for these questions.

3.6.4.7 Part 2, 3, 4 and closing

For HR strategy fit (HRS), the original 12-items were reduced to eight-items. This is consistent with Azmi (2010) and was recommended by the author to use as the final scale to test the HRM strategy fit. The experts agreed and perceived this as relevant in the context of SWP. For HR practices fit (HRP) the original 18-items were replaced. Based on the existing literature, another scale was identified with 13-items and a reported Cronbach alpha of 0.76-0.79 (Ericksen, 2007). One item was added following a practitioner's suggestion and perceived as relevant in the context of SWP: "This organisation realises that it will have to develop its own employees to fill open positions rather than rely on the labour market". For HR flexibility (HRF), the original 22-items have been reduced to seven-items looking at practice flexibility, as most relevant to in the context of SWP. Items on skill and behaviour flexibly were dropped. Practice flexibility has a recorded Cronbach alpha of 0.75-0.86 (Bhattacharya et al., 2005). Moreover, HRF was measured by a three-item scale in the research with an alpha coefficient recorded as 0.88 (Ngo and Foley, 2011). For HR analytics (HRA), the original nine-items remained and wording was adapted to fit the research in the context of SWP. For the mediator variable, the original 18-items reduced to 12-items. A normative commitment was dropped, following suggestions by academic supervisors and practitioners. The wording was slightly adapted to fit the research in the context of SWP and also from an organisational perspective. The dependent variable (OCS) was well perceived by all practitioners and suitable in the context of SWP. The wording was slightly adapted to fit the research from an organisational perspective. There was a consensus by the experts to add optional fields for additional comments and to leave an email for a free executive summary and the company name.

3.6.4.8 Summary

In summary the changes resulted in survey version 3.0, see Figure 3.5 (presented in **Appendix F** for details). The outcome was shared with academic supervisors and Mercer / Oliver Wyman experts for sign-off before conducting the online pilot survey.

Figure 3.5: Final survey structure and main content – version 3.0

INTRO	PART 1	PART 2	PART 3	PART 4 / CLOSING
Introduction to survey and parts 1-3	Testing **independent variables**	Testing **mediator variable**	Testing **dependent variable**	**Demographics** and **closing** comments
• Briefing and consent • Complimented by Email invite • Current position of change initiative • Type and drivers of organisational change initiative and definition of SWP	• Consists of 4 sections to test the independent variables: – HR strategy fit (HRS) with 8 items – HR practices fit (HRP) with 14 items – HR flexibility (HRF) with 7 items – HR analytics (HRA) with 9 items	• Investigates the mediator variable "commitment to organisational change" (C2C) with 12 items	• Measures "organisational change success" (OCS) with 6 items	• Comprises of demographic questions and control variables • Added optional fields for additional comments and to leave email for free executive summary / company name • Thanking respondents for their participation

Source: Developed by author

3.6.5 Pilot online questionnaire

3.6.5.1 Purpose of piloting the online survey

The pilot study was conducted with the online survey to identify if any technical problems occurred while setting-up the survey in Qualtrics as an online tool. The researcher was also seeking feedback on overall experience with completing the survey, in particular regarding flow, comprehensibly, timing, online functionality and face validity, as well as performing exploratory and limited preliminary data analysis and checking the reliability of each scale. Small sample sizes of less than 30 observations are suitable for simple regression analysis with a single independent variable (Hair et al., 2010). In alignment with academic supervisors, it was agreed that a sample size of more than 30 completed participants was sufficient for piloting the online survey.

3.6.5.2 Process of the pilot online survey

The final version of the survey was the basis for setting-up Qualtrics as the online tool. In order to identify if any technical problems existed and to assess overall online functionality,

the researcher sent the Mercer-branded Outlook survey invite with the link to the online survey to a Mercer colleague. The researcher briefed the respondent in advance on the purpose of this exercise. Feedback on overall experience with completing the survey, regarding flow, comprehensibly, timing and online functionality were positive and face validity confirmed. However, one of the key findings was that Qualtrics allows using validation to force participants to answer a question or request that they consider answering a question before leaving the page. In the introduction to parts 1-3, the first question regarding the current position of a change initiative was set to optional. However, this is an important data point needed for later analysis, and was corrected to non-optional. The pilot study was open from February to May 2018.

3.6.5.3 Number of participants

By the end of May 2018, the survey had attracted 63 responses, of which 32 participants were in progress or had provided partial responses, and 31 responses were valid or completed responses. All participants had referred to a recently started organisational change initiative, with scores 1 and 2, included as partial responses. As the organisational change initiative had just started, it was too early to assess the impact on the dependent variable OCS. Table 3.8 provides an overview of response rates, sample size, distribution channels, and stakeholders involved. Since participation in the survey is anonymous, the numbers are approximations and estimates based on monitoring survey activities and feedback from stakeholders.

Table 3.8: Response rates for the online pilot survey

Stage	Distribution channel	Stakeholders involved	Sample size	Responses	Response rate in %
Pilot online survey	Email	Researcher; Mercer experts; Marketing	200	43	22%
	WhatsApp	Researcher	50	10	20%
	Social media	Researcher	500	10	2%
Total pilot online survey			**750**	**63**	**8%**

Source: Developed by author

When taking a closer look at the 32 partial participants, the completion progress was on average 11%, where 100% implies answering each mandatory question. The majority of participants completed the “introduction to survey and parts 1-3” but stopped at the beginning of part 1, introduced in Figure 3.5. Based on feedback provided, it is not a matter of being stuck at a particular question but more of an interest hovering around the survey to get a better understanding of its content. In comparison, when analysing the 31 completed participants (i.e., progress equals to 100%) interestingly and in line with feedback provided

the 15-20 minutes time window also reflects the time spend for the survey. Completion time is 17 minutes on average for 25 participants, or 80% of total completed online surveys. Six participants did not complete the survey in one attempt. This implied a distraction for example, most participants started in the morning and completed the survey in the afternoon or came back to complete the survey much later (e.g., one survey initiated on 2 April and completed on 21 April 2018).

3.6.5.4 Usage of the range of scales

The scales were analysed in terms of how participants used the range of scales. The analysis shows that for the majority of questions, there was a good range chosen by participants from 1 = strongly disagree to 7 = strongly agree. For the first independent variable (HRS), the range is mostly 6. It indicates the use of the entire spectrum of the scale with a mean between 3.19 and 4.55. For the second independent variable (HRP), the range is mostly between 5 and 6 with a mean between 3.32 and 4.87. For the third independent variable (HRF), the range is mostly between 5 and 6 with a mean between 3.00 and 3.77. For the fourth independent variable (HRA), the range is consistently 6 with a mean between 3.00 and 4.00. For the mediator variable (C2C), the range is mostly between 5 and 6 with a mean between 3.06 and 4.16. The low mean of items 3, 5 and 6 are related to negatively worded items reversed before checking the reliability of scales. For the dependent variable (OCS), the range is mostly between 5 and 6 with a mean between 3.65 and 4.03 (presented in **Appendix I** for details).

3.6.5.5 Other observations

The “don’t know” option for questions asking for revenue figures and the number of employees was selected, so it was an excellent suggestion by the experts to add this option during the survey pre-testing. The same applies to the “other (please specify)” option that participants used for the majority of questions with that option. One respondent only used the additional comments field with an interesting observation: “This has been a tough survey for us – our change is in flight, and whilst we've responded with the current feeling of the organisation – if we responded in 12 months’ time, our responses would likely be far more positive – evidence currently suggesting that culture and process will adjust sufficiently to be more strategic and data-driven in our approach to change measurement and strategic planning”. To address this challenge, this research study was designed to understand the current position of the change initiative, from recently started to a fully completed. Moreover, this research allows analysis by type of organisational change, in terms of change scale: small scale such as continuous improvement projects versus large-scale change such as an

M&A in organisations. The research study also addresses what specific strategic workforce planning activities support organisational change success and change implementation effectiveness.

3.6.5.6 Face validity and reliability

Face validity was confirmed based on the feedback provided and no changes to the items required. Since the independent, mediator and dependent variables were aligned using a 7-point Likert-type scale (1 = 'strongly disagree' and 7 = 'strongly agree') and wording was adjusted for the fit of this research, the reliability of each scale was assured. The reliability statistics for the independent variables, the mediator variable, and the independent variable, presented in Table 3.9. Pallant (2013: 104) states that "values above .7 are considered acceptable; however, values above .8 are preferable", which is the case for the pilot study.

Table 3.9: Reliability of scales (n=31)

Type of variable	**Scale** *Sub-scale*	**Cronbach's Alpha**	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
Independent	**HRS**	0.895	0.894	**8**
	HRP	0.822	0.823	**14**
	HRF	0.913	0.915	**7**
	HRA	0.944	0.945	**9**
Mediator	**C2C**			**12**
	Affective	*0.830*	*0.832*	*6*
	Continuance	*0.900*	*0.903*	*6*
Dependent	**OCS**	0.843	0.841	**6**

Source: Developed by author

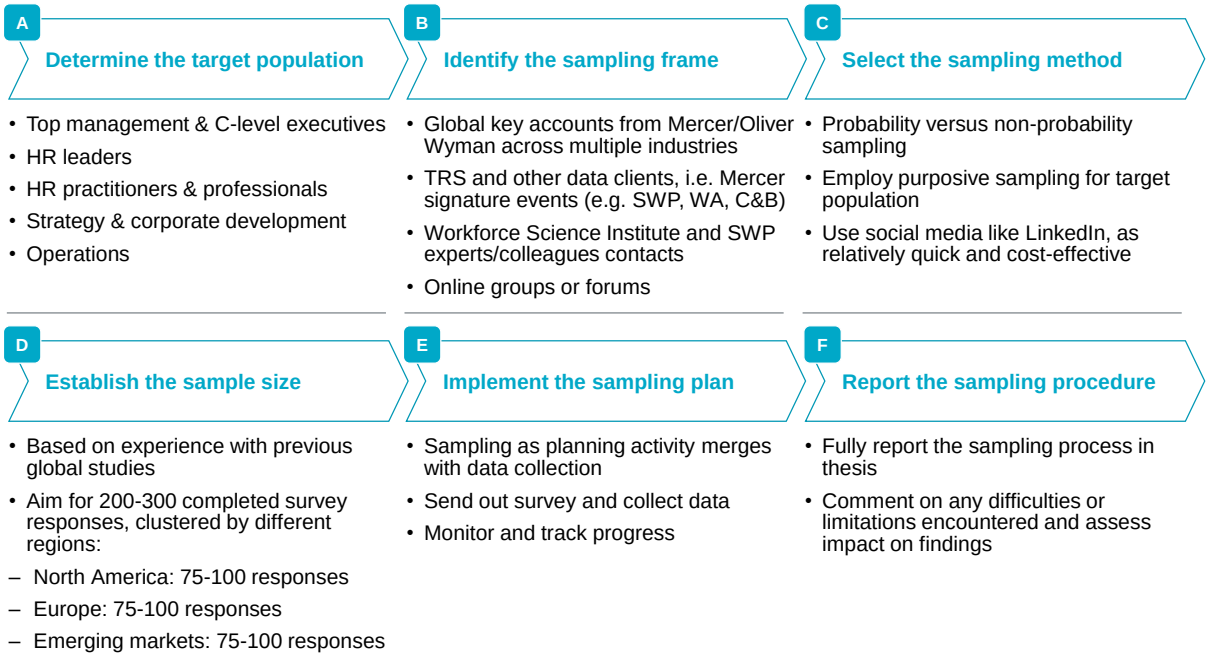
3.6.5.7 Summary

In summary despite a small sample size, the results from the online pilot survey were encouraging in terms of usage and reliability of each scale. In particular, the results of the potential new developed scale OCS was inspiring. Overall, this provided enough confidence that the global online survey was fit for purpose and was ready to collect data.

3.7 Sampling frame

The sampling process followed six steps to collect the data in this research study, see Figure 3.6.

Figure 3.6: Sampling process and steps to collect the data



Source: Developed by author, based on Rose et al. (2015)

3.7.1 Target population, sampling frame and method

An interesting observation from the survey feasibility study was that the potential target audience reported by participants is vast. It ranged from top management / key decision-makers, HR, line managers, strategy department (at larger organisations), finance, operations to the change sponsor. All Mercer and Oliver Wyman experts also confirmed this during the survey pre-testing phase. Since the researcher joined Mercer in order to conduct this research study, the target population also comprised of Mercer's HR practitioners and professionals.

As part of the survey pre-testing phase, participants asked to determine the sample frame to ensure targeting of the right participants, thereby enhancing response rates. For the global online survey, the researcher worked closely with the experts who participated during the pre-testing of the survey, as well as business leaders and marketing, to target the right participants, i.e. Mercer and Oliver Wyman clients that are also practitioners in their field. In terms of distribution channels, the researcher identified three options: email, WhatsApp, and social media. Mercer, Oliver Wyman experts and marketing, forwarded a Mercer-branded Outlook survey invite to their clients. For the second distribution channel, the researcher sent the survey invite to clients on their mobile phones via WhatsApp messenger that is available free on phones all over the world. It is a fast and cost-effective distribution channel in particular since Qualtrics is an online tool and accessible on all mobile devices. Filling in the

survey away from their desks allowed participants greater flexibility to complete the survey. For the third distribution channel within networks of the target population such as online groups and forums, see Table 3.10. Direct access used in the form of self-selection sampling by posting a survey link and snowballing by asking group or forum member to pass the survey link on to others who fitted the sampling criteria (Rose et al., 2015).

Table 3.10: Target online groups and forums on LinkedIn

Name of the online group and forum	**Objective and purpose**	**Members**
Workforce Strategy & Transformation, SWP	This group is an exclusive professional group of practitioners in workforce strategy and transformation and strategic workforce planning. The objective is to connect and exchange thoughts, trends and best practices in SWP across industries	542
Strategic Workforce Planning	A group designed to resource strategic workforce planning professionals across industries	4,692
Workforce Analytics & Workforce Planning	This group will provide a forum for exchanging ideas and news items on human capital metrics, reporting, analytics, and planning	6,676
Workforce Planning and Analytics	Group for HR professionals dedicated to workforce planning and analytics	7,618
People Analytics: Data-Driven HR	A community of professionals, consultants, developers and academics in HR analytics, business intelligence and data science	7,047
Measuring Human Capital	This is a group for people passionate about leveraging data and analytics to make better HR and talent decisions in organisations	4,168
Change Management Network	This is a community of change management professionals and practitioners. The purpose of this group is to encourage networking and collaboration	19,306
Business Transformation – Programme Leaders & Practitioners	We welcome involvement from all those experienced in a business transformation that depicts how organisations radically change, usually in order to re-align the business with specific strategic objectives. This involves complex changes to people, processes, and systems, which need to be delivered in order to produce a desired outcome within the business. Organisations achieve the desired changes by the use of well-crafted plans, quality design, meticulous implementation and skilful delivery	6,613
Total target population for this distribution channel		**56,662**
Penetration rate in % based on pilot study results		**2%**
Adjusted sample size		**1,133**

Source: Developed by author, based on LinkedIn (2019)

In case of any unforeseen issues or low response rates, the researcher discussed a contingency plan with his academic supervisors. It was agreed to consider Henley and Rotman alumni to extend the sampling frame, as they generally comprise of key decision-makers and senior management. The Henley MSc/DBA programmes office offered their support should this be required. Given the researcher's organisation structure, and based on experience with prior global surveys, he decided to employ purposive sampling, a form of non-probability sampling, as it is relatively quick and cost-effective (Rose et al., 2015). For the email and WhatsApp distributions channels, the inclusion criteria for participants was

identified as employees/professionals working in the area of strategic workforce planning, HR analytics and metrics department, ideally employed at organisations going through a change initiative. For the third distribution channel, the inclusion criteria within networks of the target population, such as online groups and forums, introduced in Table 3.10.

3.7.2 Sample size, plan and procedure

Some authors argue that a sample size of 100 should be sufficient for regression models and more complex models such as structural equation modelling (SEM) generally require a sample of 200-300 observations (Blunch, 2013). For example, with stepwise regression, a ratio of 40 observations for every independent variable is recommended by Pallant (2013), indicating a minimum sample size of 160 for this research study. In the past, different rules of thumb and formulae for determining sample size were developed. However, with the maturity of its field, the "higher the sample size the better" is no longer applicable, even with more advanced statistical analysis such as SEM (Hair et al., 2010; Rose et al., 2015). Based on the research model 2.0 with six constructs, introduced in this chapter, the sample size aimed for 200-300 completed surveys, in line with suggestions by Hair et al. (2010). Previous studies with similar scales in the researcher's field ranged from 106 to 224 participants, and employed a variety of statistical analysis, including SEM see Table 3.11.

Table 3.11: Observations and statistical techniques employed with similar scales

Hypothesis	**Scale** # of participants	**Statistical techniques employed in previous research**	**Key references**
H1	**HRS** 108 observations	Exploratory factor analysis (EFA); confirmatory factor analysis (CFA); structural equation modelling (SEM)	e.g. Lengnick-Hall et al. (2009); Azmi (2010); Higgs and Rowland (2011); Ward and Tripp (2013)
H2	**HRP** 182 observations	Harman's single-factor test; marker variable correlation analysis; hierarchical regression analysis	e.g. Lui et al. (2004); Bhattacharya et al. (2005); Evans and Davis (2005); Subramony (2006); Lengnick-Hall et al. (2009); Ngo and Foley (2011)
H3	**HRF** 123 observations	Exploratory factor analysis (EFA)	e.g. Bhattacharya et al. (2005); Lengnick-Hall et al. (2009); Ward and Tripp (2013); Mayo (2015)
H4	**HRA** 106 observations	Correlation analysis; factor analysis	e.g. Lawler and Bourdreau (2009); Ward and Tripp (2013); Nienaber and Sewdass (2016)
H5a-d	**C2C** 224 observations	Principal-axis factor analysis with oblimin rotation; analysis of covariance (ANOVA)	e.g. Pettigrew et al. (2001); Lengnick-Hall et al. (2009); Higgs and Rowland (2011); Kuipers et al. (2014); Al-Haddad (2015)

Source: Developed by author

The online survey was launched in January 2019 and remained open until September 2019. Reminders were sent out before each quarter ended, at the beginning of March, June, and

September. WhatsApp Messenger served as an additional distribution channel to personally invite participants, using the benefit of Qualtrics as an online tool accessible on all mobile devices. Similar to the emails invites, reminders were sent at the beginning of March, June, and September. On social media, the researcher regularly engaged with experts in forums and groups to increase response rates. After each completed survey, a notification was sent via email to monitor and track progress. The overall status was captured in the Qualtrics online default report for further review and analysis. The response rates for the global online survey is presented in Chapter 4. For comments on any difficulties or limitations encountered, there is an assessment of the impact of findings, discussed in Chapter 6.

3.8 Potential method bias

Method bias, also discussed as common method variance, common method bias (CMB), specific bias can inflate or deflate all the perceptual measures in a model (Gaskin, 2020). For example, social desirability, a construct related to the degree to which a respondent believes there is a certain desirable way of responding to a questionnaire item (Gaskin, 2020). While there is still divergence in the literature, which leads to method bias, two harmful effects are known. The first effect is that method factors can result in wrong perceptions related to a scale's reliability and convergent validity, potentially undervaluing corrected correlations. The other effect of uncontrolled method factors can result in bias parameters in the form of inflating, deflating, or even with no effect on estimates between two various constructs (Podsakoff et al., 2012). The researcher addressed potential method bias as part of the overall research design process. The researcher included preventive measures to reduce common method bias, such as emphasizing anonymity, accuracy in giving responses and careful wording during the survey design and development stage (Gaskin, 2020).

3.8.1 Procedural and statistical remedies

Podsakoff et al. (2012) outlined several techniques to control for different sources of method bias: 1) obtaining measure of predictor and criterion variables from different sources; 2) temporal, proximal, or psychological separation concerning predictor and criterion; 3) eliminating common scale properties; 4) improving scale items to eliminate ambiguity; 5) reducing social desirability bias in item wording and 6) balancing positive and negative items. The researcher included as many suggestions as possible by Podsakoff et al. (2012) in this research study. The entire research design process was developed to incorporate and implement preventive remedies to reduce common method bias. In particular, it reduced social desirability bias in item wording in the form of the survey pre-testing phase. The wording has been adjusted based on the feedback provided by subject matter experts.

However, there could potentially be method bias from common scale properties as well as ambiguity, but since these are established scales in the literature and a 7-point Likert-type scale (1 = 'strongly disagree' and 7 = 'strongly agree') that can typically be found in the majority of management research this should not pose a limitation to this survey (Podsakoff et al., 2003; Podsakoff et al., 2012; Rose et al., 2015). Statistical remedies as part of the confirmatory factor analysis on the results of the full global online survey conducted, following techniques suggested by Podsakoff et al. (2012) and Gaskin (2020) to control for measurement error and to understand the nature of method bias, refer to Chapter 4.

3.9 Chapter summary

The type of research questions, in particular the lead research question, indicate conducting the research study with a deductive and positivist research process. This is in line with previous studies in the SHRM field as the most used research method is quantitative and the dominant paradigm is a positivist one (Markoulli et al., 2017; Jiang and Messersmith, 2018). Based on the research questions, and assessment of strategy and organisational settings implied to conduct a large-scale survey with a cross-sectional design, as a suitable research tactic (Remenyi et al., 2010). The reason behind this research design was to engage with practitioners and experts. The research design, data collection, and analysis follow eight clear stages connected with different activities. This research design process is embedded in an overall work plan with clear milestones to keep track and monitor progress. It outlines how the research questions will be answered and further explored. Specifically, it brought forward five hypotheses, introduced in Table 3.4, around the concepts of vertical fit, horizontal fit, HR flexibility, HR analytics, and commitment to change, supporting the proposed research model, introduced in Figure 3.4, developed, and designed to operationalise the hypotheses. In essence, the entire research design process was developed to incorporate and implement preventive remedies to reduce common method bias. Statistical remedies were performed for the actual global online survey. Although slightly adjusted for fit with this overall research study, in principle, the survey design and development process followed the steps suggested by Rose et al. (2015). The outcome from the survey pre-testing in an expert interview panel resulted in survey version 3.0, as the basis for the pilot online study. Despite a small sample size, the results from the pilot online study were encouraging in terms of its face validity, usage, and reliability of each scale. In particular, the development of a potential new scale OCS was inspiring. Overall, this provided enough confidence that the global online survey was fit for purpose to collect data, followed by a detailed sampling process.

The next chapter covers the data analysis from the survey feasibility study and statistical results for the main study – the online survey, performing a range of statistical analyses.

4 Data analysis

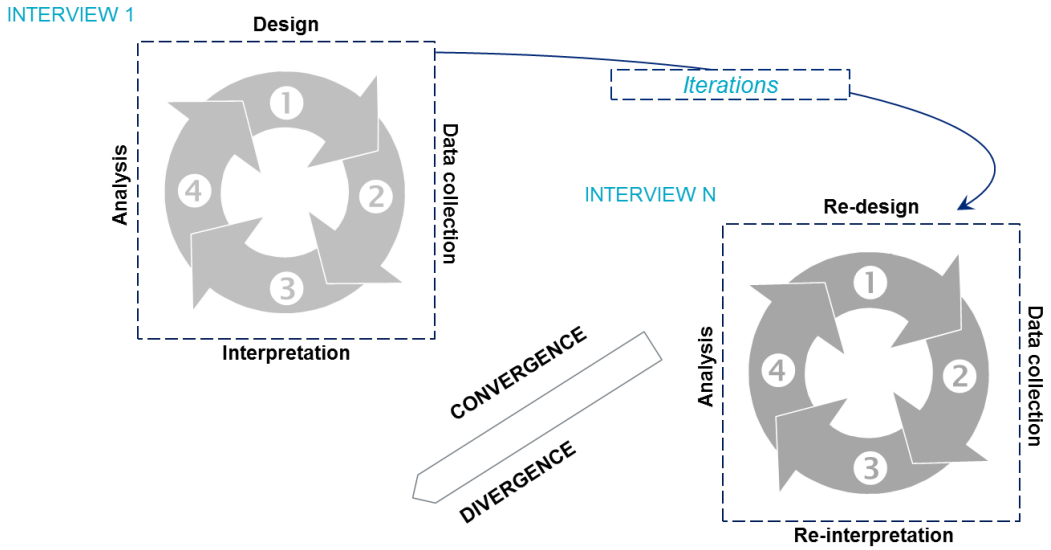
4.1 Introduction

Chapter 3 described the research philosophy, methodology, process, strategy, tactics, and ethics. It also presented the research design, data collection, and analysis process following eight clear stages linked with different activities. It introduced the hypotheses, control variables, and overall research model, developed and designed to operationalise the hypotheses. The sampling frame and potential method bias and remedies were also discussed in the previous chapter. Chapter 4 includes the data analysis from the survey feasibility study and statistical results for the online survey. This chapter outlines the survey feasibility study employing convergent interviewing. The crucial objective for the researcher is to confirm Mercer practitioner interest in the research study, and the possibility to conduct a global online survey. Moreover, this chapter introduces the online survey data analysis and reporting phase, i.e. the last stage of the research design process. The researcher conducts the quantitative analysis in six steps, performing a range of statistical analyses. In SPSS regression analysis for mediation with the use of the Hayes PROCESS macro and exploratory factor analysis (EFA). In SPSS Amos a confirmatory factor analysis (CFA) and structural equation modelling (SEM) to test the hypotheses.

4.2 Survey feasibility study

While leadership is an important aspect of driving and implementation organisational change, it is outside the scope of this study given the research context, research questions and aim of the research study as introduced in Chapter 1 (Higgs and Rowland, 2011; Burnes et al., 2018; By, 2020). Suddaby (2006: 638) makes the point that “qualitative software programs can be used in organising and coding data, but they are not suitable for the interpretation of data”. Since the data set consists of 12 interviews, the researcher used Microsoft Excel, extensive field notes, confirmed interview summaries, and mind mapping to collect the data and perform the analysis. The process of data collection and analysis depicted in Figure 4.1.

Figure 4.1: Convergent interviewing process



Source: Developed by author, based on Williams and Lewis (2005)

"Initially, interviews are unstructured, but as the number of interviews and the richness of data improves, questions can become more focused to expose key findings" which leads to uncovering issues and convergent themes reported by practitioners (Williams and Lewis, 2005: 221). Critical issues and convergent themes extracted from the interviews are shown in Table 4.1.

Table 4.1: Issues and convergent themes reported by practitioners

#	Issues and convergent themes
1	Strategic workforce planning links HR strategy with business strategy.
2	Understanding critical roles and required capacity (how many) but also capabilities (what skills/competencies) that lead to competitive advantage.
3	SWP has a strong diagnostic element, i.e. it analyses workforce segments and considers the specific context/risks the organisation operates in.
4	You need to tell a story with leadership and other stakeholders involved.
5	SWP is an ongoing management decision making process not a one day event.
6	Technology empowers organisation to gain more confidence utilising data but poor execution and still a management issue.
7	HR manages, moderates, owns "drives" the change process but line management owns the plan to ensure its implementation to get people involved.
8	HR still not strategic business orientated enough to think quantitatively (e.g. business case development and understanding root causes).
9	Importance to understand how value is created, notion of productivity drivers and impact on the business (scenarios) in the future.
10	SWP is an art but also science by looking at quantitative and qualitative aspects.
11	Co-ownership and alignment between Top-Management, Line Management, Operations and HR.
12	For unplanned change it can provide the tools and have a positive impact on change success by addressing "what kind of resources do we need".
13	Workforce analytics not just generic benchmarks but industry specific KPIs are critical for monitoring and tracking.
14	Change not a data driven process and blind side to people aspects, still very reactive in practice.
15	SWP allows to impact both, top- and bottom line in terms of revenue side but also operational efficiency/costs.

Source: Developed by author, inspired by Logan et al. (2013)

Based on participants' responses, 10 issues (1, 2, 3, 5, 8, 9, 10, 11, 12 and 14) had 100% agreement. With issue 4, one participant was not familiar with the issue or did not mention it

during the interview, and this was also the case for issue 6 with two participants. However, disagreement was found on three issues (7, 13 and 15), see Table 4.2.

Table 4.2: Agreements and disagreements on different issues by practitioners

Interviewees	A	B	C	D	E	F	G	H	I	J	K	L
Number of issue												
1	A	A	A	A	A	A	A	A	A	A	A	A
2	A	A	A	A	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	X	A	A	A	A
5	A	A	A	A	A	A	A	A	A	A	A	A
6	A	X	A	A	A	A	A	A	A	A	X	A
7	A	A	D	A	D	A	A	A	A	A	D	D
8	A	A	A	A	A	A	A	A	A	A	A	A
9	A	A	A	A	A	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A	A	A	A	A
13	A	A	A	A	A	A	D	D	A	D	A	D
14	A	A	A	A	A	A	A	A	A	A	A	A
15	D	A	A	A	A	A	A	A	A	D	D	A

A = Agreement
D = Disagreement
X = Not familiar with issue or not mentioned, so not in agreement or disagreement

Source: Developed by author, inspired by Logan et al. (2013)

Disagreement on issue 7: HR manages, moderates, owns "drives" the change process but line management owns the plan to ensure its implementation to get people involved.

Participant C stated: “HR is not able to deliver and needs to be more business case orientated and requires to up-skill own capabilities”. Underlined by participant E: “HR lacks strategic and quantitative skills and understanding root causes to drive change”. Participant K made the point that “HR is still seen as very operational and very reactive” and therefore failing to live up to their role. Lastly, participant L states: “HR is not strong enough due to a lack of skills but also a mindset issue”.

Disagreement on issue 13: workforce analytics, not just generic benchmarks, but industry-specific KPIs are critical for monitoring and tracking.

Participant G: “it is more important to look inside the organisation and understand the flow of people during change”. Participant H points out that organisations “need KPIs that are critical to their business and output not necessarily ‘less is more’ regarding the usage of KPIs”. Another interesting observation is of participant J saying that “it is an ownership issue in terms of HR industry bodies and associations for developing a measurement framework… there is no global HR association”. There is also a “lack of industry-specific KPIs and standards-driven by the HR profession, while other functions are pretty good at measuring their ROI, e.g. in sports sponsorship”. Participant L mentioned that “it is still a measurement

issue; we need to have value metrics by job not just by industry, coupled with more traditional profit & cost metrics".

Disagreement on issue 15: SWP allows to impact both, top- and bottom line in terms of revenue side but also operational efficiency/costs.

Participant A said: "overall, SWP does not deliver a dollar to your bottom line". Participant J points out that there is not a: "clear link to assess business impact to HR ROI… productivity or value drives might be the key to measure ROI per employee". Participant K said that "SWP helps organisations understanding productivity improvements, e.g. in IT, outsourcing, and reviewing organisational structures but HR needs to understand headcount drivers better not just focus on costs but rather on value creation".

Of the 15 issues identified, eight issues (5, 6, 7, 10, 11, 13, 14 and 15) indirectly linked to the literature. Interestingly, it confirmed that resource-based and dynamic capabilities view play an essential role in strategic workforce planning and analytics in light of organisation change. Specifically, issue 1: SWP links HR strategy with business strategy, issue 2: understanding critical roles and required capacity (how many) but also capabilities (what skills/competencies) that lead to competitive advantage, issue 9: importance to understand value creation, the notion of productivity drivers and impact on the business (scenarios) in the future and issue 12: for an unplanned change it can provide the tools and have a positive impact on change success by addressing "what kind of resources do we need". While discussing issue 12, exploring that for companies with a shorter product developing cycle (e.g. less than one year) often characterised by unplanned change, strategic workforce planning and analytics are still relevant. For example, it is identifying critical roles by having a scenario "rationale" based approach supporting staffing, recruiting, and segmenting the right people with the right skills and competencies to sustain the business during change. Interviewees said that this, in particular, applies for companies operating in more knowledge-intensive industries, characterised by 1) stable growth 2) scarcity of labour, i.e. critical roles with a high strategy impact, and 3) a need for quality of labour (e.g. skills, capabilities, and competencies).

Looking at issue 8: "HR still not strategic business-orientated enough to think quantitatively (e.g. business case development and understanding root causes)" there is a consensus between the literature and study findings that HR is not able to execute the strategic business partner model and is not sufficiently strategic enough in implementing and executing the HR strategy as well as aligning employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018). Another interesting observation, it is regarded as both a lack of adequate skills but also a mindset issue within the HR profession.

Issue 3: “SWP has a strong diagnostic element, i.e. it analyses workforce segments and considers the specific context/risks the organisation operates in”, identified in the literature (e.g. Brush and Ruse, 2005; Lavelle, 2007; Levenson, 2018; Willis et al., 2018; Goldberg and Boyes, 2019). While issue 4: “you need to tell a story with leadership and other stakeholders involved” can be regarded as conventional wisdom it is also widely reported in the literature (e.g. Kotter, 1995; Caldwell and Dyer, 2020; Edwards et al., 2020). By further exploring the 15 issues, it could be revealed that 11 issues (1, 2, 3, 6, 7, 8, 9, 12, 13, 14 and 15) regarded as limitations in the current state of strategic workforce planning and analytics in light of organisational change. These limitations helped to frame and inform initial survey topics, see Table 4.3.

Table 4.3: Initial survey topics for the global online survey linked to hypotheses

Initial survey topics linked to hypotheses	Issues and convergent themes from practitioners
Alignment of business and HR strategy (H1)	1, 9
Alignment of HR practices (H2)	2, 3
HR flexibility and adaptability (H3)	5
Workforce analytics (H4)	6, 8, 13, 15
Change process (H5a-d)	7, 12, 14

Source: Developed by author

While another initial survey topic, the concept of HR flexibility or adaptability, item 5 “SWP is an ongoing management decision-making process, not a one-day event” is regarded as an advantage of SWP, perceived critical to reflect in a survey, hence included in Table 4.3. As discussed Chapter 3, the actual items for the survey design and development were grounded in the literature.

4.3 Online survey data analysis and reporting

The researcher was blending previous statistical techniques with suggestions by Byrne (2010); Hair et al. (2010); Blunch (2013); Pallant (2013); Tabachnick and Fidell (2013); Rose et al. (2015); Hayes (2018); Lund and Lund (2018) and Gaskin (2020). As a result, the researcher conducted the quantitative analysis in six steps:

1. Preparing the data
2. Preliminary analyses
3. Regression analysis for mediation with use of Hayes PROCESS macro (Hayes, 2018)
4. Exploratory factor analysis (EFA)

5. Confirmatory factor analysis (CFA), including statistical remedies to address common method bias (CMB)
6. Structural equation modelling (SEM)

4.3.1 Preparing the data

The advantage of Qualtrics as an online survey tool is that it is directly downloadable into SPSS for analysis. The online survey was launched in January 2019 and remained open until September 2019. The survey attracted 497 responses, including 63 responses collected during the pilot online study. Table 4.4 provides an overview of response rates, sample size, distribution channels, and stakeholders involved. Since participation in the survey was anonymous, the numbers were approximations and estimated based on monitoring survey activities and feedback from stakeholders.

Table 4.4: Total response rates for the global online survey

Stage	Distribution channel	Stakeholders involved	Sample size	Responses	Response rate in %
Global online survey	Email	Researcher; Mercer experts; Marketing	1,500	300	20%
	WhatsApp	Researcher	250	61	31%
	Social media	Researcher	1,133	73	6%
Sum global online survey			***2,833***	***434***	***15%***
Total pilot online survey			**750**	**63**	**8%**
Total global online survey			**3,583**	**497**	**14%**

Source: Developed by author

In comparison to the pilot online survey (8%), the response rate increased by 7 % for the global online survey to 15%. The total response rate for the survey was 14% and in line with previous studies and response rates ranging from 6-28%, with an average of 17% (Becker et al., 1998; Datta et al., 2005). All participants referred to a recently started organisational change initiative, with scores 1 and 2, included as partial responses. As the organisational change initiative had just started, it was too early to assess the impact on the dependent variable OCS. The final data set contained 165 in progress or partial responses and 332 valid or completed responses, indicating that they had gone through and answered every mandatory question. The final number of completed responses for the global online survey was above the 200-300 sample size established in Chapter 3.

4.3.1.1 Screening and cleaning the data

When taking a closer look at the 165 partial responses nearly 75% (or 123 participants) had a completion rate of less than 20%, where 100% implies answering of each mandatory

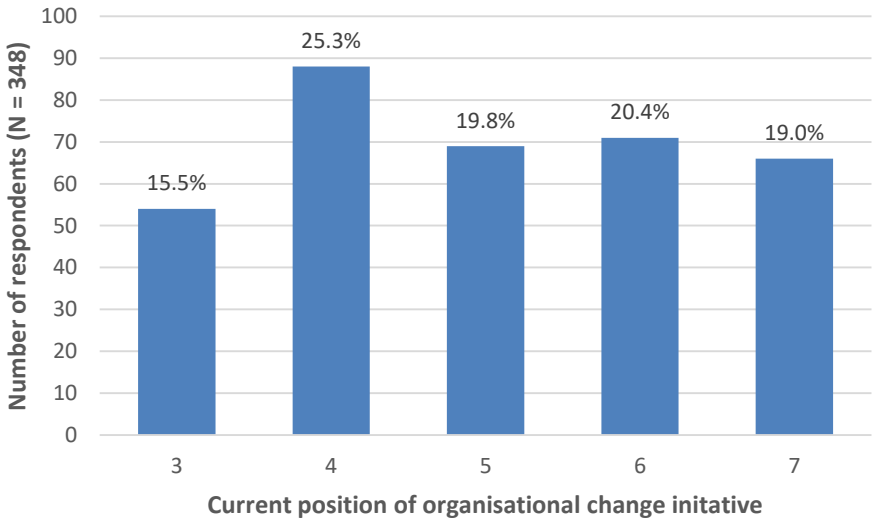
question. The remaining 42 had completion ranges of 29% to 57%. Of these 42, eight partial responses had a completion rate of 57%, implying they had completed all relevant questions to test the hypothesis, including a few demographic questions. Eleven partial responses had a completion rate of 52%, implying they had also completed all relevant questions to test the hypothesis but apart from organisation's size and headquarter location, did not answer any demographic questions. Three out of the nineteen partial responses referred to a recently started organisational change initiative, with scores 1 and 2, so were excluded from this analysis. There are multiple ways of dealing with missing values, such as deletion, considering deletion on a case-by-case basis and substituting missing values (Rose et al., 2015). Hair et al. (2010: 48) suggest, "Variables or cases with 50 percent or more missing data should be deleted". As a remedy, the researcher did not include partially completed responses below 50%, resulting in a final sample size of 348 responses as the basis for the analysis. The researcher reversed negatively worded items 3, 5 and 6 in the sub-scale affective commitment of the mediator variable C2C. The reversed negatively worded items were combined with the other three variables to calculate the total score for the sub-scale affective commitment. The researcher calculated total scores for all scales and sub-scales.

4.3.2 Preliminary analyses: familiarise and examine the data

4.3.2.1 Introduction to survey and parts 1-3

The researcher analysed the introduction and demographic section in more detail to familiarise and examine the data set for a better understanding. Further output from analysing the introduction and demographic section of the survey is presented in **Appendix J**. Over half of responses or 61% referred to a well-established organisational change initiative with scores 3, 4 and 5, followed by 39% of responses referred to a fully completed organisational change initiative with scores 6 and 7, see Figure 4.2.

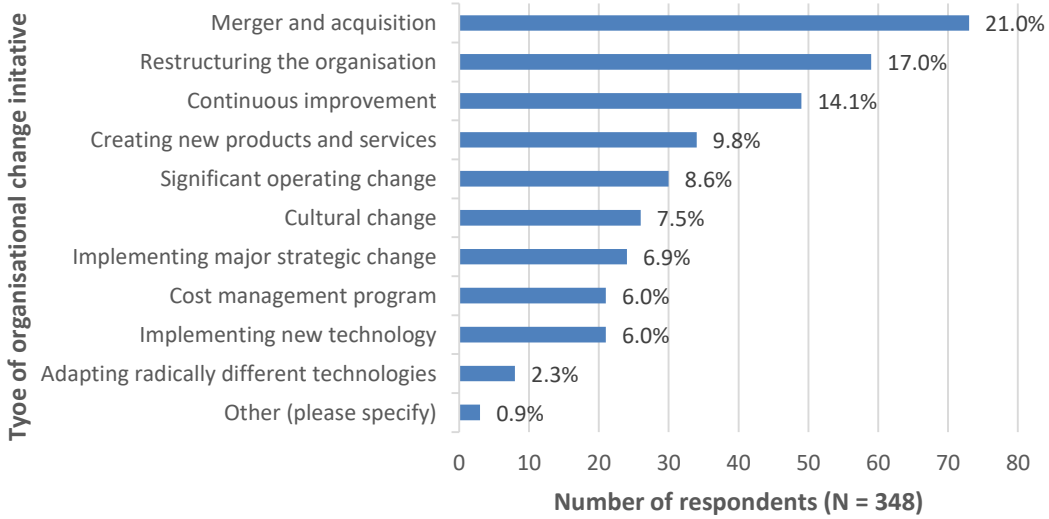
Figure 4.2: The current position of an organisational change initiative



Source: Developed by author

The top three types of organisational change initiatives were mergers and acquisitions, restructuring the organisation and continuous improvement, amounting to 52% of total responses, see Figure 4.3. In the “other (please specific)” text field “competitive pressure”, a driver looked at in the next question, was mentioned.

Figure 4.3: Type of organisational change initiative



Source: Developed by author

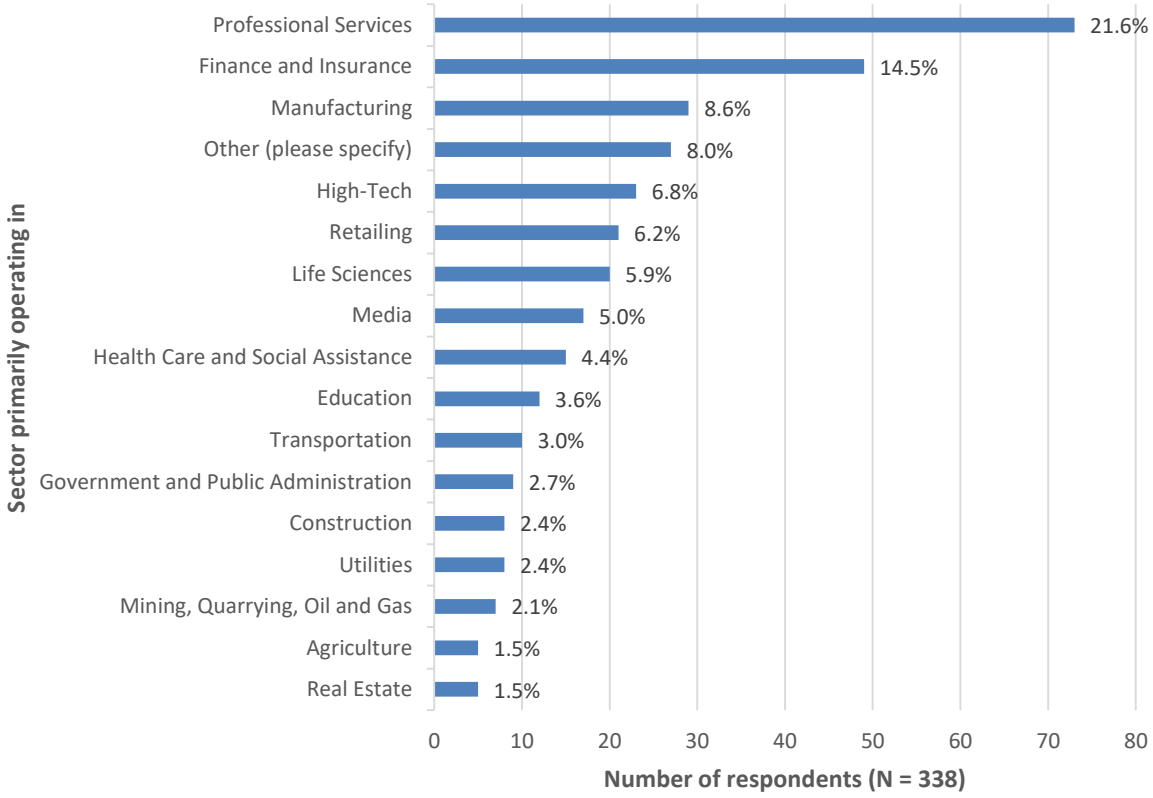
With regards to organisational change, competitive pressure was the key driver (157 responses), followed by a desire to grow and expand the business (144 responses) and improving processes due to client demands (80 responses), amounting to 49% of total responses. In the “other (please specific)” text field “employee engagement” and “market

collapse" were both mentioned. Identifying future competency and capability needs was the top activity associated with SWP, followed by headcount planning and budgeting, amounting to 66% of total responses. In the "other (please specific)" text field "anticipate all action in order to have the necessary human resources present in 5 years", "flexible workforce, including gig-based engagements" and "implementing change management procedures" were also mentioned.

Demographics and closing comments

The top three sectors were professional services, finance, and insurance and manufacturing, amounting to 45% of total participants, see Figure 4.4. In the "other (please specific)" text field, participants mentioned "consulting", "hospitality" and "courier".

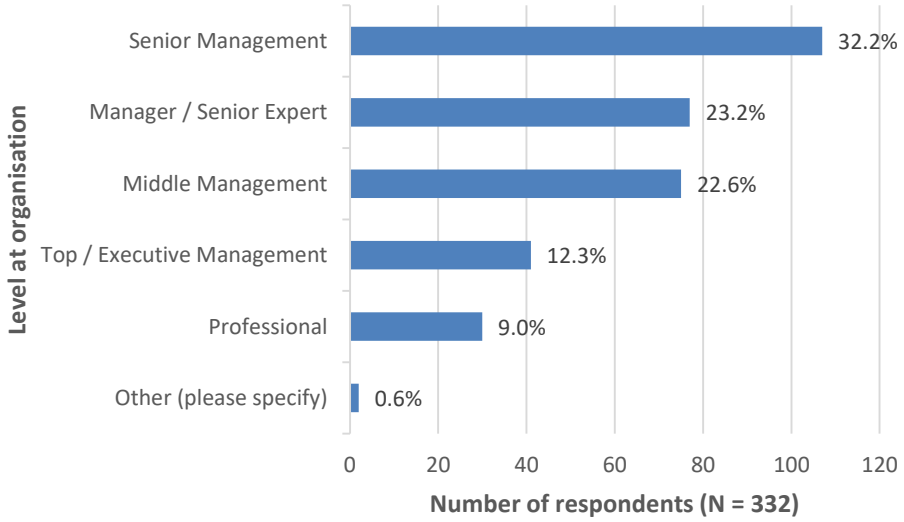
Figure 4.4: Sector participants primarily operate in



Source: Developed by author

In terms of the level at the organisation, senior management (32%), manager / senior expert (23%), and middle management (23%) account for 78% of the total responses see Figure 4.5. In the "other (please specific)" text field "associate professor" was also mentioned.

Figure 4.5: Level at the organisation



Source: Developed by author

Regarding the function at the organisations participants predominantly worked in HR, accounting and finance and management, amounting to 58% of total responses. In the "other (please specific)" text field "change and leadership", "communication" and "freelancer" were mentioned. For global number of employees at the organisation nearly 60% had over 10,000 employees. Seventeen participants (5.1%) did not know the answer. Slightly over 56% of the organisations recorded consolidated annual revenue of over USD 1 billion in 2018. Thirty-three participants (9.9%) did not know. Given the researcher's organisation is located in Germany, it is not surprising to observe that Germany is the top country with 158 participants (45%), followed by the USA with 59 participants (17%) and China with 30 participants (9%), as the top three countries. Overall, the survey attracted 348 participants from 40 countries clustered into three main regions: Europe with 223 responses, North America, with 70 responses, and the Asia Pacific region with 55 responses. Although survey responses are anonymous, a few organisations and leading global brands such as Avon, BMW, Campari Group and Hilton, all with global annual revenue over USD 1 billion, provided a company name that the researcher could use in a commercial publication as acknowledgement. Nearly one-third of all participants were interested in receiving a copy of the complimentary executive summary.

4.3.2.2 Usage of the range of scales

The researcher prepared descriptive statistics; including skewness and kurtosis, to check how participants used the range of scales. The analysis showed that for all questions full use of the scale from 1 = strongly disagree to 7 = strongly agree had been chosen. For the four

independent variables, the range was 6, with a mean between 4.54 and 5.53. For the mediator variable, the range was 6 with a mean between 4.04 and 5.44. For the dependent variable, the range was 6, with a mean between 4.80 and 5.29, see Table 4.5 and further details in **Appendix K**.

Table 4.5: Output for the dependent variable including mean scores for the scale items

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
OCS_1	348	1	7	5.05	1.436	-.633	.131	-.104	.261
OCS_2	348	1	7	4.80	1.369	-.666	.131	-.230	.261
OCS_3	348	1	7	5.29	1.424	-.726	.131	-.083	.261
OCS_4	348	1	7	4.86	1.566	-.476	.131	-.686	.261
OCS_5	348	1	7	4.91	1.503	-.575	.131	-.346	.261
OCS_6	348	1	7	5.10	1.499	-.705	.131	-.211	.261
Valid N (listwise)	348								

Source: Developed by author

Moreover, each item of each scale and sub-scale was negatively skewed, indicating clustering of scores to the right and high values. Kurtosis was negative for 32 items, indicating that the distribution is reasonably flat. For 24 items, Kurtosis was positive, indicating that the distribution is somewhat peaked (Pallant, 2013).

4.3.2.3 Test for normality

Normality of the distribution scores for all scales and sub-scales was analysed, see Table 4.6.

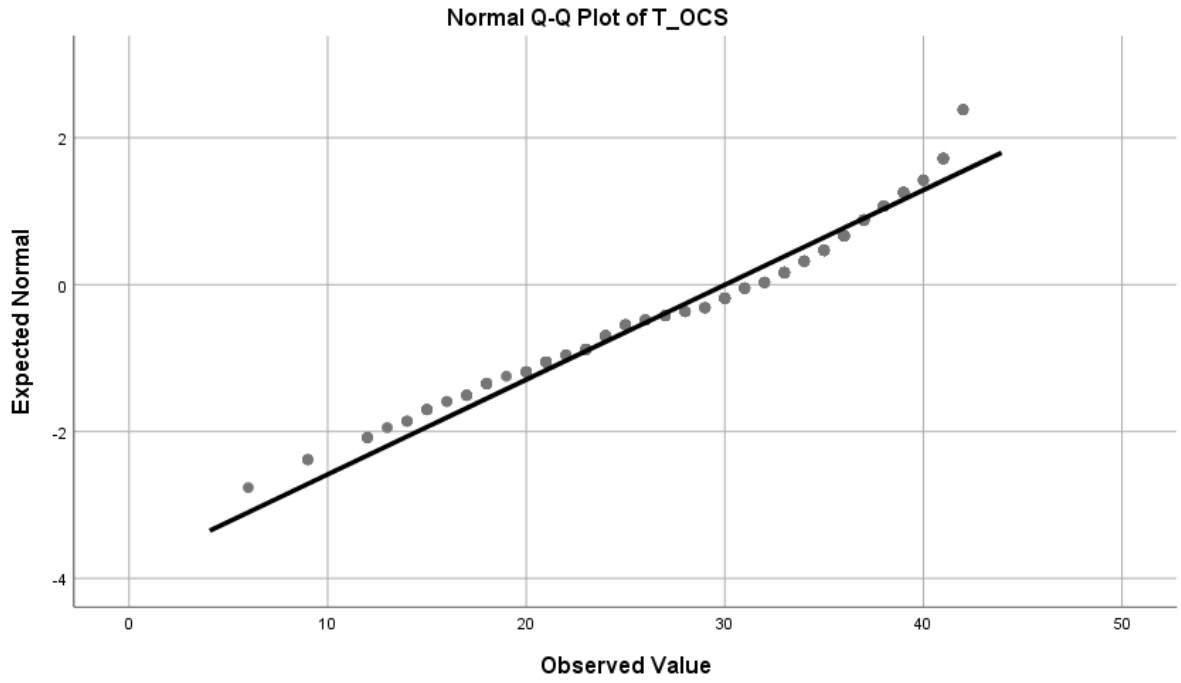
Table 4.6: Assessing normality of scales and sub-scales (n=348)

Type of variable	**Scale** *Sub-scale*	**Skewness**	**Kurtosis**
Independent	**HRS**	-0.756	0.141
	HRP	-0.721	0.444
	HRF	-0.717	-0.217
	HRA	-0.791	-0.223
Mediator	**C2C**		
	Affective	*-0.824*	*0.328*
	Continuance	*-0.830*	*0.285*
Dependent	**OCS**	-0.607	-0.339

Source: Developed by author

The normal probability plots showed a relatively straight line for all variables; see Table 4.7 for the potential new scale OCS as an example and further details in **Appendix L**.

Table 4.7 Normal probability plots for potential new scale organisational change success



Source: Developed by author

Moreover, the detrended normal probability plots show no clustering of points with most around the zero line. There are a few outliers for all scales and sub-scales, indicating that participants used predominately just a 1 (strongly disagree) or a 7 (strongly agree) to answer the questions. By further examination these cases, the answers to the three reversed items of the meditator towards the end of the survey did not follow an extreme pattern, indicating that participants paid attention to the wording of questions and were engaged in answering the survey (Gaskin, 2020). Consequently, these cases were kept in the data file to test reliability and validity.

4.3.2.4 Reliability and validity

When discussing positivist research design, it is inevitable to talk about internal and external validity or generalisability and reliability. Validity refers to if the instrument is measuring the right thing and reliability is related to consistency and accuracy of measures (Pallant, 2013; Rose et al., 2015). The reliability statistics for the independent variables, the mediator variable, and the independent variable, shown in Table 4.8.

Table 4.8: Reliability of scales for final sample size (n=348)

Type of variable	Scale *Sub-scale*	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Independent	**HRS**	0.942	0.943	**8**
	HRP	0.948	0.949	**14**
	HRF	0.963	0.963	**7**
	HRA	0.963	0.963	**9**
Mediator	**C2C**			**12**
	Affective	*0.927*	*0.927*	*6*
	Continuance	*0.875*	*0.878*	*6*
Dependent	**OCS**	0.942	0.942	**6**

Source: Developed by author

Generally, Cronbach's alpha range is from zero to one; negative values are possible if the items are negatively correlated, but statisticians are not on a common agreement on an acceptable size (Vaske et al., 2017). For example Pallant (2013: 104) states that "values above .7 are considered acceptable; however, values above .8 are preferable". As can be seen above the values in this research range between 0.88 – 0.96, suggesting excellent internal consistency reliability for all scales and sub-scales. Nevertheless, consistent high alphas close to one for all scales would imply that a scale encompasses unnecessary items (Taber, 2018). Therefore, Shelby (2011) suggests performing a CFA to establish multicollinearity, and after that, examine the alphas. The researcher also assessed multicollinearity before running the regression analysis for mediation using the Hayes PROCESS macro when checking the assumption.

Overall, in the inter-item correlation matrix, no negative values for the independent, mediator and dependent variable were identified, suggesting the scales and sub-scales are measuring what they intend to measure and not something else (Pallant, 2013). The corrected item-total correlation is one of the parameters used for construct validity showing no scores lower than < 0.3; only one item C2C_8 is close to breaching this threshold. Deleting this item would produce a higher alpha (0.91), see Table 4.9 and further details are provided in **Appendix M**.

Table 4.9: Inter-Item statistics for sub-scale C2C

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C2C_7	23.93	46.154	.666	.461	.855
C2C_8	24.70	52.038	.339	.230	.910
C2C_9	23.79	43.969	.824	.726	.829
C2C_10	23.76	43.390	.782	.734	.835
C2C_11	23.86	43.103	.764	.658	.838
C2C_12	23.67	45.104	.750	.652	.841

Source: Developed by author

Since this is a well-established scale in the literature published in the Journal of Applied Psychology, a top academic journal, and Cronbach's alpha is above 0.8, the item was not removed to allow comparison with previous research. For all scales and sub-scales, the score is with > 0.3 above the threshold. As the comparison to previous research is an essential theoretical foundation in this mediation analysis, regression analysis for mediation with the use of the Hayes PROCESS macro was conducted before the factor analysis with the original items.

4.3.3 Regression analysis for mediation with use of Hayes PROCESS macro

Hair et al. (2010) suggest testing the underlying assumptions by performing four steps of analysis: the linearity of the phenomena measured, constants variance- and independence of the error terms, as well as normality of the error term distribution. Along similar lines Pallant (2013) uses three steps to interpret the output from a regression analysis. The researcher followed these recommendations for checking the assumptions for interpretation and statistical inference such as linearity, normality, homoscedasticity and independence before commencing the mediation analysis with the Hayes PROCESS macro (Hayes, 2018).

4.3.3.1 Checking the assumptions for regression analysis

Multicollinearity

All independent variables had a relationship with the dependent variable OCS, indicated by Pearson correlation > 0.3. Tolerance is over 0.10 and VIF values are below 10, indicating that there is no problem with multicollinearity (Pallant, 2013).

Outliers, normality, linearity, homoscedasticity, independence of residuals

The normal probability plot showed a reasonable diagonal line indicating no significant deviations from normality. The residuals showed a horizontal band, meaning that there is a rectangular distribution with residuals centred around the zero. The Durbin-Watson statistic may range from 0 to 4. Generally a value of around 2 suggests that there is no correlation between residuals; the cut-off is between the two critical values of $1.5 < d < 2.5$. For this analysis the Durbin-Watson statistics was 1.568, suggesting independence of residuals. The maximum leverage value was 0.126, and below 0.2, which is considered safe. The Mahal. Distance critical value for four independent variables was 18.47 ($p = 0.001$). In this analysis, there were six variables above this threshold with the maximum at 43.727. However, given the size of the data, these cases were not removed. The maximum Cook's Distance was 0.157 and below 1, indicating no significant issues. (Pallant, 2013; Tabachnick and Fidell, 2013; Lund and Lund, 2018), see Table 4.10 and further output is presented in **Appendix N**.

Table 4.10: Residual statistics for checking the assumptions for regression analysis

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	8.92	40.35	30.02	5.856	348
Std. Predicted Value	-3.603	1.764	.000	1.000	348
Standard Error of Predicted Value	.283	1.831	.565	.235	348
Adjusted Predicted Value	9.07	40.55	30.02	5.860	348
Residual	-23.311	18.240	.000	5.072	348
Std. Residual	-4.569	3.575	.000	.994	348
Stud. Residual	-4.582	3.677	.000	1.003	348
Deleted Residual	-23.443	19.295	-.005	5.162	348
Stud. Deleted Residual	-4.723	3.747	-.001	1.010	348
Mahal. Distance	.072	43.727	3.989	4.940	348
Cook's Distance	.000	.157	.004	.011	348
Centered Leverage Value	.000	.126	.011	.014	348

a. Dependent Variable: T_OCS

Source: Developed by author

Evaluating the overall model and independent variables

The model summary showed a good R Square of 0.571, accounting for 57% of the variance on the dependent variable. Additionally ANOVA showed a good model fit, reaching statistical significance with Sig. = .000. For the independent variables, the Beta under Standardised Coefficients ranges between 1.11 and 2.57. Apart from HRA that slightly missed the cut ($p = 0.084$), all other independent variables have Sig. values less than 0.05, indicating that the

variables made a statistically significant and unique contribution to the prediction of the dependent variable OCS (Pallant, 2013). HRA is not much of a concern or limitation here, since it was conceptually different from the other hypotheses. Moreover, the Hayes PROCESS macro utilised linear regression analysis, so each independent variable was tested separately with the dependent variable (Hayes, 2018).

4.3.3.2 Hayes PROCESS macro for mediation analysis

When it comes to mediation, Baron and Kenny's method is well established; however, there are newer approaches such as the Hayes PROCESS macro for mediation analysis. The following analysis followed the guidelines as provided by Hayes (2018). The overall research model, introduced in Chapter 3, was the basis for running the mediation analysis. Conceptually "mediation analysis is a statistical method used to evaluate evidence from studies designed to test hypotheses about how some causal antecedent variable X transmits its effect on a consequent variable Y" in essence the reason for the effect (Hayes, 2018: 78). The mediation analysis was conducted in three steps: looking at the direct effect X on Y, the total effect X on Y and the indirect effect of X on Y through M. The final step tested the mediation of the relationship between the independent variables and dependent variable organisational change success (OCS). In other words, the indirect effect of X on Y mediated by a commitment to organisational change – the mediator variable M. Hypothesis 5a-d explored this issue, as follows:

Hypothesis 5a-d (H5a-d): Commitment to organisational change (C2C) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)

The key output from the mediation analysis is provided in this section and additional information is provided in **Appendix O**.

The direct effect X on Y

According to Hayes (2018: 94): "the direct effect quantifies the estimated difference in Y between two cases that are equal on M but differ by one unit on X". The researcher is first looking at affective commitment to change, followed by continuance commitment to change.

HRS and affective commitment to change

For the outcome variable affective commitment to change (C2CA), X predicting M (a), the direct effect from HRS to C2CA was positive and statistically significant, $b = 0.458$, $t(346) = 13.554$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRS to C2CA was positive and statistically significant $b = 0.395$, $t(345) = 11.293$, $p = <.001$, indicating that HRS had a positive impact on OCS. M predicting Y (b), the direct effect of C2CA on OCS was positive and statistically significant $b = 0.341$, $t(345) = 7.537$, $p = <.001$, indicating that C2CA had a positive impact on OCS.

HRP and affective commitment to change

For the outcome variable affective commitment to change (C2CA), X predicting M (a), the direct effect from HRP to C2CA was positive and statistically significant, $b = 0.326$, $t(346) = 15.106$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRP to C2CA was positive and statistically significant $b = 0.261$, $t(345) = 10.578$, $p = <.001$, indicating that HRP had a positive impact on OCS. M predicting Y (b), the direct effect of C2CA on OCS was positive and statistically significant $b = 0.324$, $t(345) = 6.796$, $p = <.001$, indicating that C2CA had a positive impact on OCS.

HRF and affective commitment to change

For the outcome variable affective commitment to change (C2CA), X predicting M (a), the direct effect from HRF to C2CA was positive and statistically significant, $b = 0.484$, $t(346) = 14.076$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRF to C2CA was positive and statistically significant $b = 0.423$, $t(345) = 11.670$, $p = <.001$, indicating that HRF had a positive impact on OCS. M predicting Y (b), the direct effect of C2CA on OCS was positive and statistically significant $b = 0.324$, $t(345) = 7.152$, $p = <.001$, indicating that C2CA had a positive impact on OCS.

HRA and affective commitment to change

For the outcome variable affective commitment to change (C2CA), X predicting M (a), the direct effect from HRA to C2CA was positive and statistically significant, $b = 0.307$, $t(346) = 11.488$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRA to C2CA was positive and statistically significant $b = 0.265$, $t(345) = 10.404$, $p = <.001$, indicating that HRA had a positive impact on OCS. M predicting Y (b), the direct effect of C2CA on OCS was positive and statistically significant $b = 0.403$, $t(345) = 9.231$, $p = <.001$, indicating that C2CA had a positive impact on OCS.

HRS and continuance commitment to change

For the outcome variable continuance commitment to change (C2CC), X predicting M (a), the direct effect from HRS to C2CC was positive and statistically significant, $b = 0.278$, $t(346) = 6.728$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRS to C2CC was positive and statistically significant $b = 0.505$, $t(345) = 16.011$, $p = <.001$, indicating that HRS had a positive impact on OCS. M predicting Y (b), the direct effect of C2CC on OCS was positive and statistically significant $b = 0.167$, $t(345) = 4.333$, $p = <.001$, indicating that C2CC had a positive impact on OCS.

HRP and continuance commitment to change

For the outcome variable continuance commitment to change (C2CC), X predicting M (a), the direct effect from HRP to C2CC was positive and statistically significant, $b = 0.257$, $t(346) = 9.972$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRP to C2CC was positive and statistically significant $b = 0.347$, $t(345) = 15.062$, $p = <.001$, indicating that HRP had a positive impact on OCS. M predicting Y (b), the direct effect of C2CC on OCS was positive and not statistically significant $b = 0.077$, $t(345) = 1.821$, $p = 0.069$, indicating that C2CC had a positive impact on OCS but not statistically significant.

HRF and continuance commitment to change

For the outcome variable continuance commitment to change (C2CC), X predicting M (a), the direct effect from HRF to C2CC was positive and statistically significant, $b = 0.340$, $t(346) = 8.181$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRF to C2CC was positive and statistically significant $b = 0.539$, $t(345) = 16.124$, $p = <.001$, indicating that HRF had a positive impact on OCS. M predicting Y (b), the direct effect of C2CC on OCS was positive and statistically significant $b = 0.121$, $t(345) = 3.057$, $p = 0.002$, indicating that C2CC had a positive impact on OCS.

HRA and continuance commitment to change

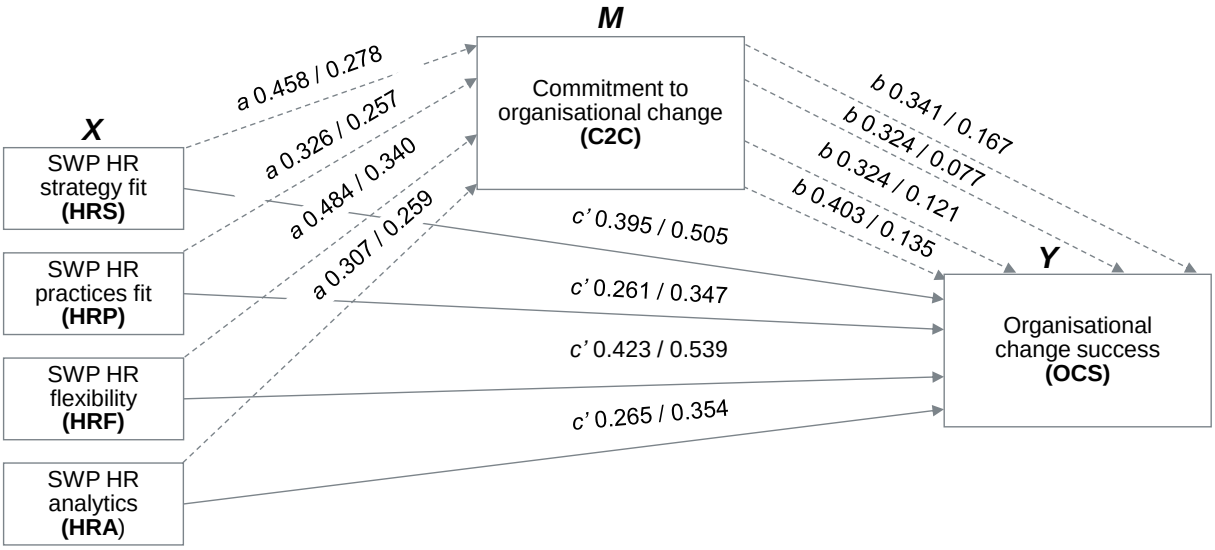
For the outcome variable continuance commitment to change (C2CC), X predicting M (a), the direct effect from HRA to C2CC was positive and statistically significant, $b = 0.259$, $t(346) = 8.653$, $p = <.001$.

For the outcome variable organisational change success (OCS), X predicting Y (c'), the direct effect from HRA to C2CC was positive and statistically significant *b* = 0.354, *t*(345) = 13.438, *p* = <.001, indicating that HRA had a positive impact on OCS. M predicting Y (b), the direct effect of C2CC on OCS was positive and statistically significant *b* = 0.135, *t*(345) = 3.147, *p* = 0.002, indicating that C2CC had a positive impact on OCS.

Summary

Figure 4.6 summaries the direct effect X on Y analysis. The first number relates to affective commitment to change (C2CA), and the second number, after the forward-slash, relates to continuance commitment to change (C2CC). For HRP and continuance commitment to change, M predicting Y (b), the direct effect of C2CC on OCS was positive and not statistically significant *b* = 0.077, *t*(345) = 1.821, *p* = 0.069, indicating that C2CC had a positive impact on OCS but not statistically significant.

Figure 4.6: Summary of the direct effect X on Y analysis



Source: Developed by author

The total effect of X on Y

According to Hayes (2018: 93): "…the total effect of X on Y is the sum of the direct effect of X on Y and indirect effect of X on Y through M". Simply put the total effect can be estimated by regressing Y on X, excluding M in the model (Hayes, 2018).

HRS and organisational change success

For the outcome variable organisational change success (OCS), X predicting Y (c), the total effect from HRS to OCS was positive and statistically significant *b* = 0.551, *t*(346) = 18.134, *p* = <.001, with 95% confidence interval residing between 0.492 and 0.611. Looking at H1, this

indicates that strategic workforce planning HR strategy fit (HRS) had a positive impact on organisational change success (OCS).

HRP and organisational change success

For the outcome variable organisational change success (OCS), X predicting Y (c), the total effect from HRP to OCS was positive and statistically significant $b = 0.366$, $t(346) = 18.006$, $p = <.001$, with 95% confidence interval residing between 0.326 and 0.406. Looking at H2, this indicates that strategic workforce planning HR practice fit (HRP) had a positive impact on organisational change success (OCS).

HRF and organisational change success

For the outcome variable organisational change success (OCS), X predicting Y (c), the total effect from HRF to OCS was positive and statistically significant $b = 0.580$, $t(346) = 18.735$, $p = <.001$, with 95% confidence interval residing between 0.519 and 0.641. Looking at H3, this indicates that strategic workforce planning HR flexibility (HRF) had a positive impact on organisational change success (OCS).

HRA and organisational change success

For the outcome variable organisational change success (OCS), X predicting Y (c), the total effect from HRA to OCS was positive and statistically significant $b = 0.389$, $t(346) = 16.079$, $p = <.001$, with 95% confidence interval residing between 0.342 and 0.437. Looking at H4, this indicates that strategic workforce planning HR analytics (HRA) had a positive impact on organisational change success (OCS).

Summary

To summarise, the effect from HRS, HRP, HRF, and HRA to OCS was positive and statistically significant. In other words, this indicates that each of the four independent variables had a positive impact on organisational change success (OCS).

The indirect effect of X on Y through M

There are four inferential tests for indirect effects: Normal Theory Approach, percentile bootstrap, Monte Carlo and distribution of the product (Hayes, 2018). The Normal Theory Approach is referred to as the product of coefficients or Sobel test in the literature based on the similar theory of inference. The Bootstrap Interval in mediation generates an empirically obtained representation of the sampling distribution of the indirect effect, referred to as resampling methods in the literature. The Monte Carlo confidence intervals are similar to

bootstrapping simulation-based. The distribution of the product method depends on mathematical estimations of the sampling distribution of the product (Hayes, 2018).

There is an ongoing debate in the literature about the most effective method to test the indirect effect, e.g. Williams & MacKinnon, 2008, Biesanz et al., 2010, Fritz and MacKinnon, 2012. Hayes (2018) concluded that if the same data set is analysed, then irrespective of the method used the outcome related to the inference about the indirect effect is similar. Hayes (2018: 107) also suggests that "the percentile bootstrap confidence interval has become the more widely recommended method for inference about the indirect effect in mediation analysis". In this analysis, non-parametric bootstrapping tests the indirect effect. The indirect effect is statistically significant if above zero at the 95% bootstrap confidence interval (Hayes, 2018). The final step tests the mediation of the relationship between the independent variables and dependent variable organisational change success (OCS). In other words, the indirect effect of X on Y mediated by a commitment to organisational change – the mediator variable M. Hypothesis 5a-d explores this issue.

H5a: Affective commitment to organisational change (C2CA) mediates the positive relationship between HRS and organisational change success (OCS)

The indirect effect was = 0.156, *SE* 0.028, 95% CI [0.102,0.212], implying C2CA mediates the positive relationship between HRS and OCS because CI does not contain zero.

H5b: Affective commitment to organisational change (C2CA) mediates the positive relationship between HRP and organisational change success (OCS)

The indirect effect was = 0.106, *SE* 0.020, 95% CI [0.068,0.145], implying C2CA mediates the positive relationship between HRP and OCS because CI does not contain zero.

H5c: Affective commitment to organisational change (C2CA) mediates the positive relationship between HRF and organisational change success (OCS)

The indirect effect was = 0.157, *SE* 0.029, 95% CI [0.102,0.215], implying C2CA mediates the positive relationship between HRF and OCS because CI does not contain zero.

H5d: Affective commitment to organisational change (C2CA) mediates the positive relationship between HRA and organisational change success (OCS)

The indirect effect was = 0.124, *SE* 0.026, 95% CI [0.087,0.165], implying C2CA mediates the positive relationship between HRA and OCS because CI does not contain zero.

H5a: Continuance commitment to organisational change (C2CC) mediates the positive relationship between HRS and organisational change success (OCS)

The indirect effect was = 0.046, *SE* 0.002, 95% CI [0.021,0.081], implying C2CC mediates the positive relationship between HRS and OCS because CI does not contain zero.

H5b: Continuance commitment to organisational change (C2CC) mediates the positive relationship between HRP and organisational change success (OCS)

The indirect effect was = 0.020, *SE* 0.012, 95% CI [-0.002,0.045], implying C2CC does not mediate the positive relationship between HRP and OCS because CI does contain zero.

H5c: Continuance commitment to organisational change (C2CC) mediates the positive relationship between HRF and organisational change success (OCS)

The indirect effect was = 0.041, *SE* 0.018, 95% CI [0.010,0.080], implying C2CC mediates the positive relationship between HRF and OCS because CI does not contain zero.

H5d: Continuance commitment to organisational change (C2CC) mediates the positive relationship between HRS and organisational change success (OCS)

The indirect effect was = 0.035, *SE* 0.014, 95% CI [0.01,0.067], implying C2CC mediates the positive relationship between HRA and OCS because CI does not contain zero.

Summary

To summarise, apart from H5b, continuance commitment to organisational change (C2CC), the indirect effect was statistically significant as above zero at the 95% bootstrap confidence interval. This implies that commitment to change mediates the positive relationship between the four independent variables and the dependent variable organisational change success (OCS).

4.3.4 Exploratory factor analysis (EFA)

Exploratory Factor Analysis (EFA) is a statistical approach for determining the correlation among the variables in a dataset; simply put it is a “data reduction” technique. This type of analysis provides a factor structure, so a grouping of variables based on strong correlations. Generally, an EFA prepares the variables for cleaner structural equation modelling (SEM). For new datasets, since the researcher developed a potential new scale (OCS) it is advisable to perform an EFA to reduced problematic items and thereby potentially lower the number of items in the full model (Hair et al., 2010; Pallant, 2013; Tabachnick and Fidell, 2013; Gaskin, 2020). The EFA was conducted in four steps by addressing the assessment of suitability of data, factor extraction method, factor rotation method, analysis and extracting components.

4.3.4.1 Assessment of the suitability of the data for factor analysis

There are two key issues to determine before running a factor analysis: sample size and sampling adequacy. In the literature, different guidelines exist for sample size (e.g. 50+5x, where x is the number of questions in the survey). This survey contains 56-items, so this equates to a sample size of 330. Tabachnick and Fidell (2013) recommend at least 300 cases. This dataset comprised of 348 completed responses for the global online survey. Regarding sampling adequacy the Kaiser-Meyer-Olikin (KMO) and Bartlett's test of sphericity primarily determine if there is a sufficiently high level of correlation among all the variables included in the EFA.

4.3.4.2 Factor extraction method

Different methods are principal component analysis (PCA), principal axis factoring (PAF), and maximum likelihood (ML). Hair et al. (2010: 108) state that irrespective of the extraction method each “arrive at essentially identical results if the number of variables exceeds 30 or the commonalities exceed .60 for most variables”. In this research, for most variables, commonalities were > 0.600. However, even with models having fewer than 30 variables and with commonalities > 0.300 and < 0.600 Gaskin (2020) did not find any significant difference between PCA, PAF and ML. Since ML is the default approach used in AMOS for CFA and structural equation modelling, the researcher used ML during the EFA (Hair et al., 2010).

4.3.4.3 Factor rotation method

There are two main approaches to rotation in SPSS resulting in uncorrelated (orthogonal), e.g. Varimax, Quartimax and Equimax and correlated (oblique), e.g. Direct Oblimin and Promax factor solutions, see Table 4.11.

Table 4.11: Comparison of different factor rotation methods in SPSS

Factor rotation method	Category	Objective	Observations
Varimax	Orthogonal rotation	Minimize the complexity of factors (simplify columns of loading matrix) by maximizing the variance of loadings on each factor	Most commonly used rotation; recommended as default option
Quartimax		Minimize the complexity of variables (simplify rows of loading matrix) by maximizing the variance of loadings on each variable	The first factor tends to be general, with other sub clusters of variables
Equamax		Simplify both variables and factors (rows and columns); compromise between quartimax and varimax.	May behave erratically
Direct Oblimin	Oblique rotation	Simplify factors by minimizing the cross-products of loadings	Continuous values of gamma, or delta, δ available; allows a wide range of factor intercorrelations
Promax		Orthogonal factors rotated to oblique positions	Similar to Direct Oblimin but faster

Source: Developed by author, based on Tabachnick and Fidell (2013: 643)

While orthogonal rotation methods are mostly used, in the researcher's field of study, previous studies also employed oblique rotation methods, such as Direct Oblimim, introduced in Chapter 3. Moreover, Pallant (2013) demonstrated Direct Oblimim in the chapter on factor analysis. Hair et al. (2010: 116) state that "no compelling analytical reason suggests favouring one rotational method over another". Gaskin (2020) did not find any significant differences between factor rotation method and made frequent use of Promax in demonstrations. Since Promax is similar to Direct Oblimim but even faster, the researcher used Promax.

4.3.4.4 Analysis of EFA and extracting components

Sampling adequacy

The two values of interest are the KMO value, which should be greater than about 0.600 as the minimum with anything higher than 0.800 is a better result, and the p-value for Bartlett's test, which should be less than 0.05. For this dataset, the KMO was 0.965 with $p = 0.000$. Most commonalities in the extracted column were higher than 0.500, and all were greater than 0.300, except on variable C2C_8 (0.283) implying retaining all variables apart from potentially C2C_8, extracted during the EFA procedure, see Table 4.13. (Pallant, 2013; Gaskin, 2020). The correlation matrix showed that each variable had at least one correlation with another variable of > 0.3. The total variance explained showed the first seven components recorded eigenvalues above 1 and explain a total of 73.892 % of the variance, see Table 4.12 and further details in **Appendix P**.

Table 4.12: Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	28.675	51.206	51.206	28.292	50.522	50.522	23.061
2	3.273	5.845	57.051	2.862	5.111	55.632	22.400
3	2.910	5.197	62.248	2.738	4.890	60.522	19.829
4	2.055	3.669	65.917	1.623	2.899	63.421	20.016
5	1.868	3.336	69.254	1.646	2.940	66.361	13.973
6	1.425	2.545	71.799	1.243	2.219	68.580	11.015
7	1.172	2.093	73.892	.912	1.628	70.208	22.607

Source: Developed by author

The residuals computed between observed and reproduced correlations. There are 61 (3.0%) non-redundant residuals with absolute values greater than 0.05, implying ideal minimisation as less than 5%. Goodness-of-fit Test was significant with p = 0.000 (Pallant, 2013; Gaskin, 2020).

Convergent and discriminant validity

Convergent validity is when the items expected to load onto that factor have loadings higher than 0.500 and average out above 0.700. Discriminant validity resolves if factors are unique from other factors in a measurement model, so generally, each factor should not load or cross-load on another factor. (Hair et al., 2010; Pallant, 2013; Gaskin, 2020). Given these guidelines the following extractions have been performed based on the pattern matrix, see Table 4.13.

Table 4.13: Summary of factor extractions during EFA

Analysis	Factors and loadings	Action	Comments
Loading > 0.500 and to achieve an average out of > 0.700	HRP_1 (0.455), HRP_2 (0.481), HRP_8 (0.317) and HRP_12 (0.356)	Removed factors since loadings lower than 0.500	After removal, remaining loadings were higher than 0.500 and average out above 0.700
	HRS_6 (0.426) and HRS_8 (0.445)		
	C2C_2 (0.473), C2C_4 (0.460) and C2C_8 (0.474)		
Variable loading on another factor	HRS_7 (0.468) loaded on HRF		
Variable cross-loading on another factor; does not differ by more than 0.2	C2C_1 (0.476) cross-loaded on OCS (0.301)	Removed factors since loading lower than 0.500 and the cross-loading difference not less than 0.2	
	HRF 7 (0.572) cross-loaded on HRA (0.391)	Loading > 0.500 and cross-loading difference slightly less than 0.2 (0.181); factor not removed, see comments	Removal of factor would produce a Heywood Case on HRA_6 as loading would then be slightly higher than 1; so it was not removed
Total factors removed	11-items		

Source: Developed by author, based on Hair et al. (2010); Gaskin (2020)

After performing these factor extractions the pattern matrix shows good loadings also for the potential new scale OCS, see Table 4.14.

Table 4.14: Pattern matrix after factor extractions performed during EFA

	Factor						
	1	2	3	4	5	6	7
HRA_6	.984						
HRA_7	.955						
HRA_5	.925						
HRA_4	.858						
HRA_8	.850						
HRA_2	.838						
HRA_9	.793						
HRA_1	.709						
HRA_3	.653						
HRP_5		.900					
HRP_6		.830					
HRP_11		.800					
HRP_9		.779					
HRP_10		.698					
HRP_7		.685					
HRP_14		.561					
HRP_3		.561					
HRP_4		.553					
HRP_13		.536					
OCS_5			.896				
OCS_1			.837				
OCS_4			.811				
OCS_6			.789				
OCS_3			.739				
OCS_2			.735				
C2C_9				.921			
C2C_11				.860			
C2C_10				.849			
C2C_12				.782			
C2C_7				.672			
HRS_2					.853		
HRS_4					.811		
HRS_3					.801		
HRS_1					.744		
HRS_5					.674		
C2C_6						.923	
C2C_5						.891	
C2C_3						.888	
HRF_4							.755
HRF_5							.750
HRF_2							.705
HRF_3							.699
HRF_6							.682
HRF_7	.391						.572
HRF_1							.543

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Source: Developed by author

Reliability

Each factor was assessed separately and only items remaining after the EFA included in the reliability assessment. For all variables Cronbach's Alpha was higher than 0.9, suggesting excellent internal consistency reliability for all scales and sub-scales, see Table 4.15 (Pallant, 2013).

Table 4.15: Reliability of scales after the EFA (n=348)

Type of variable	**Scale** *Sub-scale*	**Cronbach's Alpha**	**Cronbach's Alpha Based on Standardized Items**	**N of Items**
Independent	**HRS**	0.938	0.938	**5**
	HRP	0.934	0.935	**10**
	HRF	0.963	0.963	**7**
	HRA	0.963	0.963	**9**
Mediator	**C2C**			**8**
	Affective	*0.918*	*0.918*	*3*
	Continuance	*0.910*	*0.911*	*5*
Dependent	**OCS**	0.942	0.942	**6**

Source: Developed by author

4.3.4.5 Exploratory factor analysis summary

A maximum likelihood (ML) run on a 56-item questionnaire that measured organisational change success on 348 companies with the suitability of ML assessed before analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient higher than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.965. Bartlett's test of sphericity was statistically significant ($p < 0.005$), indicating that the data was likely factorizable. ML revealed seven-component that had eigenvalues higher than one and which explained 50.522%, 5.111%, 4.890%, 2.940%, 2.889%, 2.219% and 1.628% of the total variance, respectively. Visual inspection of the scree plot indicates retaining seven components. The seven-component solution explained 73.892% of the total variance. A Promax rotation was employed to aid interpretability. Following convergent and discriminate validity guidelines, reducing the questionnaire by 11-items. Reliability was assessed for each factor separately and only items remaining after the EFA included in the reliability assessment with all Cronbach's Alpha higher than 0.9. As a result, the final model contains 45-items as the basis for the CFA.

4.3.5 Confirmatory factor analysis (CFA)

A Confirmatory Factor Analysis (CFA) is a more complex and sophisticated set of techniques and confirms the factor structure extracted during the EFA (Hair et al., 2010; Gaskin, 2020). The structural model done in SEM describes the "(suggested) 'causal' connections among variables, as opposed to the measurement model that describes the connection between latent variables and their (manifest) indicators" (Blunch, 2013: 294). The analysis, structure and steps in this section follow the recommendations by Byrne (2010); Hair et al. (2010); Blunch (2013); Tabachnick and Fidell (2013) and Gaskin (2020). The CFA was conducted in seven steps to assess the measurement model by addressing assessment of model fit, validity, reliability, common method bias, measurement invariance, higher-order models, and methods representing scales for SEM analysis.

The researcher is also utilising a range of plugins or macros that automate analytical procedures in SPSS Amos, developed by Gaskin (2020).

4.3.5.1 Model fit or "goodness-of-fit"

Model fit or goodness-of-fit (GOF) is a measure that is: "indicating how well a specified model reproduces the observed covariance matrix among the indicator variable" (Hair et al., 2010: 632). There is a vast amount of fit measures in the literature, see Table 4.16.

Table 4.16: Overview of methods for assessing model fit or "goodness-of-fit"

Model fit measures	Methods	Objective	Level of acceptance	Reference to literature
Comparative fit indices	Normed fit index (NFI)	Evaluates the estimated model by comparing the x^2 value of the model to the x^2 value of the independence model	High values (greater than 0.95) are indicative of a good-fitting model	Bentler-Bonett (1980)
	Non- normed fit index (NNFI)	The adjustment improves on the problem of underestimating the fit in perfect fitting models	Same as NFI	Bollen (1989)
	Comparative fit index (CFI)	Employs the noncentral x^2 distribution with non-centrality parameters	CFI values greater than 0.95 are often indicative of good-fitting models	Bentler (1988), Hu & Bentler (1999)
	The root mean square error of approximation (RMSEA)	Estimates the lack of fit in a model compared to a perfect (saturated) model	Values of 0.06 or less indicate a good- fitting model relative to the model degrees of freedom	Browne & Cudeck (1993), Hu & Bentler (1999)
Absolute fit index	x^2 statistic / relative chi-square (CMIN/DF)	Judges the fit of a model without reference to other models that could be relevant in the situation	Generally, a value near one is considered a sign of good fit; cut-off is between 1-3	McDonald and Marsh (1990)
Indices of the proportion of variance accounted	The goodness-of-fit index (GFI)	Calculates a weighted proportion of variance in the sample covariance accounted for by the estimated population covariance matrix	Values of 0.90 and higher indicate good model fit	Bentler (1983), Tanaka & Huba (1989)
Degree of parsimony fit indices	An adjustment can be made to the GFI to produce PGFI	Takes into account the degree of parsimony in the model	The larger the fit index, the better; values closer to 1.00	Mulaik et al. (1989)
Residual-based fit indices	The root mean square residual (RMR) and the standardized root mean square residual (SRMR)	Average differences between the sample variances and covariance's and the estimated population variances and covariance's	The SRMR has a range of 0-1, values of 0.08 or less is better	Hu & Bentler (1999)

Source: Developed by author, based on Hair et al. (2010); Blunch (2013); Tabachnick and Fidell (2013: 720-725)

More broadly speaking, these measures fall into two categories: absolute and comparative measures. Absolute measures (for example SRMR of fit) are relatively immune to sample size and model complexity. Comparative measures (for example CFI) are derived by comparing the fit of the proposed model to the fit of a model in which all variables are uncorrelated (Hair et al., 2010; Gaskin, 2020). Hair et al. (2010), Blunch (2013), Tabachnick and Fidell (2013) and Gaskin (2020) suggest using a range of different measures, in particular: the chi-square value and the associated *df*, RMSEA, CFI and SRMR. The initial 45-item model did not meet the model fit criteria. Only after removing four additional items, HRF_1, HRF_3, HRF_6 and HRF_7, based on the modification indices and standardized residual covariance, an acceptable model fit was established, see Table 4.17.

Table 4.17: Model fit for the measurement model with threshold and interpretation

Measure	Estimate	Threshold	Interpretation
CMIN	2170.717	--	--
DF	758.000	--	--
CMIN/DF	2.864	Between 1 and 3	Excellent
CFI	0.901	>0.95	Acceptable
SRMR	0.046	<0.08	Excellent
RMSEA	0.073	<0.06	Acceptable
PClose	0.000	>0.05	Not Estimated

Source: Developed by author, based on Gaskin (2020)

Hair et al. (2010: 671) made it clear that to increase model fit: “a common mistake is to reduce the number of items per construct to only two or three”. In this analysis two variables remain with three items after assessing model fit: affective commitment to change (C2CA) items removed as part of the EFA and SWP HR flexibility (HRF) as part of this CFA procedure. Regarding the sub-scale C2CA, while it was part of the measurement model, the researcher did not test mediation hypothesis (H5a-d) in Amos but with the Hayes PROCESS macro, conducted in this chapter. However, the Cronbach's Alpha was 0.918 for the three remaining items. Regarding HRF, as discussed in Chapter 3, HRF was measured by a three item scale in previous research, see Ngo and Foley (2011). The remaining items, HRF_2, HRF_4 and HRF_5, are well suited in this analysis, so this should not pose a limitation to test the theory. Before removing each item during the CFA, the researcher checked Cronbach’s Alpha, and the three remaining items had a Cronbach's Alpha of 0.924. Regarding minimum items per construct, a good practice is to include a minimum of three items per factor (Hair et al., 2010).

4.3.5.2 Validity

Convergent validity

Validity is assessed differently in a CFA in comparison to an EFA. The Average Variance Extracted (AVE) establishes convergent validity in a CFA if the AVE for any given factor is above 0.500, which was the case for all variables, ranging from 0.591-0.803, implying no convergent validity issues (Hair et al., 2010; Gaskin, 2020).

Discriminant validity

For discriminant validity, the AVE square root should be higher than any correlation with another factor. The AVE should also be higher than the maximum shared variance (MSV). In this analysis, for HRP the AVE value (0.591) was slightly lower than the MSV (0.634).

Moreover, the AVE square root (0.769) was also slightly lower than its correlation with HRP (0.796), indicating a potential issue with discriminant validity (Hair et al., 2010; Gaskin, 2020). Before concluding an issue with discriminant validity, there is another test. The heterotrait-monotrait ratio (HTMT) tests discriminant validity with a recommended cut-off point at 0.900, or 0.850 as a more prudent threshold. Anything higher than this threshold indicates discriminant validity issues. However, the HTMT matrix shows that HRP and HRF are not too closely related (0.797), with a threshold below the more conservative 0.850 as is for all other factors, implying no discriminant validity issues, see Table 4.18 and for further output see **Appendix Q** (Hair et al., 2010; Gaskin, 2020).

Table 4.18: HTMT analysis to assess discriminant validity during CFA

	HRA	HRP	OCS	C2C_C	HRS	C2C_A	HRF
HRA							
HRP	0.724						
OCS	0.686	0.714					
C2C_C	0.487	0.528	0.499				
HRS	0.716	0.736	0.712	0.400			
C2C_A	0.348	0.506	0.478	0.228	0.391		
HRF	0.839	0.797	0.735	0.490	0.788	0.422	

Source: Developed by author, based on Gaskin (2020)

4.3.5.3 Factor reliability

Cronbach's Alpha demonstrates reliability; however, in the CFA a more precise measure called Composite Reliability (CR) is available. Any value higher than 0.700 demonstrates factor reliability (Hair et al., 2010; Gaskin, 2020). In this analysis, CR was higher than 0.900, which is highly related to the Cronbach's Alpha – reported Alpha's in Table 4.8 for C2CA and HRF were the same as CR – indicating internal consistency of the factors.

4.3.5.4 Common method bias (CMB)

Method bias, also discussed as common method variance, common method bias (CMB), the specific bias in the literature can inflate or deflate all the perceptual measures in a model (Gaskin, 2020). This is exemplified by social desirability, a construct related to the degree to which a respondent believes there is a certain desirable of responding to a questionnaire item (Gaskin, 2020). While there is still divergence in the literature, which leads to method bias, two harmful effects are known. The first effect is that method factors can result in wrong

perceptions related to a scale's reliability and convergent validity, potentially undervaluing corrected correlations. The other effect of uncontrolled method factors can result in bias parameters in the form of inflating, deflating, or even with no effect on estimates between two various constructs (Podsakoff et al., 2012). Different approaches exist to assess method bias statistically (Podsakoff et al., 2003; Gaskin, 2020). The most current approach is zero and equal constraints. Gaskin (2020) developed a plugin called "Amos-ModelBias" to test zero and equal constraints. The researcher was not able to run the analysis with this plugin and received an error message in SPSS Amos: "Solution could not be generated, try running the model without the model bias plugin to troubleshoot. This is not a plugin problem, but a model problem. Adding a common latent factor often creates instability in measurement models" (Gaskin, 2020). Since the model ran without the common latent factor (CLF) the researcher assessed method bias using variance inflation factors (VIFs); based on the summated scales, see Table 4.19.

Table 4.19: Assessing method bias using VIFs based on summated scales

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	HRS_NEW	.401	2.494
	HRP_NEW	.343	2.918
	HRF_NEW	.269	3.715
	HRA_NEW	.332	3.008
	C2CA_NEW	.774	1.292
	C2CC_NEW	.731	1.368

a. Dependent Variable: OCS_NEW

Source: Developed by author

Because multicollinearity is a symptom of method bias, multicollinearity is appropriate for testing method bias (Hair et al., 2010; Gaskin, 2020). Kock (2015: 5) cited in Gaskin (2020) states: "If all VIFs resulting from full collinearity test are equal or lower than 3.3, the model can be considered free of common method bias". In this analysis, only HRF_NEW was slightly missing this cut (3.715). However, tolerance values of less than 0.10 or a VIF above ten are discussed as cut-off points in the literature for determining the presence of multicollinearity (Hair et al., 2010, Pallant, 2013). In this analysis, the tolerance value for the independent variables was between 0.269 and 0.774, which is no less than 0.10 and VIF values all below 10; therefore, no violation of the multicollinearity assumption.

4.3.5.5 Measurement Invariance

Although not explicitly part of the research model and hypotheses testing, the researcher was interested in understanding the differences between different groups. Today most scholars would agree that there is a broad perception that organisational change is a complex, open-ended process of continuous adaption. Nevertheless organisational change should only be required if linked to an organisational purpose and values (Hughes, 2016; By, 2020). To address this challenge the researcher designed this survey to understand the current position of the change initiative. Therefore group one was looking at a well-established change initiative with scores 3, 4 and 5 (n=211) versus a completed change initiative with scores 6 and 7 (n=137). The US as a region dominates the majority of the SHRM research (Wright and Ulrich, 2017) so group two was looking at the US (n=59) versus the rest of the world (n=289).

To assess group differences at the structural level assessment of invariance is required at the measurement level. Without testing invariance, the results at the structural level potentially lead to false inference from the results. Hair et al. (2010) suggest six steps to test invariance in multigroup analysis; only after passing a step allows moving to the next: configural invariance, metric invariance, scalar invariance, factor covariance invariance, factor variance invariance, and error variance invariance. The first three tests of invariance, most frequently required by journals (Blunch, 2013; Gaskin, 2020). Configural invariance "exist when an acceptable fit is obtained from a multisample CFA model that simultaneously estimates a factor solution for all groups with each group configured with the same structure" (Hair et al., 2010: 689). Configural invariance, assessed by looking at model fit but this time for the two groups. Metric invariance "provides support that respondents use the rating scales similarly across groups so the differences between values can be compared directly" (Hair et al., 2010: 690). Metric invariance, analysed by looking at the chi-square between the unconstrained and constrained model with a p-value of greater than 0.05 in the model comparison output "measurement weights" table, indicates invariance. The factor constraint of 1 should not be on the regression weights but rather on the factor variance in order for Amos to run correctly. Scalar invariance "assesses the extent to which intercepts (means) of the measured variables are equivalent across groups in a multisample confirmatory factor analysis (MCFA)" (Hair et al., 2010: 692). Scalar invariance is assessed similarly to metric invariance; however, the factor constraint of 1 needs to be back on the regression weights. A p-value of greater than 0.05 in the output "assuming model measurement weights to be correct" indicates invariance.

Both groups did not pass the model fit test, and CFI causing issues. For group one, CFI was 0.831, and for group two, CFI was 0.841, below the > 0.95 or minimum > 0.90 value (Hair et al., 2010). It is not possible to establish model fit without significantly diminishing the underlying measurement model and theoretical foundation. Not passing the model fit test may be caused by splitting the groups and thereby reducing the sample size for each group. Without passing the invariance tests, the results at the structural level potentially lead to false inference from the results, hence not conducted for the SEM.

4.3.5.6 Higher-order models

It is essential to reflect this in higher-order models with multidimensional factors. The researcher assessed if it was feasible to include higher-order models into the measurement model (Gaskin, 2020). Lawler III and Boudreau (2009) measured the independent variable HR analytics (HRA), with nine-items exploring these three categories of workforce measures: efficiency, effectiveness and impact (Lawler III and Boudreau, 2009). Efficiency measures the relationship between resources that HR uses and the programs and practices that it creates. Effectiveness measures the relationship between HR programs and their effects on those that receive them. Impact measures the relationship between the effects of HR programs and the pivotal elements of business success (Boudreau and Cascio, 2017). It is however not suggested to use these categories as sub-scales as these “are valid and useful, but analytics can be confusing when measures in one category (e.g. efficiency) are presented or mistaken for another (e.g. impact)” (Boudreau and Cascio, 2017: 123). Moreover, during the EFA, all factors were loaded on HRA, indicating this should not be treated as a higher-order model.

The mediating variable commitment to organisational change comprises of two sub-scales in this analysis. Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly (Herscovitch and Meyer, 2002). As these sub-scales are theoretically measuring something else, and this was the intention of the mediation relationship in this research, indicating these variables should be treated separately and not as a higher-order model.

4.3.5.7 Methods representing scales for SEM analysis

Three methods can support the researcher in reducing model complexity to simplify the scales into composite measures for SEM analysis, see Table 4.20.

Table 4.20: Methods representing scales for SEM analysis

Method	Approach	Advantages	Disadvantages
The single surrogate variable	Based on the factor matrix selecting the variable with the highest factor loading on each factor to act as a surrogate variable that is representative of that factor	Easy to administer and interpret	Does not represent all facets of a factor; prone to measurement error
Factor scores	Factor score is computed based on the factor loadings of all variables on the factor	Represents all variables loading on the factor; best method for complete data reduction; are generally by default orthogonal, depending on the model to be estimated. It can avoid complications caused by multicollinearity	Interpretation more difficult because all variable contribute through-loading; challenging to replicate across studies
Summated scales	All the variables loading highly on a factor are combined, and the total is the replacement variable	Compromise between the surrogate variable and factor score options; reduce measurement error; represent multiple facets of a concept; easily replicated across studies	Include only the variables that load highly on the factor and exclude those having little or marginal impact; not necessarily orthogonal; require extensive analysis of reliability and validity issues

Source: Developed by author, based on Hair et al. (2010)

A simpler (parsimonious) model could be theoretically rigorous but would also be more generalizable (Blunch, 2013). The researcher used summated scales, as it is a compromise between the surrogate variable and factor scores. This is also easily replicated across studies with common method bias already assessed for the summated scales in this CFA analysis with no violation of the multicollinearity assumption.

4.3.5.8 Measurement model summary

The CFA was conducted in seven steps to assess the measurement model by addressing assessment of model fit, validity, reliability, common method bias, measurement invariance, higher-order models, and methods representing scales for SEM analysis. Acceptable model fit was achieved by reducing four additional items to 41-items. Convergent validity with AVE > 0.5 and discriminant validity with HTMT < 0.85 did not reveal any issues, as well as factor reliability CR > 0.9 (Hair et al., 2010; Gaskin, 2020). Regarding common method bias, the tolerance value for the independent variables was between 0.269 and 0.774, which is no less than 0.10 and VIF values all below 10; therefore, no violation of the multicollinearity assumption (Pallant, 2013; Hair et al., 2010).

Regarding measurement invariance, both groups did not pass the model fit test, and CFI causes issues. For group one, CFI was 0.831, and for group two, CFI was 0.841, below the > 0.95 or minimum > 0.90 value (Hair et al., 2010). It is not possible to establish model fit without significantly diminishing the underlying measurement model and theoretical foundation. Not passing the model fit test may be caused by splitting the groups and thereby reducing the sample size for each group. Without passing the invariance tests, the results at the structural level potentially lead to false inference from the results, hence not conducted for the SEM.

With multidimensional factors, it is essential to reflect this in higher-order models. The researcher assessed whether it was feasible to include higher-order models into the measurement model, which was not the case in this analysis. To reduce model complexity and simplify the scales into composite measures for SEM analysis the researcher used summated scales, a compromise between the surrogate variable and factor score options. This is also easily replicated across studies and includes common method bias already assessed for the summated scales in this CFA analysis with no violation of the multicollinearity assumption.

4.3.6 Structural equation modelling (SEM)

Before conducting any SEM analysis, it is essential to assess model fit again with the summated scales, see Table 4.21. The degrees of freedom dropped from the initial structural model without summated scales (DF: 759.000) to 1.000 in this structural model with summated scales, consequently not achieving the CMIN/DF threshold. However, the other measures indicate excellent model fit; hence, the structural model with summated scales was suitable to test the hypotheses.

Table 4.21: Model fit for the structural model with threshold and interpretation

Measure	Estimate	Threshold	Interpretation
CMIN	0.333	--	--
DF	1.000	--	--
CMIN/DF	0.333	Between 1 and 3	Need more DF
CFI	1.000	>0.95	Excellent
SRMR	0.005	<0.08	Excellent
RMSEA	0.000	<0.06	Excellent
PClose	0.704	>0.05	Excellent

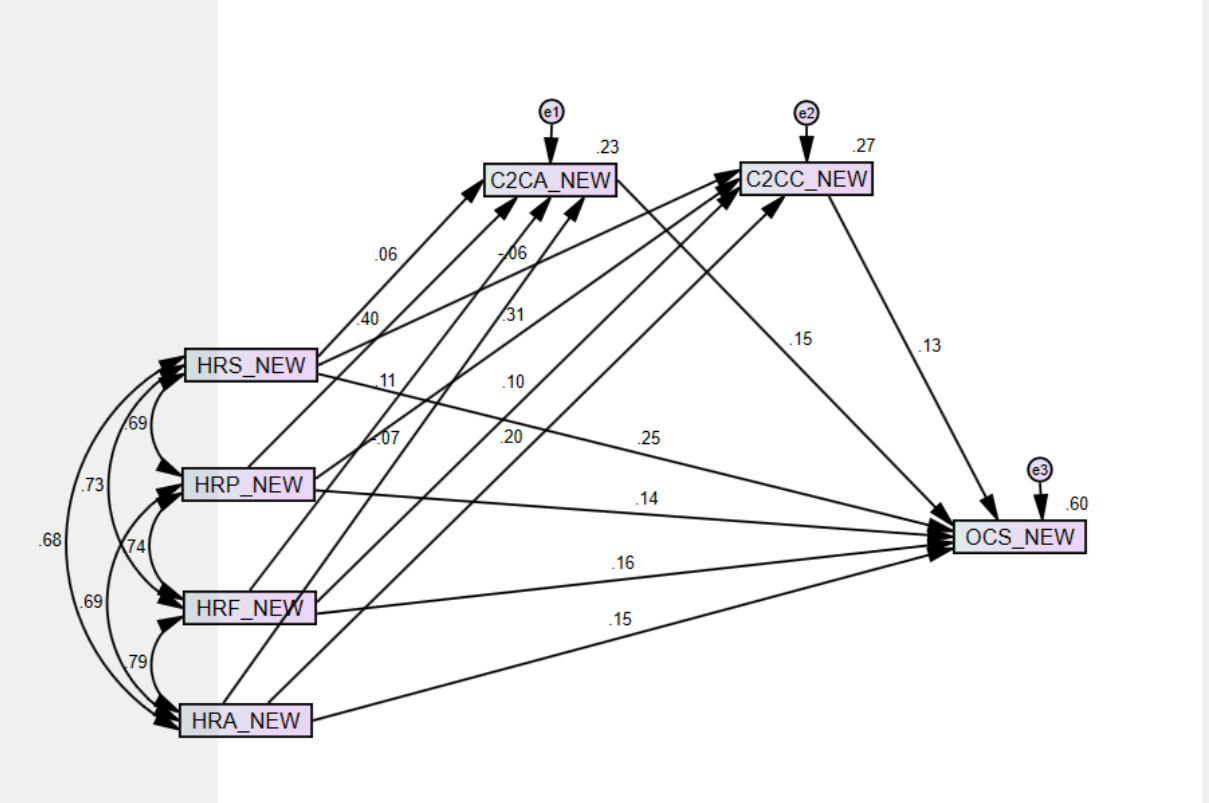
Source: Developed by author, based on Gaskin (2020)

The main output from the SEM procedure from SPSS Amos is presented in **Appendix R**. The researcher also utilises a range of plugins or macros that automate analytical procedures in SPSS Amos, developed by Gaskin (2020).

4.3.6.1 Hypotheses

The following structural model was used to test the hypotheses, see Figure 4.7. As discussed, hypothesis 5a-d was tested with the Hayes PROCESS macro for mediation analysis.

Figure 4.7: Structural model with summated scales



Source: Developed by author

As can be observed, the independent variables (exogenous) to the dependent variable (endogenous) have regression lines, also named betas, half-loadings or regression weights; similar from the independent variables to the mediator. The standardised regression weights are positive and range from .14 to .25 for H1-H4. At the same time, the correlation between the H1-H4 ranges from .68 to .79. The dependent and mediator variables have error terms (e1-e3) and display the R Square. The model summary showed a good R Square of 0.60, accounting for 60% of the variance on the dependent variable. Table 4.22 summarises the output for the regression weights for hypothesis H1-H4.

Table 4.22: Regression weights for hypothesis H1-H4

Hypothesis	Estimate	S.E.	C.R.	P
H1: OCS_NEW <--- HRS_NEW	.301	.065	4.603	.001
H2: OCS_NEW <--- HRP_NEW	.104	.043	2.430	.015
H3: OCS_NEW <--- HRF_NEW	.300	.122	2.470	.013
H4: OCS_NEW <--- HRA_NEW	.091	.035	2.570	.010

Source: Developed by author

Hypothesis 1 (H1): Strategic workforce planning HR strategy fit (HRS) will have a positive impact on organisational change success (OCS)

When HRS goes up by 1, OCS goes up by 0.301. The regression weight estimate, 0.301, has a standard error of 0.065. The regression weight estimate is 4.603 standard errors above zero. The probability of getting a critical ratio as large as 4.603 in absolute value is less than 0.001. In other words, the regression weight for HRS in the prediction of OCS is significantly different from zero at the 0.001 level (two-tailed), see Table 4.22; hence, H1 was accepted.

Hypothesis 2 (H2): Strategic workforce planning HR practice fit (HRP) will have a positive impact on organisational change success (OCS)

When HRP goes up by 1, OCS goes up by 0.104. The regression weight estimate, 0.104, has a standard error of 0.043. The regression weight estimate is 2.43 standard errors above zero. The probability of getting a critical ratio as large as 2.43 in absolute value is 0.015. In other words, the regression weight for HRP in the prediction of OCS is significantly different from zero at the 0.05 level (two-tailed), see Table 4.22; hence, H2 was accepted.

Hypothesis 3 (H3): Strategic workforce planning HR flexibility (HRF) will have a positive impact on organisational change success (OCS)

When HRF goes up by 1, OCS goes up by 0.3. The regression weight estimate, 0.300, has a standard error of 0.122. The regression weight estimate is 2.47 standard errors above zero. The probability of getting a critical ratio as large as 2.47 in absolute value is 0.013. In other words, the regression weight for HRF in the prediction of OCS is significantly different from zero at the 0.05 level (two-tailed), see Table 4.22; hence accepting H3.

Hypothesis 4 (H4): Strategic workforce planning HR analytics (HRA) will have a positive impact on organisational change success (OCS)

When HRA goes up by 1, OCS goes up by 0.091. The regression weight estimate, 0.091, has a standard error of 0.035. The regression weight estimate is 2.57 standard errors above zero. The probability of getting a critical ratio as large as 2.57 in absolute value is 0.010. In

other words, the regression weight for HRA in the prediction of OCS is significantly different from zero at the 0.01 level (two-tailed), see Table 4.22; hence accepting H4.

4.3.6.2 Control variables

Typical control variables in past research are the size of an organisation, the number of employees working in HR and the organisation, location, type of industry and level of unionization. In particular, there were three control or dummy variables most frequently used: organisation size in terms of the number of employees, one industry in comparison to other industries and comparison of regions (Ngo and Foley, 2011; Bernerth and Aguinis, 2016; Wright and Ulrich, 2017; Cooke, 2018; Wright et al., 2018; Cafferkey et al., 2019; Han et al., 2019; Hauff, 2019; Rogozińska-Pawełczyk, 2020; Yasir and Majid, 2020).

Controlling for organisation size

Controlling for three different organisation sizes: small with less than 1,000 employees (n=69); medium between 1,001 and 50,000 employees (n=125) and large over 50,001 employees (n=121). None of the control variables effected the dependent variable *(p* > 0.05). However, small organisations with less than 1,000 employees have the weakest effect (*p* = 0.335).

Controlling for industry

The researcher controlled for the largest industry in this analysis is the sector professional services (n=73) to all other industries (n=265). Professional services just slightly missed the cut to be statistically significant on the dependent variable (*p* = 0.052).

Controlling for regions

Three regions were controlled for North America (n=70), Europe (n=223) and Asia (n=55). Due to the small sample size of Asia, Amos did not allow running the three regions together, so they were run separately. None of the control variables affected the dependent variable *(p* > 0.05). However, Europe as a region had the weakest effect (*p* = 0.311).

Table 4.23 summarises the output from the analysis, including control variables in the structural model.

Table 4.23: Output from including control variables

Control variables			Estimate	S.E.	C.R.	P
OCS_NEW	<---	OrgSizeLarge	-1.638	.972	-1.686	.092
OCS_NEW	<---	OrgSizeMedium	-1.363	.960	-1.419	.156
OCS_NEW	<---	OrgSizeSmall	-1.004	1.042	-.964	.335
OCS_NEW	<---	ProfServices	1.274	.656	1.941	.052
OCS_NEW	<---	NorthAmercia	1.467	.896	1.636	.102
OCS_NEW	<---	Europe	.753	.743	1.013	.311
OCS_NEW	<---	Asia	-.910	.728	-1.250	.211

Source: Developed by author

4.3.6.3 Structural model summary

Model fit was assessed again with the summated scales, confirming the excellent model fit, so the structural model was suitable to test the hypotheses. Moreover, common method bias already assessed for the summated scales in this CFA analysis with no violation of the multicollinearity assumption.

Hypothesis 1-4 could be accepted as these were all statistically significant with the following p-values, H1 $p < 0.001$, H2 $p = 0.015$, H3 $p = 0.013$ and H4 $p = 0.010$.

Three control or dummy variables were included in this analysis, in line with those most frequently used in the literature: organisation size in terms of the number of employees, one industry in comparison to other industries and comparison of regions. None of the control variables affected the dependent variable, and the control variables were not statistically significant *(*$p > 0.05$).

4.4 Chapter summary

The survey feasibility study accomplished its most crucial objective, to confirm Mercer practitioners' interest in the research study, and confirmed the relevancy to conduct a global online survey. The survey attracted 497 responses, including 63 participants collected during the pilot online study. After preparing, screening, and cleaning data, the final sample size was 348 participants from 40 countries clustered into three central regions: Europe with 223 participants, North America with 70 participants, and the Asia Pacific region with 55 participants.

Mediation analysis with the use of the Hayes PROCESS macro for SPSS

As the comparison to previous research is an essential theoretical foundation in this mediation analysis, regression analysis for mediation with the use of the Hayes PROCESS

macro was conducted before the factor analysis with the original items. The assumptions were checked for interpretation and statistical inference for regression analysis such as linearity, normality, homoscedasticity, and independence, before commencing the mediation analysis. The mediation analysis was conducted in three steps: looking at the direct effect X on Y, the total effect X on Y and the indirect effect of X on Y through M. The final step tested the mediation of the relationship between the independent variables and dependent variable organisational change success (OCS). In other words, the indirect effect of X on Y mediated by a commitment to organisational change – the mediator variable M. The direct effect X on Y analysis is summarised in Figure 4.6. For HRP and continuance commitment to change, M predicting Y (b), the direct effect of C2CC on OCS was positive and not statistically significant $b = 0.077$, $t(345) = 1.821$, $p = 0.069$, indicating that C2CC has a positive impact on OCS but was not statistically significant.

Regarding the total effect X on Y, the effect from HRS, HRP, HRF, and HRA to OCS was positive and statistically significant. In other words, this indicates that each of the four independent variables have a positive impact on organisational change success (OCS), also confirmed during SEM hypotheses testing. Apart from H5b, continuance commitment to organisational change (C2CC), the indirect effect was statistically significant as above zero at the 95% bootstrap confidence interval. Implying affective (C2CA) and continuance commitment to change (C2CC) mediated the positive relationship between the four independent variables and the dependent variable organisational change success (OCS).

Exploratory factor analysis (EFA) with SPSS

During the EFA, a maximum likelihood (ML) ran on a 56-item questionnaire that measured organisational change success on 348 companies. The suitability of ML was assessed before analysis. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient higher than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.965. Bartlett's test of sphericity was statistically significant ($p < 0.05$), indicating that the data was likely factorizable. ML revealed seven-component that had eigenvalues higher than one and which explained 50.522%, 5.111%, 4.890%, 2.940%, 2.889%, 2.219% and 1.628% of the total variance, respectively. Visual inspection of the scree plot indicates retaining seven components. The seven-component solution explained 73.892% of the total variance. A Promax rotation was employed to aid interpretability. Following convergent and discriminate validity guidelines, reducing the questionnaire by 11-items. Reliability was assessed for each factor separately and only items remaining after the EFA included in the reliability assessment with all Cronbach’s Alpha higher than 0.9. As a result, the final model contains 45-items as the basis for the CFA.

Confirmatory factor analysis (CFA) with SPSS Amos

The CFA was conducted in seven steps to assess the measurement model by addressing assessment of model fit, validity, reliability, common method bias, measurement invariance, higher-order models, and methods representing scales for SEM analysis. Acceptable model fit was achieved by reducing four additional items to 41-items. Convergent validity with AVE > 0.5 and discriminant validity with HTMT < 0.85 did not reveal any issues, as well as factor reliability CR > 0.9 (Hair et al., 2010; Gaskin, 2020). For common method bias, the tolerance value for the independent variables is between 0.269 and 0.774, which is no less than 0.10 and VIF values all below 10; therefore, no violation of the multicollinearity assumption (Pallant, 2013; Hair et al., 2010). For measurement invariance, both groups did not pass the model fit test, and CFI caused issues. For group one, CFI was 0.831, and for group two, CFI was 0.841, below the > 0.95 or minimum > 0.90 value (Hair et al., 2010). It was not possible to establish model fit without significantly diminishing the underlying measurement model and theoretical foundation. Not passing the model fit test could be caused by splitting the groups and thereby reducing the sample size for each group. Without passing the invariance tests, the results at the structural level potentially lead to false inference from the results, hence not conducted for the SEM. With multidimensional factors, it is essential to reflect this in higher-order models. The researcher assessed if it is feasible to include higher-order models into the measurement model, which was not the case in this analysis. To reduce model complexity and simplify the scales into composite measures for SEM analysis the researcher used summated scales, a compromise between the surrogate variable and factor score options. This is easily replicated across studies and common method bias was already assessed for the summated scales in this CFA analysis with no violation of the multicollinearity assumption.

Structural equation modelling (SEM) with SPSS Amos

Model fit was assessed again with the summated scales, confirming the excellent model fit, so the structural model is suitable to test the hypotheses. Moreover, common method bias already assessed for the summated scales in this CFA analysis with no violation of the multicollinearity assumption. Hypothesis 1-4 could be accepted as these are all statistically significant with the following p-values, H1 $p < 0.001$, H2 $p = 0.015$, H3 $p = 0.013$ and H4 $p = 0.010$. Three control or dummy variables were included in the analysis, in line with the most frequently used in the literature: organisation size in terms of the number of employees, one industry in comparison to other industries and comparison of regions. None of the control variables affects the dependent variable, the control variables not statistically significant ($p > 0.05$).

Table 4.24 summarises the output and findings from hypothesis testing performed in this chapter.

Table 4.24: Summary of findings from hypothesis testing

Hypothesis	Link to survey feasibility study	Research questions	Results
H1: Strategic workforce planning HR strategy fit (**HRS**) will have a positive impact on organisational change success	Item #1: Strategic workforce planning links HR strategy with business strategy	What is the impact of strategic workforce planning on organisational change success?	Accepted with $p < 0.001$
H2: Strategic workforce planning HR practice fit (**HRP**) will have a positive impact on organisational change success	Item #2: Understanding critical roles and required capacity (how many) but also capability (what skills/competencies) that lead to competitive advantage		Accepted with $p = 0.015$
H3: Strategic workforce planning HR flexibility (**HRF**) will have a positive impact on organisational change success	Item #5: SWP is an ongoing management decision-making process, not a one-day event		Accepted with $p = 0.013$
H4: Strategic workforce planning HR analytics (**HRA**) will have a positive impact on organisational change success	Item #13: Workforce analytics, not just generic benchmarks but industry-specific KPIs are critical for monitoring and tracking	Do workforce analytics, as part of SWP, positively affect change implementation effectiveness?	Accepted with $p = 0.010$
H5a-d: Affective commitment to organisational change (**C2CA**) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)	Item #7: HR manages, moderates, owns "drives" the change process but line management owns the plan to ensure its implementation and get people involved	Does commitment to organisational change mediate the relationship between HRS/HRP/HRF/HRA and organisational change success?	Accepted The indirect effect is statistically significant as above zero at the 95% bootstrap confidence interval, implying mediation
H5a-d: Continuance commitment to organisational change (**C2CC**) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)			Partially accepted Apart from H5b, the indirect effect is statistically significant as above zero at the 95% bootstrap confidence interval, implying mediation

Source: Developed by author

The next chapter covers the discussion of findings from the data analysis.

5 Discussion of findings

5.1 Introduction

Chapter 4 included the data analysis and statistical results for the online survey, including findings from hypotheses testing. Chapter 5 discusses the findings in detail.

5.2 Online survey

SWP aligns core business processes to SHRM related changes and organisational needs, and so are viewed as an enabler of organisational change in this research context, presented in Chapter 1. As introduced in Chapter 2, prior research did not pay enough attention to the research context nor did it sufficiently address issues with common method bias to enhance rigour (Jian and Messersmith, 2018). This study addressed method bias and incorporate procedural or preventive measures in the research design process, introduced in Chapter 3 and statistical remedies, as part of the confirmatory factor analysis, introduced in Chapter 4. Moreover, SEM confirmed the research model 2.0, introduced in Chapter 3 and the structural model, introduced in Chapter 4. The central and the two sub-research questions with corresponding hypotheses structure the discussion of the findings in more detail.

5.2.1.1 What is the impact of strategic workforce planning on organisational change success?

Despite resonating with the current fit and flexibility discussion and the impact on organisational performance, SWP is an essential but often missing piece in the SHRM literature. According to Ayandibu and Kaseeram (2020: 127), “a review of empirical literature reveals that workforce planning has a strong relationship with organisational performance as well as productivity”. This study addressed the critical empirical issues that surfaced in HRM and performance research referred to as the “black box” meaning difficulties in capturing multiple dimensions of fit and not paying attention to context (Farndale and Paauwe, 2018). This research context provided an opportunity to develop a potential new outcome or dependent variable, such as organisational change success, since more relevant due to issues with existing methods measuring outcomes of SHRM (Wright et al., 2018). According to Kehoe, 2019:12 “while a focus on horizontal fit and vertical fit represents just one of many potential starting points from which we might advance the SHRM literature”. Wright et al. (2018: 157): “identified four key tensions facing the field going forward. These tensions can be seen in that there seem to be research streams that look at one side of the tension (e.g., HR practices, fit, and commitment) or the other (e.g., human capital, flexibility, and control)

but not both". This thesis employed SWP related concepts of fit – both vertical and horizontal – and flexibility (dynamic capability) with hypotheses 1-3.

Hypothesis 1 (H1): Strategic workforce planning HR strategy fit (HRS) will have a positive impact on organisational change success (OCS)

The first part of the tension related to vertical fit and SWP as an enabler of organisational change will positively affect the alignment of business strategy with HR strategy (Lengnick-Hall et al., 2009). The first hypothesis proposed to investigate the notion of HR strategy fit or vertical fit is widely discussed in the literature. SWP aligns HR strategies with business strategies, despite numerous studies published; the empirical research that supports the vertical fit perspective is somewhat limited. There are still issues with measuring outcomes of SHRM due to limited dependent variables (e.g. Miles and Snow, 1984, Wright, Smart, and McMahan, 1995, Youndt, Snell, Dean, and Lepak, 1996, Delery, 1998, Batt, 2000, Kepes and Delery, 2007, Kehoe and Collins, 2008, Azmi, 2010, Chadwick, Aslam, 2013, Way, Kerr, and Thacker, 2013, Kehoe, 2019). SEM revealed that HRS has a positive impact on organisational change success and not just organisational performance. When HRS goes up by 1, OCS goes up by 0.301. The regression weight estimate, 0.301, has a standard error of 0.065. The regression weight estimate is 4.603 standard errors above zero. The probability of getting a critical ratio as large as 4.603 in absolute value is less than 0.001. In other words, the regression weight for HRS in the prediction of OCS is significantly different from zero at the 0.001 level (two-tailed); hence, H1 was accepted with $p < 0.001$. Indicating that organisations aligning business strategy and SWP, with HR regarded as a vital asset, can achieve organisational change success. Since HR activities are consistent with the organisational vision, this implies increased organisational change success as the statistical results indicate. Christiansen and Higgs (2008) investigated how the alignment of HR strategy and business strategy leads to enhanced organisational performance. Based on Miles and Snow (1986) theories of strategic typologies, the study confirmed that organisations with tight and minimal alignment achieved a higher level of performance in comparison to firms that have a misalignment. This study showed that due to the alignment of HR strategies with business strategies and the integration of HPWS, SWP becomes a vital activity integrated into the business planning process with top management trained in utilising SWP. Hence, organisations can take a conscious effort to align business with HR strategies, considering HR integral to business strategy with HR activities designed to suit the business strategy. Ulrich and Grochowski (2018) in their current study with over 100,000 participants identified nine dimensions required today for an HR department to be effective in organisations. Within each dimension Ulrich and Grochowski (2018) identified four stages of value delivery by HR: on the administrative (efficiency), functional, strategic (both

effectiveness) and for stakeholder outside the organisations (impact). For the dimension HR strategy, in a way, these study results are somewhat consistent with the findings of Ulrich and Grochowski (2018: 3) arguing that if carrying out strategic work than HR departments "are strategic thinkers, strongly versed in business acumen and HR solutions. We serve line managers by understanding the critical capabilities the business needs and we prioritize our work based upon those needs". Interestingly, this indicates a business partner model. At the same time, the literature suggests that HR is not able to execute the strategic business partner model and not strategic enough in implementing and executing the HR strategy and aligning employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018). This suggests that the HR function in this study is more advanced than the literature generally suggests and even contrary to the result of the survey feasibility study. The researcher anticipated this finding since the largest sector in this study, professional services generally provide advice to clients and are therefore skilled in advising, and utilising SWP related concept enabling managing and measuring organisational change. HR as a function makes up the largest share; over 40% of participants are indeed operating a business partner model in their organisations. Looking at the global number of employees for nearly 60% of participants, this means they work at organisations with over 10,000 employees, so larger firms. Hence, it is not too surprising to uncover that the business partner model is in use, as large organisation tend to be more advanced in their HR work.

Hypothesis 2 (H2): Strategic workforce planning HR practice (HRP) fit will have a positive impact on organisational change success (OCS)

As discussed, past SHRM research predominantly focused on the manufacturing industry with a need to understand interconnected HR practices better to enhance the skills, competencies, and effort of employees that could also be a potential source for competitive advantage (Ngo and Foley, 2011, Paracha et al., 2014, Han et al., 2019). This research study explored HR practices in different industries. These HR practices referred to as "high commitment" and "high involvement" HR practices. SWP as an enabler of change is positively related to the integration of high-performance work systems with HR strategy or horizontal fit. Hence, the second hypothesis was developed to explore the tension of horizontal fit identified in the literature. Horizontal fit integrates and aligns distinct HR activities, such as several HR practices, conceptually referred to as high-performance work systems (HPWS). These HPWS include, for instance, selective hiring, extensive training, job design programs, formalised performance appraisal, self-managed teams, performance-based compensation, employment security and internal promotion supporting one another (Altarawneh, 2016). For example, Batt (2002) was one of the first contributors that empirically tested HPWS in a call centre environment and "demonstrated that establishments

implementing the high-performance work systems had lower employee quit rate and higher sales growth" (Napathom, 2018: 64).

The empirical research on horizontal fit, specifically on the concept of a high-performance work system (HPWS), has consistently found that this fit leads to better organizational performance outcomes. However, there are still issues with measuring the outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance (e.g. Arthur, 1994; MacDuffie, 1995; Huselid, 1995; Delery, 1998; Batt, 2002; Combs, Liu, Hall, and Ketchen; 2006, Ngo and Foley, 2011; Paracha et al., 2014; Han et al., 2019). SEM revealed that HRP has a positive impact on organisational change success and not just organisational performance. When HRP goes up by 1, OCS goes up by 0.104. The regression weight estimate, 0.104, has a standard error of 0.043. The regression weight estimate is 2.43 standard errors above zero. The probability of getting a critical ratio as large as 2.43 in absolute value is 0.015. In other words, the regression weight for HRP in the prediction of OCS is significantly different from zero at the 0.05 level (two-tailed); hence H2 was accepted with $p = 0.015$, consistent with previous studies. Indicating that organisations need formal job duties and descriptions so that employees know their roles and responsibilities, thereby providing fairness and transparency. In a similar vein, a formal process of performance appraisals is equally essential to provide feedback to employees. Individual bonuses or incentive pay linked to change milestones can entice and motivate employees, coupled with opportunities for employees to continue to learn and grow. Providing employees with challenging opportunities to thrive, and giving employees the discretion to complete tasks as they see fit is a vital empowerment mechanism that may consistently increase productivity. Just as important is communication and managers regularly sharing information with employees through organisation-wide meetings during change initiatives. Given employee are social beings, the sponsoring of social events so that employees can network, also boosting morale, and commitment. This implies that organisations utilising HPWS, specifically in the form of formalised job duties and descriptions, and a formal process of performance appraisals, feedback, incentive pay, learning, discretion to complete the task, communication and networking results in organisational change success, is somewhat consistent with the literature (Ngo and Foley, 2011; Paracha et al., 2014; Han et al., 2019).

An interesting finding of this study is that organisations realise that they will have to develop their employees to fill open positions rather than rely on the labour market. Resonating well with a common challenge for organisations across industries all over the globe that is well-published in the talent management literature: identifying, attracting, recruiting, developing and retaining talent, a central activity in Strategic Workforce Planning (SWP), regarded as a

critical resource to achieve lasting competitive advantage (Gallardo-Gallardo et al., 2020). Regarding attracting and recruiting prospects, this means that organisations are building their talent internally rather than buying or borrowing externally. However, when evaluating job candidates, organisations focus on determining if they fit the organisations' values following the logic of selective hiring, consistent with the literature (Altarawneh, 2016).

Hypothesis 3 (H3): Strategic workforce planning HR flexibility (HRF) will have a positive impact on organisational change success (OCS)

SWP as an enabler of change will positively affect an organisation's adaptability to changing organisational settings. Hence, the third hypothesis was developed to explore the tension of flexibility identified in the literature. According to Mayo (2015: 180) "this systematic planning process enables organisations to take proactive action to fill gaps ahead of time", allowing to respond more flexibly to changing organisational settings. The literature increasingly emphasised the concept of flexibility in SHRM research (Wright and Snell, 1998; Becker and Huselid, 2006; Lengnick-Hall et al., 2009; Wright et al., 2018). For any "successful transformation to a new and innovative business model is largely dependent on a firm's dynamic capabilities" identified as an essential capability to thrive in the "New Normal" environment (Loon et al., 2020: 719). The concept of HR flexibility is related to a dynamic capability enabling organisations to respond to changing external but also internal conditions to create sustainable value by also exploring the relationship between HR flexibility and firm performance (Eisenhardt and Martin, 2000; Bhattacharya et al., 2005; Lengnick-Hall et al., 2009). HR flexibility comprises three dimensions: employee skills (redeployment and application of different skills), employee behaviour (adjusting to changing circumstances), and HR practices: "the extent to which the firm's HR practices can be adapted and applied across a variety of situations" (Wright and Snell, 1998; Bhattacharya et al., 2005: 33). In particular, the last dimension of HR practices flexibility somewhat reflected in the SWP concept confirmed by experts during the survey pre-test. It "examines the gap between staff availabilities (internal and external to the organization) and staffing requirements (to perform tasks in the organization) over time, and prescribes courses of action to narrow such a gap" or mitigate HR-related risks (Doumic et al., 2017: 11). However, this HR flexibility is not explicitly differentiating by resource and coordination flexibility (Ketkar and Sett, 2009; Way et al., 2015). More recently the Human Resource Management Review published five articles that underline the importance of the concept of HR flexibility, framing it as strategic agility providing organisations with the opportunity responding to ongoing changes with HR management (Ahammad et al., 2020). The empirical research that supports HR flexibility is somewhat limited. There are still issues with measuring outcomes of SHRM due to limited dependent variables – failure to consider more than bottom-line performance (e.g. Wright

and Snell, 1998, Bhattacharya, Gibson and Doty, 2005, Ngo & Loi, 2008, Ketkar & Sett, 2010, Way et al., 2015).

Moreover, this research study recognised that irrespective of planned or unplanned "change is only required when linked to organizational purpose and in line with organizational values. Change for the sake of change is harmful and will result in change fatigue" (Al-Haddad and Kotnour, 2015, Ahammad et al., 2020, By, 2020:4). The dynamics of change (planned or unplanned) is reflected in the form of flexibility as a construct, acknowledging that organisations interact with an external environment – irrespective of change methods employed by organisations. SEM revealed that HRF has a positive impact on organisational change success and not just organisational performance. When HRF goes up by 1, OCS goes up by 0.3. The regression weight estimate, 0.300, has a standard error of 0.122. The regression weight estimate is 2.47 standard errors above zero. The probability of getting a critical ratio as large as 2.47 in absolute value is 0.013. In other words, the regression weight for HRF in the prediction of OCS is significantly different from zero at the 0.05 level (two-tailed); hence accepting H3 related to the sub-scale HR practices flexibility with $p = 0.013$.

Way et al. (2015) have noted that virtually all of the research on HR flexibility tests for a positive relationship between it and performance. However, the theory underlying flexibility would indicate that the importance of flexibility and thus, its relationship with performance depends upon the dynamicity and predictability within the firm's external environment (Way et al., 2015). Because investments in flexibility may be costly, one would expect a positive relationship only in dynamic environments; in stable environments, the cost of building flexibility might far outweigh its benefits (Way et al., 2015). However, "strategic flexibility enhances employees' commitment to their firms because they believe that their firms can advance by responding to change" (Takaishi et al., 2016: 550). This study addressed change types in terms of scale and duration of the change by acknowledging that the line between continuous and discontinuous change, too often blurred in practice and hard to distinguish meaningfully (Al-Haddad and Kotnour, 2015, Heyden et al., 2017, By, 2020). This study differentiates between small-scale change, such as continues improvement projects, versus large-scale discontinuous change, such as an M&A in organisations in the introduction to parts 1-3 in the survey. Regarding the duration of change, this study captured the current position of the change initiative, from recently started to fully completed to reflect that dimension of change. All participants referred to either a well-established organisational change initiative (61%) with scores 3, 4 and 5 or a fully completed organisational change initiative (39%) with scores 6 and 7, somewhat consistent with Way et al. (2015) findings, implying organisations that participate in the survey operate in dynamic environments.

5.2.1.2 Do workforce analytics, as part of SWP, positively affect change implementation effectiveness?

The SHRM literature did not get extensive consideration on workforce analytics but identified as "one way for further research to make truly novel contributions may be to research activities HR professionals are regularly involved in" (Markoulli et al., 2017: 18). In a recent study from eight organisations utilising HR analytics for SHRM, Qadir and John (2019) identified reasons why HR analytics is not in use and challenges for companies. Organisations stated lack of competencies and complexity as reasons for not using HR analytics, while challenges include cost factor and data quality for organisations (Qadir and John, 2019). Despite this "claims have been made about the extent to which talent analytics can contribute to business performance, we still lack a theoretical framework that allows one to identify the channels through which the deployment of talent analytics may have an impact on organizational performance" (Nocker and Sena, 2019: 2). The HR analytics as a management fad argument somewhat shared by Angrave et al. (2016: 9), concluded that "contrary to optimistic accounts from industry sources, we can see little evidence that HR analytics is developing into a 'must have capability', which will ensure HR's future as a strategic management function". Moreover, "a little more confrontation here and there could be a good thing to move the practice of workforce analytics further into the realm of improving strategy execution and organizational effectiveness" (Levenson, 2018: 698). Accounting rules provide little guidance for managing, measuring, and evaluating the return on HR investments that drive an organisation's performance. At the same time, cost-based approaches are only partly suitable to conduct a cost-benefit analysis (utility analyses) of HR programs, e.g. training costs, cost-per-hire, and HR processes (Pastor et al., 2017, Mokhnenko et al., 2019). Moreover, the HC Bridge decision framework and LAMP model provide solid theoretical foundations; yet the HR scorecard remains the most frequent analytics framework used by organisations today (Lawler and Boudreau, 2015, Rasmussen and Ulrich, 2015, Angrave et al., 2016, Marler and Boudreau, 2017, Ben-Gal, 2019).

Hypothesis 4 (H4): Strategic workforce planning HR analytics (HRA) will have a positive impact on organisational change success (OCS)

HR functions frequently collect data on their efficiency but not on the impact of their practices on the business (Ben-Gal, 2019). However, organisations can collect three different kinds of HR metrics related to efficiency, effectiveness and impact measures (Boudreau and Cascio, 2017; Marler and Boudreau, 2017). These "HR metrics and workforce analytics can be used as a tool to improve organisational outcomes", or in this research context organisational change success (Ayandibu and Kaseeram, 2020: 127). SWP "builds upon quantitative

activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organizational strategy" (Human Capital Institute, 2018). This research study explored HR analytics in the form of HR metrics that measure not only efficiency but also the effectiveness of, for example, the long-term effects of HR programs and (future) impact of changes in HR programs and processes today (Lawler and Boudreau, 2015; Rasmussen and Ulrich, 2015; Angrave et al., 2016; Marler and Boudreau, 2017; Ben-Gal, 2019). Hence, the fourth hypothesis investigated the concept of HR analytics identified in the literature. Empirical research that supports the relationship of HR analytics organisational outcomes is somewhat limited, also due to a lack of a tested theoretical framework (Mondore et al., 2011; Rasmussen and Ulrich, 2015; Angrave et al., 2016; Cuozzo et al., 2017; Marler and Boudreau, 2017; Osinski et al., 2017; Pedro et al., 2018; Ulrich and Grochowski, 2018; Ben-Gal, 2019; Hamilton and Sodeman, 2020; Kaufman et al., 2020; Lepenioti et al., 2020; Lochab and Kumar, 2020; Nicolaescu et al., 2020). SEM revealed that HRA has a positive impact on organisational change success. When HRA goes up by 1, OCS goes up by 0.091. The regression weight estimate, 0.091, has a standard error of 0.035. The regression weight estimate is 2.57 standard errors above zero. The probability of getting a critical ratio as large as 2.57 in absolute value is 0.010. In other words, the regression weight for HRA in the prediction of OCS is significantly different from zero at the 0.01 level (two-tailed); hence accepting H4 with $p = 0.010$. This implies that an integrated HR analytics function utilising HR metrics leads to organisational change success and supports firms with measuring change implementation effectiveness. Not much of a surprise, since organisations not only measure the financial efficiency of HR operations but also collect metrics that measure the current costs and the impact of future changes in HR programs and processes. The use of an HR dashboard and scorecards blending internal data with external benchmarks supports organisations enabling SWP efforts during organisational change initiatives. Advanced competencies in conducting cost-benefit analyses, so-called utility analyses and understanding the long-term effects of HR programs (e.g. learning from training, motivation from rewards) are equally important as measuring the quality of talent decisions by non-HR-leaders of the business. This is somewhat consistent with the literature, since effective change implementation is blending top-down with bottom-up approaches (Heyden et al., 2017; Edwards et al., 2020). Measuring the business impact of high versus low performance in jobs indicates that organisations create transparency in their effort to develop and retain top talent. As discussed, this resonates well with a common challenge for organisations across industries all over the globe that is well-published in the talent management literature: external activities identifying, attracting, recruiting but gaining more importance is the developing and retaining talent, a central activity in Strategic

Workforce Planning (SWP), regarded as a critical resource to achieve lasting competitive advantage (Gallardo-Gallardo et al., 2020). Levenson (2018: 695) argues that "currently, ROI is the gold standard for evaluating the financial benefits of an organizational change or existing process". This study shows that it is also essential to use the right blend of efficiency, effectiveness, and impact measures that enable organisations SWP efforts during organisational change initiatives, positively improving an organisational outcome, in the form of organisational change success.

5.2.1.3 Does a commitment to organisational change mediate the relationship between HRS/HRP/HRF/HRA and organisational change success?

Prior research did not focus on the elements that enable and measure successful change and enhance organisational performance sufficiently. In particular, this study explored the concept of organisational commitment to change that may enhance organisational change success. SWP is a vital but often missing piece in the organisational change literature (Al-Haddad and Kotnour, 2015; Lengnick-Hall et al., 2009; Wright et al., 2018). As discussed with hypotheses 1-4, SWP (SHRM concepts of fit, flexibility, and HR analytics) can act as an enabler of change with a commitment to change acting as a mediator, introduced in Figure 1.1 and Figure 1.2. This resonates well with gaps and issues identified in the SHRM literature and follows the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance. The commitment to change construct comprises of three items: affective commitment, continuance commitment and normative commitment (Adam et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019). Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly. Normative commitment is the obligation supporting the change initiative. In particular, affective and normative commitment to change was associated with championing change, i.e. higher levels of support for change as opposed to continuance commitment. However, normative commitment is not always applicable in different cultural settings (Herscovitch and Meyer, 2002; Cunningham, 2006; Raveendran and Gamage, 2019). Hence, the normative commitment sub-scale was dropped, following suggestions by academic supervisors and practitioners during the survey pre-testing phase.

H5a-d: Commitment to organisational change (C2C) mediates the positive relationship between HRS/HRP/HRF/HRA and organisational change success (OCS)

As comparison to previous research is an essential theoretical foundation in this mediation analysis, regression analysis for mediation with the use of the Hayes PROCESS macro was

conducted before the factor analysis with the original items. The assumptions were checked for interpretation and statistical inference for regression analysis such as linearity, normality, homoscedasticity, and independence, before commencing the mediation analysis. The mediation analysis was conducted in three steps: looking at the direct effect X on Y, the total effect X on Y and the indirect effect of X on Y through M. The final step tested the mediation of the relationship between the independent variables and dependent variable organisational change success (OCS). In other words, the indirect effect of X on Y mediated by a commitment to organisational change – the mediator variable M. For HRP and continuance commitment to change, M predicting Y (b), the direct effect of C2CC on OCS is positive and not statistically significant $b = 0.077$, $t(345) = 1.821$, $p = 0.069$, indicating that C2CC has a positive impact on OCS but not statistically significant. Regarding the total effect X on Y, the effect from HRS, HRP, HRF, and HRA to OCS is positive and statistically significant. In other words, this indicates that each of the four independent variables have a positive impact on organisational change success (OCS), also confirmed during SEM hypotheses testing.

Apart from H5b, continuance commitment to organisational change (C2CC), the indirect effect is statistically significant as above zero at the 95% bootstrap confidence interval. Implying affective (C2CA) and continuance commitment to change (C2CC), apart from H5b, mediates the positive relationship between the four independent variables and the dependent variable organisational change success (OCS). For C2CC the findings in the literature suggest either a negative or neutral effect and for C2CA a positive mediation effect (Bouckenooghe et al., 2015; Da Camara et al., 2015; Soumyaja et al., 2015; Adam et al., 2018; Hendri Muhammad, 2019; Raveendran and Gamage, 2019; Ahammad et al., 2020; By, 2020; Edwards, 2020). Prior studies “indicate that organizational commitment mediates organizational change”, in particular, affective commitment in line with these research findings (Iverson, 1996 and Yousef, 2000, cited in Takaishi et al., 2016; Adam et al., 2018). As these research findings confirm, “affective commitment to change was found to have significant effect on the success of the change implementation” (Parish, et al., 2008, cited in Soumyaja et al., 2015: 15). In a similar vein, “committed employees contribute more to organizations; such employees willing work for their institutes and enhance their own capability and have positive impact on organizational performance” or organisational change success (Khan, 2020: 95).

Regarding continuance commitment to change, as mentioned it reflects an external pressure to support a change and a perceived cost or risk associated with not supporting the change. “Studies frequently have shown that this form of commitment is negatively related or unrelated to such desirable outcomes such as job performance”, or in this research study organisational change success (Meyer et al., 2002; Parish et al., 2008, cited in Soumyaja et

al., 2015: 15; Chao, 2018). Contrary to expectations but shown in the results, C2CC mediates the positive relationship between HRS/HRF/HRA and OCS with statistical significance. One explanation to this counterintuitive finding might be related to the sample of this research study. However, the demographic analysis showed a diversified sample with different sectors. Perhaps a better explanation is that the original sample consisted of psychology undergraduate students and nurses, hence a focus on limited sectors and in terms of geography limited only on North America. While the study by Herscovitch and Meyer (2002) asked participants to describe a recent or ongoing organisational change it was not conducted in an actual organisational change context, hence confounded in this research context (Bouckenooghe et al., 2015). Moreover, in this research study all participants referred to a recently started organisational change initiative, with scores 1 and 2, included as partial responses, and were excluded from this analysis. As the organisational change initiative had just started, it was too early to assess the impact on the dependent variable OCS. Another explanation might relate to the very senior level of participants; around two-thirds are on the middle management level and higher, understanding the risks of not supporting an organisational change initiative, even in regards to their own development objectives (Indradevi and Veronica, 2019). At this level in any organisation managing change initiatives are most likely also part of the performance evaluations with clear expectations articulated in specific performance goals. Indeed continuous commitment "could be increased if the organization had a clear plan for employee promotion, a good reward system and a career development plan" (Akhtar & Tan, 1994; Shouksmith, 1994, cited in Đorđević et al., 2020: 30).

Employees may also recognise the costs associated with the failure to support the change (Bouckenooghe et al., 2015). Continuance commitment is "dependent on factors external to the individual, such as social norms and the nature of the job market" (Visagie and Steyn, 2011: 116). For several employees in this research study it was implied that they would remain with the organisation because of a perceived lack of employment alternatives. Although this is also possibly changing, employees working in European countries (nearly two-thirds of total participants in this study) are more inclined to stay longer in an organisation as opposed to the greater "hire and firing" or "up or out" practices prevailing in Anglo Saxon cultures. According to Qureshi et al. (2019: 5) "continuous commitment does not increase the level of job satisfaction as affective does but employees motivate themselves to work because the association with the organization is constructed on the valuation of economics assistances expanded", thereby reducing turnover intentions during organisational change. In other words, there is a significant economic benefit for organisations to keep turnover intentions low, since it is generally associated with costs, e.g.

loss of productivity, knowledge replacement, training, and development (Morrell et al., 2004; Cohen, 2017; Hom et al., 2017; Lee et al., 2018; Ekhsan, 2019). In a similar vein “turnover has been assumed to create substantial losses for organizations due to human and social capital depletion, and operational disruptions. It would therefore affect organizational performance negatively” or in this study organisational change success (Hancock et al., 2013; Shaw, 2011, cited in De Winne et al., 2019: 3050).

While mediation is not confirmed for H5b, as being statistically insignificant, the result still shows a positive relationship between HRP and organisational change success (OCS). Perhaps since HR practices are adapted locally and perceived as a ‘hygiene factor’ taken for granted by employees, they do not mediate the relationship. However, employees feel that their organisation sufficiently invested in working relationships and career opportunities, indicated by the positive relationship (Andrew, 2017; BinBakr and Ahmed, 2019). According to Johnson & Chang, 2006, cited in Visagie and Steyn (2011: 114) “this is to be expected, since continuance commitment is an extrinsic form of commitment related to economic and instrumental benefits”. Moreover, continuous commitment can “directly and positively influence cognitive dimension of attitudes toward organizational change” (Yousef, 2017: 84).

5.2.1.4 Control variables

Three control or dummy variables were included in the analysis, in line with those most frequently used in the literature: organisation size in terms of the number of employees, one industry in comparison to other industries and comparison of regions (Ngo and Foley, 2011; Bernerth and Aguinis, 2016; Wright and Ulrich, 2017; Cooke, 2018; Wright et al., 2018; Cafferkey et al., 2019; Han et al., 2019; Hauff, 2019; Rogozińska-Pawełczyk, 2020; Yasir and Majid, 2020). None of the control variables affects the dependent variable; the control variables are not statistically significant ($p > 0.05$). Nevertheless, and not surprisingly, small organisations with less than 1,000 employees have the weakest effect ($p = 0.335$) on organisational change success, implying that larger organisations are more advanced and structured in using SWP-related concepts enabling managing and measuring change. Prior research focused on studies drawn from within the US. Despite the increasingly global landscape, most SHRM research, particularly that which appears in top academic journals, remains centred on the US (Markoulli et al., 2017; Wright et al., 2018). This study conducted a global survey with a focus on countries outside the US, in particular, Europe. Given the researcher’s organisation is located in Germany, it is not surprising to observe that Germany is the top country with 158 participants (45%), followed by the USA with 59 participants (17%) and China with 30 participants (9%), as the top three countries. Overall, the survey attracted 348 participants from 40 countries clustered into three central regions: Europe with

223 participants, North America, with 70 participants and the Asia Pacific region with 55 participants. However Europe was the region with the weakest effect (p = 0.311) on organisational change success, implying Europe is lagging behind the US. This is not too much of a surprise since the US dominate research in that field and implies that organisations are more advanced in comparison to European firms in managing and measuring change with SWP. Previous SHRM research predominantly focused on the manufacturing industry with a need to understand interconnected HR practices better to enhance the skills, competencies, and effort of employees that could also be a potential source for competitive advantage (Ngo and Foley, 2011, Paracha et al., 2014, Han et al., 2019). This thesis explored HR practices – in other industries outside of manufacturing. While the top three sectors include manufacturing in this study, it only accounts for approximately 7% of total participants. Interestingly professional services only slightly missed the cut in becoming statistically significant on the dependent variable (p = 0.052). The researcher anticipated this finding since the professional services sector generally provides advice to clients and is therefore skilled in advising and utilising SWP-related concepts.

5.3 Chapter summary

Regarding hypotheses 1-3, based on the results conducted structural equation modelling, hypotheses 1-3 were accepted which is generally in line with previous empirical studies, and implied that SWP has a positive impact on organisational change success. More importantly, this study responded to gaps and issues identified in the literature, the issues with measuring outcomes addressed with a potential new validated outcome or dependent variable of SHRM related changes in the form of organisational change success, enhancing theory for themes, explaining the contingency perspective, fit and flexibility (Wright et al., 2018) in particular to employ SWP related concepts of fit, flexibility and measuring outcomes of SHRM (Delery, 1998, Lengnick-Hall et al. 2009, Wright et al., 2018).

Regarding hypothesis 4, based on the results conducted structural equation modelling, hypothesis 4 was accepted that implied workforce analytics, as part of SWP, positively affect change implementation effectiveness. While the HC Bridge decision framework and LAMP model provide solid theoretical foundations, the HR scorecard remains the most frequent analytics framework used by organisations today (Lawler and Boudreau, 2015, Rasmussen and Ulrich, 2015, Angrave et al., 2016, Marler and Boudreau, 2017, Ben-Gal, 2019). This study explored HR analytics in the form of HR metrics that measure not only efficiency but also effectiveness (e.g. long-term effects of HR programs) and (future) impact of changes in HR programs and processes (Pastor et al., 2017, Mokhnenko et al., 2019). ROI is the gold standard as an outcome measure. This research study showed that if organisations utilise

the right blend of efficiency, effectiveness and impact measures that enable organisations SWP efforts during organisational change initiatives, positively improving an organisational outcome, in the form of organisational change success (Nørreklit, 2000; Awadallah and Allam, 2015; Fink and Sturman, 2017; Pastor et al., 2017; Mokhnenko et al., 2019).

Regarding the mediating variable, prior studies “indicate that organizational commitment mediates organizational change”, in particular, affective commitment in line with these research findings (Iverson, 1996 and Yousef, 2000, cited in Takaishi et al., 2016; Adam et al., 2018). This chapter offered possible explanations why C2CC was mediating the positive relationship between HRS/HRF/HRA and OCS with statistical significance. None of the three control variables affects organisational change success.

The next chapter covers the conclusions and contributions of this research study. It addresses limitations and provides recommendations for future research.

6 Conclusions and implications

6.1 Introduction

Chapter 5 discussed the findings of the main global online survey. This chapter provides conclusions and implications as well as recommendations to practitioners. It introduces a framework as a meaningful discussion basis for practitioners and academics. The chapter also outlines the limitations and contributions of this research study, as well as directions for future research before closing the thesis with concluding remarks.

6.2 Conclusions

6.2.1 Survey feasibility study

The survey feasibility study achieved three objectives. Firstly and most importantly, it confirmed feasibility and relevancy to conduct a global online survey by gaining Mercer practitioners' interest in the research study and assisted in getting insights by identifying key issues, themes, first survey topics for the global online survey linked to hypotheses and preliminary survey questions. Secondly, it confirmed that the resource-based and dynamic capabilities view play an essential role in strategic workforce planning and analytics in light of organisational change, in particular the concepts of fit and flexibility widely discussed in the SHRM literature. Thirdly, it confirmed that HR is still not strategic enough in developing, managing, measuring and executing the HR strategy during organisational change and aligning employees towards organisational goals, in particular, the lack of fully utilising workforce analytics.

6.2.2 Online survey

The research study achieved its aim to answer three research questions by testing five hypotheses. By accepting hypotheses 1-4 with statistical significance, the research findings confirmed that if organisations blend vertical- and horizontal fit with flexible HR practices and utilise HR analytics this will positively impact organisational change success and change implementation effectiveness. Regarding hypothesis 5 affective commitment to change (C2CA) was positive, statistically significant and mediated all relationships. Contrary to expectations but shown in the results, C2CC was mediating the positive relationship between HRS/HRF/HRA and OCS with statistical significance. The sample of this research study was not an explanation to this counterintuitive finding, since it consisted of a diversified sample with different sectors. However, the most suitable explanation is perhaps that the original

sample consisted of psychology undergraduate students and nurses, hence a focus on limited sectors, and in terms of geography only on North America. While the study by Herscovitch and Meyer (2002) asked participants to describe a recent or ongoing organisational change it was not conducted in an actual organisational change context per se, hence confounded in this research context (Bouckenooghe et al., 2015).

6.3 Limitations of this research study

This research study addressed method bias and incorporated procedural (or preventive) measures and statistical remedies but found no violation of the multicollinearity assumption. Still, no research is free from limitations and "academic research is never perfect", and it is about striking the right balance between time and resource constraints that also applies to this research study (Remenyi and Bannister, 2012: 83). This study had two limitations. The first related to the sampling process and the second to the timeframe of the research study.

The sampling process followed six steps to collect the data in this research study, introduced in Chapter 3. Given the researcher's organisations structure, and based on experience with prior global surveys, he decided to employ purposive sampling, a form of non-probability sampling, as it is relatively quick and cost-effective (Rose et al., 2015). For the distribution channels email and WhatsApp, the inclusion criteria for participants identified as employees/professionals working in the area of strategic workforce planning, HR analytics and metrics department, ideally employed at organisations going through a change initiative. For the third distribution channel, the inclusion criteria within networks of the target population, such as online groups and forums, introduced in Chapter 3. The researcher involved an expert from the outset of this research study. The potential target audience reported by participants is extensive. The survey feasibility study revealed that it ranges from top management / key decision-makers, HR, line managers, strategy department (at larger organisations), finance, operations to the change sponsor. All experts also confirmed it during the survey pre-testing phase. The researcher joined Mercer in order to conduct this research study; the target population also comprises of Mercer's HR practitioners and professionals. The demographics show that the survey targeted the representative target population. Participants predominantly work in HR, accounting and finance and management, amounting to 58% of total participants. Additionally, over 90% of total participants are at a manager level or higher at the organisation.

The final number of completed responses for the global online survey was 348 participants, above the 200-300 sample size established in Chapter 3. Nevertheless, it was quite challenging to get responses especially since the survey did not offer any monetary incentive, such as an Amazon gift card. The only incentive on offer was to provide a copy of

the complimentary executive summary, that nearly one-third of all participants are interested in receiving. Based on participant feedback, “we are getting bombarded with consulting request to participate in research, however, if you happen to know someone, personally that certainly puts a request [to complete a survey] on top of the agenda”, indicating survey fatigue (Van Mol, 2017). As a countermeasure, the researcher also sent the survey invite to clients on their mobile phones via WhatsApp messenger that is available free on phones all over the world. This was a fast and cost-effective distribution channel in particular since Qualtrics as an online tool is accessible on all mobile devices. Directly communicating with participants added a personal flavour and convenience since completing the survey is possible away from the desk, allowing greater flexibility for participants to complete the survey.

For surveys, there is a decision regarding the time horizon, studying a specific point in time such as a cross-sectional design or over a period referred to as a longitudinal study (Rose et al., 2015). There have been calls in the literature to conduct more longitudinal studies, in particular, due to the ongoing changes in the competitive environment (Wright et al., 2018). Nevertheless, cross-sectional studies remain common and still dominate the SRHM field, potentially since these require fewer resources and costs are lower (Jiang and Messersmith, 2018). This research study is also a cross-sectional design. However, it aims to mitigate the inherent issue of time by asking the respondent to indicate the current position of the organisational change initiative in the survey introduction. Over half of participants (61%) referred to a well-established organisational change initiative with scores 3, 4 and 5, followed by 39% of participants referring to a fully completed organisational change initiative with scores 6 and 7, introduced in Chapter 4.

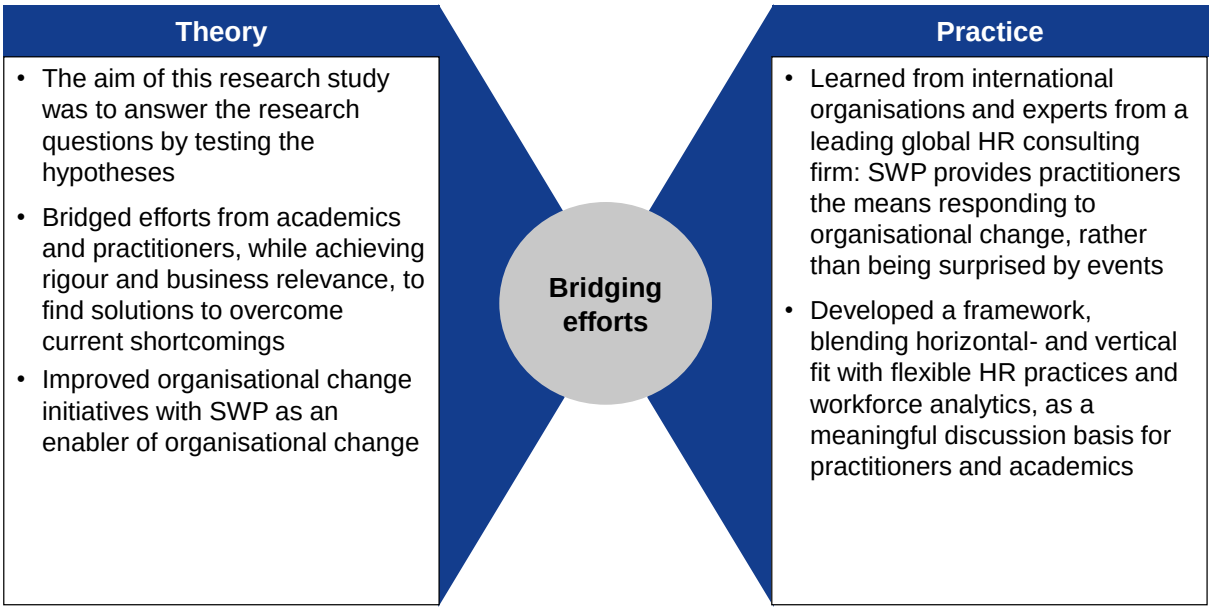
6.4 Contributions of this research study

The literature review in Chapter 2 critically reviewed theoretical foundations, concepts, and debates clustered into 15 themes, looking at gaps and issues as well as implications that also guided the contributions of this research study.

6.4.1 Importance to theory and practice

Prior academic research often lacked a bridge to real-world relevance, pairing rich practitioner data with corresponding academic rigour (Wright et al., 2018, Armstrong and Brown, 2019, Ahammad et al., 2020, Connelly et al., 2020). The researcher developed a detailed research design process to engage with practitioners and experts. The following summarises how the researcher contributed to the theory and practice with this research study, see Figure 6.1.

Figure 6.1: Importance and contribution to theory and practice



Source: Developed by author

This research study also made methodological, empirical, conceptual contributions and provides implications as well as recommendations to practitioners.

6.4.2 Methodological contributions

Prior research did not consistently address issues with common method bias and enhanced rigour, paying more attention to the research context (Jian and Messersmith, 2018. This research study addressed method bias and incorporate procedural or preventive measures in the research design process and statistical remedies, as part of the confirmatory factor analysis using SEM, set in a specific research context.

Encountering survey fatigue was an interesting challenge, and is an issue most researchers will face when conducting surveys. To overcome survey fatigue the researcher sent the survey invite to clients on their mobile phones via WhatsApp messenger, which is available free on phones all over the world. This is a fast and cost-effective distribution channel in particular since Qualtrics as an online tool is accessible on all mobile devices. Directly communicating with participants added a personal flavour and convenience since completing the survey is possible away from the desk, allowing greater flexibility for participants to complete the survey. For the global online survey, this distribution channel was the most successful, indication by the highest response rate (31%) in comparison to email (20%) and social media (6%) distribution channels.

The survey feasibility study was conducted across three regions and seven different countries arguably enhanced the reliability of the findings. By rigorously applying convergent

interviewing, it also contributed to increasing awareness of a not so widely known qualitative research method for practitioner-oriented strategic HR management research. The reason behind this research design, including the survey feasibility study, was to engage with practitioners and experts.

6.4.3 Empirical contributions

Prior research predominately focused on organisational change failure, highlighting that many organizational changes do not deliver the expected results or outcome. It appears that "authors rarely explicitly address the success of change. Although some studies explicitly state that change was unsuccessful, the success of the change remains unclear or ambiguous in most studies" (Kuipers et al., 2014: 14; Rosenbaum et al., 2018; Wright et al., 2018; Edwards et al., 2020). The researcher developed and validated a potential new outcome variable, capturing organisational change success, comprising of achievement of the project objectives and accounting for internal and external stakeholders. It resonates well with the gaps and issues identified in the SHRM literature, developing a potential new outcome or dependent variable, which has become more relevant due to issues with existing methods measuring outcomes of SHRM. The researcher specifically developed a potential new six-item instrument to measure organisational change success. The scale encompasses much written on change success, using a 7-point Likert-type scale (1 = 'strongly disagree' and 7 = 'strongly agree'). The reported Cronbach's alpha in this research was 0.942. Sample items from this potential new scale include "In our organisation the change achieved the objectives that is set out to achieve" and "External stakeholders impacted by the change have accepted the change" (see **Appendix F**).

Prior research did not focus on studies drawn from outside the US. Despite an increasingly global landscape, most SHRM research, particularly that which appears in top academic journals, remains centred on the US (Markoulli et al., 2017; Wright et al., 2018). The researcher conducted a global survey with a focus on countries outside the US, in particular, Europe. Given the researcher's organisation is located in Germany, it is not surprising to observe that Germany is the top country with 158 participants (45%), followed by the USA with 59 participants (17%) and China with 30 participants (9%), as the top three countries. Overall, the survey attracted 348 participants from 40 countries clustered into three central regions: Europe with 223 participants, North America, with 70 participants and the Asia Pacific region with 55 participants.

Prior research predominantly focused on the manufacturing industry with a need to better understand interconnected HR practices better to enhance the skills, competencies, and effort of employees that could also be a potential source for competitive advantage (Ngo and

Foley, 2011, Paracha et al., 2014, Han et al., 2019). This researcher study explored HR practices – in other industries outside of manufacturing – including selective hiring, extensive training, job design programs, formalised performance appraisal, self-managed teams, performance-based compensation, employment security, and internal promotion. These HR practices referred to as “high commitment” and “high involvement”, related to horizontal fit. While the top three sectors include manufacturing in this study, it only accounts for approximately 7% of total participants. This is not surprising since the share of the service sector is steadily increasing in Europe but also worldwide (Rennung et al., 2016).

Prior research showed that HR is not able to execute the strategic business partner model and not strategic enough in implementing and executing the HR strategy and align employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018). Contrary to the literature and results of the survey feasibility study, this research study indicated that HR could execute the strategic business partner model and is becoming sufficiently strategic enough in implementing and executing the HR strategy and aligning employees towards organisational goals.

6.4.4 Conceptual contributions

Prior research focused only on one side of the tension for example either HR practices, fit, and commitment or else human capital, flexibility, and control – but not on both. SWP is a vital but often missing piece in the SHRM literature (Wright et al., 2018). This research study employed SWP related concepts of fit – both vertical and horizontal – and flexibility (a dynamic capability). Research needs to incorporate less frequently applied theoretical frameworks to advance the field further and improve understanding of the processes underlying SHRM (Jiang and Messersmith, 2018). This research study explored the dynamic capability theoretical foundation with the concept of HR flexibility, enabling organisations to respond to changing external but also internal conditions to create sustainable value.

The SHRM literature did not get extensive consideration on workforce analytics but identified this “one way for further research to make truly novel contributions may be to research activities HR professionals are regularly involved in” (Markoulli et al., 2017: 18). This research study explored HR analytics in the form of HR metrics. These metrics are measuring not only efficiency but also effectiveness (e.g. long-term effects of HR programs) and (future) impact of changes in HR programs and processes (Lawler and Boudreau, 2015; Rasmussen and Ulrich, 2015; Angrave et al., 2016; Marler and Boudreau, 2017; Ben-Gal, 2019).

Prior research did not address change types in terms of scale and duration of the change in research better. Not explicitly acknowledging that the line between continuous and discontinuous change is too often blurred in practice and hard to distinguish meaningfully (Al-Haddad and Kotnour, 2015; Heyden et al., 2017; By, 2020). This research study differentiated between small-scale change, such as continues improvement projects versus large-scale discontinuous change, such as an M&A in organisations. Regarding the duration of change, this was an opportunity to understand the current position of the change initiative, from recently started to a fully completed to reflect that dimension of change.

Prior research did not focus on the elements that enable and measure successful change, enhancing organisational performance. In particular, this research study explores the concept of organisational commitment to change that may enhance organisational change success. SWP is a vital but often missing piece in the organisational change literature (Al-Haddad and Kotnour, 2015; Lengnick-Hall et al. 2009; Wright et al., 2018). This research study explored SWP (SHRM concepts of fit, flexibility and HR analytics) as an enabler of change with a commitment to change acting as a mediator, introduced in Figure 1.1 and Figure 1.2. This resonates well with gaps and issues identified in the SHRM literature and follows the logic of the social exchange theory, looking at mediators such as organisational commitment that impact performance.

6.4.5 Implications and recommendations to practitioners

This research study aimed to understand the impact of SWP and analytics on organisational success. Based on the conclusions, the study results have several implications and recommendations to practitioners. SWP, as an enabler of change, positively impacts organisational change success, suggesting that it may be beneficial for organisations to blend vertical- and horizontal- fit with flexible HR practices to manage organisational change. HR analytics also supports monitoring organisational change initiatives regarding efficiency, effectiveness, and impact measures. These mechanisms may enhance the overall commitment of its workforce during change initiatives.

6.4.5.1 The alignment of fit and flexibility as the backbone of SWP

This research study showed that due to the alignment of HR strategies with business strategies and the integration of HPWS, SWP becomes a vital activity integrated into the business planning process with top management trained in utilising SWP. Hence, organisations can make a conscious effort to align business with HR strategies, considering HR integral to business strategy with HR activities designed to suit the business strategy. If organisations utilise SWP, it may elevate HR, as a critical gatekeeper to manage and

measure organisational change. Contrary to the literature and results of the feasibility study, this study indicates that HR can execute the strategic business partner model and is becoming strategic enough in implementing and executing the HR strategy and aligning employees towards organisational goals (Markoulli et al., 2017; Ulrich and Grochowski, 2018).

Organisations are utilising HPWS to empower their employees, specifically in the form of formalised job duties and descriptions, a formal process of performance appraisals, feedback, incentive pay, learning, discretion to complete the task, communication and networking results in organisational change success, somewhat consistent with the literature (Ngo and Foley, 2011; Paracha et al., 2014; Han et al., 2019). An interesting finding of this study is that organisations realise that they will have to develop their employees to fill open positions rather than rely on the labour market. In the terminology of SWP, this means organisations are building their employees in the form of reskilling, training new skills that may result in higher retention and providing flexibility to respond to changes in the environment. In line with the study results, Way et al. (2015) have noted that virtually all of the research on HR flexibility tests for a positive relationship between it and performance. However, the theory underlying flexibility would indicate that the importance of flexibility and its relationship with performance depends upon the dynamicity and predictability within the firm's external environment. Because investments in flexibility may be costly, one would expect a positive relationship only in dynamic environments; in stable environments, the cost of building flexibility might far outweigh its benefits. Since this sample comprised of organisations that are going through change, the results might be different for organisations operating in more stable environments. However even in more stable environments the investments might outweigh the costs since "strategic flexibility enhances employees' commitment to their firms because they believe that their firms can advance by responding to change" (Takaishi et al., 2016: 550).

6.4.5.2 The importance of HR analytics with the right blend of measures

Levenson (2018: 695) argues that "currently, ROI is the gold standard for evaluating the financial benefits of an organizational change or existing process". This study shows that an integrated HR analytics function utilising HR metrics lead to organisational change success and support firms with measuring change implementation effectiveness. In practice, not all organisations have an HR analytics function in place. Even if HR lacks the skills to utilise HR metrics, potentially other functions such as finance and controlling may support HR. The compensations & benefits function is generally analytically sound in carrying out these tasks.

There is also a range of software solutions available that can carry out the majority of the work, easing the burden on employees responsible for HR metrics.

It is also essential to use the right blend of efficiency, effectiveness, and impact measures that enable organisations' SWP efforts during organisational change initiatives, positively improving an organisational outcome in the form of organisational change success. There is no one-size-fits-all approach to determine the right mix of metrics, and this is very much dependent on the industry. However, adding effectiveness and impact measures to the metric collection may support navigating through change initiatives better. This is not much of a surprise since organisations not only measure the financial efficiency of HR operations but also collect metrics that measure the current costs and the impact of future changes in HR programs and processes. The use of HR dashboard and scorecards blending internal data with external benchmarks supports organisations enabling SWP efforts during organisational change initiatives. Advanced competencies in conducting cost-benefit analyses, so-called utility analyses and understanding the long-term effects of HR programs (e.g. learning from training, motivation from rewards) are equally important as measuring the quality of talent decisions non-HR-leaders of the business. This is somewhat consistent with the literature since effective change implementation is blending top-down with bottom-up approaches (Heyden et al., 2017; Edwards et al., 2020). Measuring the business impact of high versus low performance in jobs indicates that organisations create transparency to develop and retain top talent. As discussed, this resonates well with a common challenge for organisations across industries all over the globe that is well-published in the talent management literature: external activities identifying, attracting, recruiting but gaining more importance is the developing and retaining talent, a central activity in Strategic Workforce Planning (SWP), regarded as a critical resource to achieve lasting competitive advantage (Gallardo-Gallardo et al., 2020).

6.4.5.3 The economic benefit of committed employees during change

Affective but also mostly continuance commitment positively mediate the relationship between the horizontal- and vertical fit, flexibility, and HR analytics. Affective commitment is the belief that supporting this initiative eventually helps the organisation. Continuance commitment is related to supporting the change initiative because not doing so would be costly. According to Qureshi et al. (2019: 5) "continuous commitment does not increase the level of job satisfaction as affective does but employees motivate themselves to work because the association with the organization is constructed on the valuation of economics assistances expanded", thereby reducing turnover intentions during organisational change. In other words, there is a significant economic benefit for organisations to keep turnover

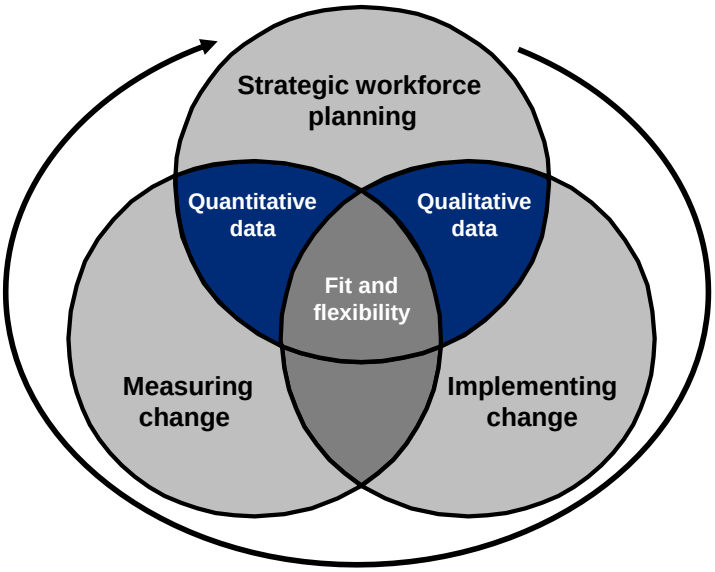
intentions low, since it is generally associated with costs, e.g. loss of productivity, knowledge, replacement, training, and development (Morrell et al., 2004; Cohen, 2017; Hom et al., 2017; Lee et al., 2018; Ekhsan, 2019). Similarly, “turnover has been assumed to create substantial losses for organizations due to human and social capital depletion, and operational disruptions. It would therefore affect organizational performance negatively” or in this research study organisational change success (Hancock et al., 2013; Shaw, 2011, cited in De Winne et al., 2019: 3050). While a specific turnover rate is acceptable, practitioners need to keep an eye on avoidable and voluntary turnover, in particular with top talent (Morrell et al., 2004; Hom et al., 2017). The practitioner literature is full of surveys and examples drawing similar conclusions that “the cost of turnover is extremely high; [roughly] estimated that losing an employee can cost 1.5-2 times the employee’s salary” (Heinz, 2020).

6.4.5.4 SWP as an enabler of organisational change framework

As discussed in Chapter 2, organisational change is complicated, not only for organisations but also for researchers and even practitioners. It poses a great degree of controversial issues and dilemmas because of “a debilitating fragmentation of theories of organizational change, with widely different perspectives – sometimes contradictory – blossom side by side in the large organizational change literature” (Jacobs et al., 2013: 773; Caldwell and Dyer, 2020). The sheer volume of frameworks developed since Lewin tends to follow a sequential and linear step by step approach, making it challenging to manage organisational change, in particular continuous change (Rosenbaum et al., 2018).

The following framework, presented in Figure 6.2, attempts to overcome these controversies into a meaningful discussion basis for practitioners and academics. This framework shows the logical relations of SWP as an enabler of organisational change blending vertical- and horizontal fit with flexible HR practices and utilising workforce analytics that may enhance the overall commitment of employees during change initiatives. The circled arrow depicts that this is an iterative process in practice, acknowledging that organisations interact with a dynamic external environment (Ahammad et al., 2020).

Figure 6.2: SWP as an enabler of organisational change framework



Source: Developed by author

6.5 Directions for future research

This research study's results, findings, conclusions, implications and recommendations to practitioners provide six directions for future research. First, viewing SWP as an enabler of organisational change. This explores SWP as an enabler of change by using the framework, introduced in Figure 6.2, to practitioners and academics. Similarly the core activity associated with strategic workforce planning could also be clustered by low maturity (e.g., budgeting purposes) versus high maturity (e.g., headcount planning or workforce metrics and analytics) to uncover if this reveals new insights. Second, exploring organisational change success, not as a failure. This views organisational change from a "success" perspective employing this potential new and validated scale, as opposed to a "failure" perspective and narrative. It is catchier to talk about change failure and this probably increases book sale. However, practitioners are interested in what makes change successful. Future research can explore the type of organisational change, in terms of change scale – for example, small such as continues improvement projects versus large-scale change such as a cultural change in an organisation – and analyse similarities and differences. Third, studying change with a cross-sectional survey design. Participants indicated the current position of the organisational change initiative in the survey introduction (see **Appendix F**). For future studies, this survey design might be useful to address the inherent issue of time in cross-sectional studies. Sample size permitting, future research can explore different groups looking at a well-established change initiative with scores 3, 4 and 5 versus a completed change initiative with scores 6 and 7. Fourth, exploring both sides of the tension: fit and flexibility. Future research can explore both sides of the tension of HR practices, fit,

commitment and human capital, flexibility, control but also including HR analytics. This research study focused on HR practice flexibility as relevant in this specific research context. However there is more to the concept, such as differentiating HR flexibility by resource and coordination flexibility (Ketkar and Sett, 2009; Way et al., 2015). More recently, the Human Resource Management Review published five articles that underline the importance of the concept of HR flexibility, framing it as strategic agility providing organisations with the opportunity responding to ongoing changes with HR management (Ahammad et al., 2020). The empirical research that supports HR flexibility is somewhat limited, providing excellent research opportunities. Fifth, aligning research to global trends to stay relevant. There are endless opportunities in the SHRM field, but these should also be aligned to global trends. Wright et al. (2018) identified four trends: the increasing pace of change in the external environment, increasing globalisation of firms and markets, increasing importance of talent as a competitive necessity and increasing skill gaps in the labour markets. In the terminology of SWP, this means organisations need to build their employees in the form of reskilling, training new skills that may result in higher retention and providing flexibility to respond to changes in the environment, an area worth exploring. Sixth, leadership is an important aspect of driving and implementation organisational change, while it is outside the scope of this study, it is a field worth exploring in future research (Higgs and Rowland, 2011; Burnes et al., 2018; By, 2020).

6.6 Concluding remarks

Despite the tremendous progress the SHRM field has experienced since the 1980s, it has not fully achieved its potential. In a similar vein and to be more blunt, the SHRM field has reached an era of stagnation or “tensions” as the literature suggests and is somewhat going in circles. By and large, this is directly related to a lack of engagement with practitioners that can support making research findings more integrated and relevant for organisations. The researcher developed a detailed research design process to engage with practitioners from the beginning to have real-world business relevance and pairing rich practitioner data with corresponding academic rigour. Hence, the vital contribution to theory and practice was the development of a framework as a meaningful discussion basis for practitioners and academics. Empirical contributions included a potential new validated outcome variable, capturing organisational change success and thereby shifting the conversation away from the change failure monologue. Methodological contributions comprised of increasing awareness of a not so widely known research method for practitioner-oriented SHRM research by rigorously applying convergent interviewing for the survey feasibility study. This allowed the researcher to involve practitioners from the outset of this research study. By

answering the call from seminal authors, a significant contribution to SHRM theory was that this research study combined vertical- and horizontal fit with flexible HR practices and HR analytics.

Moreover, this research study demonstrated that SWP is becoming as dynamic as the business environment. The demographic shift characterised by more contractors and temporary workforce requires higher flexibility for organisations, but equally importantly the notion of retaining top talent. Organisations realise that they have to develop their employees to fill positions rather than rely on the labour market. The fourth industrial revolution set the tone that the economic state is in constant change; the future is in flux coupled with challenges for organisations blending innovative technologies, such as artificial intelligence and machine learning, with new ways of working. The recent COVID-19 pandemic is no stranger to shaking up firms around the globe. While long-term planning becomes almost impossible given these constant changes, SWP provides organisations with the flexibility to react and respond to threats that could become new growth opportunities. Notably, as this research confirmed, if organisations blend vertical- and horizontal fit with flexible HR practices and utilise workforce analytics this will also enhance the commitment of its workforce. Hence, organisations are becoming better prepared to navigate through ongoing organisational change. The research study underlines the relevancy of SWP as an enabler of organisational change in the time of COVID-19 and beyond. It does not matter if employees physically sit in an office or digitally work remotely – organisations need top talent to achieve lasting competitive advantage and thrive in the “New Normal” working environment.

Glossary

Organisational Change: is defined “as the activities associated with planning, designing, implementing and internalising tools, procedures, routines, processes, or systems that will require people to perform their jobs differently” (Mourier and Smith, 2001).

Organisational Change Success (OCS): refers to a potential new developed and validated six-item instrument to measure organisational change success, the independent or outcome variable in this thesis, introduced in **Appendix F** see **PART 3**

Strategic Workforce Planning: “builds upon quantitative activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organisational strategy” (Human Capital Institute, 2018).

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Appendix A: Structuring and synthesising the literature review

Figure A: Broader view – by individual academic disciplines

	Strategy	HR	Accounting	Leadership & Change
Key Authors	•Barney & Hesterly, 2006 •Grant, 1991 •Peteraf, 1993 •Prahalad & Hamel, 1999 •Rumelt, 1991	•Armstrong, 2006 •Huselid, Jackson & Schuler, 1997 •Mercer Consulting •Schuler, 1992 •Ulrich & Brockbank, 2005	•International Accounting Standards, e.g. IAS 38 •Kaplan & Norton, 1996 •Mouritsen et al, 2001 •Skandia, 1995 •Sveiby, 2002	•Beer & Nohria, 2000 •Caluwé & Vermaak, 2003 •Kotter, 1995 •Lewin, 1974 •Marks & Mirvis, 2001 •Miller, 2002
Relevant concepts & approaches to own research	•Resource based view model focuses on organization's strategic resources and capabilities •Internal analysis on organization performance that lead to competitive advantage	•HR service delivery model in particular role of the strategic business partner/centers of expertise •Focus on strategy, not day-to-day operational support; outsourcing administrative work	•The BSC is a strategic measurement systems incl. both financial and non-financial measures •Narratives to describe intangibles •Valuation of intangibles, e.g. market, income, cost approach and real options	•Root causes for successful change management initiatives have been identified, e.g. Kotter's 8 steps •Different paradigms and approaches, tools and frameworks (e.g. Theory E & O) to change proposed
Gaps & Issues	•How can resources be developed & changed over time, i.e. measured? •Dynamics of workforce within organization is seldom addressed •Model lacks detail and is hence difficult to implement	•HR not strategic enough, i.e. developing, managing and operationalizing the human capital strategy • Not focused on metrics and measurement – providing the business with information/tools to guide fact-based decisions	•BSC: there is no cause-and-effect relationship between all areas of measurement, rather logical •The performance measures of accounting systems are short-term focus and ignore the financial value of a firm's intangible assets, i.e. HR	•Are change measuring and monitoring tools in today's knowledge economy able to support the change process, in particular related to human capital value drivers? •Mercer clients still struggle with monitoring change – how come?

Source: Developed by author

Figure B: Narrow focus – analytics as part of SHRM

	Strategic HRM	Organisational Change
Key authors	• Christiansen & Higgs, 2008; Lavelle, 2007; Teece, 2007; Armstrong, 2006 • Barney & Hesterly, 2006; Ulrich & Brockbank, 2005; Brush & Ruse, 2005 • Eisenhardt & Martin, 2000 • Delery & Shaw, 2001	• Higgs & Rowland, 2011 • Caluwé & Vermaak, 2003 • Miller, 2002; Kaplan & Norton, 2001 • Marks & Mirvis, 2001 • Beer & Nohria, 2000 • Kotter, 1995; Lewin, 1974
Relevant concepts & approaches	• The **RBV** is the **dominant theory** being used in the empirical literature on **SHRM and performance** but stable concept • Recent attention has focused on the need for many organisations to constantly develop new capabilities or competencies ("**dynamic capabilities framework**") in a dynamic environment • HR **service delivery model** in particular role of the **strategic business partner** • SWP and Analytics as a process to bridge HR efforts managing resources/capabilities	• Root causes for successful change management initiatives have been identified e.g. **Kotter's 8 steps** • Different paradigms and approaches, tools and frameworks (e.g. **Theory E** "hard" and **O** "soft"; **unfreeze-change-refreeze**) to change proposed • The **BSC** is a strategic measurement systems widely used to **drive organisational change**, as it incorporates financial and non-financial measures: "it is not a metrics project, it's a change project"

Source: Developed by author

Appendix B: Strengths, limitations and assessment of research methodologies

CDP1

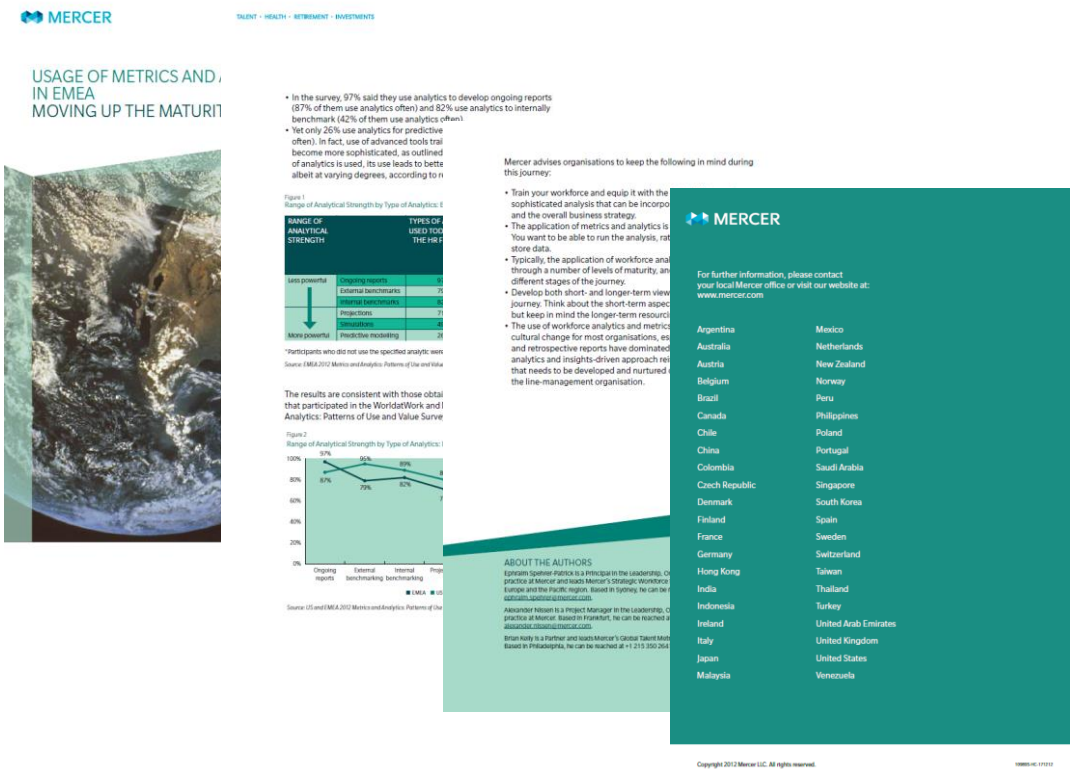
Research Methodologies	Strengths (+), Limitations (–) and Suitability for Own Research	
Quantitatively (e.g. surveys)	+ Enables a large amount of data to be collected quickly at low cost. Useful for exploration and confirmation (open and closed questions). High perceived anonymity. Stats tools (SPSS/SAS) for data analysis. – Poorly worded questions may lead to responses that are confusing, negatively influencing the data results. Willingness of respondents to answer truthfully and completely. Non-responses to selective questions. **Suitability**: Yes, since access to Mercer client data and office support to run surveys	●
Qualitatively (e.g. semi-structured interviews)	+ Gives inside into expert opinion (i.e. the emic) and topic can be explored in detail. High response rates. Useful for exploration and confirmation. Allows follow-up questions, hence a degree of flexibility. – Face-to-face interviews are time consuming. Personal biases may distort data. Is more difficult to test hypothesis and theories with large samples, as measures need validation. Low perceived anonymity. **Suitability**: Potential method to deep dive after survey results with selected Mercer clients	◑
Case studies (e.g. a form of qualitative descriptive research)	+ Close to reality. Provides descriptive information. Flexible method and useful for forming hypotheses and understanding complex interrelationships in detail. Allows to explore new angles and insights. – Case studies may not be representative of the population, hence challenges in generalizability. Time consuming and costly. Potential for observer bias and challenge to answer multiple research questions. **Suitability**: At this stage low suitability for own research	◔
Focus groups (e.g. measures reactions to concepts and ideas)	+ Allows observation of group interaction/reaction in a controlled setting. Appropriate for less structured topics. Relatively fast to conduct and flexible method. Useful for exploring ideas and concepts. – Relies entirely on group interaction. Some participants may dominate discussions (e.g. alpha male in top management). Needs a moderator. Higher cost. Should not be used as the only data collection method. **Suitability**: At this stage low suitability for own research	◔
Mixed methods (e.g. triangulation)	+ Integrates survey methods (quantitatively) and fieldwork (qualitatively), i.e. the best of both worlds. Multiple research questions can be addressed. Potentially stronger evidence. Higher generalizability of results. – May be time consuming and demanding for a single researcher, i.e. double the work and hence costly. Judgment call to combine research methods appropriately. Issue with assessing conflicting results. **Suitability**: Could be a potential option, i.e. combining questionnaires with interviews to deep dive	◑

Source: Remenyi et al, 2010

◔ = low suitability ● = high suitability

Source: Developed by author

Appendix C: Survey and publication with Mercer (excerpt)



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USAGE OF METRICS AND
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• In the survey, 97% said they use analytics to develop ongoing reports (87% of them use analytics often) and 82% use analytics to internally benchmark (42% of them use analytics often).
• Yet only 26% use analytics for predictive
often). In fact, use of advanced tools trai
become more sophisticated, as outlined
of analytics is used, its use leads to bette
albeit at varying degrees, according to n

Figure 1
Range of Analytical Strength by Type of Analytics: E

RANGE OF ANALYTICAL STRENGTH	TYPES OF
Less powerful	Ongoing reports
	External benchmarks
	Internal benchmarks
	Projections
	Simulations
More powerful	Predictive modeling

*Participants who did not use the specified analytic wer

Source: EMEA 2012 Metrics and Analytics: Patterns of Use and Valu

The results are consistent with those obtai
that participated in the WorldatWork and
Analytics: Patterns of Use and Value Surve

Figure 2
Range of Analytical Strength by Type of Analytics:

Source: US and EMEA 2012 Metrics and Analytics: Patterns of Use

Mercer advises organisations to keep the following in mind during this journey:

• Train your workforce and equip it with the
sophisticated analysis that can be incorpo
and the overall business strategy.
• The application of metrics and analytics is
You want to be able to run the analysis, rat
store data.
• Typically, the application of workforce anal
through a number of levels of maturity, an
different stages of the journey.
• Develop both short- and longer-term view
journey. Think about the short-term aspec
but keep in mind the longer-term resourci
• The use of workforce analytics and metrics
cultural change for most organisations, es
and retrospective reports have dominated
analytics and insights-driven approach rei
that needs to be developed and nurtured
the line-management organisation.

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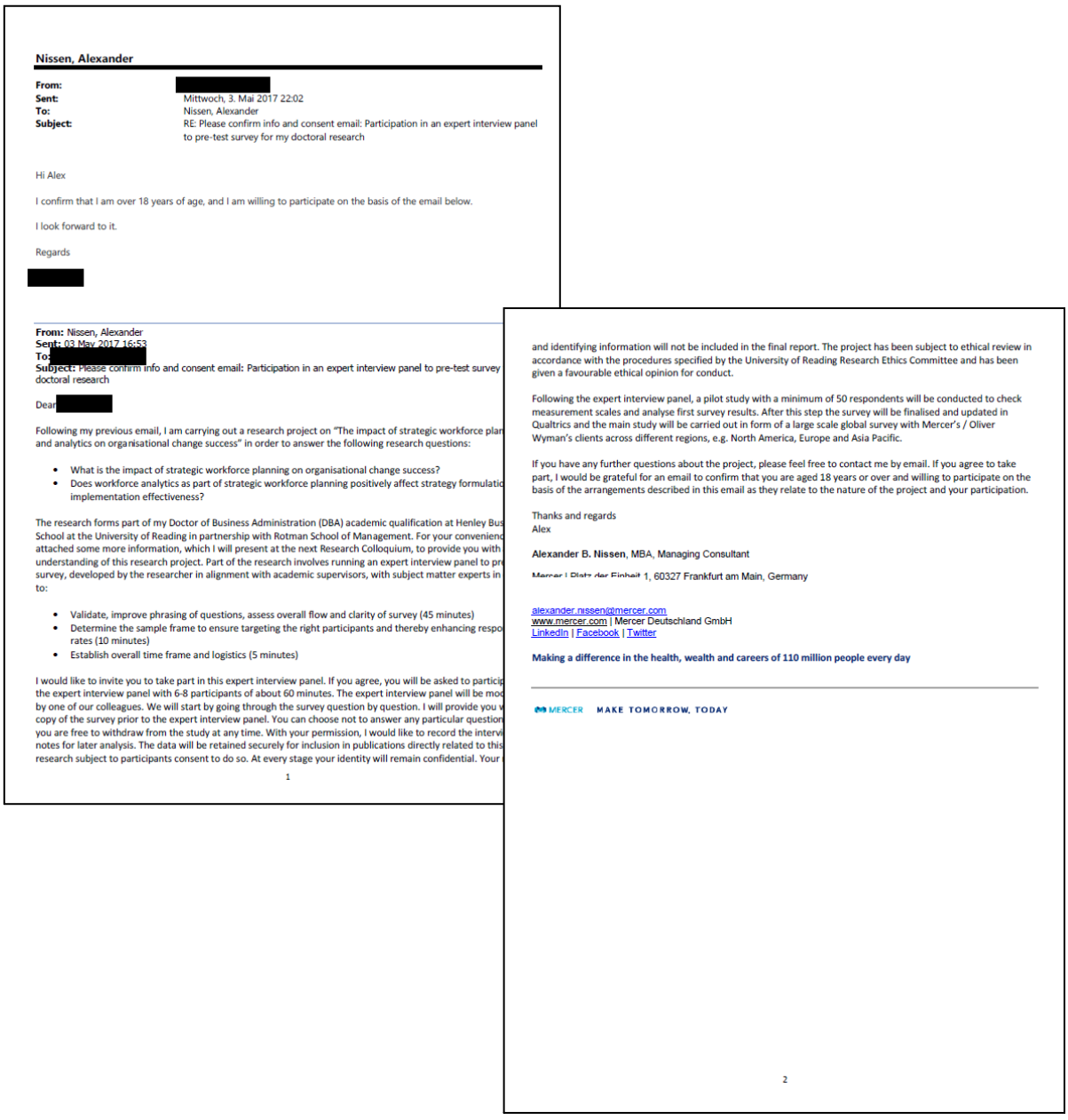
Denmark	South Korea
Finland	Spain
France	Sweden
Germany	Switzerland
Hong Kong	Taiwan
India	Thailand
Indonesia	Turkey
Ireland	United Arab Emirates
Italy	United Kingdom
Japan	United States
Malaysia	Venezuela

Source: (Kelly et al., 2012)

Appendix D: Example informed and consent email with a confirmation

Figure A: Example 1



Nissen, Alexander

From: [redacted]
Sent: Mittwoch, 3. Mai 2017 22:02
To: Nissen, Alexander
Subject: RE: Please confirm info and consent email: Participation in an expert interview panel to pre-test survey for my doctoral research

Hi Alex

I confirm that I am over 18 years of age, and I am willing to participate on the basis of the email below.

I look forward to it.

Regards

[redacted]

From: Nissen, Alexander
Sent: 03 May 2017 16:58
To: [redacted]
Subject: Please confirm info and consent email: Participation in an expert interview panel to pre-test survey doctoral research

Dear [redacted]

Following my previous email, I am carrying out a research project on "The impact of strategic workforce plan and analytics on organisational change success" in order to answer the following research questions:

- What is the impact of strategic workforce planning on organisational change success?
- Does workforce analytics as part of strategic workforce planning positively affect strategy formulatio implementation effectiveness?

The research forms part of my Doctor of Business Administration (DBA) academic qualification at Henley Bus School at the University of Reading in partnership with Rotman School of Management. For your convenienc attached some more information, which I will present at the next Research Colloquium, to provide you with understanding of this research project. Part of the research involves running an expert interview panel to pr survey, developed by the researcher in alignment with academic supervisors, with subject matter experts in to:

- Validate, improve phrasing of questions, assess overall flow and clarity of survey (45 minutes)
- Determine the sample frame to ensure targeting the right participants and thereby enhancing respo rates (10 minutes)
- Establish overall time frame and logistics (5 minutes)

I would like to invite you to take part in this expert interview panel. If you agree, you will be asked to particip the expert interview panel with 6-8 participants of about 60 minutes. The expert interview panel will be mod by one of our colleagues. We will start by going through the survey question by question. I will provide you w copy of the survey prior to the expert interview panel. You can choose not to answer any particular question you are free to withdraw from the study at any time. With your permission, I would like to record the intervi notes for later analysis. The data will be retained securely for inclusion in publications directly related to this research subject to participants consent to do so. At every stage your identity will remain confidential. Your

1

and identifying information will not be included in the final report. The project has been subject to ethical review in accordance with the procedures specified by the University of Reading Research Ethics Committee and has been given a favourable ethical opinion for conduct.

Following the expert interview panel, a pilot study with a minimum of 50 respondents will be conducted to check measurement scales and analyse first survey results. After this step the survey will be finalised and updated in Qualtrics and the main study will be carried out in form of a large scale global survey with Mercer's / Oliver Wyman's clients across different regions, e.g. North America, Europe and Asia Pacific.

If you have any further questions about the project, please feel free to contact me by email. If you agree to take part, I would be grateful for an email to confirm that you are aged 18 years or over and willing to participate on the basis of the arrangements described in this email as they relate to the nature of the project and your participation.

Thanks and regards
Alex

Alexander B. Nissen, MBA, Managing Consultant

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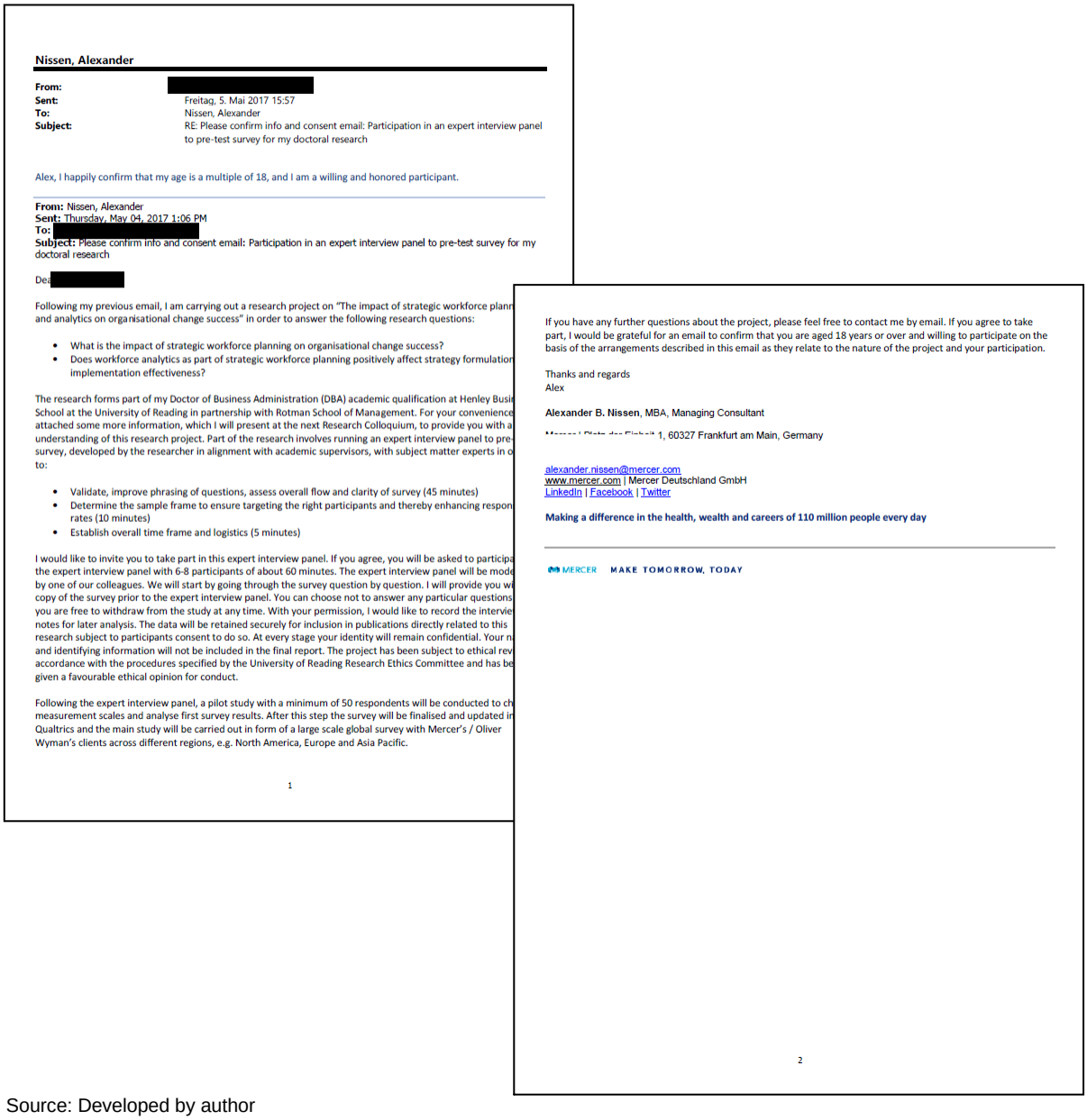
Source: Developed by author

Figure B: Example 2



Nissen, Alexander

From: [redacted]
Sent: Freitag, 5. Mai 2017 15:57
To: Nissen, Alexander
Subject: RE: Please confirm info and consent email: Participation in an expert interview panel to pre-test survey for my doctoral research

Alex, I happily confirm that my age is a multiple of 18, and I am a willing and honored participant.

From: Nissen, Alexander
Sent: Thursday, May 04, 2017 1:06 PM
To: [redacted]
Subject: Please confirm info and consent email: Participation in an expert interview panel to pre-test survey for my doctoral research

De[redacted]

Following my previous email, I am carrying out a research project on "The impact of strategic workforce plann and analytics on organisational change success" in order to answer the following research questions:

- What is the impact of strategic workforce planning on organisational change success?
- Does workforce analytics as part of strategic workforce planning positively affect strategy formulation implementation effectiveness?

The research forms part of my Doctor of Business Administration (DBA) academic qualification at Henley Busi School at the University of Reading in partnership with Rotman School of Management. For your convenience attached some more information, which I will present at the next Research Colloquium, to provide you with a understanding of this research project. Part of the research involves running an expert interview panel to pre- survey, developed by the researcher in alignment with academic supervisors, with subject matter experts in o to:

- Validate, improve phrasing of questions, assess overall flow and clarity of survey (45 minutes)
- Determine the sample frame to ensure targeting the right participants and thereby enhancing respon rates (10 minutes)
- Establish overall time frame and logistics (5 minutes)

I would like to invite you to take part in this expert interview panel. If you agree, you will be asked to participa the expert interview panel with 6-8 participants of about 60 minutes. The expert interview panel will be mode by one of our colleagues. We will start by going through the survey question by question. I will provide you wi copy of the survey prior to the expert interview panel. You can choose not to answer any particular questions you are free to withdraw from the study at any time. With your permission, I would like to record the intervie notes for later analysis. The data will be retained securely for inclusion in publications directly related to this research subject to participants consent to do so. At every stage your identity will remain confidential. Your n and identifying information will not be included in the final report. The project has been subject to ethical rev accordance with the procedures specified by the University of Reading Research Ethics Committee and has be given a favourable ethical opinion for conduct.

Following the expert interview panel, a pilot study with a minimum of 50 respondents will be conducted to ch measurement scales and analyse first survey results. After this step the survey will be finalised and updated in Qualtrics and the main study will be carried out in form of a large scale global survey with Mercer's / Oliver Wyman's clients across different regions, e.g. North America, Europe and Asia Pacific.

1

If you have any further questions about the project, please feel free to contact me by email. If you agree to take part, I would be grateful for an email to confirm that you are aged 18 years or over and willing to participate on the basis of the arrangements described in this email as they relate to the nature of the project and your participation.

Thanks and regards
Alex

Alexander B. Nissen, MBA, Managing Consultant

[redacted] 1, 60327 Frankfurt am Main, Germany

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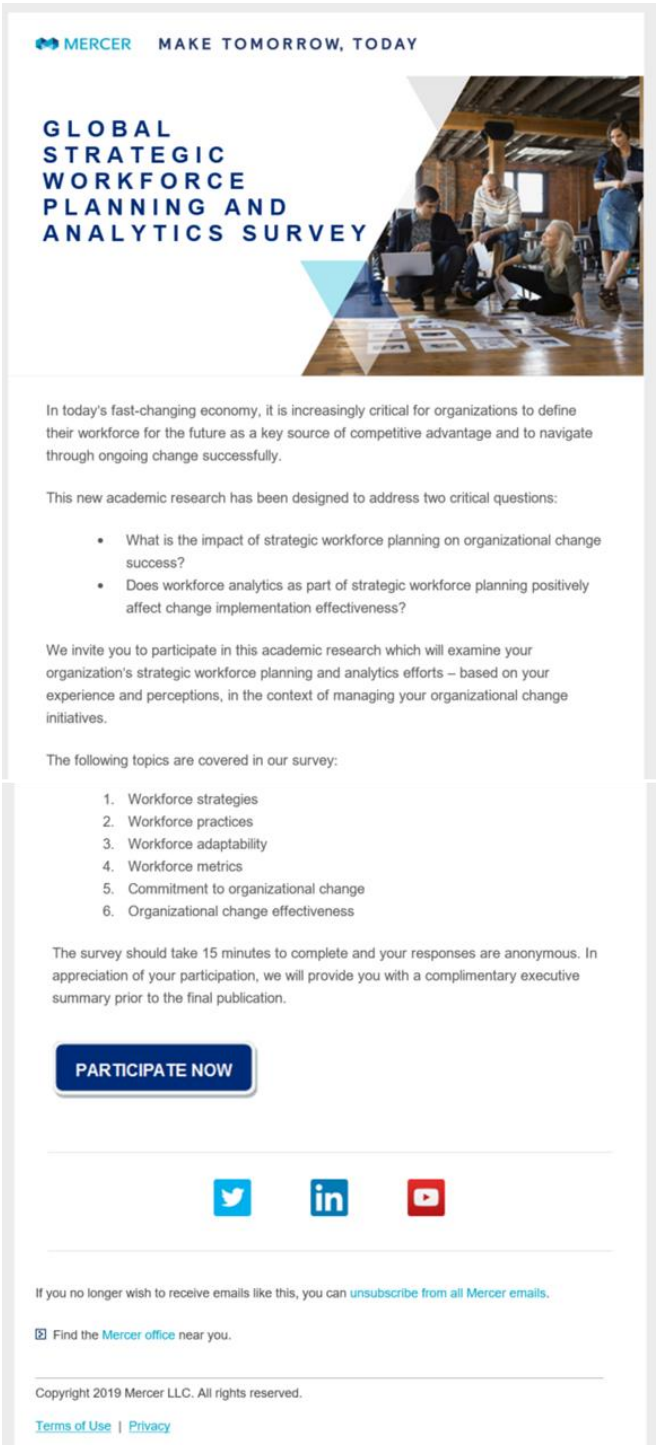
2

Source: Developed by author

Appendix E: Email invite to the survey – Version 3.0



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GLOBAL STRATEGIC WORKFORCE PLANNING AND ANALYTICS SURVEY

In today's fast-changing economy, it is increasingly critical for organizations to define their workforce for the future as a key source of competitive advantage and to navigate through ongoing change successfully.

This new academic research has been designed to address two critical questions:

- What is the impact of strategic workforce planning on organizational change success?
- Does workforce analytics as part of strategic workforce planning positively affect change implementation effectiveness?

We invite you to participate in this academic research which will examine your organization's strategic workforce planning and analytics efforts – based on your experience and perceptions, in the context of managing your organizational change initiatives.

The following topics are covered in our survey:

1. Workforce strategies
2. Workforce practices
3. Workforce adaptability
4. Workforce metrics
5. Commitment to organizational change
6. Organizational change effectiveness

The survey should take 15 minutes to complete and your responses are anonymous. In appreciation of your participation, we will provide you with a complimentary executive summary prior to the final publication.

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Source: Developed by author

Appendix F: Survey design development – Version 3.0

Q1 INTRODUCTION TO SURVEY

We are interested to learn about your experience and perceptions on "**The impact of strategic workforce planning and analytics on organisational change success**". This survey is part of a research project conducted by one of our consultants to complete a Doctor of Business Administration (DBA) academic qualification at Henley Business School at the University of Reading in partnership with Rotman School of Management.

For the purpose of this survey the following definitions are used:

Strategic Workforce Planning "builds upon quantitative activities such as headcount planning and workforce analytics and uses that data as part of a qualitative decision framework that can inform and transform organisational strategy" (Human Capital Institute, 2018).

Organisational Change is defined "as the activities associated with planning, designing, implementing and internalising tools, procedures, routines, processes, or systems that will require people to perform their jobs differently" (Mourier and Smith, 2001).

In Parts 1 – 3 the survey presents you with a number of statements. You are asked to express the extent to which you agree or disagree with each statement. The scale for the responses is:

1 = **strongly disagree**, 2 = disagree, 3 = slightly disagree, 4 = neither agree or disagree, 5 = slightly agree, 6 = agree, 7 = **strongly agree**

It will be helpful if you are as open and honest as possible in answering the questions. It is also important to answer all of the questions in order to be able to obtain a complete picture. The survey will take approximately 15-20 minutes to complete.

Responses are anonymous and individual respondents will not be identified by name or organisation in the final report. The data will be retained securely for inclusion in publications directly related to this research.

The research project has been subject to ethical review in accordance with the procedures specified by the University of Reading Research Ethics Committee and has been given a favourable ethical opinion for conduct. By completing the survey it will be understood that you are aged 18 or over and you give consent for your responses to be used for the purposes of this research project.

Q2 INTRODUCTION TO PARTS 1 – 3

In the following sections you will be asked to respond to a number of statements relating to an organisational change initiative that has either been completed or is ongoing, requiring you and your workforce to perform jobs differently.

Q3 Please indicate the current position of the organisational change initiative that you will be referring to in your subsequent responses:

1	2	3	4	5	6	7
Recently started			**Well established**			**Fully completed**

Q4 What best describes the type of organisational change initiative that you will be referring to in your subsequent responses? Please select one option.

a. Adapting radically different technologies
b. Continuous improvement
c. Cost management program
d. Creating new products and services
e. Cultural change
f. Implementing major strategic change
g. Implementing new technology
h. Merger & Acquisition
i. Restructuring the organisation
j. Significant operating change
k. Other (please specify)

Q5 What best describes the drivers for going through this organisational change initiative that you will be referring to in the subsequent responses? Please select all options that apply.

a. Competitive pressure
b. New technology
c. Need to improve processes due to client demands
d. Government regulations
e. Severe economic crisis
f. Desire to grow and expand the business
g. Performance gaps
h. Exploring new opportunities
i. Product near end of life cycle
j. Testing a new business strategy
k. Business model disruption
l. Innovating new products and/or services
m. Other (please specify).

Q6 What best describes the main activity you associate with your strategic workforce planning efforts that you will be referring to in your subsequent responses? Please select one option.

a. Budgeting
b. Headcount planning
c. Identifying future competency and capability needs
d. Job or people redeployment planning
e. Leadership development
f. Recruitment planning
g. Retention strategies and plans
h. Succession planning
i. Talent forecasting and assessment
j. Workforce metrics and analytics
k. Other (please specify)

PART 1

THE NEXT SECTION IS EXPLORING THE ROLE OF YOUR **WORKFORCE STRATEGIES** THAT ENABLE YOUR STRATEGIC WORKFORCE PLANNING EFFORTS DURING THE ORGANISATIONAL CHANGE INITIATIVE

Q7 (1-8) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

In thinking about the recent organisational change initiative, consider the role of your workforce strategies that enable your strategic workforce planning efforts when answering the following statements.

1.1 Our Human Resources are considered as vital assets in our organisation

1.2 Conscious effort in our organisation to align business with Human Resource strategies

1.3 Our Human Resource activities are designed to suit business strategy

1.4 Our Human Resources are considered integral to business strategy

1.5 Our Human Resource activities are consistent with the organisational vision

1.6 Our top management takes an interest in strategic workforce planning related issues

1.7 Out top management is trained in strategic workforce planning related issues

1.8 Information is shared between Human Resource department and senior managers

---

THE NEXT SECTION IS EXPLORING THE ROLE OF YOUR **WORKFORCE PRACTICES** THAT ENABLE YOUR STRATEGIC WORKFORCE PLANNING EFFORTS DURING THE ORGANISATIONAL CHANGE INITIATIVE

Q8 (1-14) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

In thinking about the recent organisational change initiative, consider the role of your workforce practices that enable your strategic workforce planning efforts when answering the following statements.

1.9 This organisation primarily selects new employees based on their long-term potential to contribute to the organisation

1.10 This organisation will leave a position open until it can find the best and brightest possible new employee

1.11 When evaluating job candidates, this organisation focuses on determining if they fit the organisation's values

1.12 This organisation has formal job duties and descriptions so that employees know their roles and responsibilities

1.13 This organisation has a formal process of performance appraisals to provide feedback to employees

1.14 This organisation provides employees with challenging work opportunities

1.15 Employees are given discretion to complete their tasks however they see fit

1.16 This organisation pays a higher wage than its competitors

1.17 This organisation uses individual bonuses or incentive pay to motivate employees

1.18 This organisation sponsors social events so that employees can get to know one another

1.19 This organisation proves opportunities for employees to continue to learn and grow

1.20 Employees here expand their skills by rotating through a range of different jobs

1.21 Managers regularly share information with employees through organisation-wide meetings

1.22 This organisation realises that it will have to develop its own employees to fill open positions rather than rely on the labour market

---

THE NEXT SECTION IS EXPLORING THE ROLE OF YOUR **WORKFORCE ADAPTABILITY** THAT ENABLE YOUR STRATEGIC WORKFORCE PLANNING EFFORTS DURING THE ORGANISATIONAL CHANGE INITIATIVE

Q9 (1-7) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

In thinking about the recent organisational change initiative, consider the role of your workforce adaptability that enable your strategic workforce planning efforts when answering the following statements.

1.23 Our organisation modifies its workforce system to keep pace with the changing competitive environment

1.24 Our workforce practice are designed so that they adjust quickly to changes in business conditions

1.25 Flexibility of our workforce practices helps us to adjust to the changing demands of the environment

1.26 We make frequent changes in our workforce practices to align our strategic workforce planning with changing work requirements

1.27 Changes in our workforce practices enable us to remain competitive in the market

1.28 Our workforce practices adjust meaningfully to changed business scenarios

1.29 Our workforce practices, as a whole, are flexible and strategic workforce planning plays a crucial part

THE NEXT SECTION IS EXPLORING THE ROLE OF YOUR **WORKFORCE METRICS** THAT ENABLE YOUR STRATEGIC WORKFORCE PLANNING EFFORTS DURING THE ORGANISATIONAL CHANGE INITIATIVE

Q10 (1-9) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

In thinking about the recent organisational change initiative, consider the role of your workforce metrics that enable your strategic workforce planning efforts when answering the following statements.

1.30 We measure the financial efficiency of HR operations, e.g. cost-per-hire, time-to-fill, training costs

1.31 We collect metrics that measure the cost of providing HR programs and processes

1.32 We use benchmarks and analytics to compare our data against data from outside organisations

1.33 We use HR dashboards or scorecards

1.34 We measure the specific long term effects of HR programs, such as, learning from training, motivation from rewards, validity of tests, etc.

1.35 We have the capability to conduct cost-benefit analyses, also called utility analyses, of HR programs

1.36 We measure the future impact of changes in HR programs and processes

1.37 We measure the quality of the talent decisions made by non-HR leaders

1.38 We measure the business impact of high versus low performance in jobs

PART 2

THE NEXT SECTION IS EXPLORING THE IMPACT OF YOUR STRATEGIC WORKFORCE PLANNING EFFORTS ON YOUR PERCEPTIONS OF EMPLOYEES **COMMITMENT TO ORGANISATIONAL CHANGE**

Q11 (1-12) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

In thinking about the recent organisational change initiative, consider the impact of strategic workforce planning or something similar on your perceptions of employee's commitment to organisational change when answering the following statements.

2.1 Overall our employees believe in the value of this change

2.2 In general our employees believe this change is a good strategy for this organisation

2.3 Overall our employees think that management is making a mistake by introducing this change (R)

2.4 Overall our employees believe that this change serves an important purpose

2.5 In general our employees believe that things would be better without this change (R)

2.6 Overall our employees think that this change is not necessary (R)

2.7 In general our employees believe that they have no choice but to go along with this change

2.8 Overall our employees feel pressure to go along with this change

2.9 In general our employees believe that they have too much at stake to resist this change

2.10 In general our employees think that it would be too costly to resist this change

2.11 Overall our employees believe that it would be risky to speak out against this change

2.12 Overall our employees think that resisting this change is not a viable option

(R) = reversed

PART 3

THE NEXT SECTION IS EXPLORING THE IMPACT OF YOUR STRATEGIC WORKFORCE PLANNING EFFORTS ON YOUR **ORGANISATIONAL CHANGE EFFECTIVENESS**

Q12 (1-6) Please indicate the degree to which you agree or disagree with each of the following statements:

1 = strongly disagree, 7 = strongly agree

How effective was the recent organisational change initiative you considered when responding to the statements in Parts 1 and 2 on the impact of your strategic workforce planning efforts.

3.1 In our organisation the change achieved the objectives that it set out to achieve

3.2 Employees impacted by the change have embraced the change

3.3 External stakeholders impacted by the change have accepted the change

3.4 In our organisation the change was implemented within the planned timescales

3.5 In our organisation the change was implemented within the planned budget

3.6 The change has been embedded within the organisation

PART 4

Please complete the following demographic questions

4.1 Q13 Which sector is your organisation primarily operating in? Please select one option.

a. Agriculture
b. Construction
c. Education
d. Finance and Insurance
e. Government and Public Administration
f. Health Care and Social Assistance
g. High-Tech
h. Life Sciences
i. Manufacturing
j. Media
k. Mining, Quarrying, Oil and Gas
l. Professional Services
m. Real Estate
n. Retailing
o. Transportation
p. Utilities
q. Other (please specify)

4.2 What best describes your level and function at your organisation? Please select one option for each.

Q14 LEVEL AT YOUR ORGANISATION

a. Top / Executive Management
b. Senior Management
c. Middle Management
d. Manager / Senior Expert
e. Professional
f. Other (please specify)

Q15 FUNCTION AT YOUR ORGANISATION

a. Accounting and Finance
b. Administration
c. Corporate Development
d. Customer Service

e. Distribution
f. Human Resources
g. IT
h. Legal
i. Management
j. Marketing
k. Mergers & Acquisitions
l. Operations
m. Purchasing
n. Research and Development
o. Sales
p. Supply Chain Management
q. Other (please specify)

_____

4.3 Q16 How many employees work in your organisation globally, as of last year? Please select one option.

a. Less than 100 employees
b. 100 to 1,000 employees
c. 1,001 to 10,000 employees
d. 10,001 to 50,000 employees
e. 50,001 to 100,000 employees
f. Over 100,000 employees
g. Don't know

4.4 Q17 What was the consolidated annual revenue for your organisation in USD, as of last year? Please select one option.

a. Less than $1 million
b. $1 to $10 million
c. $11 to $100 million
d. $101 to $500 million
e. $501 million to $1 billion
f. Over $1 billion
g. Don't know

4.5 Q18 In which country is your organisation headquarter based? Please select one option.

a. Drop down by country
b. Don't know

4.6 Q19 If you would like to add any additional comments, please use the space below. *OPTIONAL FIELD*

4.7 Q20 In appreciation for your completed response, a complimentary free executive summary will be provided prior to the final publication. If you would like to receive a copy of this summary please provide your company email in the space below.

OPTIONAL FIELD

a. _____

4.8 Q21 If you would like to include your company's participation to be acknowledged and included in the summary report and final publication, please provide your company name in the space below. Other than acknowledgement there will be no linkages between your individual response and the company name. All responses are anonymous and individual respondents will not be identified by name or organization in any publication.

OPTIONAL FIELD

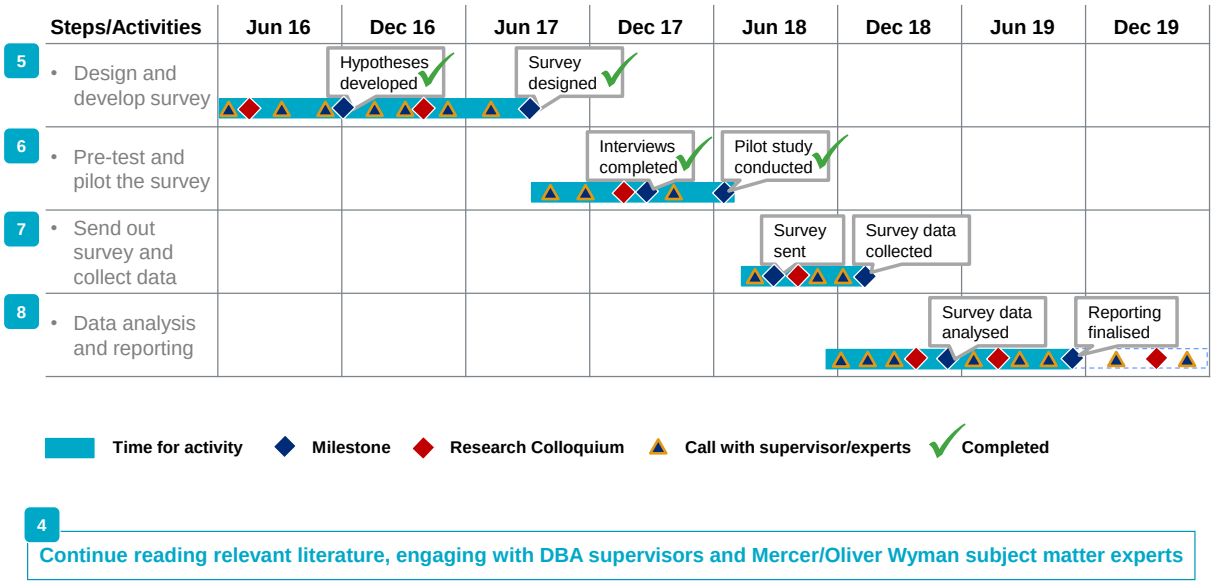
a. _____

Thank you for participating in this survey and research project.

Source: Developed by author

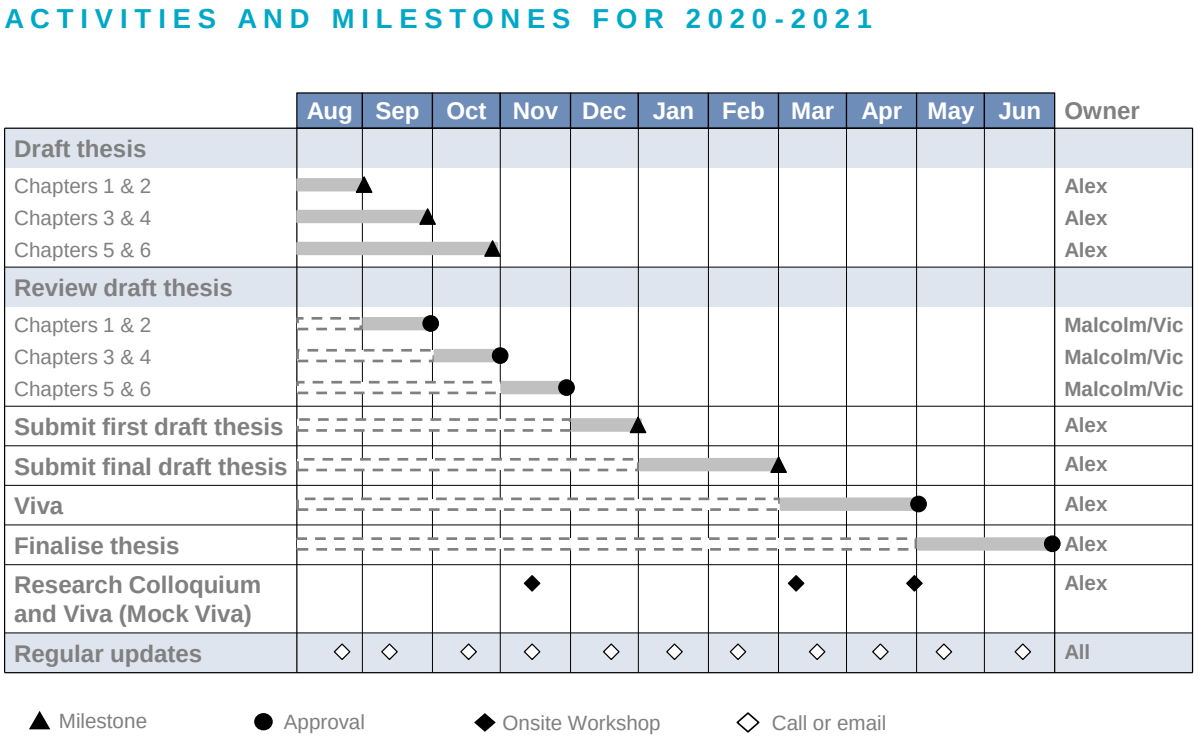
Appendix G: Illustrative work plan outlining next steps, activities, and milestones

Figure A: Example of high-level roadmap linked to steps of research design



Source: Developed by author

Figure B: Example of the detailed project plan to finalise the thesis



Source: Developed by author

Appendix H: Survey feasibility study interview protocol

Each interview started with an introduction to the project objectives. The following summarises the four steps involved in the interview protocol:

1. Introduce the researcher and the purpose of the interview and addressing the plan to use a questionnaire with Mercer's clients as the main study to collect information. Explaining that this interview should assist in collecting insights into the research topic, but also in light of survey design, identifying key issues, themes and potential survey questions. Asking for permission to take extensive field notes, confirming confidentiality and length (approximately 60 minutes) of the interview.

2. Warm-up by explaining the terms and definitions (for example, strategic workforce planning, workforce analytics, organisational change, resource-based view) briefly to ensure a common understanding of terminology.

3. Carry out the interview. Commence with the critical opening research question. Based on (Logan et al., 2013: 33), additional probe questions aided the discussion:

   - "Can you give me an example of this?"
   - "Can you elaborate a little?"
   - "What exactly did you mean by…?"
   - "Is that all? Is there anything you left out?"
   - "What are the pros and cons of this situation?"

   Moreover, the researcher aimed to talk for only 20% of the time, leaving 80% for the interviewees during each interview.

4. Close the interview. The interview invited the respondents to review key points from the discussion in the order of importance. Within one week of each interview, a summary of key findings was sent to participants asking for confirmation to ensure mutual understanding and capturing main themes.

Source: Developed by author

Appendix I: Pilot study usage of the range of scales

Range of scale for SWP HR strategy fit (HRS)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q7_1	31	6	1	7	4.32	1.939	3.759
Q7_2	31	5	2	7	4.39	1.706	2.912
Q7_3	31	4	2	6	4.32	1.400	1.959
Q7_4	31	6	1	7	4.13	1.839	3.383
Q7_5	31	6	1	7	4.06	1.548	2.396
Q7_6	31	6	1	7	4.55	1.690	2.856
Q7_7	31	6	1	7	3.19	1.515	2.295
Q7_8	31	5	2	7	4.13	1.384	1.916
Valid N (listwise)	31						

Range of scale for SWP HR practice fit (HRP)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q8_1	31	4	2	6	3.84	1.369	1.873
Q8_2	31	5	1	6	3.87	1.455	2.116
Q8_3	31	6	1	7	4.29	1.596	2.546
Q8_4	31	5	2	7	4.42	1.501	2.252
Q8_5	31	6	1	7	4.87	1.607	2.583
Q8_6	31	5	2	7	4.81	1.376	1.895
Q8_7	31	5	2	7	4.39	1.174	1.378
Q8_8	31	4	2	6	3.74	1.264	1.598
Q8_9	31	6	1	7	3.97	1.622	2.632
Q8_10	31	6	1	7	4.32	1.796	3.226
Q8_11	31	5	2	7	4.39	1.453	2.112
Q8_12	31	5	1	6	3.32	1.600	2.559
Q8_13	31	5	2	7	4.10	1.599	2.557
Q8_14	31	5	2	7	4.29	1.510	2.280
Valid N (listwise)	31						

Range of scale for SWP HR flexibility (HRF)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q9_1	31	6	1	7	3.77	1.309	1.714
Q9_2	31	5	1	6	3.23	1.431	2.047
Q9_3	31	6	1	7	3.39	1.626	2.645
Q9_4	31	6	1	7	3.00	1.571	2.467
Q9_5	31	6	1	7	3.68	1.558	2.426
Q9_6	31	5	1	6	3.58	1.259	1.585
Q9_7	31	5	1	6	3.26	1.437	2.065
Valid N (listwise)	31						

Range of scale for SWP HR analytics (HRA)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q10_1	31	6	1	7	3.71	1.883	3.546
Q10_2	31	6	1	7	3.90	1.795	3.224
Q10_3	31	6	1	7	3.74	1.673	2.798
Q10_4	31	6	1	7	4.00	1.949	3.800
Q10_5	31	6	1	7	3.23	1.668	2.781
Q10_6	31	6	1	7	3.39	2.060	4.245
Q10_7	31	6	1	7	3.16	1.917	3.673
Q10_8	31	6	1	7	3.00	1.807	3.267
Q10_9	31	6	1	7	3.52	1.786	3.191
Valid N (listwise)	31						

Range of scale for commitment to organisational change (C2C)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q11_1	31	4	2	6	4.06	.998	.996
Q11_2	31	4	2	6	4.10	1.193	1.424
Q11_3	31	5	1	6	3.06	1.482	2.196
Q11_4	31	5	1	6	4.16	1.319	1.740
Q11_5	31	6	1	7	3.16	1.530	2.340
Q11_6	31	6	1	7	3.06	1.672	2.796
Q11_7	31	6	1	7	4.03	1.643	2.699
Q11_8	31	6	1	7	3.84	1.614	2.606
Q11_9	31	5	2	7	3.97	1.354	1.832
Q11_10	31	6	1	7	3.81	1.447	2.095
Q11_11	31	6	1	7	3.77	1.707	2.914
Q11_12	31	6	1	7	3.87	1.668	2.783
Valid N (listwise)	31						

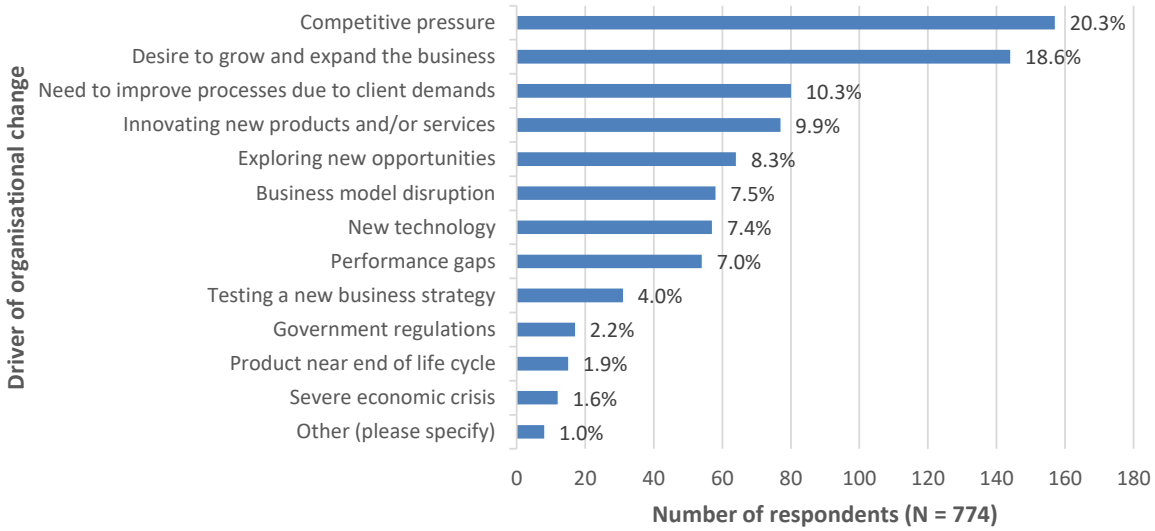
Range of potential new scale organisational change success (OCS)

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Q12_1	31	4	2	6	4.03	1.080	1.166
Q12_2	31	5	1	6	3.87	1.284	1.649
Q12_3	31	5	2	7	4.32	1.222	1.492
Q12_4	31	6	1	7	3.65	1.582	2.503
Q12_5	31	5	1	6	3.74	1.390	1.931
Q12_6	31	6	1	7	3.81	1.493	2.228
Valid N (listwise)	31						

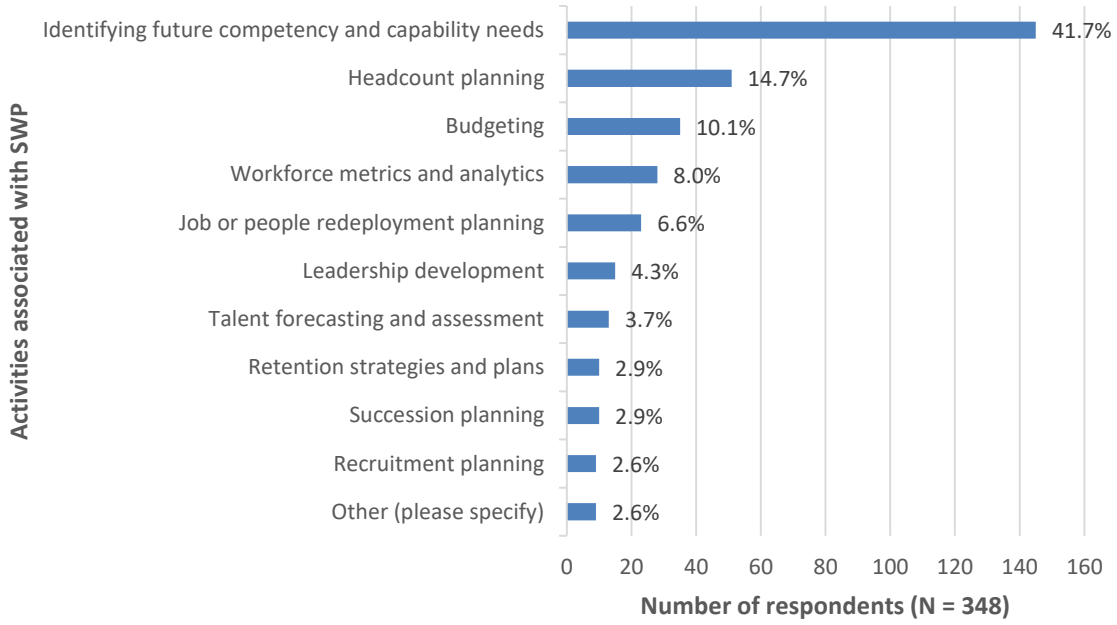
Appendix J: Output for the introduction and demographic section of the survey

Driver of organisational change



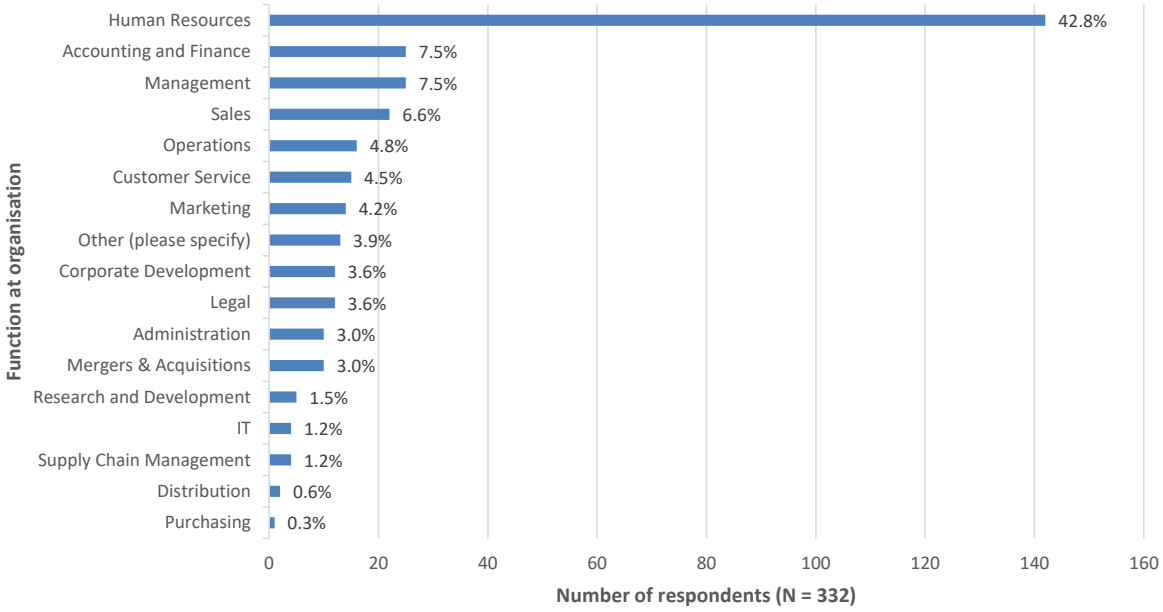
Source: Developed by author

Activities associated with SWP



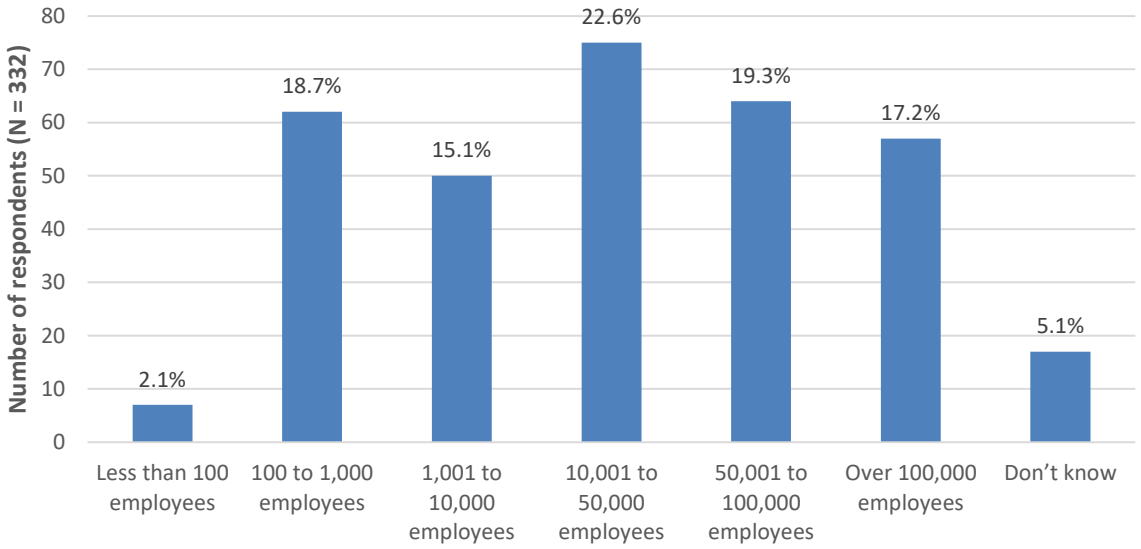
Source: Developed by author

Function at the organisation



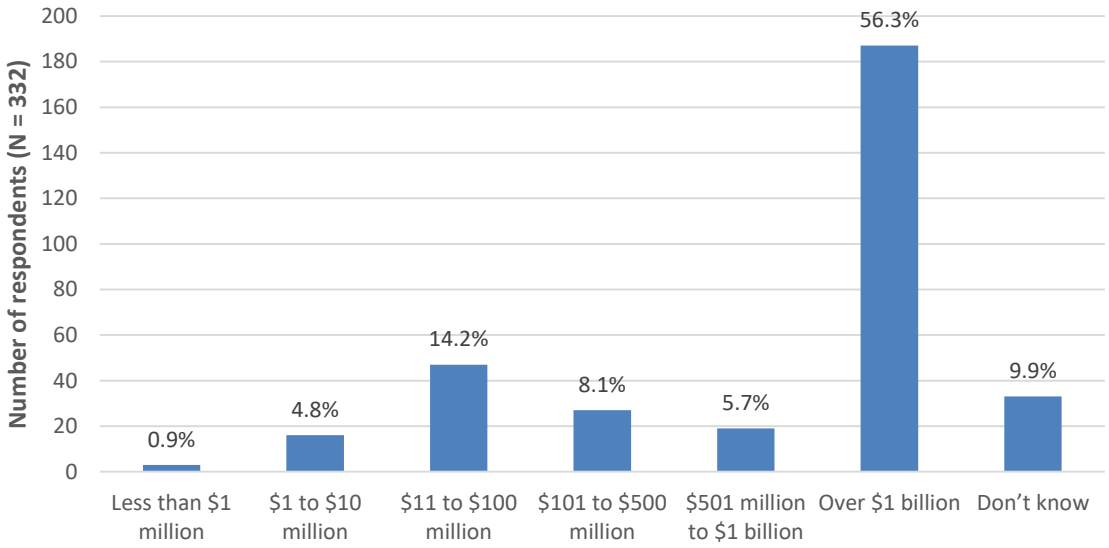
Source: Developed by author

Global number of employees at the organisation



Source: Developed by author

Consolidated annual revenue at the organisation in USD



Source: Developed by author

Appendix K: Output for descriptive statistics

SWP HR strategy fit (HRS)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HRS_1	348	1	7	5.26	1.438	-.946	.131	.677	.261
HRS_2	348	1	7	5.05	1.422	-.870	.131	.407	.261
HRS_3	348	1	7	5.11	1.387	-.846	.131	.392	.261
HRS_4	348	1	7	5.09	1.446	-.875	.131	.339	.261
HRS_5	348	1	7	5.02	1.430	-.736	.131	.099	.261
HRS_6	348	1	7	5.31	1.420	-.889	.131	.300	.261
HRS_7	348	1	7	4.69	1.609	-.618	.131	-.380	.261
HRS_8	348	1	7	5.17	1.461	-.694	.131	-.154	.261
Valid N (listwise)	348								

SWP HR practice fit (HRP)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HRP_1	348	1	7	5.01	1.475	-.664	.131	-.139	.261
HRP_2	348	1	7	4.95	1.487	-.756	.131	-.104	.261
HRP_3	348	1	7	5.25	1.350	-.782	.131	.189	.261
HRP_4	348	1	7	5.31	1.388	-.906	.131	.249	.261
HRP_5	348	1	7	5.53	1.234	-1.028	.131	1.147	.261
HRP_6	348	1	7	5.27	1.225	-.808	.131	.558	.261
HRP_7	348	1	7	5.13	1.223	-.753	.131	.351	.261
HRP_8	348	1	7	4.69	1.367	-.440	.131	-.405	.261
HRP_9	348	1	7	5.02	1.408	-.708	.131	.085	.261
HRP_10	348	1	7	5.22	1.456	-.857	.131	.251	.261
HRP_11	348	1	7	5.23	1.255	-.676	.131	.240	.261
HRP_12	348	1	7	4.76	1.455	-.620	.131	-.296	.261
HRP_13	348	1	7	5.16	1.370	-.767	.131	.323	.261
HRP_14	348	1	7	5.22	1.314	-.887	.131	.472	.261
Valid N (listwise)	348								

SWP HR flexibility fit (HRF)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HRF_1	348	1	7	5.05	1.517	-.755	.131	-.098	.261
HRF_2	348	1	7	4.81	1.490	-.769	.131	-.152	.261
HRF_3	348	1	7	4.89	1.491	-.662	.131	-.274	.261
HRF_4	348	1	7	4.85	1.524	-.748	.131	-.150	.261
HRF_5	348	1	7	4.95	1.481	-.638	.131	-.352	.261
HRF_6	348	1	7	4.88	1.441	-.752	.131	-.102	.261
HRF_7	348	1	7	4.93	1.536	-.727	.131	-.239	.261
Valid N (listwise)	348								

SWP HR analytics (HRA)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
HRA_1	348	1	7	4.84	1.660	-.695	.131	-.446	.261
HRA_2	348	1	7	4.83	1.597	-.788	.131	-.390	.261
HRA_3	348	1	7	5.04	1.607	-.848	.131	.027	.261
HRA_4	348	1	7	4.95	1.590	-.811	.131	-.097	.261
HRA_5	348	1	7	4.76	1.635	-.757	.131	-.166	.261
HRA_6	348	1	7	4.74	1.666	-.815	.131	-.280	.261
HRA_7	348	1	7	4.79	1.687	-.862	.131	-.151	.261
HRA_8	348	1	7	4.54	1.693	-.691	.131	-.478	.261
HRA_9	348	1	7	4.71	1.656	-.675	.131	-.369	.261
Valid N (listwise)	348								

Commitment to organisational change (C2C)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
C2C_1	348	1	7	5.14	1.418	-.789	.131	.220	.261
C2C_2	348	1	7	5.06	1.423	-.776	.131	.094	.261
Rev_Q11_3	348	1	7	5.44	1.529	-1.083	.131	.365	.261
C2C_4	348	1	7	5.13	1.471	-.836	.131	.221	.261
Rev_Q11_5	348	1	7	5.35	1.520	-1.029	.131	.321	.261
Rev_Q11_6	348	1	7	5.39	1.512	-1.046	.131	.409	.261
C2C_7	348	1	7	4.81	1.674	-.739	.131	-.339	.261
C2C_8	348	1	7	4.04	1.800	-.145	.131	-1.156	.261
C2C_9	348	1	7	4.95	1.606	-.826	.131	-.149	.261
C2C_10	348	1	7	4.99	1.722	-.713	.131	-.410	.261
C2C_11	348	1	7	4.89	1.777	-.684	.131	-.510	.261
C2C_12	348	1	7	5.07	1.624	-.880	.131	.096	.261
Valid N (listwise)	348								

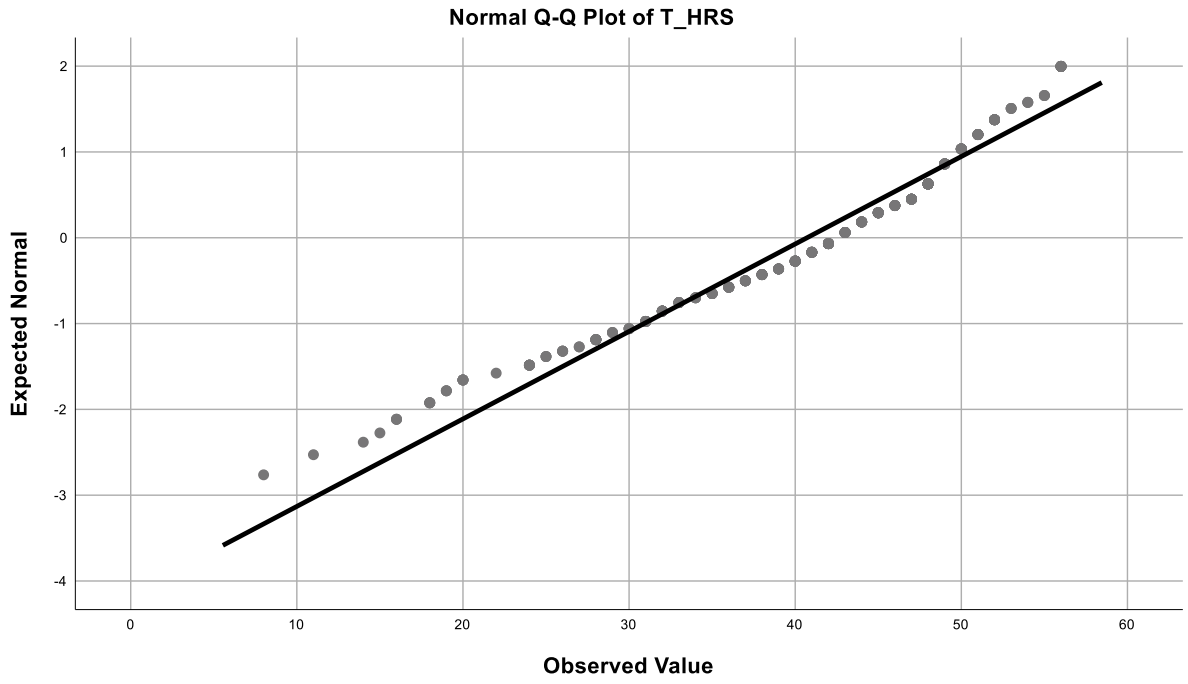
Potential new scale organisational change success (OCS)

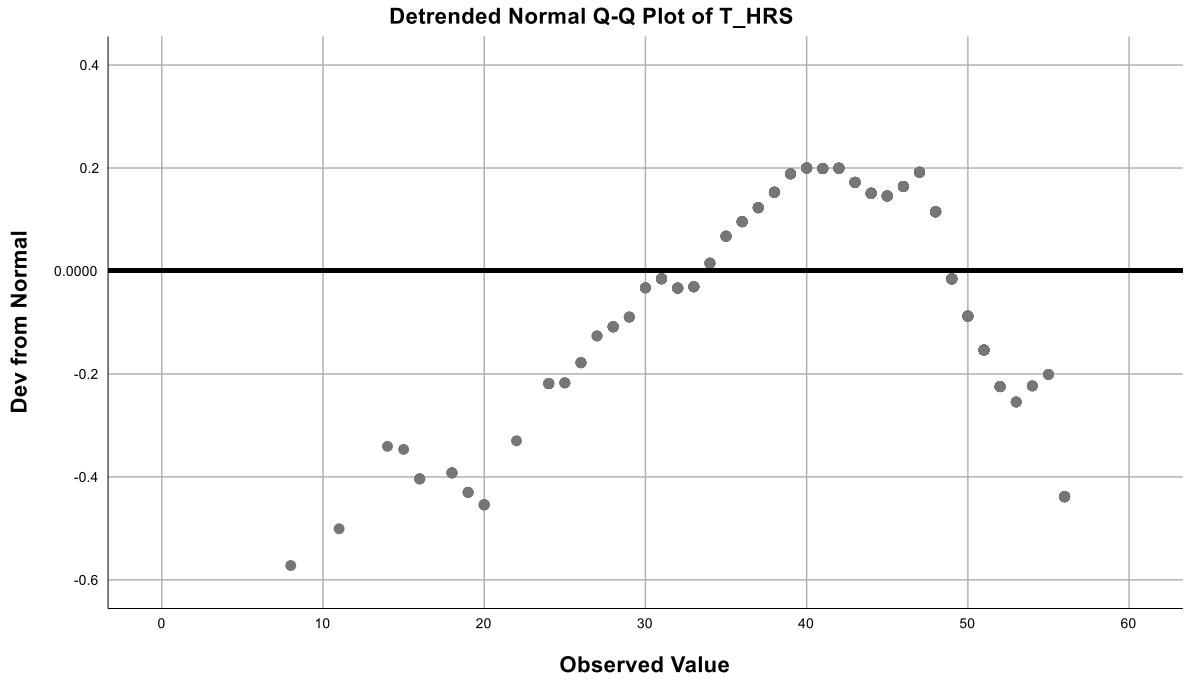
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
OCS_1	348	1	7	5.05	1.436	-.633	.131	-.104	.261
OCS_2	348	1	7	4.80	1.369	-.666	.131	-.230	.261
OCS_3	348	1	7	5.29	1.424	-.726	.131	-.083	.261
OCS_4	348	1	7	4.86	1.566	-.476	.131	-.686	.261
OCS_5	348	1	7	4.91	1.503	-.575	.131	-.346	.261
OCS_6	348	1	7	5.10	1.499	-.705	.131	-.211	.261
Valid N (listwise)	348								

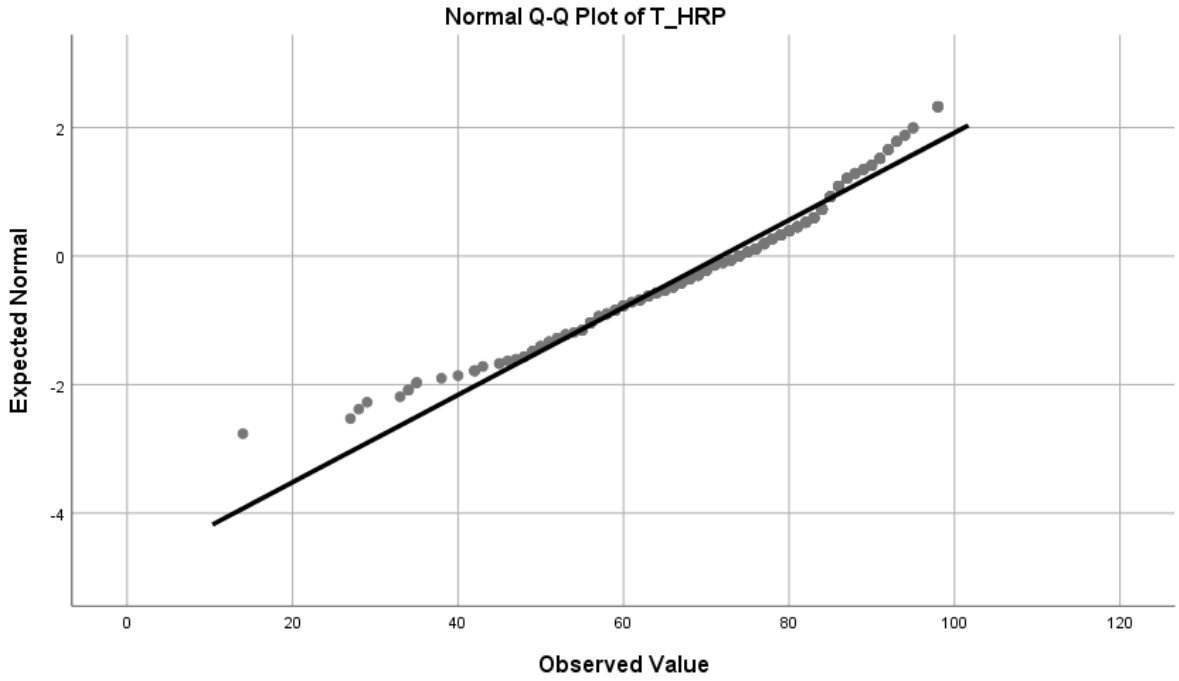
Appendix L: Output for assessing normality

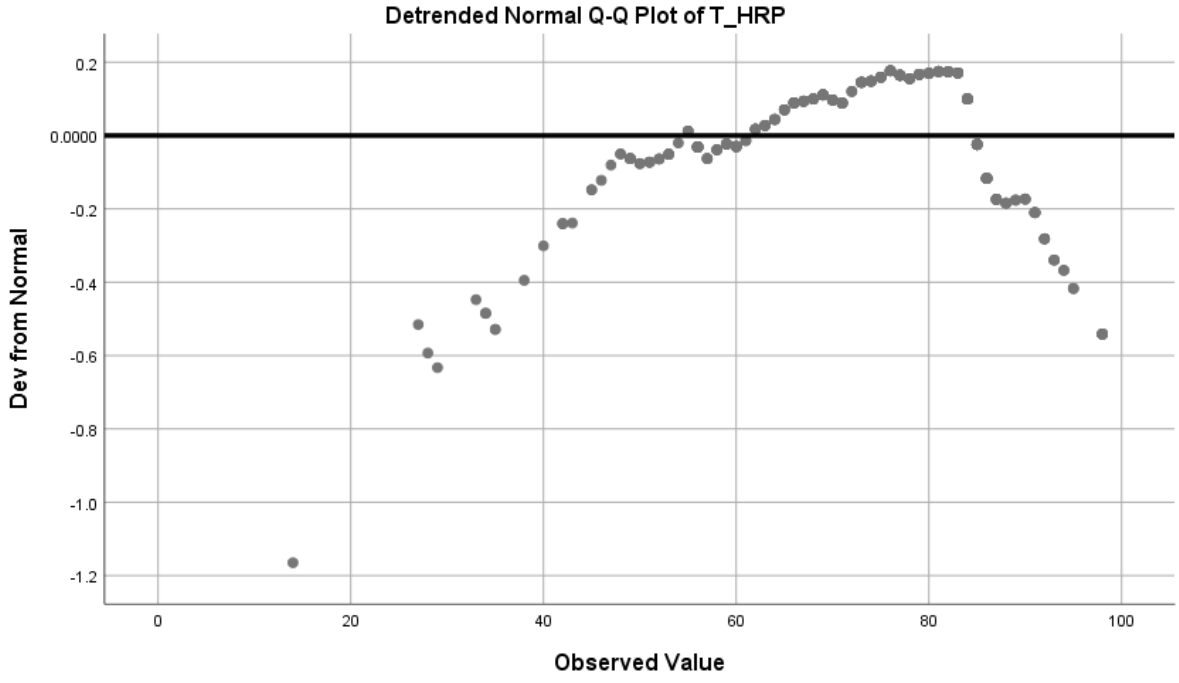
Total scale SWP HR strategy fit



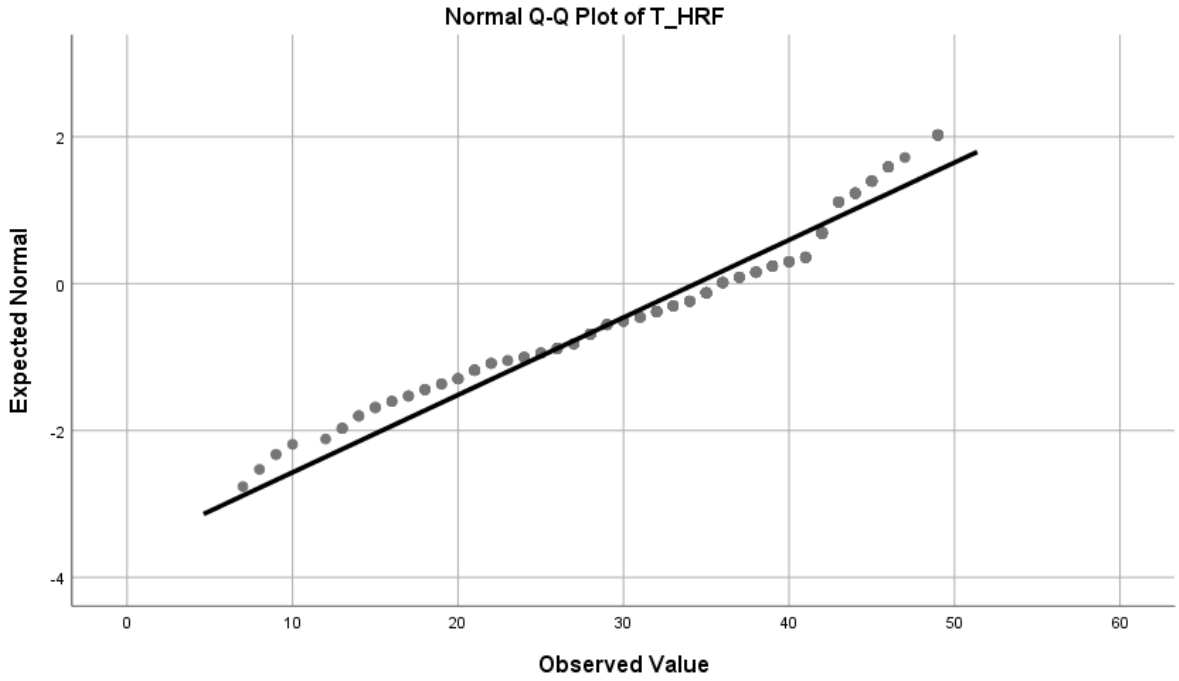


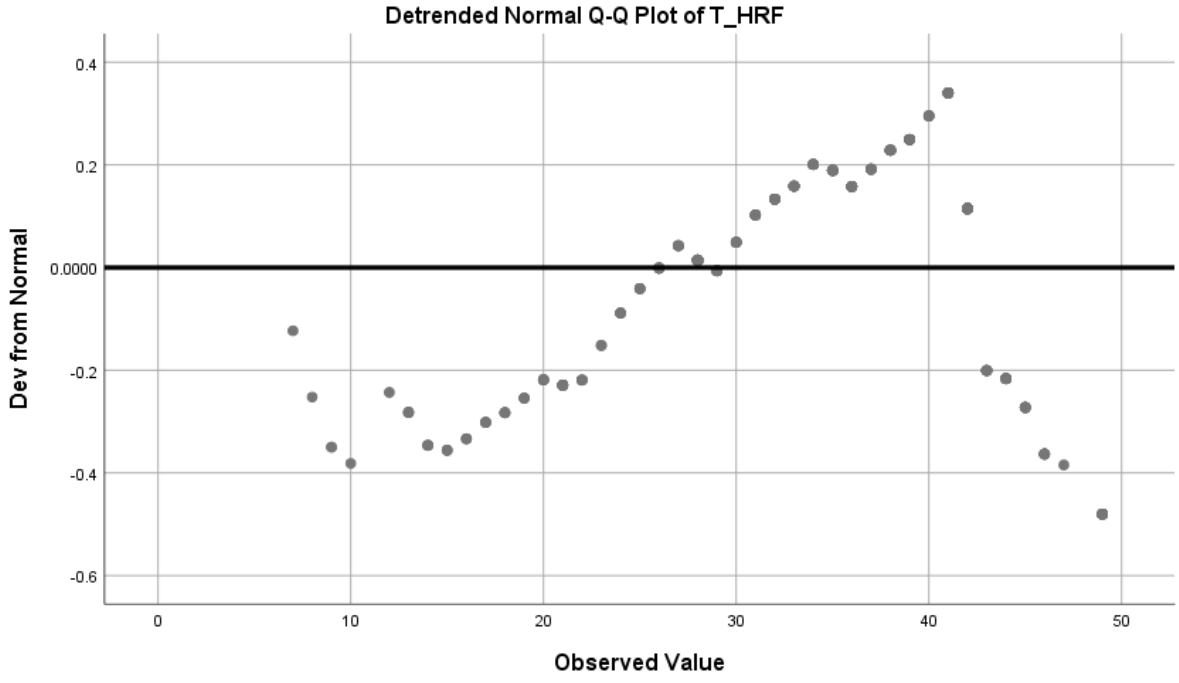
Total scale SWP HR practice fit



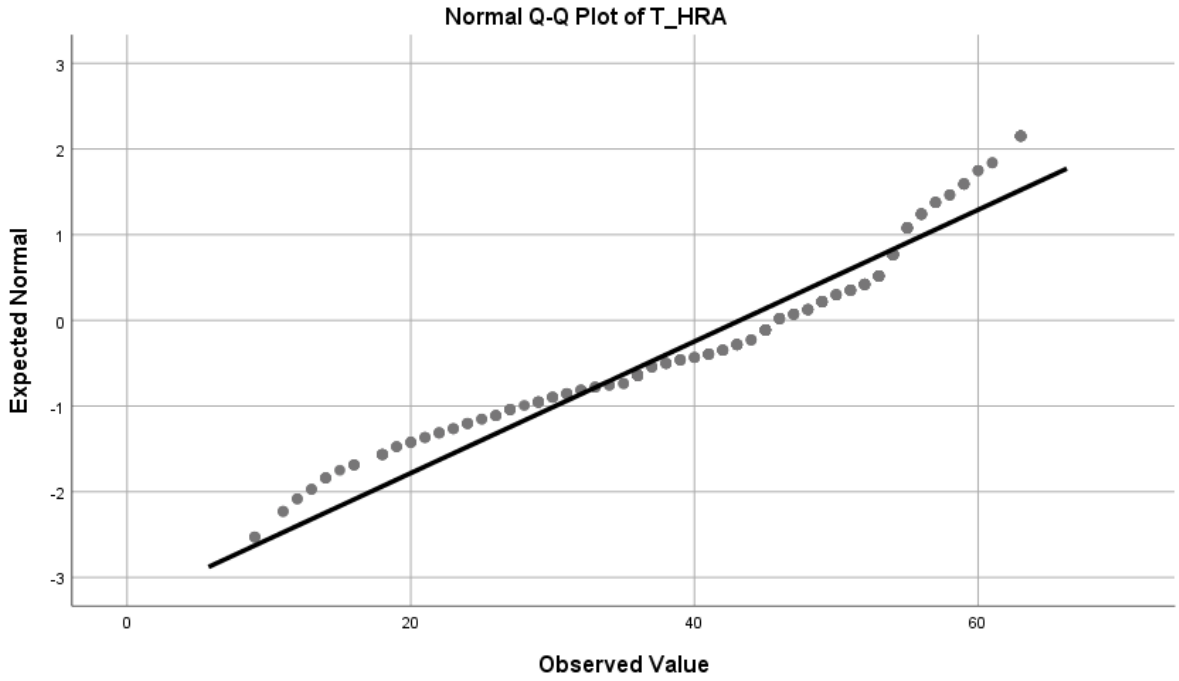


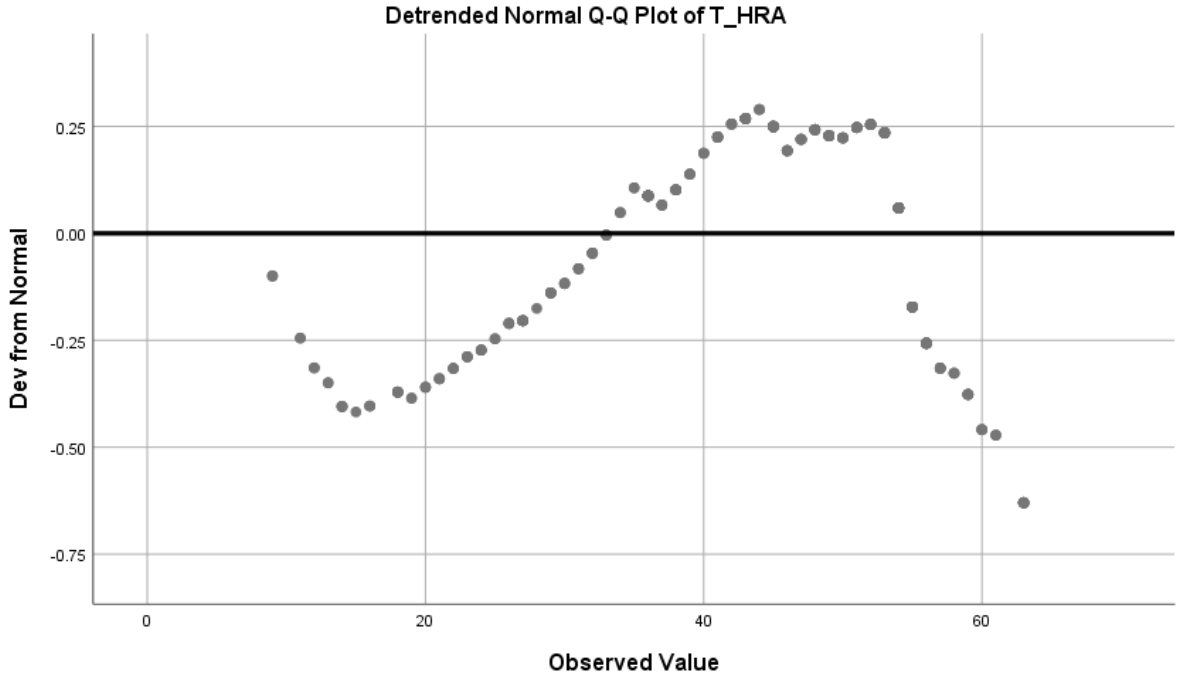
Total scale SWP HR flexibility fit



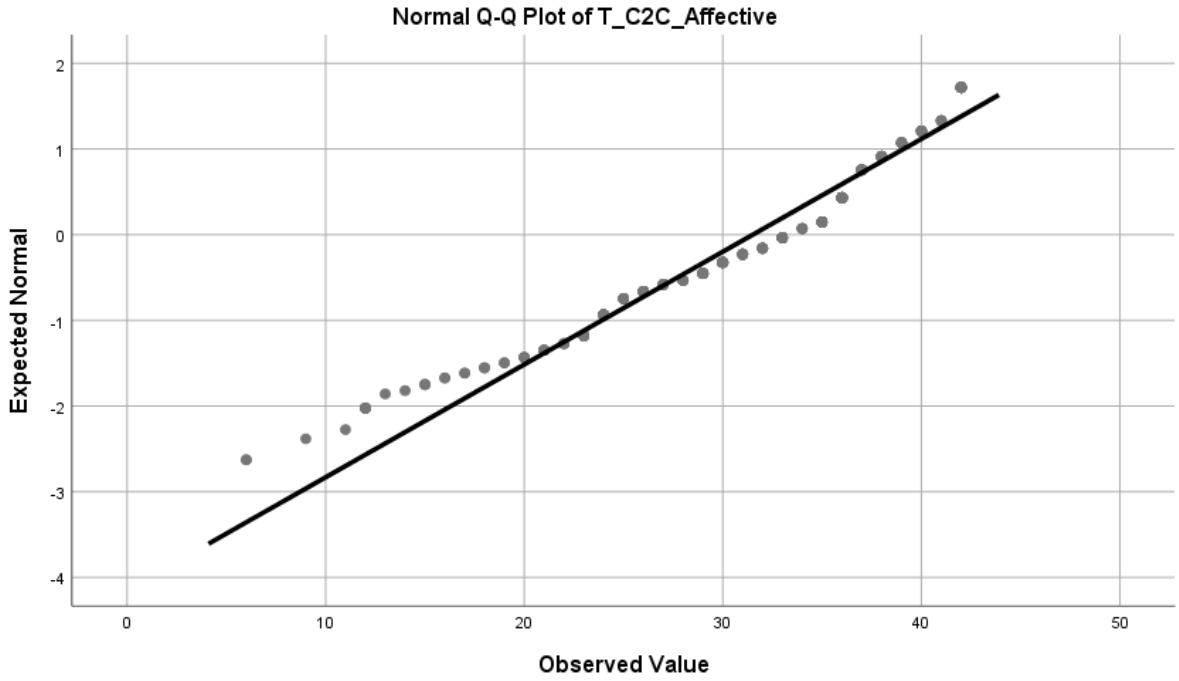


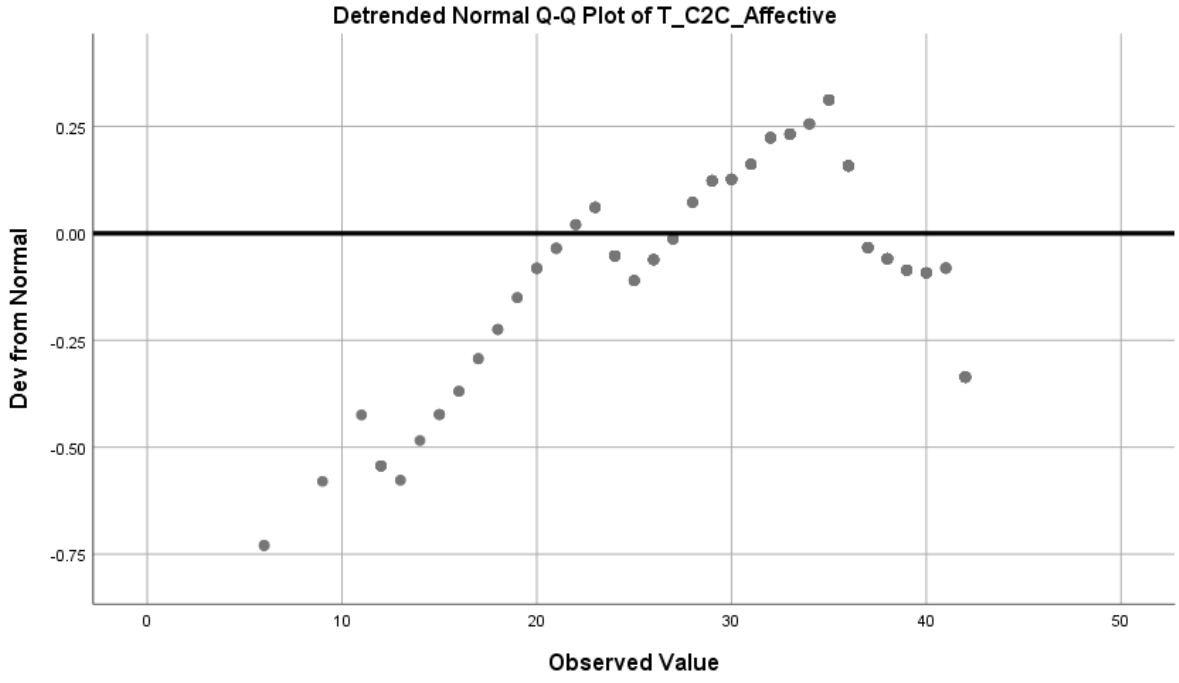
Total scale SWP HR analytics



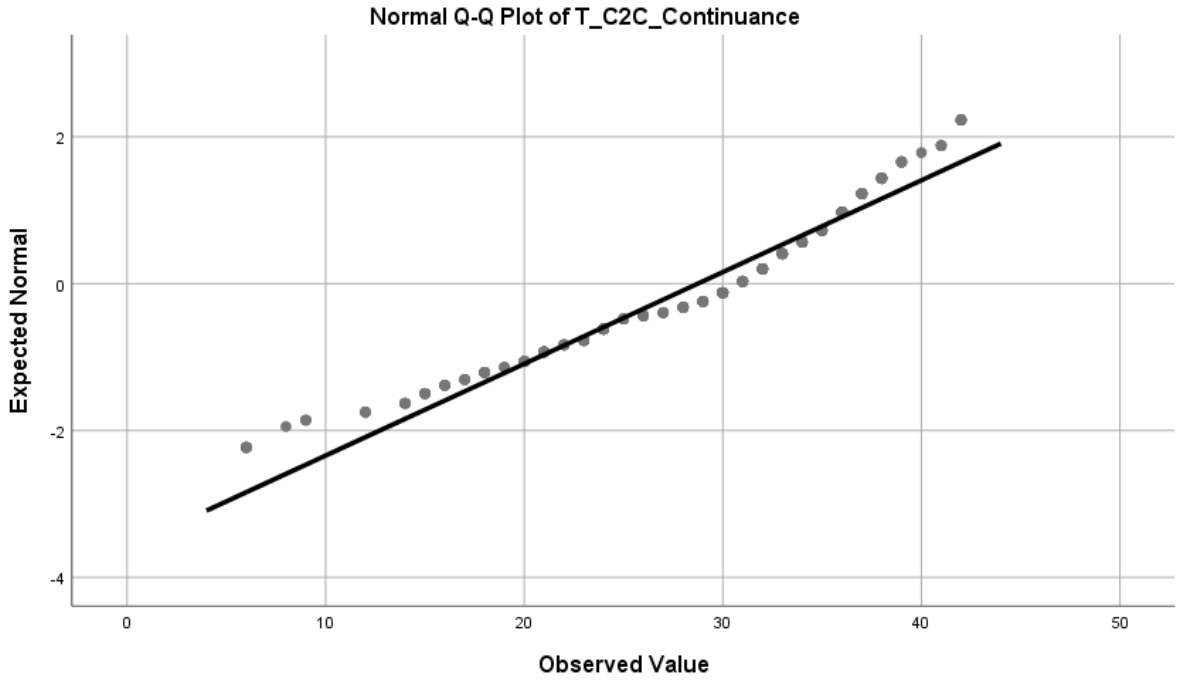


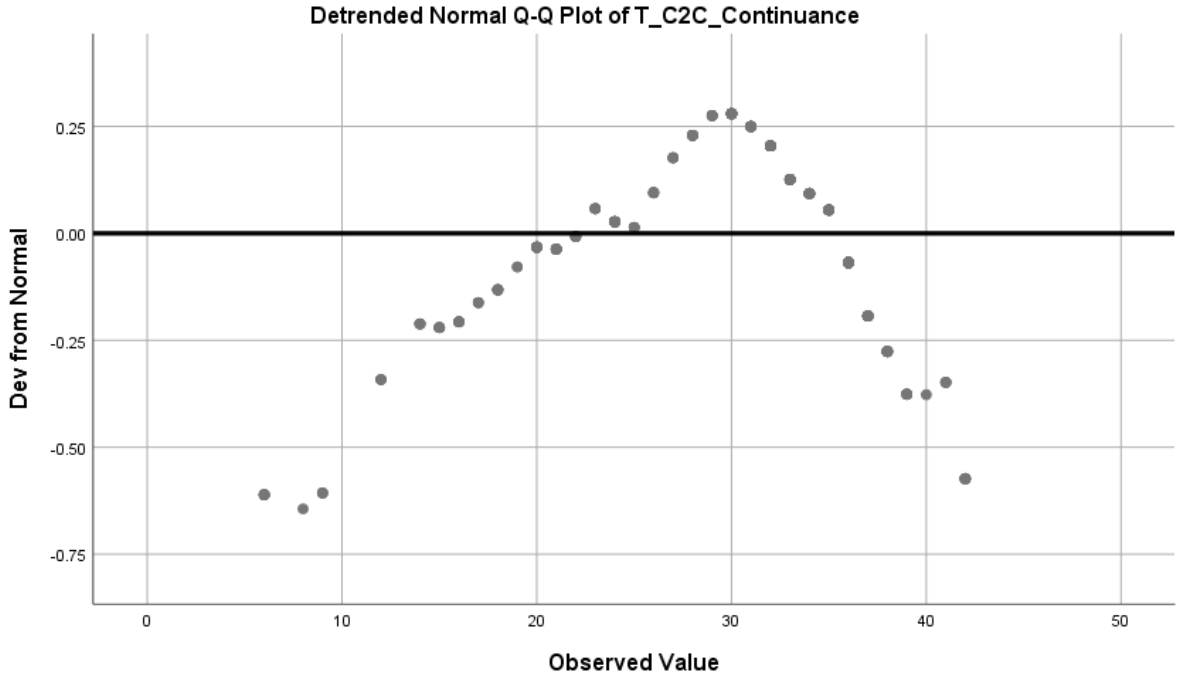
Total sub-scale affective commitment to organisational change



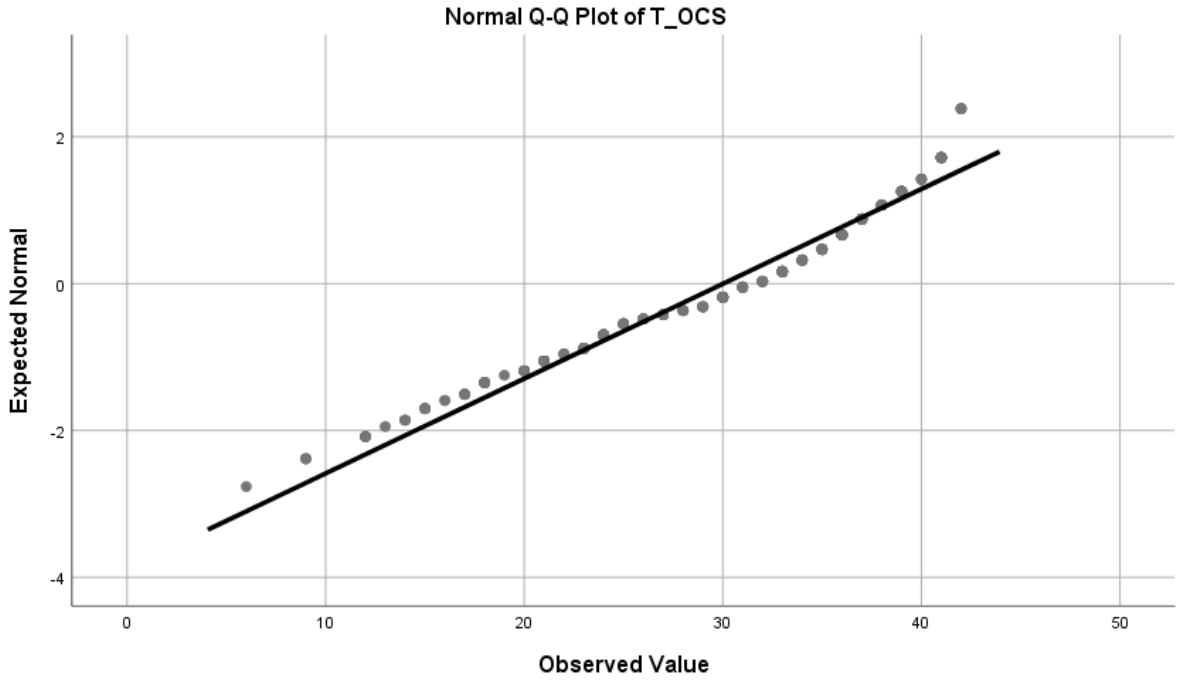


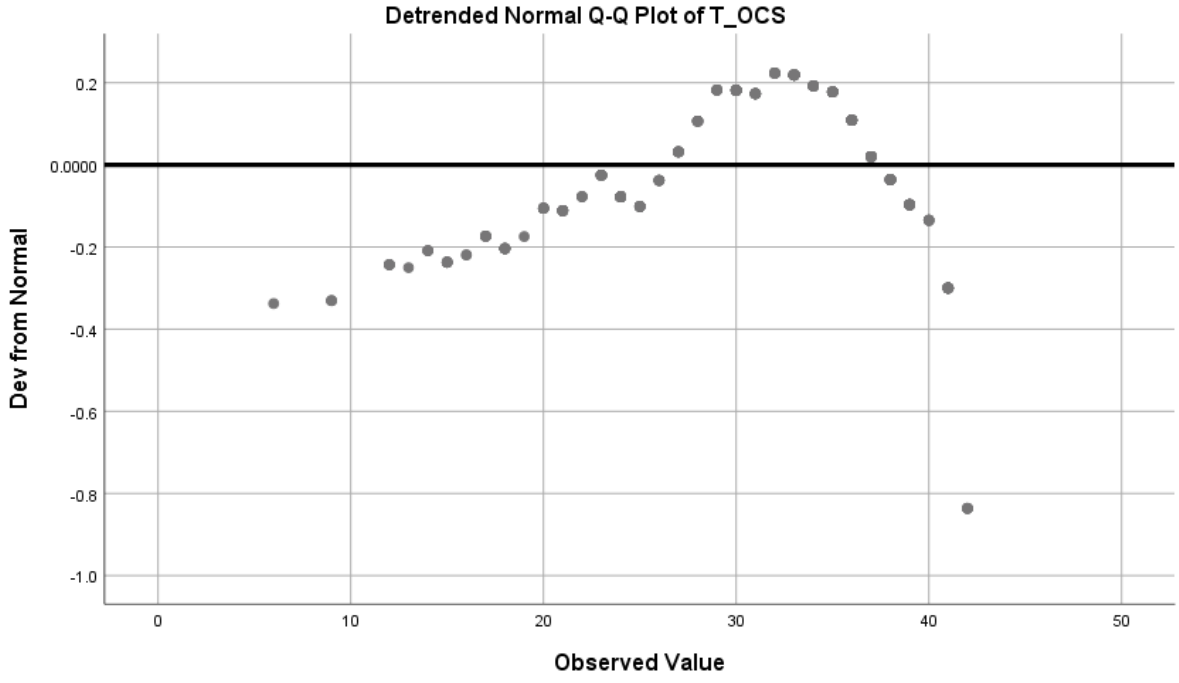
Total sub-scale continuance commitment to organisational change





Total potential new scale organisational change success





Appendix M: Output for inter-item correlation matrix and item-total statistics

Inter-Item Correlation Matrix and Item-Total Statistics for HRS

Inter-Item Correlation Matrix

	HRS_1	HRS_2	HRS_3	HRS_4	HRS_5	HRS_6	HRS_7	HRS_8
HRS_1	1.000	.758	.710	.754	.677	.605	.463	.617
HRS_2	.758	1.000	.755	.801	.723	.646	.499	.659
HRS_3	.710	.755	1.000	.785	.769	.617	.584	.689
HRS_4	.754	.801	.785	1.000	.781	.689	.595	.711
HRS_5	.677	.723	.769	.781	1.000	.682	.609	.715
HRS_6	.605	.646	.617	.689	.682	1.000	.672	.679
HRS_7	.463	.499	.584	.595	.609	.672	1.000	.664
HRS_8	.617	.659	.689	.711	.715	.679	.664	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HRS_1	35.45	75.096	.765	.654	.936
HRS_2	35.66	74.254	.814	.728	.933
HRS_3	35.60	74.460	.829	.720	.932
HRS_4	35.62	72.732	.868	.777	.929
HRS_5	35.69	73.609	.838	.715	.931
HRS_6	35.41	75.198	.772	.628	.936
HRS_7	36.02	74.838	.675	.558	.944
HRS_8	35.55	74.035	.798	.650	.934

Inter-Item Correlation Matrix and Item-Total Statistics for HRP

Inter-Item Correlation Matrix

	HRP_1	HRP_2	HRP_3	HRP_4	HRP_5	HRP_6	HRP_7	HRP_8	HRP_9	HRP_10	HRP_11	HRP_12	HRP_13	HRP_14
HRP_1	1.000	.695	.659	.552	.520	.522	.595	.478	.451	.553	.545	.598	.621	.534
HRP_2	.695	1.000	.693	.606	.522	.579	.607	.493	.452	.536	.567	.589	.572	.567
HRP_3	.659	.693	1.000	.583	.578	.569	.576	.427	.443	.564	.633	.604	.558	.574
HRP_4	.552	.606	.583	1.000	.681	.576	.580	.457	.465	.569	.555	.526	.557	.563
HRP_5	.520	.522	.578	.681	1.000	.646	.515	.327	.557	.538	.589	.473	.607	.560
HRP_6	.522	.579	.569	.576	.646	1.000	.669	.508	.576	.614	.692	.595	.637	.588
HRP_7	.595	.607	.576	.580	.515	.669	1.000	.582	.545	.607	.685	.581	.617	.583
HRP_8	.478	.493	.427	.457	.327	.508	.582	1.000	.585	.511	.446	.566	.490	.517
HRP_9	.451	.452	.443	.465	.557	.576	.545	.585	1.000	.564	.553	.412	.499	.547
HRP_10	.553	.536	.564	.569	.538	.614	.607	.511	.564	1.000	.694	.562	.650	.633
HRP_11	.545	.567	.633	.555	.589	.692	.685	.446	.553	.694	1.000	.655	.647	.669
HRP_12	.598	.589	.604	.526	.473	.595	.581	.566	.412	.562	.655	1.000	.666	.619
HRP_13	.621	.572	.558	.557	.607	.637	.617	.490	.499	.650	.647	.666	1.000	.642
HRP_14	.534	.567	.574	.563	.560	.588	.583	.517	.547	.633	.669	.619	.642	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HRP_1	66.75	184.920	.728	.609	.944
HRP_2	66.81	184.085	.743	.632	.944
HRP_3	66.52	187.069	.742	.622	.944
HRP_4	66.45	187.073	.719	.595	.944
HRP_5	66.23	190.829	.702	.648	.945
HRP_6	66.49	188.833	.771	.643	.943
HRP_7	66.64	188.913	.770	.635	.943
HRP_8	67.07	190.669	.629	.557	.947
HRP_9	66.74	189.091	.651	.552	.946
HRP_10	66.54	184.399	.753	.609	.944
HRP_11	66.53	187.621	.789	.703	.943
HRP_12	67.01	184.948	.739	.631	.944
HRP_13	66.60	185.600	.772	.642	.943
HRP_14	66.55	187.424	.755	.594	.943

Inter-Item Correlation Matrix and Item-Total Statistics for HRF

Inter-Item Correlation Matrix

	HRF_1	HRF_2	HRF_3	HRF_4	HRF_5	HRF_6	HRF_7
HRF_1	1.000	.834	.748	.742	.746	.729	.720
HRF_2	.834	1.000	.858	.815	.770	.806	.771
HRF_3	.748	.858	1.000	.789	.770	.776	.774
HRF_4	.742	.815	.789	1.000	.820	.787	.826
HRF_5	.746	.770	.770	.820	1.000	.840	.820
HRF_6	.729	.806	.776	.787	.840	1.000	.812
HRF_7	.720	.771	.774	.826	.820	.812	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HRF_1	29.31	67.115	.824	.723	.960
HRF_2	29.55	66.006	.895	.845	.955
HRF_3	29.48	66.619	.865	.778	.957
HRF_4	29.51	65.830	.879	.787	.956
HRF_5	29.41	66.531	.877	.797	.956
HRF_6	29.48	67.207	.873	.786	.957
HRF_7	29.44	65.912	.867	.774	.957

Inter-Item Correlation Matrix and Item-Total Statistics for HRA

Inter-Item Correlation Matrix

	HRA_1	HRA_2	HRA_3	HRA_4	HRA_5	HRA_6	HRA_7	HRA_8	HRA_9
HRA_1	1.000	.902	.673	.704	.742	.697	.688	.685	.675
HRA_2	.902	1.000	.695	.752	.786	.757	.741	.713	.675
HRA_3	.673	.695	1.000	.785	.728	.674	.680	.617	.644
HRA_4	.704	.752	.785	1.000	.806	.758	.775	.705	.672
HRA_5	.742	.786	.728	.806	1.000	.850	.846	.780	.756
HRA_6	.697	.757	.674	.758	.850	1.000	.891	.826	.755
HRA_7	.688	.741	.680	.775	.846	.891	1.000	.853	.760
HRA_8	.685	.713	.617	.705	.780	.826	.853	1.000	.793
HRA_9	.675	.675	.644	.672	.756	.755	.760	.793	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
HRA_1	38.36	135.268	.813	.826	.961
HRA_2	38.37	135.128	.854	.856	.959
HRA_3	38.17	137.730	.771	.663	.962
HRA_4	38.25	135.623	.844	.758	.959
HRA_5	38.45	132.864	.898	.820	.957
HRA_6	38.47	132.636	.885	.840	.957
HRA_7	38.41	132.065	.889	.856	.957
HRA_8	38.66	133.372	.848	.790	.959
HRA_9	38.49	135.450	.810	.697	.961

Inter-Item Correlation Matrix and Item-Total Statistics for affective commitment to change (C2CA)

Inter-Item Correlation Matrix

	C2C_1	C2C_2	Rev_Q11_3	C2C_4	Rev_Q11_5	Rev_Q11_6
C2C_1	1.000	.869	.633	.811	.553	.583
C2C_2	.869	1.000	.665	.807	.555	.574
Rev_Q11_3	.633	.665	1.000	.618	.783	.819
C2C_4	.811	.807	.618	1.000	.562	.610
Rev_Q11_5	.553	.555	.783	.562	1.000	.766
Rev_Q11_6	.583	.574	.819	.610	.766	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C2C_1	26.37	41.214	.797	.792	.913
C2C_2	26.45	41.060	.803	.801	.912
Rev_Q11_3	26.07	39.548	.824	.767	.909
C2C_4	26.38	40.801	.786	.720	.914
Rev_Q11_5	26.16	40.969	.743	.664	.920
Rev_Q11_6	26.12	40.467	.779	.725	.915

Inter-Item Correlation Matrix and Item-Total Statistics for continuance commitment to change (C2CC)

Inter-Item Correlation Matrix

	C2C_7	C2C_8	C2C_9	C2C_10	C2C_11	C2C_12
C2C_7	1.000	.422	.590	.579	.518	.553
C2C_8	.422	1.000	.345	.206	.276	.212
C2C_9	.590	.345	1.000	.799	.753	.702
C2C_10	.579	.206	.799	1.000	.731	.757
C2C_11	.518	.276	.753	.731	1.000	.730
C2C_12	.553	.212	.702	.757	.730	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C2C_7	23.93	46.154	.666	.461	.855
C2C_8	24.70	52.038	.339	.230	.910
C2C_9	23.79	43.969	.824	.726	.829
C2C_10	23.76	43.390	.782	.734	.835
C2C_11	23.86	43.103	.764	.658	.838
C2C_12	23.67	45.104	.750	.652	.841

Appendix N: Output for checking the assumptions for regression analysis

Correlations

		T_OCS	T_HRS	T_HRP	T_HRF	T_HRA
Pearson Correlation	T_OCS	1.000	.698	.696	.710	.654
	T_HRS	.698	1.000	.768	.824	.744
	T_HRP	.696	.768	1.000	.804	.734
	T_HRF	.710	.824	.804	1.000	.820
	T_HRA	.654	.744	.734	.820	1.000
Sig. (1-tailed)	T_OCS	.	.000	.000	.000	.000
	T_HRS	.000	.	.000	.000	.000
	T_HRP	.000	.000	.	.000	.000
	T_HRF	.000	.000	.000	.	.000
	T_HRA	.000	.000	.000	.000	.
N	T_OCS	348	348	348	348	348
	T_HRS	348	348	348	348	348
	T_HRP	348	348	348	348	348
	T_HRF	348	348	348	348	348
	T_HRA	348	348	348	348	348

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.756 [a]	.571	.566	5.101	1.568

a. Predictors: (Constant), T_HRA, T_HRP, T_HRS, T_HRF

b. Dependent Variable: T_OCS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11900.232	4	2975.058	114.315	.000 [b]
	Residual	8926.627	343	26.025		
	Total	20826.859	347			

a. Dependent Variable: T_OCS

b. Predictors: (Constant), T_HRA, T_HRP, T_HRS, T_HRF

Coefficients[a]

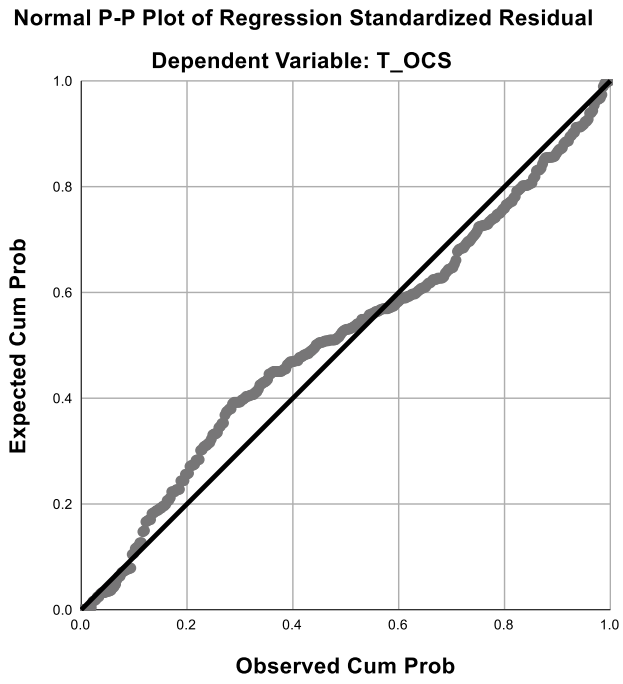
Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.680	1.404		2.621	.009	.918	6.442					
	T_HRS	.194	.052	.245	3.688	.000	.090	.297	.698	.195	.130	.283	3.535
	T_HRP	.135	.033	.257	4.038	.000	.069	.201	.696	.213	.143	.310	3.229
	T_HRF	.172	.065	.210	2.653	.008	.044	.299	.710	.142	.094	.199	5.031
	T_HRA	.066	.038	.111	1.734	.084	-.009	.141	.654	.093	.061	.305	3.281

a. Dependent Variable: T_OCS

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	8.92	40.35	30.02	5.856	348
Std. Predicted Value	-3.603	1.764	.000	1.000	348
Standard Error of Predicted Value	.283	1.831	.565	.235	348
Adjusted Predicted Value	9.07	40.55	30.02	5.860	348
Residual	-23.311	18.240	.000	5.072	348
Std. Residual	-4.569	3.575	.000	.994	348
Stud. Residual	-4.582	3.677	.000	1.003	348
Deleted Residual	-23.443	19.295	-.005	5.162	348
Stud. Deleted Residual	-4.723	3.747	-.001	1.010	348
Mahal. Distance	.072	43.727	3.989	4.940	348
Cook's Distance	.000	.157	.004	.011	348
Centered Leverage Value	.000	.126	.011	.014	348

a. Dependent Variable: T_OCS


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: T_OCS
Expected Cum Prob
Observed Cum Prob
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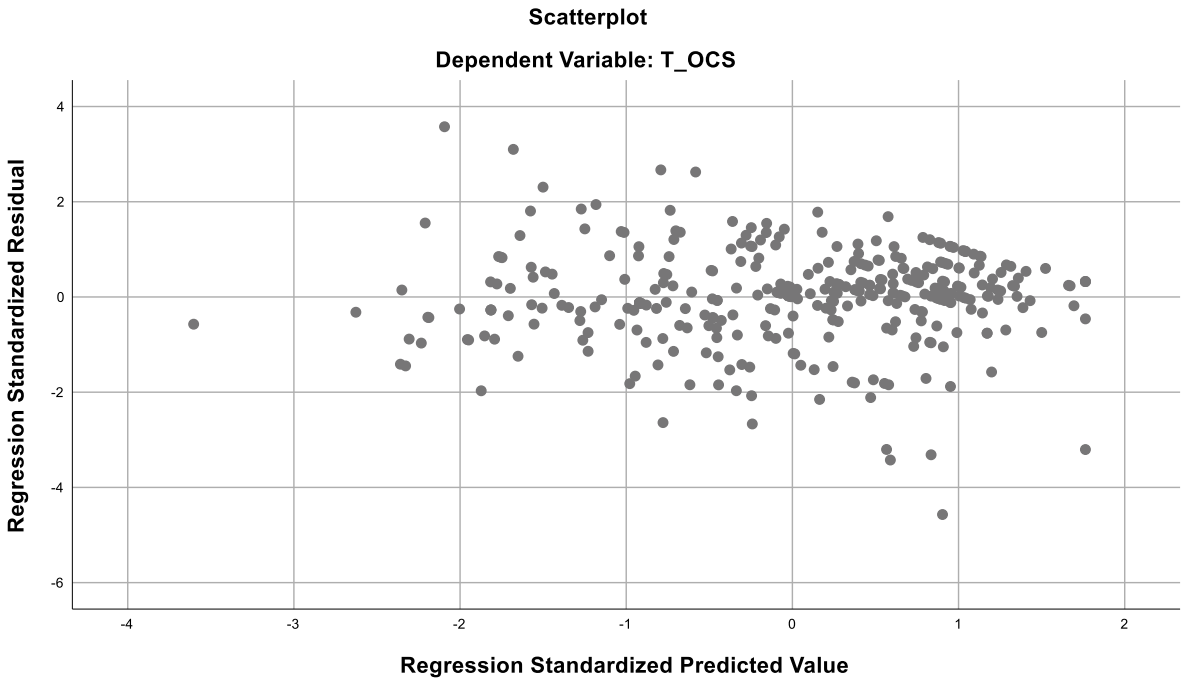
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: T_OCS
Regression Standardized Residual
Regression Standardized Predicted Value
4
2
0
-2
-4
-6
-4
-3
-2
-1
0
1
2

Appendix O: Output for regression analysis for mediation from the Hayes PROCESS procedure for SPSS

```
Run MATRIX procedure:

*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRS
    M  : T_C2CA

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .592       .350     37.626    186.428      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    12.848      1.406      9.140       .000     10.083     15.613
T_HRS         .458       .034     13.654       .000       .392       .524

Standardized coefficients
          coeff
T_HRS       .592

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .748       .560     26.576    219.341      2.000    345.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant     3.199      1.316      2.431       .016       .610      5.788
T_HRS         .395       .035     11.293       .000       .326       .464
T_C2CA        .341       .045      7.537       .000       .252       .429

Standardized coefficients
           coeff
T_HRS        .500
T_C2CA       .334
```

```
************************** TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .698       .487     30.862    328.839      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      7.575      1.273      5.950       .000      5.071     10.079
T_HRS          .551       .030     18.134       .000       .492       .611

Standardized coefficients
           coeff
T_HRS       .698

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .551       .030     18.134       .000       .492       .611       .071       .698

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .395       .035     11.293       .000       .326       .464       .051       .500

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .156       .028       .102       .212

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .020       .004       .013       .027

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .198       .035       .131       .267

********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRP
    M  : T_C2CA

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .630       .397     34.889    228.195      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      8.136      1.579      5.151       .000      5.029     11.242
T_HRP          .326       .022     15.106       .000       .283       .368

Standardized coefficients
           coeff
T_HRP       .630

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .738       .545     27.486    206.367      2.000    345.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      1.089      1.455       .749       .455     -1.772      3.950
T_HRP          .261       .025     10.578       .000       .212       .309
T_C2CA         .324       .048      6.796       .000       .230       .418

Standardized coefficients
            coeff
T_HRP        .495
T_C2CA       .318

************************ TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .696       .484     31.075    324.218      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      3.727      1.491      2.500       .013       .795      6.659
T_HRP          .366       .020     18.006       .000       .326       .406

Standardized coefficients
           coeff
T_HRP       .696
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .366       .020     18.006       .000       .326       .406       .047       .696

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .261       .025     10.578       .000       .212       .309       .034       .495

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .106       .020       .068       .145

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .014       .003       .009       .019

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .200       .037       .130       .274

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRF
    M  : T_C2CA

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .603       .364     36.816    198.139      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    14.891      1.225     12.161       .000     12.483     17.300
T_HRF         .484       .034     14.076       .000       .416       .551

Standardized coefficients
          coeff
T_HRF       .603

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .753       .568     26.098    226.507      2.000    345.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant     5.274      1.232      4.282       .000      2.851      7.697
T_HRF         .423       .036     11.670       .000       .352       .495
T_C2CA        .324       .045      7.152       .000       .235       .413

Standardized coefficients
           coeff
T_HRF        .518
T_C2CA       .317

************************* TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .710       .504     29.881    350.994      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    10.095      1.103      9.150       .000      7.925     12.264
T_HRF         .580       .031     18.735       .000       .519       .641

Standardized coefficients
          coeff
T_HRF       .710
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .580       .031     18.735       .000       .519       .641       .075       .710

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .423       .036     11.670       .000       .352       .495       .055       .518

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .157       .029       .102       .215

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .020       .004       .013       .028

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .192       .035       .126       .262

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRA
    M  : T_C2CA

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CA

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .525       .276     41.912    131.976      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    18.256      1.205     15.153       .000     15.886     20.625
T_HRA         .307       .027     11.488       .000       .254       .359

Standardized coefficients
          coeff
T_HRA       .525

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .736       .541     27.707    203.338      2.000    345.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant     5.837      1.263      4.620       .000      3.352      8.321
T_HRA         .265       .026     10.404       .000       .215       .316
T_C2CA        .403       .044      9.231       .000       .318       .489

Standardized coefficients
           coeff
T_HRA        .446
T_C2CA       .396

************************* TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .654       .428     34.451    258.537      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    13.203      1.092     12.088       .000     11.054     15.351
T_HRA         .389       .024     16.079       .000       .342       .437

Standardized coefficients
          coeff
T_HRA       .654
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .389       .024     16.079       .000       .342       .437       .050       .654

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .265       .026     10.404       .000       .215       .316       .034       .446

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .124       .020       .087       .165

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .016       .003       .011       .022

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CA       .208       .032       .148       .274

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRS
    M  : T_C2CC

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CC

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .340       .116     56.843     45.269      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant     17.439      1.728     10.094       .000     14.041     20.837
T_HRS          .278       .041      6.728       .000       .196       .359

Standardized coefficients
           coeff
T_HRS       .340

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .717       .514     29.354    182.257      2.000    345.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      4.655      1.413      3.295       .001      1.877      7.433
T_HRS          .505       .032     16.011       .000       .443       .567
T_C2CC         .167       .039      4.333       .000       .091       .243

Standardized coefficients
            coeff
T_HRS        .639
T_C2CC       .173

************************ TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .698       .487     30.862    328.839      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      7.575      1.273      5.950       .000      5.071     10.079
T_HRS          .551       .030     18.134       .000       .492       .611

Standardized coefficients
           coeff
T_HRS       .698
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .551       .030     18.134       .000       .492       .611       .071       .698

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .505       .032     16.011       .000       .443       .567       .065       .639

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .046       .015       .021       .081

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .006       .002       .003       .010

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .059       .019       .027       .101

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRP
    M  : T_C2CC

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CC

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .472       .223     49.929     99.449      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant     10.283      1.889      5.443       .000      6.567     13.999
T_HRP          .257       .026      9.972       .000       .206       .308

Standardized coefficients
          coeff
T_HRP       .472

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .699       .489     30.868    164.853      2.000    345.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant     2.935      1.548      1.896       .059      -.109      5.980
T_HRP          .347       .023     15.062       .000       .301       .392
T_C2CC         .077       .042      1.821       .069      -.006       .160

Standardized coefficients
           coeff
T_HRP        .658
T_C2CC       .080

************************ TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .696       .484     31.075    324.218      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant     3.727      1.491      2.500       .013       .795      6.659
T_HRP          .366       .020     18.006       .000       .326       .406

Standardized coefficients
          coeff
T_HRP       .696
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .366       .020     18.006       .000       .326       .406       .047       .696

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .347       .023     15.062       .000       .301       .392       .045       .658

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .020       .012      -.002       .045

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .003       .002       .000       .006

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .038       .023      -.004       .085

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRF
    M  : T_C2CC

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CC

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .403       .162     53.861     66.931      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant     17.060      1.481     11.518       .000     14.146     19.973
T_HRF          .340       .042      8.181       .000       .258       .422

Standardized coefficients
          coeff
T_HRF       .403

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .719       .517     29.177    184.400      2.000    345.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant      8.031      1.282      6.264       .000      5.509     10.553
T_HRF          .539       .033     16.124       .000       .473       .604
T_C2CC         .121       .040      3.057       .002       .043       .199

Standardized coefficients
           coeff
T_HRF        .659
T_C2CC       .125

************************* TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .710       .504     29.881    350.994      1.000    346.000       .000

Model
              coeff         se          t          p       LLCI       ULCI
constant     10.095      1.103      9.150       .000      7.925     12.264
T_HRF          .580       .031     18.735       .000       .519       .641

Standardized coefficients
          coeff
T_HRF       .710
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .580       .031     18.735       .000       .519       .641       .075       .710

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .539       .033     16.124       .000       .473       .604       .070       .659

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .041       .018       .010       .080

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .005       .002       .001       .010

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .050       .021       .013       .097

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

```
Run MATRIX procedure:


*************** PROCESS Procedure for SPSS Version 3.4.1 ***************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

**************************************************************************
Model  : 4
    Y  : T_OCS
    X  : T_HRA
    M  : T_C2CC

Sample
Size:  348

**************************************************************************
OUTCOME VARIABLE:
 T_C2CC

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .422       .178     52.843     74.883      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    17.532      1.353     12.961       .000     14.871     20.192
T_HRA         .259       .030      8.653       .000       .200       .318

Standardized coefficients
          coeff
T_HRA       .422

**************************************************************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .666       .444     33.587    137.547      2.000    345.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    10.838      1.314      8.245       .000      8.253     13.423
T_HRA         .354       .026     13.438       .000       .302       .406
T_C2CC        .135       .043      3.147       .002       .051       .219

Standardized coefficients
           coeff
T_HRA       .595
T_C2CC      .139

************************* TOTAL EFFECT MODEL ****************************
OUTCOME VARIABLE:
 T_OCS

Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .654       .428     34.451    258.537      1.000    346.000       .000

Model
             coeff         se          t          p       LLCI       ULCI
constant    13.203      1.092     12.088       .000     11.054     15.351
T_HRA         .389       .024     16.079       .000       .342       .437

Standardized coefficients
          coeff
T_HRA       .654
```

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y **************

Total effect of X on Y
     Effect         se          t          p       LLCI       ULCI       c_ps       c_cs
       .389       .024     16.079       .000       .342       .437       .050       .654

Direct effect of X on Y
     Effect         se          t          p       LLCI       ULCI      c'_ps      c'_cs
       .354       .026     13.438       .000       .302       .406       .046       .595

Indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .035       .014       .011       .067

Partially standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .005       .002       .001       .009

Completely standardized indirect effect(s) of X on Y:
           Effect     BootSE   BootLLCI   BootULCI
T_C2CC       .059       .024       .018       .113

*********************** ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

------ END MATRIX -----
```

Appendix P: Output from the EFA procedure

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.965
Bartlett's Test of Sphericity	Approx. Chi-Square	21043.762
	df	1540
	Sig.	.000

Goodness-of-fit Test

Chi-Square	df	Sig.
3167.554	1169	.000

Communalities

	Initial	Extraction
HRS_1	.769	.711
HRS_2	.782	.770
HRS_3	.800	.756
HRS_4	.836	.818
HRS_5	.786	.733
HRS_6	.710	.632
HRS_7	.715	.610
HRS_8	.741	.668
HRP_1	.717	.576
HRP_2	.720	.584
HRP_3	.693	.576
HRP_4	.726	.586
HRP_5	.720	.630
HRP_6	.717	.670
HRP_7	.705	.651
HRP_8	.684	.459
HRP_9	.649	.474
HRP_10	.681	.612
HRP_11	.741	.681
HRP_12	.737	.640
HRP_13	.721	.653
HRP_14	.713	.621
HRF_1	.811	.687
HRF_2	.878	.808
HRF_3	.841	.767
HRF_4	.826	.821
HRF_5	.847	.816
HRF_6	.835	.812
HRF_7	.855	.829
HRA_1	.883	.703
HRA_2	.889	.763
HRA_3	.744	.628
HRA_4	.829	.741
HRA_5	.873	.842
HRA_6	.885	.862
HRA_7	.887	.871
HRA_8	.853	.805
HRA_9	.761	.693
C2C_1	.859	.762
C2C_2	.856	.728
C2C_3	.824	.830
C2C_4	.778	.699
C2C_5	.745	.730
C2C_6	.792	.771
C2C_7	.542	.452
C2C_8	.449	.283
C2C_9	.784	.800
C2C_10	.817	.810
C2C_11	.719	.716
C2C_12	.734	.698
OCS_1	.835	.824
OCS_2	.764	.735
OCS_3	.745	.704
OCS_4	.832	.752
OCS_5	.803	.690
OCS_6	.807	.775

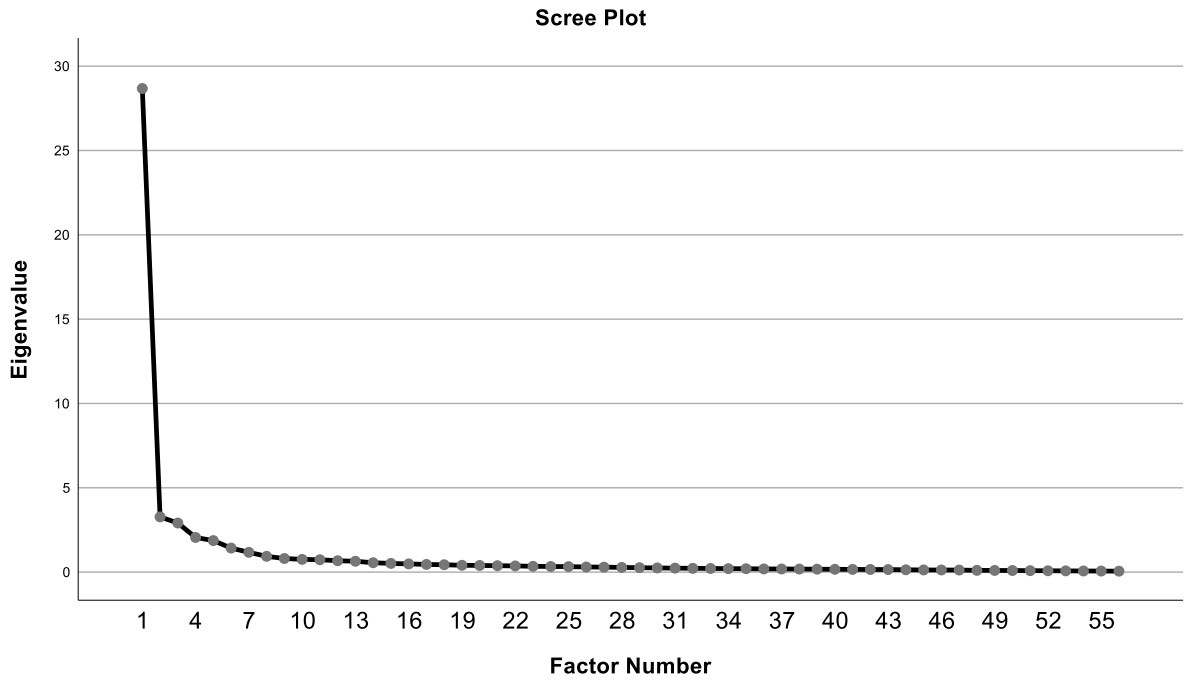
Extraction Method: Maximum Likelihood.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	28.675	51.206	51.206	28.292	50.522	50.522	23.061
2	3.273	5.845	57.051	2.862	5.111	55.632	22.400
3	2.910	5.197	62.248	2.738	4.890	60.522	19.829
4	2.055	3.669	65.917	1.623	2.899	63.421	20.016
5	1.868	3.336	69.254	1.646	2.940	66.361	13.973
6	1.425	2.545	71.799	1.243	2.219	68.580	11.015
7	1.172	2.093	73.892	.912	1.628	70.208	22.607
8	.936	1.671	75.563				
9	.807	1.441	77.004				
10	.756	1.349	78.353				
11	.733	1.309	79.662				
12	.675	1.205	80.867				
13	.644	1.150	82.018				
14	.556	.993	83.010				
15	.516	.921	83.932				
16	.486	.867	84.799				
17	.455	.813	85.612				
18	.437	.780	86.392				
19	.404	.721	87.113				
20	.394	.704	87.817				
21	.380	.679	88.496				
22	.367	.655	89.150				
23	.344	.613	89.764				
24	.333	.594	90.358				
25	.325	.580	90.939				
26	.304	.542	91.481				
27	.295	.528	92.008				
28	.278	.496	92.504				
29	.262	.468	92.973				
30	.248	.443	93.415				
31	.236	.422	93.837				
32	.225	.401	94.238				
33	.217	.387	94.625				
34	.206	.368	94.993				
35	.202	.360	95.353				
36	.188	.336	95.690				
37	.186	.332	96.022				
38	.181	.324	96.345				
39	.174	.311	96.656				
40	.166	.297	96.953				
41	.161	.288	97.240				
42	.156	.278	97.518				
43	.152	.272	97.790				
44	.138	.247	98.036				
45	.129	.230	98.266				
46	.125	.224	98.490				
47	.122	.218	98.708				
48	.105	.188	98.896				
49	.099	.176	99.072				
50	.095	.169	99.242				
51	.087	.156	99.397				
52	.079	.141	99.539				
53	.074	.133	99.671				
54	.066	.118	99.789				
55	.062	.111	99.900				
56	.056	.100	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.


Scree Plot
Eigenvalue
30
25
20
15
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1
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7
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19
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25
28
31
34
37
40
43
46
49
52
55
Factor Number

Pattern Matrix[a]

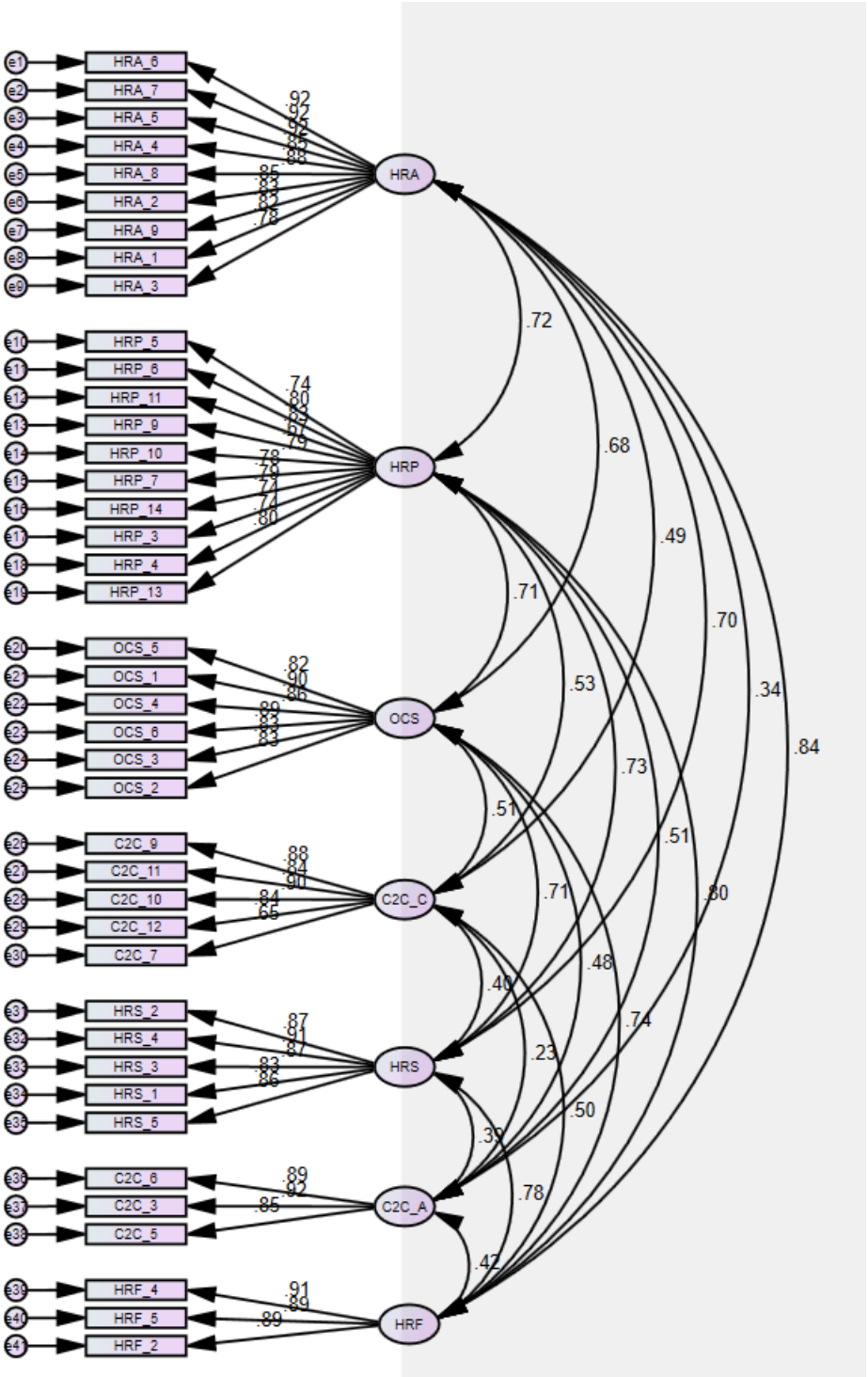
	Factor						
	1	2	3	4	5	6	7
HRA_6	.984						
HRA_7	.955						
HRA_5	.925						
HRA_4	.858						
HRA_8	.850						
HRA_2	.838						
HRA_9	.793						
HRA_1	.709						
HRA_3	.653						
HRP_5		.900					
HRP_6		.830					
HRP_11		.800					
HRP_9		.779					
HRP_10		.698					
HRP_7		.685					
HRP_14		.561					
HRP_3		.561					
HRP_4		.553					
HRP_13		.536					
OCS_5			.896				
OCS_1			.837				
OCS_4			.811				
OCS_6			.789				
OCS_3			.739				
OCS_2			.735				
C2C_9				.921			
C2C_11				.860			
C2C_10				.849			
C2C_12				.782			
C2C_7				.672			
HRS_2					.853		
HRS_4					.811		
HRS_3					.801		
HRS_1					.744		
HRS_5					.674		
C2C_6						.923	
C2C_5						.891	
C2C_3						.888	
HRF_4							.755
HRF_5							.750
HRF_2							.705
HRF_3							.699
HRF_6							.682
HRF_7	.391						.572
HRF_1							.543

Extraction Method: Maximum Likelihood.
Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

Appendix Q: Output from the CFA procedure

Model fit with 41-items established



Convergent and discriminant validity

	AVE	MSV	MaxR(H)	HRA	HRP	OCS	C2C_C	HRS	C2C_A	HRF
HRA	0.746	0.702	0.968	**0.864**						
HRP	0.591	0.634	0.938	0.718***	**0.769**					
OCS	0.731	0.542	0.945	0.681***	0.714***	**0.855**				
C2C_C	0.680	0.285	0.929	0.492***	0.534***	0.509***	**0.825**			
HRS	0.753	0.614	0.941	0.703***	0.729***	0.711***	0.399***	**0.868**		
C2C_A	0.790	0.263	0.924	0.341***	0.512***	0.481***	0.232***	0.388***	**0.889**	
HRF	0.803	0.702	0.925	0.838	0.796	0.736	0.502	0.783	0.416	**0.896**

Source: Developed by author, based on Gaskin (2020)

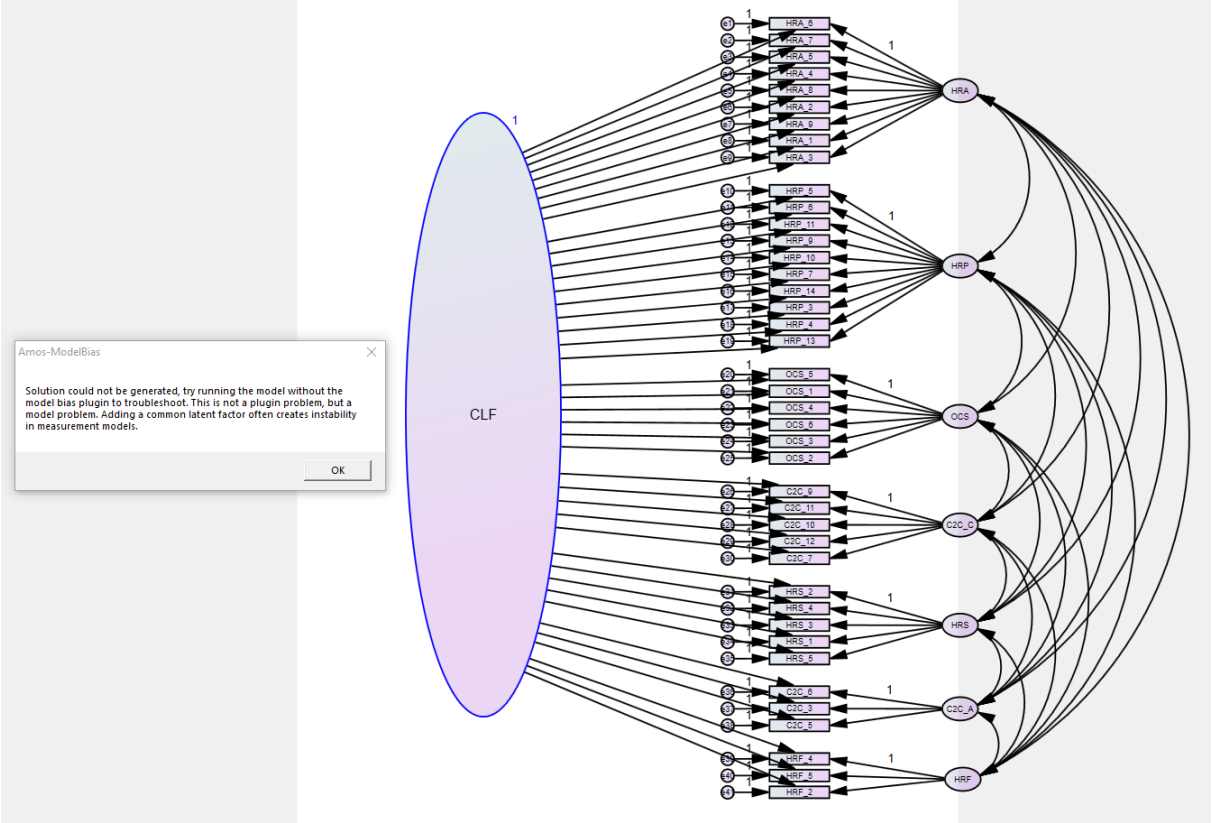
Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

HTMT analysis to assess discriminant validity

	HRA	HRP	OCS	C2C_C	HRS	C2C_A	HRF
HRA							
HRP	0.724						
OCS	0.686	0.714					
C2C_C	0.487	0.528	0.499				
HRS	0.716	0.736	0.712	0.400			
C2C_A	0.348	0.506	0.478	0.228	0.391		
HRF	0.839	0.797	0.735	0.490	0.788	0.422	

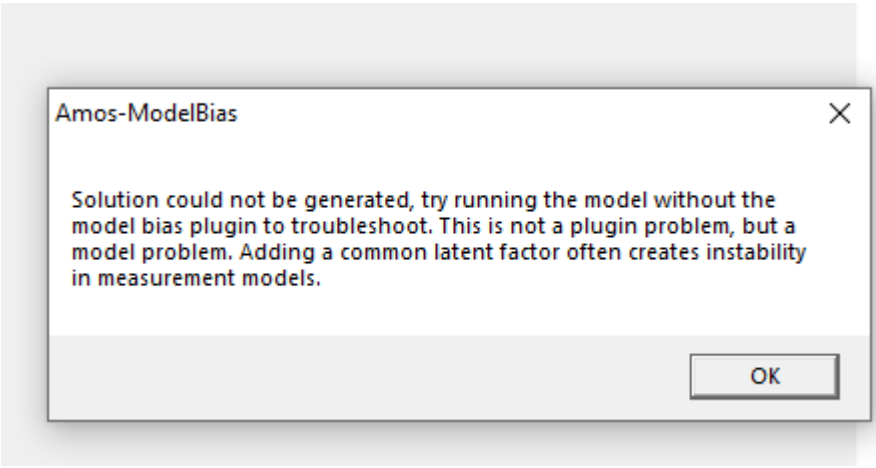
Source: Developed by author, based on Gaskin (2020)

The output from running the specific bias test with the Gaskin plugin



Source: Developed by author, based on Gaskin (2020)

Error message from running the specific bias test with the Gaskin plugin



Model fit for multigroup analysis for a well-established change initiative versus a completed change initiative

Measure	Estimate	Threshold	Interpretation
CMIN	3830.417	--	--
DF	1516.000	--	--
CMIN/DF	2.527	Between 1 and 3	Excellent
CFI	0.831	>0.95	Terrible
SRMR	0.059	<0.08	Excellent
RMSEA	0.066	<0.06	Acceptable
PClose	0.000	>0.05	Not Estimated

Source: Developed by author, based on Gaskin (2020)

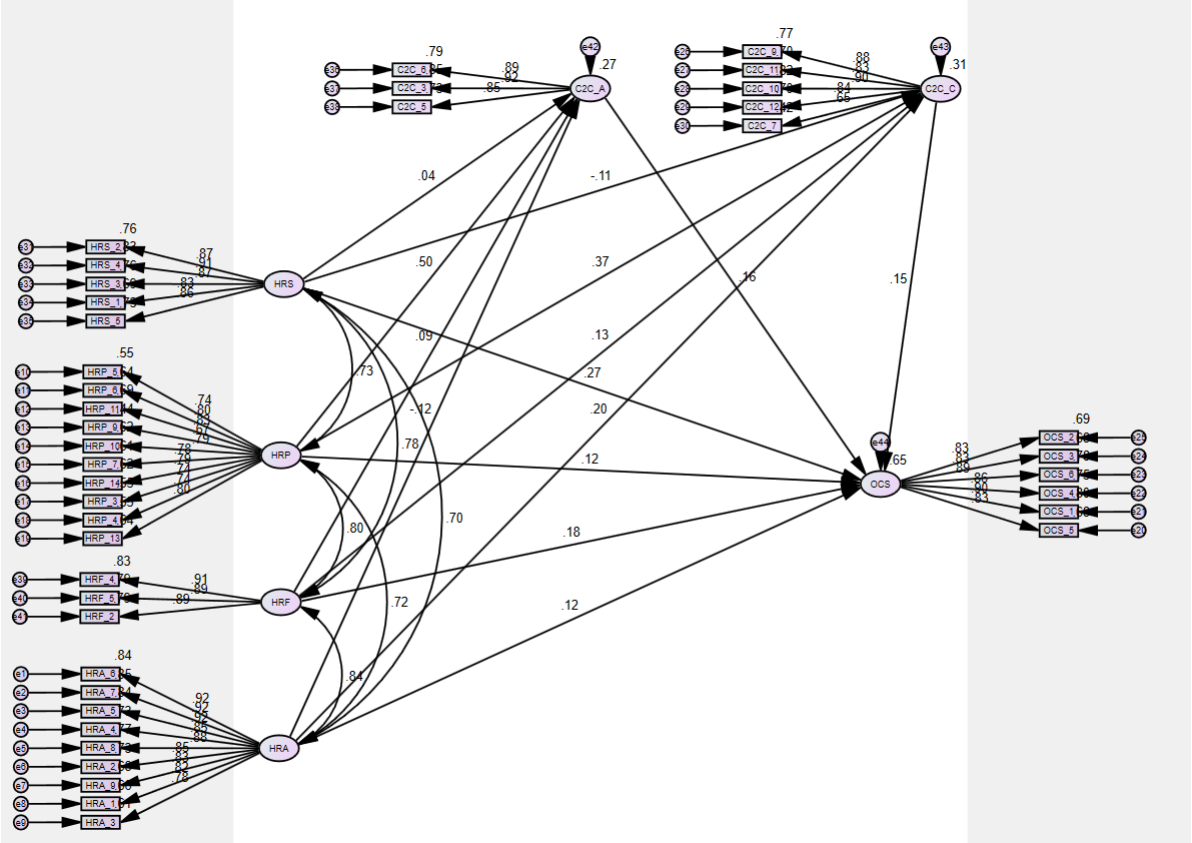
Model fit for multigroup analysis for the US versus rest of the world

Measure	Estimate	Threshold	Interpretation
CMIN	3945.016	--	--
DF	1516.000	--	--
CMIN/DF	2.602	Between 1 and 3	Excellent
CFI	0.841	>0.95	Terrible
SRMR	0.086	<0.08	Acceptable
RMSEA	0.068	<0.06	Acceptable
PClose	0.000	>0.05	Not Estimated

Source: Developed by author, based on Gaskin (2020)

Appendix R: Output from the SEM procedure

Structural model based on the measurement model



Source: Developed by author

Model fit for structural model based on the measurement model

Measure	Estimate	Threshold	Interpretation
CMIN	2171.426	--	--
DF	759.000	--	--
CMIN/DF	2.861	Between 1 and 3	Excellent
CFI	0.901	>0.95	Acceptable
SRMR	0.046	<0.08	Excellent
RMSEA	0.073	<0.06	Acceptable
PClose	0.000	>0.05	Not Estimated

Source: Developed by author, based on Gaskin (2020)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
C2CA_NEW	<---	HRS_NEW	.038	.049	.771	.441
C2CA_NEW	<---	HRP_NEW	.160	.031	5.247	***
C2CA_NEW	<---	HRF_NEW	.109	.092	1.195	.232
C2CA_NEW	<---	HRA_NEW	-.023	.026	-.881	.379
C2CC_NEW	<---	HRS_NEW	-.065	.082	-.788	.431
C2CC_NEW	<---	HRP_NEW	.216	.051	4.273	***
C2CC_NEW	<---	HRF_NEW	.173	.152	1.140	.254
C2CC_NEW	<---	HRA_NEW	.111	.044	2.529	.011
OCS_NEW	<---	HRS_NEW	.301	.065	4.603	***
OCS_NEW	<---	HRP_NEW	.104	.043	2.430	.015
OCS_NEW	<---	HRF_NEW	.300	.122	2.470	.013
OCS_NEW	<---	HRA_NEW	.091	.035	2.570	.010
OCS_NEW	<---	C2CA_NEW	.268	.071	3.773	***
OCS_NEW	<---	C2CC_NEW	.140	.043	3.260	.001

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
C2CA_NEW	<---	HRS_NEW	.057
C2CA_NEW	<---	HRP_NEW	.397
C2CA_NEW	<---	HRF_NEW	.108
C2CA_NEW	<---	HRA_NEW	-.071
C2CC_NEW	<---	HRS_NEW	-.057
C2CC_NEW	<---	HRP_NEW	.314
C2CC_NEW	<---	HRF_NEW	.101
C2CC_NEW	<---	HRA_NEW	.199
OCS_NEW	<---	HRS_NEW	.248
OCS_NEW	<---	HRP_NEW	.141
OCS_NEW	<---	HRF_NEW	.162
OCS_NEW	<---	HRA_NEW	.152
OCS_NEW	<---	C2CA_NEW	.146
OCS_NEW	<---	C2CC_NEW	.130

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
HRF_NEW	<-->	HRA_NEW	43.058	3.723	11.566	***
HRP_NEW	<-->	HRA_NEW	93.808	8.877	10.568	***
HRS_NEW	<-->	HRA_NEW	56.248	5.371	10.473	***
HRP_NEW	<-->	HRF_NEW	32.505	2.929	11.098	***
HRS_NEW	<-->	HRP_NEW	46.050	4.351	10.584	***
HRS_NEW	<-->	HRF_NEW	19.519	1.772	11.013	***

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Correlations: (Group number 1 - Default model)

			Estimate
HRF_NEW	<-->	HRA_NEW	.792
HRP_NEW	<-->	HRA_NEW	.689
HRS_NEW	<-->	HRA_NEW	.680
HRP_NEW	<-->	HRF_NEW	.742
HRS_NEW	<-->	HRP_NEW	.690
HRS_NEW	<-->	HRF_NEW	.733

Variances: (Group number 1 - Default model)

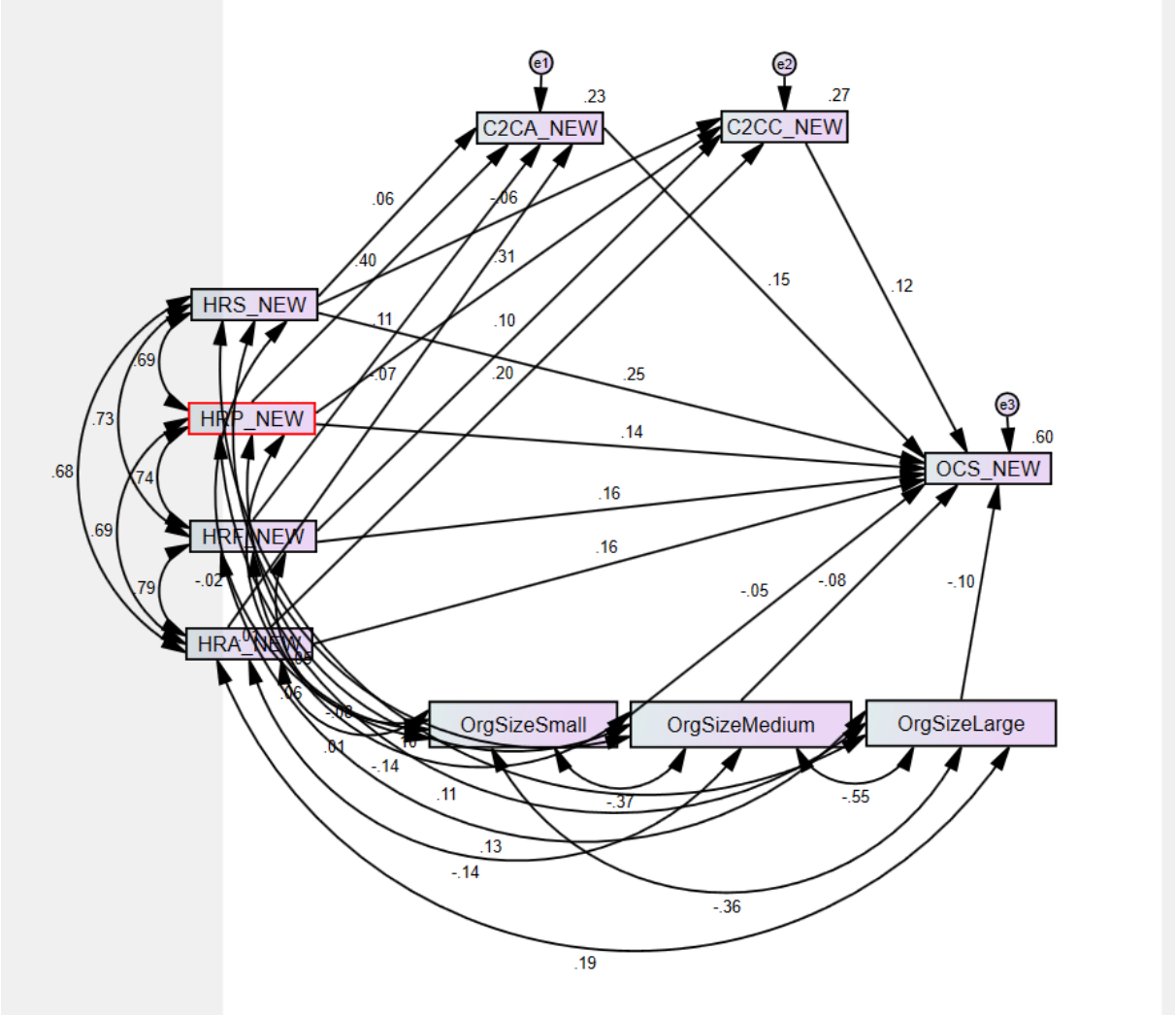
	Estimate	S.E.	C.R.	P
HRS_NEW	40.524	3.077	13.172	***
HRP_NEW	109.768	8.333	13.172	***
HRF_NEW	17.495	1.328	13.172	***
HRA_NEW	168.915	12.824	13.172	***
e1	13.805	1.048	13.172	***
e2	37.963	2.882	13.172	***
e3	24.167	1.835	13.172	***

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
C2CC_NEW	.268
C2CA_NEW	.226
OCS_NEW	.597

Controlling for organisational size



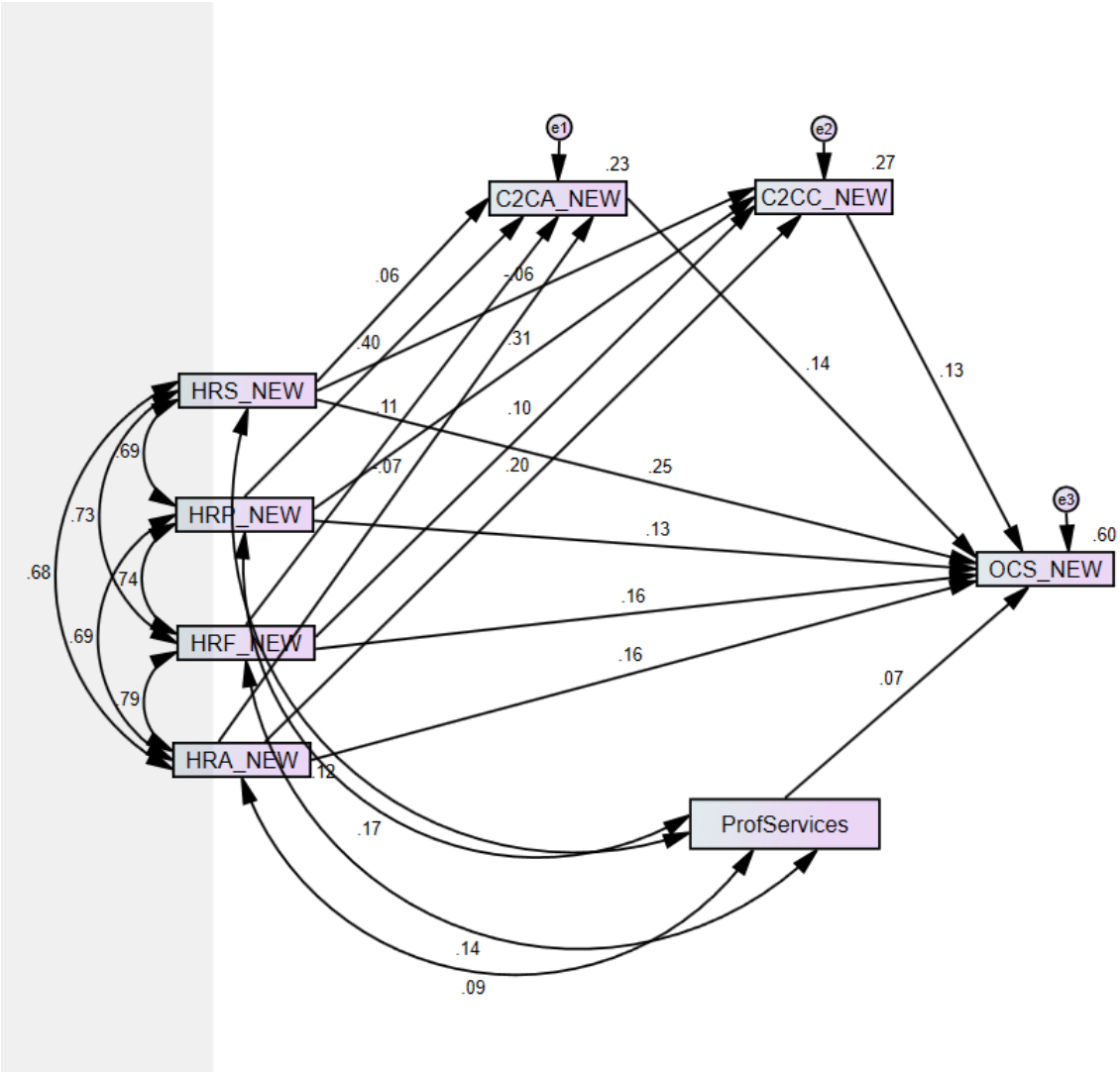
Source: Developed by author

Regression Weights: (Group number 1 - Default model) controlling for organisation size

			Estimate	S.E.	C.R.	P
C2CA_NEW	<---	HRS_NEW	.038	.049	.771	.441
C2CA_NEW	<---	HRP_NEW	.160	.031	5.247	***
C2CA_NEW	<---	HRF_NEW	.109	.092	1.195	.232
C2CA_NEW	<---	HRA_NEW	-.023	.026	-.881	.379
C2CC_NEW	<---	HRS_NEW	-.065	.082	-.788	.431
C2CC_NEW	<---	HRP_NEW	.216	.051	4.273	***
C2CC_NEW	<---	HRF_NEW	.173	.152	1.140	.254
C2CC_NEW	<---	HRA_NEW	.111	.044	2.529	.011
OCS_NEW	<---	HRS_NEW	.303	.066	4.619	***
OCS_NEW	<---	HRP_NEW	.107	.043	2.500	.012
OCS_NEW	<---	HRF_NEW	.295	.122	2.414	.016
OCS_NEW	<---	HRA_NEW	.096	.035	2.723	.006
OCS_NEW	<---	C2CA_NEW	.267	.071	3.776	***
OCS_NEW	<---	C2CC_NEW	.132	.043	3.098	.002
OCS_NEW	<---	OrgSizeLarge	-1.638	.972	-1.686	.092
OCS_NEW	<---	OrgSizeMedium	-1.363	.960	-1.419	.156
OCS_NEW	<---	OrgSizeSmall	-1.004	1.042	-.964	.335

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Controlling for the professional services industry



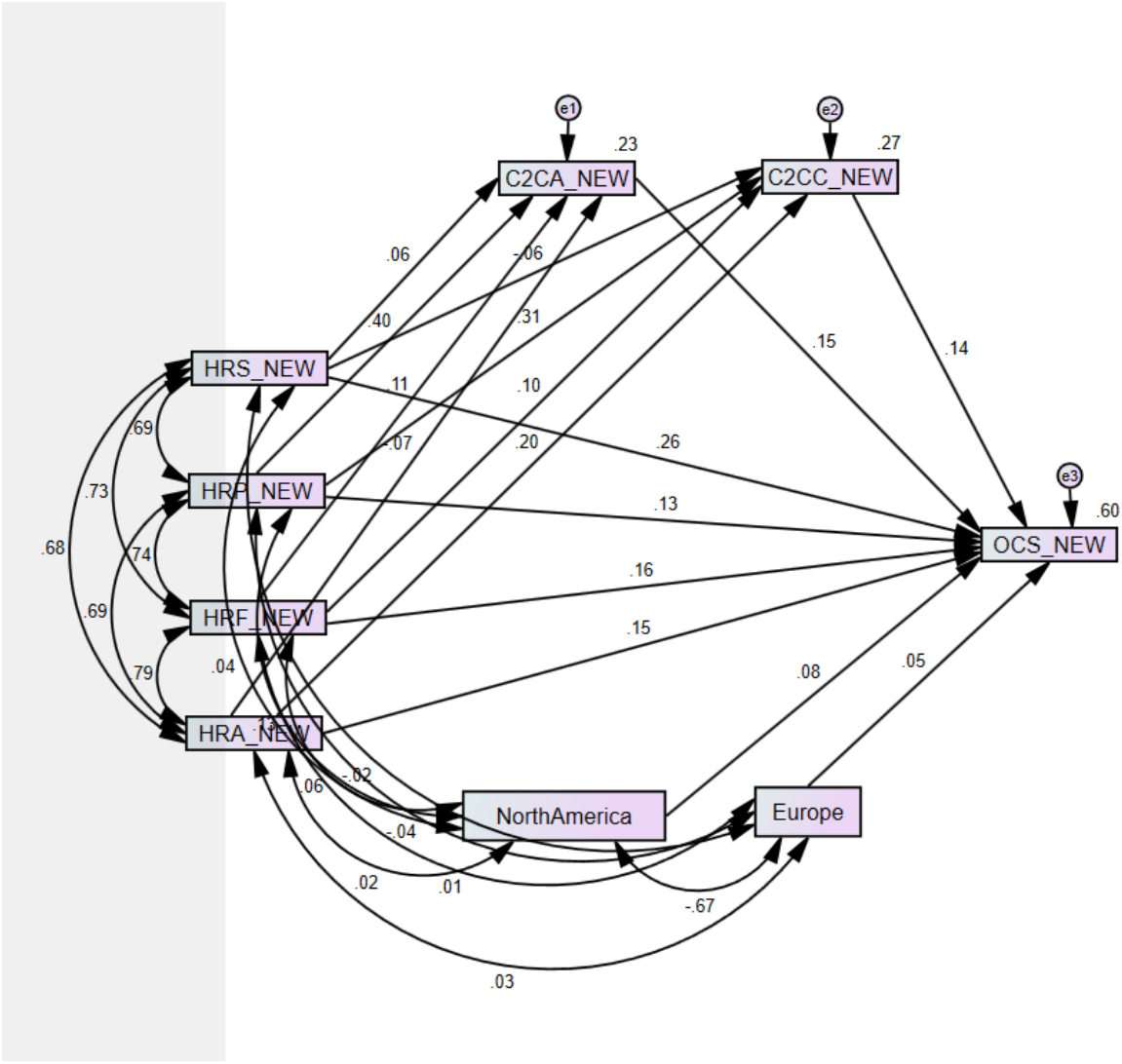
Source: Developed by author

Regression Weights: (Group number 1 - Default model) controlling for the professional services industry

			Estimate	S.E.	C.R.	P
C2CA_NEW	<---	HRS_NEW	.038	.049	.771	.441
C2CA_NEW	<---	HRP_NEW	.160	.031	5.247	***
C2CA_NEW	<---	HRF_NEW	.109	.092	1.195	.232
C2CA_NEW	<---	HRA_NEW	-.023	.026	-.881	.379
C2CC_NEW	<---	HRS_NEW	-.065	.082	-.788	.431
C2CC_NEW	<---	HRP_NEW	.216	.051	4.273	***
C2CC_NEW	<---	HRF_NEW	.173	.152	1.140	.254
C2CC_NEW	<---	HRA_NEW	.111	.044	2.529	.011
OCS_NEW	<---	HRS_NEW	.301	.065	4.619	***
OCS_NEW	<---	HRP_NEW	.096	.043	2.241	.025
OCS_NEW	<---	HRF_NEW	.288	.121	2.377	.017
OCS_NEW	<---	HRA_NEW	.095	.035	2.704	.007
OCS_NEW	<---	C2CA_NEW	.265	.071	3.746	***
OCS_NEW	<---	C2CC_NEW	.141	.043	3.301	***
OCS_NEW	<---	ProfServices	1.274	.656	1.941	.052

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Controlling for regions North America and Europe



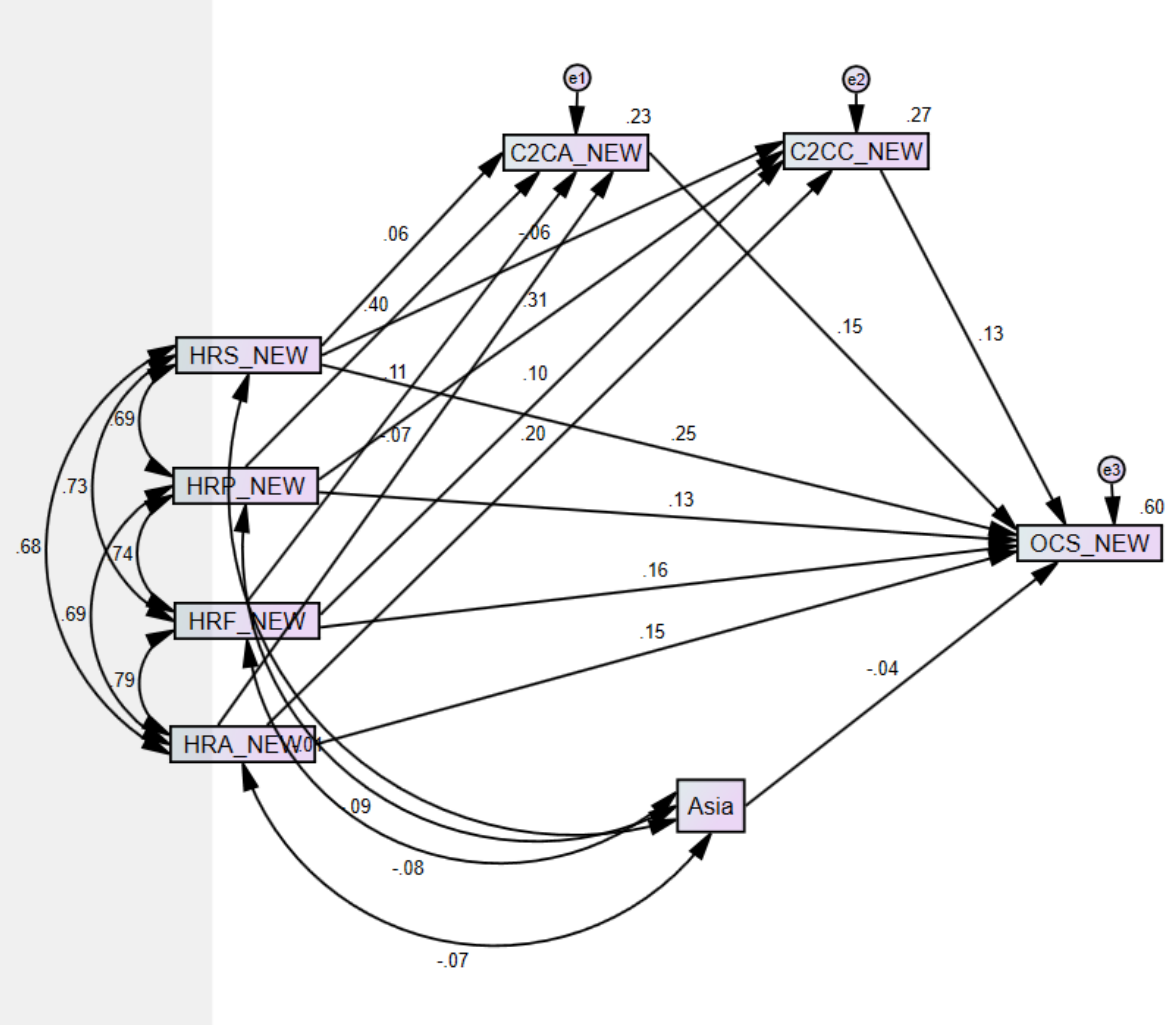
Source: Developed by author

Regression Weights: (Group number 1 - Default model) controlling for regions North America and Europe

			Estimate	S.E.	C.R.	P
C2CA_NEW	<---	HRS_NEW	.038	.049	.771	.441
C2CA_NEW	<---	HRP_NEW	.160	.031	5.247	***
C2CA_NEW	<---	HRF_NEW	.109	.092	1.195	.232
C2CA_NEW	<---	HRA_NEW	-.023	.026	-.881	.379
C2CC_NEW	<---	HRS_NEW	-.065	.082	-.788	.431
C2CC_NEW	<---	HRP_NEW	.216	.051	4.273	***
C2CC_NEW	<---	HRF_NEW	.173	.152	1.140	.254
C2CC_NEW	<---	HRA_NEW	.111	.044	2.529	.011
OCS_NEW	<---	HRS_NEW	.311	.066	4.744	***
OCS_NEW	<---	HRP_NEW	.093	.043	2.143	.032
OCS_NEW	<---	HRF_NEW	.291	.121	2.398	.016
OCS_NEW	<---	HRA_NEW	.091	.035	2.594	.009
OCS_NEW	<---	C2CA_NEW	.271	.071	3.832	***
OCS_NEW	<---	C2CC_NEW	.150	.043	3.526	***
OCS_NEW	<---	NorthAmerica	1.467	.896	1.636	.102
OCS_NEW	<---	Europe	.753	.743	1.013	.311

Significance of correlations:† p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

Controlling for region Asia



Source: Developed by author

Regression Weights: (Group number 1 - Default model) for region Asia

			Estimate	S.E.	C.R.	P
C2CA_NEW	<---	HRS_NEW	.038	.049	.771	.441
C2CA_NEW	<---	HRP_NEW	.160	.031	5.247	***
C2CA_NEW	<---	HRF_NEW	.109	.092	1.195	.232
C2CA_NEW	<---	HRA_NEW	-.023	.026	-.881	.379
C2CC_NEW	<---	HRS_NEW	-.065	.082	-.788	.431
C2CC_NEW	<---	HRP_NEW	.216	.051	4.273	***
C2CC_NEW	<---	HRF_NEW	.173	.152	1.140	.254
C2CC_NEW	<---	HRA_NEW	.111	.044	2.529	.011
OCS_NEW	<---	HRS_NEW	.309	.066	4.708	***
OCS_NEW	<---	HRP_NEW	.099	.043	2.305	.021
OCS_NEW	<---	HRF_NEW	.292	.121	2.401	.016
OCS_NEW	<---	HRA_NEW	.090	.035	2.549	.011
OCS_NEW	<---	C2CA_NEW	.275	.071	3.882	***
OCS_NEW	<---	C2CC_NEW	.144	.043	3.363	***
OCS_NEW	<---	Asia	-.910	.728	-1.250	.211