UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

ENGAGEMENT AMONG ACADEMIC STAFF AND UNDERGRADUATE STUDENTS: A MULTILEVEL ANALYSIS

by

MELISSA REYNELL VAN DER ROSS

Student Number: 14387906

Submitted in fulfilment of the requirements for the degree

PhD in Industrial and Organisational Psychology

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

Promoter: Professor C. Olckers

Co-promoter: Professor P. Schaap

PRETORIA   DECEMBER 2021

ACKNOWLEDGEMENTS

For of Him and through Him and to Him are all things. To Him be the glory forever! Amen.

Romans 11:36

Aan God die Vader, deur wie alles moontlik is, gee ek die lof en al die eer.

Vader, aanvaar asseblief my dank, want slegs deur U was hierdie moontlik. Waarlik, aan U behoort die

lof en die heerlikheid, tot in ewigheid, Amen.

To the following people, my word of thanks can never express to you the depth of my gratitude.

- Prof. Chantal Olckers, my promoter, and Prof. Pieter Schaap, my co-promoter, I am at a loss for words and not even sure how to start thanking you. I am deeply appreciative of all your support, guidance, leadership, and encouragement. What a privilege it has been working with you. There are no words to express to you how truly thankful I am. I count it a blessing from above having had the two of you as my promoters.

- To my committee members, Prof. E. Koekemoer and Dr. S. O'Neil, thank you so much for your time, advice, and support. I have such appreciation for your support throughout this journey.

- To Prof. Jenny Hoobler, you set such a high standard, and it allowed for growth in ways that I am unable to express. Thank you, Prof. Thank you to you and your team for coordinating such a distinguished PhD programme. The support and seminars throughout the first year of this degree, the opportunity to have learned from scholars of such a high calibre, thank you!

- To Prof. Jim Walsh, thank you for your willingness to be a sounding board, for your kindness, and for sharing your knowledge.

- To the higher education institution that permitted me to conduct my study among its staff and students, thank you.

- To all the participants, thank you for taking the time to take part in my study.

ii

DECLARATION

I declare that this thesis is my own original work and was conducted under the supervision of my PhD promoter, Prof. C. Olckers and co-promoter, Prof. P. Schaap. Where words, ideas or material from other sources (whether from published or unpublished articles, printed sources, Internet sources, or any other sources) have been used, the due acknowledgement was given and reference was made accordingly.

The references and editorial style as prescribed by the Publication Manual (7th edition) of the American Psychological Association (APA) were followed in this thesis. United Kingdom English was used in the various chapters.

This thesis was done by compiling three research manuscripts. A different version of these manuscripts may be published in accredited academic journals with co-authors, following the examination, adaptations, and the journal review process. Similarity reports are available on request.

Full names and surname:	Melissa Reynell van der Ross
Student number:	14387906

ABSTRACT

Higher education institutions have a great responsibility in that they play an important part in preparing and developing students who will one day be leaders, teachers, and influencers in their respective work environments. The COVID-19 pandemic has however had a real psychological impact on higher education institutions as it has influenced the engagement and overall well-being of academic staff and students. Past research has highlighted the importance of engagement in achieving positive organisational outcomes such as well-being and commitment, as well as both in-role and extra-role job performance among employees. In regard to students, engagement has been identified as a requisite for delivering quality work, developing life-long learners, and promoting students' mental health. Scholars have further asserted that, to survive and ensure sustainable growth in a globally competitive and knowledge-driven society, a talented and engaged workforce needs to be cultivated and retained. Despite the proven importance of engagement, not enough research on this construct has been conducted. Scholars have called for further studies that assist learning institutions in understanding the conditions that lead to engagement and developing approaches or processes that foster such conditions. This research study drew on positive psychology, which is a field of study that focuses on positive emotions, meaning, and engagement with the aim of promoting optimal psychological functioning. Thus, in establishing positive outcomes for higher education institutions, this study set out to better understand what enabled engagement among both academic staff and students.

For this study, three manuscripts were prepared. The first manuscript explored the conditions that cultivated engagement and psychological well-being among academic staff, and for this purpose the study established connections between Kahn's theory on engagement, the job demands-resources model, organisational support theory, and the construct of reciprocity. In the second manuscript, the study demands-resources model and the leader-member exchange theory were used to operationalise Kahn's psychological conditions beyond the employee–employer context to include university students. The study further set out to explore students' learning approaches by extrapolating from work done using the job demands-resources model and the study demands-resources model so as to expand on the existing understanding of how student engagement influenced learning approaches. The third manuscript drew on crossover theory to explore

v

mutual influences among academic staff and students, and the impact of these influences on the engagement of and outcomes relating to both parties.

Purposive, non-probability sampling was used and cross-sectional data were collected through electronic surveys. The sample used in the first manuscript's study comprised 160 academic staff members employed at a university in South Africa. The findings of this study revealed that the three psychological conditions (meaningfulness, safety, and availability), which were operationalised as lack of reciprocity, perceived organisational support, and burnout risk, were significantly related to emotional engagement. Perceived organisational support (job resources), which met the criteria for psychological safety and some components of meaningfulness, displayed the strongest association with engagement. Recommendations made to university management included considering policies, procedures, or interventions that gave employees the assurance that the university valued them, cared about their well-being, and regarded them as important contributors to institutional objectives, particularly during times of change or crisis.

In the study presented in the second manuscript, the sample consisted of 1 594 undergraduate students enrolled at a South African university. The results showed that the psychological conditions of meaningfulness (study resources), availability (burnout risk), and safety (student leader-member exchange) as conceptualised in Kahn's theory, influenced students' engagement. Results further showed that high levels of student engagement fostered a deep-learning approach. University leaders were encouraged to take note of the clear gain in fostering student engagement and, therefore, to adopt an approach that considered all the psychological conditions that encouraged and promoted the engagement of students.

In respect of the study presented in the third manuscript, a total of 1 594 students (level 1) were nested within 160 academic staff members (level 2). Findings from the study revealed non-significant relationships for both the crossover relationships proposed between academic staff and students. However, the findings did show that students' perceptions of high-quality relationships with academic staff (student–LMX) were significantly related to their engagement. In terms of outcomes for academic staff, the results revealed that

perceptions of lack of reciprocity from the student group were negatively associated with academic staff's emotional engagement. University leaders were encouraged to consider interventions that might support and better equip academic staff to develop high-quality exchange relationships with students. The study recommended that university leaders should adopt a collective approach in addressing the component of mutual influences among academic staff and students. Such an approach would lead to the improvement of well-being among employees and the cultivation of a culture of life-long learning among students, which hold significant benefits.

Keywords: Psychological conditions, engagement, burnout risk, psychological well-being, deep- and surface-learning, perceived organisational support, lack of reciprocity, study demands, study resources, student leader-member exchange

LIST OF KEY TERMS/ABBREVIATIONS

The following abbreviations and terms were used in this study:

- **Academic staff** refers to the population of lecturers/academic staff members at a university.

- **HE** refers to higher education.

- **Institutions** refer to higher education/tertiary institutions such as universities or colleges.

- **IO psychology** refers to industrial and organisational psychology.

- **JD-R model** refers to the job demands-resources model.

- **OST** refers to the organisational support theory.

- **POS** refers to perceived organisational support.

- **SD-R model** refers to the study demands-resources model.

- **Students** refer to the population of learners registered for studies at a higher education institution.

- **Student–LMX** refers to student leader-member exchange.

TABLE OF CONTENTS

xi

LIST OF TABLES

LIST OF FIGURES

1. CHAPTER 1: INTRODUCTION

1.1 Background

To survive in and ensure sustainable growth in a globally competitive and knowledge-driven society, institutions and organisations need to cultivate and retain a talented and engaged workforce (Pham-Thai et al., 2018). The COVID-19 pandemic has, however, led to significant disruptions and abrupt changes in all sectors, including higher education (HE) (Liu et al., 2021; Sobral et al., 2021; Van Zyl et al., 2021). In addition, this pandemic has had an indisputable psychological impact on the work engagement and overall well-being of employees (De-la-Calle-Durán & Rodríguez-Sánchez, 2021; Liu et al., 2021). Similarly, HE students experienced the pandemic's adverse psychological consequences (Sun et al., 2021) such as a decline in their emotional engagement (Wester et al., 2021).

A review by Bailey et al. (2017) highlighted the significance of engagement as a phenomenon that seemingly enables employers and policy-makers to leverage high levels of individual task performance. Various scholars have agreed that individuals who are engaged and who function optimally display higher levels of performance (Kim et al., 2012; Robertson & Cooper, 2010; Schaufeli & Bakker, 2004; Tarique & Shuler, 2010) and dedication in their work (Ababneh & Macky, 2015; Adil & Kamal, 2016). Previous research supporting these notions has highlighted the various positive outcomes for organisations and those in it, should the organisation foster engagement (Huhtala et al., 2015). Some of these positive outcomes among employees include improved well-being and organisational commitment (Gupta, 2017; Rusu & Colomeischi, 2020), and some of the positive outcomes among students are improved mental health and resilience (Kotera & Ting, 2019), increased retention of students, and students' improved learning (Burch et al., 2017; West & Halvorson, 2019). Notably, Chiu (2021) found that, despite all the changes that the COVID-19 pandemic brought about in HE institutions, specifically the complete or partial change over from traditional face-to-face teaching to online or blended teaching and the concomitant lack of physical interaction, students' basic learning needs have remained the same. Thus, Chiu stated that student engagement is an important requirement for learning. Other studies have affirmed the importance of

engagement in the world of work (Anthony-McMann et al., 2017), even in times of change or crisis (such as the COVID-19 pandemic) (Chanana & Sangeeta, 2020).

Kahn (1990), one of the first scholars to identify the construct of engagement in a work context, described personal engagement as harnessing yourself in your work role, and expressing your "preferred self" physically, emotionally, and cognitively while performing your work. By the same token, personal disengagement is when you withdraw and defend yourself physically, cognitively, and emotionally. According to Kahn, people are influenced by experiences of themselves, by conditions in their work context, and by their work role. These psychological conditions, which include psychological meaningfulness, availability, and safety, enable engagement. In line with Kahn's (1990) grounded theory of personal engagement and disengagement, and Astin's (1984) student involvement theory, Burch et al. (2015) described student engagement as a construct of emotional engagement, physical engagement, and cognitive engagement both in and out of class. The student involvement theory encompasses the quantity and quality of psychological and physical energy that students devote to the academic experience, and the practices and policies within the institution that enable student involvement.

Although universities pursue a culture of performance and excellence, they are plagued by high numbers of student dropouts, low numbers of students who graduate, and increased levels of psychological distress (Mokgele & Rothmann, 2014; Oades et al., 2011; Williams et al., 2017). Oades et al. (2011) maintained that a positive HE environment is possible, providing engagement improves and health-related problems (e.g. stress, anxiety, and depression) decrease. However, studies have highlighted that academic staff (in the present study alternately referred to as lecturers) worldwide experience increased pressures and demands, and no equivalent increase in resources (Anthun & Innstrand, 2016). The situation in South Africa is no different. As a result of strategies implemented by the South African government, increasing numbers of students are entering HE institutions, all with fluctuating academic ability and diverse needs (Barkhuizen et al., 2014; West & Halvorson, 2019). Meeting these challenges requires substantial efforts and attention from both HE institutions and their academic staff. Similarly, HE students experience pressures, which, at

times, hamper their engagement (Cilliers et al., 2018; Salmela-Aro & Read, 2017). Currently, the situation at HE institutions seems even more dismal than before, as the global COVID-19 pandemic has resulted in additional challenges and demands, impacting not only employees but also students (Armoed, 2021; Liu et al., 2021; Visser & Law-Van Wyk, 2021). As indicated in the job demands-resources (JD-R) model (Demerouti et al., 2001), such additional demands and a lack of resources will have an impact on the levels of burnout and engagement of both academic staff and students (Bakker 2011; Mokgele & Rothmann, 2014; Robins et al., 2015; Rothmann & Jordaan, 2006).

In establishing positive outcomes for HE institutions, it is important to make an effort to better understand what enables engagement and what negatively impacts on well-being (e.g. burnout risk) as far as both academic staff and students are concerned. It appears, however, that research efforts exploring the enhancement of positive outcomes in HE have focused more often than not on the student or the lecturer in isolation (e.g. Coetzee & Rothmann, 2004; Moodley & Singh, 2015; Salanova et al., 2010), instead of investigating the interactions that may facilitate the transference of positive experiences (Rofcanin et al., 2019). With reference to the transference of experiences, Westman (2001) coined the term crossover and described it as a dyadic and inter-individual transmission of negative outcomes, such as strain, or positive outcomes, such as well-being, between individuals in the same environment (Bakker et al., 2005; Bakker et al., 2009; Bakker & Xanthopoulou, 2009; Westman, 2001). Hagenauer and Volet (2014) maintained that mutual influences between educators and students are of significance, and accordingly the impact of educators in supporting student performance and motivation has been widely recognised in studies addressing education within schools (Covell et al., 2009; Shen et al., 2015; Van Horn et al., 1999).

1.2   Problem Statement

Seligman et al. (2009, p. 307) believed that the "aim of wealth should not be to blindly produce more wealth, but to produce more well-being", and, therefore, advocated that policy-makers should aim to improve general well-being, which encompasses positive emotions, engagement at work, and meaning, as these bring about prosperity that combines wealth with well-being.

3

HE institutions play a key role in facilitating economic development and growth, and in meeting the social needs of the 21st century (Boggs, 2003; Pouris & Inglesi-Lotz, 2014). These institutions have a great responsibility as they play a part in preparing and developing leaders, teachers, and influencers in their respective working environments (Cortese, 2003). The importance of engagement in the HE sector has been established, and it has been found to contribute to important organisational outcomes such as well-being (Bakker et al., 2008; Shimazu et al., 2012), both in-role and extra-role job performance (Bailey et al., 2017; Christian et al.2011; Hernandez & Guarana, 2018), and students' mental health (Kotera & Ting, 2019). Nevertheless, as scholars have indicated, the engagement of academic staff and university students is a phenomenon that has been neglected (Pham-Thai et al., 2018; Salmela-Aro & Read, 2017).

Previous research has provided evidence that various job demands and job resources have an impact on engagement and burnout (Demerouti et al., 2001; Lee, 2019; Mercali & Costa, 2019) and that engagement and burnout, in turn, affect the observed behaviour of people. However, this latter relationship is not yet fully understood (Bakker et al., 2014). In their review study, Bailey et al. (2017) concluded that a significant need still exists for further research on the topic of engagement. More recently, Bowden et al. (2021) stated that the onus is on learning institutions to not only understand what conditions lead to engagement but also develop approaches or processes that foster such conditions.

Positive psychology draws on approaches that support optimal functioning, and considers the processes that enable the optimal well-being of individuals and organisations (Raymond & Raymond, 2019). Positive psychology is the umbrella term used for the study of positive character traits, positive emotions, enabling institutions, and the strengthening of human well-being (Raymond & Raymond, 2019; Seligman et al., 2005). Seligman et al. (2005) accordingly labelled positive psychology as jointly referring to positive emotions, meaning, and engagement. Past studies on engagement conducted from the perspectives of industrial relations and human resource management have, however, moved away from the original positive psychological premises in which the phenomenon of engagement has its roots (Bailey et al., 2017).

4

Accordingly, in alignment with the original premises of positive psychology, the present study intended to gain a better understanding of the conditions in an HE institution that enabled optimal functioning during a period of great change such as the global COVID-19 pandemic. It should be noted that although this study took place during the global COVID-19 pandemic, it was not included as a variable in the study. Findings should thus be read with the context of the pandemic kept in mind.

With reference to the scarcity of academic studies on the topic of mutual influences among educators and students, Hagenauer and Volet (2014) stated that, based on study findings relating to the teacher–student relationship in schools, similar mutual influences can be assumed to exist between students and academic staff in HE institutions. These scholars viewed the quality and effect of teacher–student relationships as a precondition for excellence within teaching and learning, and they posited that the investigation of these relationships between the two parties can help remedy negative trends such as the dropping out of students. Accordingly, the present study aimed to gain a better understanding of possible interactions or mutual influences between academic staff and students, and the implications thereof for the engagement of both parties.

1.3   Research Objectives

The study was guided by the following research objectives:

Primary objective

The primary objective of this study was to explore the conditions that enabled engagement and optimal functioning within the HE context during the COVID-19 pandemic for students and academic staff.

Secondary objectives

In support of the primary objective, the following secondary objectives were formulated:

- To explore the psychological conditions that enable engagement among academic staff.
- To investigate the outcomes of engagement relating to the optimal functioning of academic staff.

- To explore the psychological conditions that enable engagement among students.

- To investigate the outcomes of engagement relating to students' intent to understand the meaning of their work (i.e. students' learning approaches).

- To investigate the possibility of mutual influences among academic staff and students (crossover of engagement), and to explore the positive outcomes of engagement for both parties.

1.4 Theoretical Framework

Mathieu (2016), in referring to the practice of industrial and organisational psychology (IO Psychology), stated that a theory is indispensable to what scholars do. Whether scholars aim to try and influence, change or manage behaviour in organisations, they function on the premise of how things work and what things mean. IO psychology is the scientific study of aspects related to people in the workplace. The discipline aims to improve the overall workplace effectiveness in organisations by drawing on the general theories and principles of psychology (Provenzano-Hass, 2017). In alignment with these premises, the present research study was grounded in positive psychology, which is concerned with concerted efforts to promote psychological functioning (Waterman, 2013) through the study of processes or conditions that contribute to the optimal functioning of institutions, groups, and people (Gable & Haidt, 2005). Positive psychology aims to enhance the understanding of how, under what circumstances and why a positive character and positive emotions flourish, and what conditions in an institution enable this (Seligman et al., 2005).

Literature in the domain of IO psychology is devoted to work or job attitudes and constructs, among these, is the construct of engagement (Provenzano-Hass, 2017). Engagement and psychological well-being are regarded as emerging constructs within the positive psychology domain and have become essential considerations in an organisational context (Joo et al., 2017). This study further drew on theories and models that aim to explain engagement. These included models or theories that past studies had used to understand antecedents to engagement (Jackson et al., 2006; Rattrie et al., 2020; Schaufeli & Bakker, 2004) or psychological mechanisms/conditions underlying the phenomenon (Kahn, 1990; Mercali & Costa, 2019). Accordingly, Kahn's (1990) theory on personal engagement, and the JD-R model (Demerouti et al.,

2001) underpinned this research study. The JD-R model places well-being at the centre of predicting behavioural outcomes (Demerouti et al., 2001; Bakker & Demerouti, 2017), and provides a basis for understanding the role of work conditions (job demands and resources) as antecedents to burnout and engagement (Crawford et al., 2010). Job demands refer to negatively valued physical, social, psychological, or organisational aspects that require continuous effort and cost or that consume energy. On the other hand, job resources serve as a motivational component to employees, resulting in their commitment and positive attitudes to work, and also as a functional component, resulting in their achieving goals (Albrecht, 2012; Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). The motivational process explains why resources operate as antecedents to engagement (Jackson et al., 2006; Schaufeli & Bakker, 2004). Furthermore, this research drew on the study demands-resources (SD-R) model, a model that is based on the JD-R model and explains the effects of study characteristics (study demands and study resources) on student burnout and engagement (Mokgele & Rothmann, 2014).

The premise of Kahn's (1990) theory is that three psychological conditions, namely, psychological safety, meaningfulness, and availability, enable engagement. Kahn described the experience of psychological safety as feeling able to express oneself without fear of negative consequences to one's career or self-image. Psychological availability centres on the psychological or physical resources people have available in light of distractions, thus how able one is to engage in light of available or depleted energy (physical and emotional), and how secure people (employees) feel in their job (their job status) and their outside lives. Psychological meaningfulness is experienced once people feel valued and not taken for granted, an experience that is also influenced by work interactions with clients (Kahn, 1990).

The conditions of psychological meaningfulness and safety as put forth by Kahn (1990), as well as the JD-R motivational process, link with the premises of the organisational support theory (OST) (Eisenberger et al., 1986). OST postulates that employees have general beliefs about how much their organisation cares for their well-being and values their contributions (Eisenberger et al., 2001). Employees' perceptions of receiving organisational support make them feel obliged to care about the welfare of their organisation and

7

to reciprocate by helping to achieve organisational objectives through various efforts, positive outputs, or commitment (Eder & Eisenberger, 2008; Eisenberger et al., 2001). Thus, in delineating the conditions within an organisation that could help foster engagement, the present study established conceptual connections between aspects of Kahn's (1990) theory on personal engagement, the JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001), and OST (Eisenberger et al., 1986).

Kahn (1990) further asserted that the experiences of people are simultaneously influenced by individual, interpersonal, and organisational factors, thus aligning with the premise that mutual influences between individuals can have an impact on states e.g., engagement (Van Horn et al., 1999; Westman, 2001). Crossover theory explains that the experiences of people can have an impact on the experiences of others with whom they interact (Westman, 2001), and it puts forth the possibility of a bi-directional and inter-individual transmission of both positive and negative emotions, moods, and dispositions, either directly or indirectly (Westman, 2001; Westman et al., 2009). Direct crossover from one person to another is based on the idea that crossover may operate via empathy or an empathetic reaction; therefore, direct crossover is likely to occur between individuals who are closely related, share a big part of their lives, and care for one another (Westman, 2001; Westman et al., 2009). On the other hand, indirect crossover occurs via mediators or moderators of interpersonal exchange (Westman, 2001; Westman et al., 2004). Accordingly, to delineate the possible impact of mutual influences between academic staff and students, the present study drew on crossover theory to explore possible interpersonal exchange processes (e.g., leader–member exchange and reciprocity) that might serve as mediators in the crossover of engagement.

In alignment with the suggestion of Westman (2001) that social interactions with others (e.g. providing appraisal, information, or instrumental support) can account for indirect processes of crossover, the present study considered the academic staff member/lecturer (as the one who directs or guides students on their learning journey) as the leader in the student–lecturer relationship. Thus, leader–member exchange (LMX) was used as the process to consider the possible influence of academic staff on students. LMX focuses on interpersonal relationships between superiors/leaders and their subordinates/followers within the

8

boundaries of an organisational structure. LMX theory postulates that superiors/leaders develop differential relationships with subordinates/followers, and that differences are reflected in the quality of the relationship (Myers, 2006; Power, 2013). High-quality exchange relationships between leaders/superiors and followers/subordinates are referred to as in-group relationships whereas low-quality exchange relationships between the two parties are referred to as out-group relationships (Myers, 2006). Scholars have, accordingly, conceptualised the relationship in a student–lecturer context, referring to it as student–LMX, a relationship that is formed through learning activities such as lectures, facilitated online forums, and interactions between lecturers or tutors and students (Farr-Wharton et al., 2018). Based on Kahn's (1990) statement that psychological meaningfulness is influenced by the interactions between employees and clients as well as by employees' perception of being valued/appreciated by their clients, the present study considered interpersonal processes of social exchange, such as reciprocity (Schaufeli et al., 1996), to explore the possible influence of students on academic staff. Perceptions of reciprocity were used to gauge the perceptions of academic staff about the link between their own inputs and how much they got back from students in terms of gratitude and effort. According to equity theory, reciprocity is pursued in interpersonal or organisational relationships. Thus, what a person invests in and gains from a particular relationship should be viewed as proportionate to the investments and gains of the other party. Reciprocity thus denotes the equality of exchange between two parties (Schaufeli et al., 1996). Figure 1 provides an overview of the study's proposed conceptual model.

9
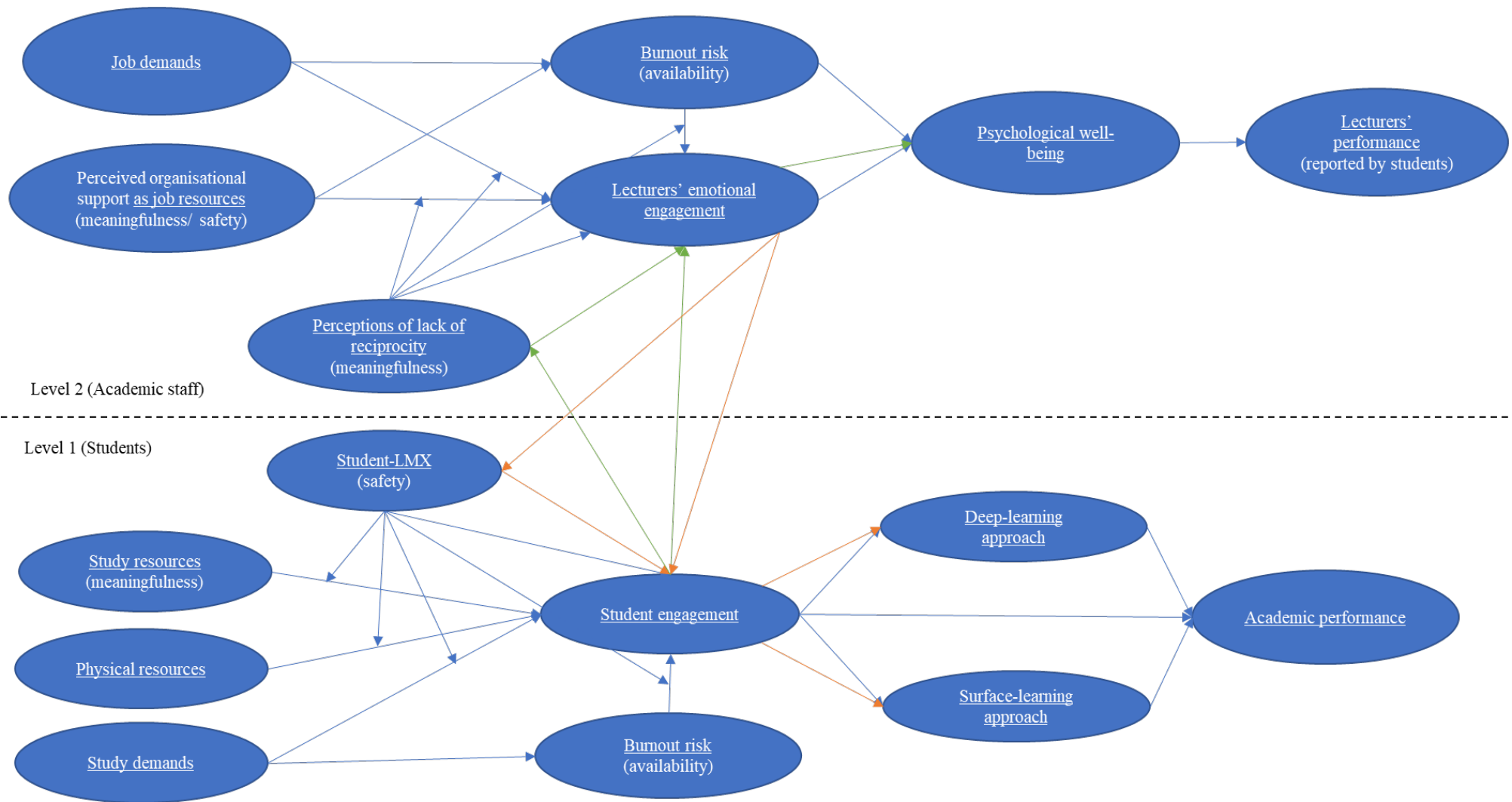
Figure 1: Conceptual framework (multilevel study)

Note: The orange arrows represent the crossover study from lecturer to students, and the green arrows represent the crossover study from students to the lecturer.

1.5   Research Methodology

1.5.1   Research Paradigm

World-views or paradigms are described as the beliefs or assumptions researchers hold that guide their actions (Creswell, 2014; Saunders et al., 2009). For the present study, a postpositivist research paradigm was followed. Creswell (2003) described postpositivism as the scientific method because it is associated with quantitative methods. Postpositivist thinking challenges the traditional position held by positivism regarding the notion of absolute truth or knowledge, and recognises that in studying human behaviour and actions one cannot be absolutely "positive" regarding claims of knowledge (Creswell, 2003; 2014). Postpositivism is a reductionist approach in that it reduces ideas to variables that can be tested by way of hypotheses or research questions. Further, postpositivism is a deterministic philosophy according to which probable causes influence outcomes (Creswell, 2003). The knowledge that is developed using the postpositivist paradigm is governed by the verification or testing of theories, and is based on the measurement or observation of the objective reality that is proposed to exist in the world (Creswell, 2014). The researcher of the present study chose the postpositivist approach as it is in harmony with the researcher's thoughts regarding meeting the objectives of the study and allowing for the achievement of results within the study's discipline.

1.5.2   Research Design

The research made use of quantitative methods as the strategy of inquiry. This approach was appropriate as it was in alignment with the study's research paradigm, and allowed for the use of statistical techniques (Saunders et al., 2009) and the elaboration of relationships among variables found in structural equation models, logistic regression, and hierarchical linear modelling (Creswell, 2014). A cross-sectional survey research design was employed for the research, this includes all three manuscripts. Cross-sectional studies study or measure a particular phenomenon or the relationship between a set of variables within a population at a particular point in time, and they often employ a survey strategy (Saunders et al., 2009). There are disadvantages to using cross-sectional designs; for example, they are especially prone to common method bias (Rindfleisch et al., 2008). On the other hand, these designs have various advantages, for example, they

are time-effective (Saunders et al., 2009) and cost-effective (Rindfleisch et al., 2008), and yield the quantitative data required for evaluating relationships in conceptual models (Creswell, 2014).

1.5.2.1 Sample and data collection procedure

With reference to the sample used and data collection procedure for the overall research study (including all three manuscripts), the target population was obtained from a university in South Africa which aims to foster engagement as a key value for the development and growth of the institution and its stakeholders (employees and students). As this study included the exploration of mutual influences between academic staff and students as part of the research objectives, a multilevel technique needed to be considered. Krasikova and LeBreton (2012) explained that dyadic constructs are used in organisational research where interactions, relationships, or exchanges between members of a dyad are explored. Two dyadic designs, namely, the standard design, and the one-with-many design, are applicable in organisational research. The standard design involves two individuals in a dyad, whereas the one-with-many design involves multiple partners such as subordinates ("the many") (the students in the present study) who are nested within one focal person such as a leader ("the one") (the lecturer in the present study) (Krasikova & LeBreton, 2012). In the latter design, partners are not paired with any other person (Sadler et al., 2011), but individuals are linked as a group and tied to one focal person. The focal person is then judged by the grouped individuals, or the focal person judges the set of partners ("the many") on the exchange relationship aspect studied (Kenny & Kashy, 2014). In this study, the students ("the many") were paired or matched with only one lecturer and with no other person. However, because the students and lecturers did not report on each other's engagement, the design was only similar in approach to that of the one-with-many dyadic design. Purposive, non-probability sampling was used as a sampling strategy as it allowed the researcher to set specific criteria for inclusion in the study (Cooper & Schindler, 2014) and, therefore, to select a sample based on subjective judgment (Saunders et al., 2009). Participating academic staff members needed to have lectured a second-semester undergraduate module during 2020 or a first-semester module during 2021 to be included in the study. Students who were registered for a specified module taught by a participating staff member were invited to take part in the study. These student

12

responses were used as part of all three manuscripts, as follows: in manuscript one, students reported on the performance of lecturers, and accordingly, student responses matched to a participating lecturer were used. In manuscript two, all valid student responses were used, and in manuscript three, student responses matched to a participating lecturer were used.

After having obtained permission from the relevant institution to conduct the study, the researcher distributed electronic surveys to academic staff via email, and to students via notices in virtual learning spaces (e.g. Blackboard, WhatsApp) and SMSs. Obtaining participants' consent formed part of the survey, and participants were informed that participation in the study was voluntary and that they could withdraw at any time. Survey data were collected from November 2020 to February 2021. Only 88 valid student–lecturer responses were obtained. Mathieu et al. (2012) indicated that in many circumstances, the power to detect interactions across levels is severely limited. Scholars have suggested that when researchers calculate the required sample size for a power level, they should make an educated guess based on findings from previous literature (Hox et al., 2018). Kenny et al. (2006) indicated that a sample size of about 80 or 100 dyads should provide sufficient power to obtain a medium effect size. Accordingly, in an effort to maximise the level 2 (academic staff) sample size of the present study, a second data collection process was undertaken during May and June 2021. Overall, 219 academic staff members and 5 294 students agreed to participate in the study, and, of these, the responses of 160 academic staff members and 1 594 students were valid and used for this study. The rest of the data had to be omitted because of missing data on the variables of interest.

1.5.2.2   Measurements used

This section reports on the various measuring instruments that the study used to collect data from the participating academic staff and students.

The following measures were employed in respect of the academic staff sample:

Job demands: In alignment with work that Taris et al. (2001) and Skaalvik and Skaalvik (2011) did among academic staff, a three-item scale on time pressure and a four-item scale on teaching versus research were used to measure job demands. Sample items included, "Life, working at the university, is currently hectic and there is no time for rest and recovery" (time pressure), and "Because of your other tasks, you have little energy left to spend on your research" (teaching vs. research). Items of the time pressure scale were scored on a 6-point scale ranging from 1 = "completely disagree" to 6 = "completely agree". The items of the scale relating to teaching versus research were scored on a 6-point scale ranging from 1 = "never" to 6 = "always". Cronbach's alpha of the scales reported by Taris et al. (2001) was α = 0.84 (teaching vs. research), and the reliability coefficient of the scales reported by Skaalvik and Skaalvik (2011) was α = 0.81 (time pressure).

Job resources: Job resources were measured using the 16-item short version of the Survey of Perceived Organisational Support (Eisenberger et al. 1997). This shortened scale addresses specific areas identified as particularly important to educators (Bakker et al., 2007), for example, appreciation (e.g. "The organisation values my contribution"), support (e.g. "Help is available from the organisation"), and climate (e.g. "The organisation cares about my opinion"). The word "organisation" was replaced with the word "university", and items were scored on a 7-point scale ranging from 1= "strongly disagree" to 7 = "strongly agree". The single-factor unidimensional measure demonstrated a reliability coefficient of 0.90 (Eisenberger et al., 1997).

Engagement of academic staff: In alignment with Kahn's (1990) premise relating to the explanation of the emotional reactions of people to conscious and unconscious phenomena, the six-item emotional engagement subscale of the Job Engagement Scale (Rich et al., 2010) was used to measure emotional engagement. The scale demonstrated omega reliability (ω) of 0.94 and factor determinacy (FD) of 0.98.

14

Respondents could score the items on a 5-point rating scale ranging from 1 = "strongly disagree" to 5 = "strongly agree".

Burnout risk: The Copenhagen Burnout Inventory (Kristensen et al., 2005) was used to measure burnout risk. The measure consists of three subscales, namely, personal, client, and work-related burnout; however, client-related burnout was not included in the present study. Example items include, "How often do you feel worn out?" (personal burnout), and "Does your work frustrate you?" (work-related burnout). In respect of 10 items, the rating is on a 5-point Likert scale, ranging from 1 = "always" to 5 = "never/almost never", and, in respect of three items, the rating is on a scale of 1 = "to a very high degree" to 5 = "to a very low degree". Cronbach's alpha for the subscales was found to be as follows: α = 0.85 (personal burnout), and α = 0.87 (work-related burnout) (Johnson & Naidoo, 2013).

Psychological well-being: The Schwartz Outcome Scale-10 (Blais et al., 1999) was used to measure psychological well-being. The scale has been used in previous studies to measure psychological well-being and psychological health (e.g. Haggerty et al., 2010; Young et al., 2003). Items are rated on a 7-point scale ranging from 1 = "never" to 7 = "all of the time/nearly all of the time". A sample item is, "I feel hopeful about my future". Cronbach's alpha coefficients were reported between α = 0.88 (Haggerty et al., 2010) and α = 0.92 (Shuck & Reio, 2014).

Lecturer performance: The lecturers' performance was reported by students. The researcher adapted questions included in the form that the university used to obtain students' observations about lecturers' performance and the conditions during lectures. The scale used in the present study consisted of 22 items. Sample items included in the present study were, "The lecturer used practical examples to explain the learning material", and "The lecturer was well prepared for each class". The measure was rated on a 5-point rating scale ranging from 1 = "always" to 5 = "never". A similar approach was used in a study exploring student evaluations of lecturers at private universities (Sok-Foon et al., 2012).

Reciprocity of student groups: In alignment with work done by Schaufeli et al. (1996) and Tayfur and Arslan (2013), lecturers' perceptions of reciprocity were measured using three items adapted from the measures these scholars had used. The items in the present study were as follows, "I spend much time, effort and consideration on work for students in the specified module, but, in general, students in the specified module give back little effort, appreciation, and interest", "I invest more in the relationship with students in the specified module than what I receive back in return from them", and "I know that my students will complain, no matter what I do." Respondents rated the questions on a 5-point scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". Similarly, Van Horn et al. (1999) used two items to assess reciprocity: one item gauged how much teachers put into the working relationship with students, and the other one measured teachers' perception about how much they got back from students.

The following measures were used in respect of the student sample:

Study demands and resources: To measure study demands and resources, the 23-item Study Demands and Resources Scale (Mokgele, 2014) was used. The study demands scale comprises five items related to time and study pressure. The study resources scale comprises four dimensions, namely, lecturer support, peer support, growth, and information accessibility. Both scales were rated on a 4-point rating scale ranging from 1 = "never" to 4 = "always", and sample items included, "Do you have too much work to do?" (study demands), and "If necessary, can you ask your fellow students for help?" (study resources, growth). Scholars reported reliability above 0.70 for all the subscale dimensions of the study resources scale, and moderate (0.61) reliability for the subscales of the study demands scale (Mokgele & Rothmann, 2014).

Physical resources: In alignment with studies showing the importance of physical resources during the COVID-19 pandemic, the present study included items on physical resources. Four items, which were rated on a 4-point rating scale ranging from 1 = "never" to 4 = "always" were included, and a sample

item was, "Are your study conditions adequate at home to allow for the attendance of online classes where needed and completion of academic work from home?"

Burnout risk: The 19-item Copenhagen Burnout Inventory (Kristensen et al., 2005) was used to measure student burnout risk. Item wording was adapted for the student context, and sample items included, "How often do you feel worn out?" (personal burnout), "Do your studies frustrate you?" (work-related burnout adapted to address study-related burnout), and "Does it drain your energy to work with peers?" (personal burnout adapted to address peer-related burnout) Past studies reported the following Cronbach's alpha coefficients for the subscales: $\alpha = 0.82$ (client-related burnout), $\alpha = 0.85$ (personal burnout), and $\alpha = 0.87$ (work-related burnout) (Johnson & Naidoo, 2013).

Student engagement: The 24-item Burch Engagement Survey for Students (Burch et al., 2015) was used to measure student engagement. The scale measures four dimensions (emotional engagement, physical engagement, cognitive engagement in class, and cognitive engagement out of class), and includes the following sample items: "I feel energetic when I am in this class/attending a lecture (online)" (emotional engagement), "I exert my full efforts toward this class/course" (physical engagement), "When I am in the classroom for this module, via online platforms or traditional face-to-face classes, I pay a lot of attention to the lecture discussion and activities" (cognitive engagement in class), and "When I am reading or studying material related to this class/course, I focus a great deal of attention on class discussion and activities" (cognitive engagement out of class). The scale was adopted from the Job Engagement Scale (Rich et al., 2010) and adapted to reflect the online/blended learning environment necessitated by the COVID-19 pandemic. A 5-point rating scale was used ranging from 1 = "strongly disagree" to 5 = "strongly agree". Cronbach's alpha coefficients were all above the recommended 0.70, and were as follows: $\alpha = 0.91$ (emotional engagement), $\alpha = 0.93$ (physical engagement), $\alpha = 0.96$ (cognitive engagement in class), and $\alpha = 0.96$ (cognitive engagement out of class) (Burch et al., 2015).

Academic performance: Students' marks for the specified semester module taught by the participating lecturer were used as a measure of their academic performance. These marks were taken as an assessment of the students' knowledge of the module content covered during the semester.

Student–LMX: In alignment with work done by Farr-Wharton et al. (2018), the present study measured student–LMX using an adapted version of the seven-item LMX scale of Graen and Uhl-Bien (1995). The items were measured using a 5-point Likert scale, and sample items included, "The lecturer of the specified module ... – would be willing to help me in their own time" and "... - encourages a good learning relationship". Farr-Wharton et al. (2018) reported Cronbach's alpha above the threshold of 0.70 for student–LMX.

1.5.3 Data Analysis

Latent variable modelling and the regression approach in Mplus version 8.6 were used to conduct the statistical analyses. Confirmatory factor analysis (CFA) was used to confirm the factor structure validity and psychometric properties of each of the measurement scales, and an evaluation was done of the theoretically supported structural model. The path models of effects between constructs in all three studies (as presented in the three manuscripts) were tested using structural equation modelling (SEM). For the third manuscript, a multilevel technique needed to be employed because of the hierarchical structure of the population (i.e. students nested within lecturers) (Hox et al., 2018). The use of a multilevel technique was justified by calculating the intraclass correlation (ICC) coefficients (Jak et al., 2013).

Based on recommendations by Kenny et al. (2015) and McNeish et al. (2018), all the popular fit indices were considered and where degrees of freedom were low in models, the comparative fit index (CFI) and the standardised root mean square residual (SRMR) played a more decisive role in adjudicating model fit. Per the guidelines, model fit was appraised as: a CFI value above 0.90 but preferably above 0.95, a SRMR value preferably less than 0.08, a RMSEA value below 0.08, and a TLI value above 0.95 (Hu & Bentler, 1999; Olckers & Van Zyl, 2019).

To assess the internal structure of the scales, the McDonald's omega (ω) coefficient was used, with values of 0.70 and 0.80 deemed as acceptable and good (Crutzen & Peters, 2017; Dedeken et al., 2020; Feisst et al., 2019). A factor determinacy value of 0.80 and above was regarded as demonstrating good internal consistency (Wang & Wang, 2020). Correlation results were interpreted as small ($r = 0.10$), medium ($r = 0.30$), and large ($r = 0.50$) (Cohen, 1988). The maximum likelihood robust (MLR) estimator was used to address non-normality in the data (Muthén & Muthén, 2017). Normality cutoff criteria equal to > -1 and $< +1$ for skewness and kurtosis were used (Anderson & Gerbing, 1988). To establish indirect effects, the significance of the beta coefficient of the interaction term was considered (Lam et al., 2018), and it was established whether the confidence intervals (CIs) set at a level of 95% did not include zero (Zhao et al., 2010).

1.6   Ethical Considerations

The researcher obtained ethical approval from the ethics committee of the relevant university faculty to conduct the study, and also obtained permission from the university for the participation of its employees and of students registered prior to the collection of data. The researcher took special care to protect the integrity of study participants, which included adhering to the code of ethics of the research institution, obtaining participants' consent, maintaining their confidentiality, and ensuring that data were reported accurately. Further, confidentiality considerations were taken into account in the design and execution of the study. Individual responses collected from the academic staff sample were recorded using a module code. The students' numbers were requested to aid in obtaining their semester marks for the module code specified. As this process did not allow for complete anonymity, the student data were kept in the strictest confidence.

Efforts were made to ensure that no information about the participants was made known to anyone if it could lead to their identification. Raw data were, therefore, viewed by the researcher and the supervising

committee only, and the results were used to indicate the relationships between the variables as per the theoretical model.

1.7 Contribution of the Study

In considering the impact of employee engagement on positive individual and organisational outcomes (e.g. Bailey et al., 2017; Bakker, 2017; Burch et al., 2017; Gupta, 2017; Kahn, 1990; Kim et al., 2012; Shuck & Reio, 2014), and the possible effect of mutual influences between academic staff and students (e.g. Bakker, 2005; Eloff et al., 2021; Hagenauer & Volet, 2014; Košir & Tement, 2013), the present study aimed to contribute to the field theoretically and practically in the ways described in the following paragraphs.

1.7.1 Theoretical contributions

The research addressed the call of Bailey et al. (2017) for more studies to be conducted on the topic of engagement, and it did so in alignment with the positive psychological roots of this construct. In so doing, the research aimed to establish conceptual connections by linking Kahn's (1990) psychological conditions of meaningfulness, safety, and availability with other existing concepts and theories that either explained engagement or were aligned with the conditions put forth in Kahn's theory on personal engagement. These connections included linkages with the JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001), OST (Eisenberger et al., 1986), and crossover theory (Westman, 2001). Through the integration of theory and literature on engagement (i.e. Kahn's (1990) theory and the JD-R model), the study found that among academic staff, Kahn's psychological conditions could be operationalised as POS (meaningfulness and safety), burnout risk (availability), and lack of reciprocity (meaningfulness). Moreover, the present study demonstrated that in alignment with OST, POS serves as a valued job resource (Kraimer & Wayne, 2004) that carries with it aspects that support psychological meaningfulness and safety, as conceptualised by Kahn (1990).

This research also addressed the call of Kahn (1990) to explore the interplay of the three psychological conditions of meaningfulness, safety, and availability to better understand these antecedents in explaining

engagement (Rothmann & Welsh, 2013), and it extended Kahn's theory beyond the employee–employer context to include a focus on students in HE. Lastly, the research contributed by addressing the call of Hagenauer and Volet (2014) to investigate mutual influences between students and academic staff from perspectives other than those of attachment theory and self-determination theory. It did that by exploring mutual influences between academic staff and students from a crossover theory perspective. In so doing, the research extended the scope of previous crossover research, which focused mainly on crossover relationships between spouses within a work–family domain (Demerouti et al., 2005) or between team members in a working relationship (Bakker et al., 2006), to include the crossover relationships between academic staff and students in the HE context. Furthermore, extant research indicates a greater focus on the crossover of negative emotions (Butt et al., 2019), the present study thus aimed to build on the few studies which have explored the crossover of more positive constructs within the HE context.

1.7.2   *Managerial contributions*

The research aimed to contribute by offering a better understanding of the conditions within HE institutions that enabled engagement among academic staff and students. In considering these conditions among academic staff, management within HE institutions are encouraged to design policies and practices geared toward improving POS and lessening burnout risk. These include the implementation of policies that give employees the assurance that they are valued and regarded as important contributors to institutional objectives. Furthermore, findings encourage management to consider strategies such as employee wellness programmes to address psychosocial issues such as burnout risk. Among students, policy-makers are encouraged to think carefully and holistically about the approaches to gauge student engagement, especially during times of crisis. Findings encourage HE leaders to focus efforts not only on ensuring that students perceive the physical resources provided during periods of uncertainty, such as the global COVID-19 pandemic, as adequate, but rather also, holistically consider the conditions that encourage student engagement such as psychological meaningfulness (study resources), availability (burnout risk), and safety (student–LMX). Moreover, in exploring engagement and well-being-related aspects in respect of academic staff and students, the research aimed to focus the attention of university management on the importance

21

of the lecturer–student exchange relationship. University management might find it worthwhile to consider aspects that could support and better equip lecturers to develop high-quality exchange relationships with their students.

The results of this study reinforced the importance of engagement in fostering psychological well-being among academic staff and a deep-learning approach among students. University leaders are prompted to recognise the importance of identifying and cultivating engagement as a holistic approach and a core institutional strategy.

1.8 Outline of the Study

The research study is presented in five chapters. A brief outline of the structure of the study is provided in this section.

1.8.1 Chapter 1: Introduction

Chapter 1 offered an overview of the research study, highlighting the background, problem statement, theoretical framework, and contribution of the study. Further, it described the research methodology followed and the ethical requirements adhered to.

1.8.2 Chapter 2: Manuscript 1; Engagement of Academic Staff during COVID-19: The Role of Perceived Organisational Support, Burnout Risk, and Lack of Reciprocity as Psychological Conditions

The first manuscript of this research study was presented in Chapter 2. The purpose of this study was to answer the call of scholars for more research to be conducted on the concept of engagement, and it did so by exploring this concept in alignment with its positive psychological roots (Bailey et al., 2017). Further, the study aimed to address the call made by Kahn (1990) to gain an understanding of the interplay between the three psychological conditions described in Kahn's theory on personal engagement. Accordingly, the objective of the study was to apply Kahn's theory on engagement by taking a closer look at the interplay

of the psychological conditions of meaningfulness, safety, and availability in stimulating engagement among academic staff. In so doing, the study aimed to contribute by establishing conceptual connections through integrating Kahn's theory on engagement with the JD-R model (Bakker & Demerouti, 2017) and other concepts such as reciprocity (Schaufeli et al., 1996) and perceived organisational support (POS) (Eisenberger et al., 1986). The study further set out to understand the role of engagement in promoting employee well-being following the tenets of positive psychology (Seligman et al., 2005). It used a quantitative method of analysis as its inquiry strategy, and employed a cross-sectional survey research design. A sample of 160 academic staff took part in the study. Mplus version 8.6 was used for doing the statistical analyses.

1.8.3 Chapter 3: Manuscript 2; Student Engagement and Learning Approaches during COVID-19: The Role of Study Resources, Burnout Risk, and Student Leader–Member Exchange as Psychological Conditions

Chapter 3 presented the second manuscript of the research study. The purpose of this study was to gain a better understanding of the construct of student engagement and to further explore the positive outcomes of engagement on student learning. Thus, the study set out to investigate the psychological conditions as conceptualised by Kahn (1990), and aimed to contribute by expanding these premises beyond the employee–employer context to include a focus on students in an HE context. Further, the study explored students' learning approaches by extrapolating premises from the JD-R model (Bakker & Demerouti, 2017) to expand on the existing understanding of how student engagement influenced learning approaches. According to Campbell and Cabrera (2014), learning approaches represent students' intentions to learn and the processes they follow in learning. The study's method of analysis was quantitative, and a cross-sectional survey research design was used. The sample comprised 1 594 study participants. Mplus version 8.6 was used for doing the statistical analyses.

1.8.4 Chapter 4: Manuscript 3; Crossover of Engagement among Academic Staff and Students during COVID-19

The third manuscript of this research study was presented in Chapter 4. The purpose of this study was to explore engagement linkages among academic staff and students within HE from a crossover theory perspective. Thus, the study's objective was to investigate the possibility of mutual influences among academic staff and students, and the effects of these influences on the engagement of both parties. In so doing the study aimed to address the call of Hagenauer and Volet (2014) for more studies on mutual influences among educators and students within the HE context and further aimed to build on earlier crossover studies by examining crossover among lecturers and students in an HE context during the COVID-19 pandemic. A quantitative method of analysis was used. Cross-sectional data were collected using electronic surveys, and, because of the hierarchical nature of the data, a multilevel technique in Mplus version 8.6 was employed to do the analyses. The sample consisted of 1 594 students (level 1) who were nested within 160 lecturers (level 2).

1.8.5 Chapter 5: Conclusion

The final chapter provided a summary of the study's main findings and the theoretical and practical contributions of the studies presented in the three manuscripts. The chapter further provided an overview of the study's limitations and made recommendations for future research.

References

Ababneh, O. M. A., & Macky, K. (2015). The Meaning and Measurement of Employee Engagement: A Review of the Literature. *The New Zealand Journal of Human Resource Management (NZJHRM), 15*(1), 1-35.

Adil, A., & Kamal, A. (2019). Authentic leadership and psychological capital in job demands-resources model among Pakistani university teachers. *International Journal of Leadership in Education*, 1-20. DOI: 10.1080/13603124.2019.1580772

Albrecht, S. L. (2012). The influence of job, team and organizational level resources on employee well-being, engagement, commitment and extra-role performance. Test of a model. *International Journal of Manpower, 33*(7), 840–853. https://doi.org/10.1108/01437721211268357

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Anthony-McMann, P. E., Ellinger, A. D., Astakhova, M., & Halbesleben, J. R. B. (2017). Exploring different operationalizations of employee engagement and their relationships with workplace stress and burnout. *Human Resource Development Quarterly, 28*(2), 163–195. https://doi.org/10.1002/hrdq.21276

Anthun, K. S., & Innstrand, S. T. (2016). The predictive value of job demands and resources on the meaning of work and organisational commitment across different age groups in the higher education sector. *Journal of Higher Education Policy and Management, 38*(1), 53–67. https://doi.org/10.1080/1360080X.2015.1126890

Armoed, Z. (2021). The Covid-19 pandemic: Online teaching and learning at higher education institutes. *IOP Conference Series: Earth and Environmental Science, 654*, 1–8. https://doi.org/10.1088/1755-1315/654/1/012026

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*(5), 518–529.

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents, and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews*, *19*(1), 31–53. https://doi.org/10.1111/ijmr.12077

Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior, 66*(1), 26–44. https://doi.org/10.1016/j.jvb.2003.11.001

Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science, 20*(4) 265–269. DOI: 10.1177/0963721411414534

Bakker, A. B. (2017). Strategic and proactive approaches to work engagement. *Organizational Dynamics, 46*(2), 67–75. https://doi.org/10.1016/j.orgdyn.2017.04.002

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 389–411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations, 58*(5), 661–689. https://doi.org/10.1177/0018726705055967

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement particularly when job demands are high. *Journal of Educational Psychology, 99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Bakker, A. B., Schaufeli, W. B., Leiter, M. P., & Taris, T. W. (2008). Work engagement: An emerging concept in occupational health psychology. *Work & Stress, 22*(3), 187–200. https://doi.org/10.1080/02678370802393649

Bakker, A. B., Van Emmerik, H., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations, 33*(4), 464–489. https://doi.org/10.1177/0730888406291310

Bakker, A. B., Westman, M., & Van Emmerik, I. J. H. (2009). Position paper advancements in crossover theory. *Journal of Managerial Psychology, 24*(3), 206–219. https://doi.org/10.1108/02683940910939304

Bakker, A. B., & Xanthopoulou, D. (2009). The crossover of daily work engagement: Test of an actor–partner interdependence model. *Journal of Applied Psychology, 94*(6), 1562-1571. https://doi.org/10.1037/a0017525

Barkhuizen, N., Rothmann, S., & Van de Vijver, F. J. R. (2014). Burnout and work engagement of academics in higher education institutions: Effects of dispositional optimism. *Stress and Health, 30*(4), 322–332. https://doi.org/10.1002/smi.2520

Blais, M. A., Lenderking, W. R., Baer, L., deLorell, A., Peets, K., Leahy, L., & Burns, C. (1999). Development and initial validation of a brief mental health outcome measure. *Journal of Personality Assessment, 73*(3), 359–373. https://doi.org/10.1207/S15327752JPA7303_5

Boggs, R. G. (2003). Leadership context for the twenty-first century. *New Directions for Community Colleges, 123*, 15–25. https://doi.org/10.1002/cc.118

Bowden, J. L.-H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: A holistic measurement approach. *Studies in Higher Education, 46*(6), 1207–1224. https://doi.org/10.1080/03075079.2019.1672647

Burch, G. F., Burch, J. J., & Womble, J. (2017). Student engagement: An empirical analysis of the effects of implementing mandatory web-based learning systems. *Organization Management Journal, 14*(2), 116–125. https://doi.org/10.1080/15416518.2017.1325349

Burch, G. F., Heller, N. A., Burch, J. J., Freed, R., & Steed, S. A. (2015). Student engagement: Developing a conceptual framework and survey instrument. *Journal of Education for Business, 90*(4), 224–229. https://doi.org/10.1080/08832323.2015.1019821

Butt, H. P., Tariq, H., Weng, Q., & Sohail, N. (2019). I see you in me, and me in you: The moderated mediation crossover model of work passion. *Personnel Review, 48*(5), 1209–1238. https://doi.org/10.1108/PR-05-2018-0176

27

Campbell, C. M., & Cabrera, A. F. (2014). Making the mark: Are grades and deep learning related? *Research in Higher Education, 55*(5), 494–507. https://doi.org/10.1007/s11162-013-9323-6

Chanana, N., & Sangeeta. (2020). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs, e2508*, 1–8. https://doi.org/10.1002/pa.2508

Chiu, T. K. F. (2021). Applying the self-determination theory (SDT) to explain student engagement in online learning during the COVID-19 pandemic. *Journal of Research on Technology in Education*, 1–18. https://doi.org/10.1080/15391523.2021.1891998

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Cilliers, J. R., Mostert, K., & Nel, J. A. (2018). Study demands, study resources and the role of personality characteristics in predicting the engagement of first-year university students. *South African Journal of Higher Education, 32*(1), 49–70. https://doi.org/10.20853/32-1-1575

Coetzee, S. E., & Rothmann, S. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *SA Journal of Industrial Psychology, 30*(3), 29–40. https://doi.org/10.4102/sajip.v30i3.157

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Cooper, D. R., & Schindler, P. S. (2014). *Business research methods* (12th ed.). McGraw-Hill Irwin.

Cortese, A. D. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education, 31*(3), 15–22.

Covell, K., McNeil, J. K., & Howe, R. B. (2009). Reducing teacher burnout by increasing student engagement. A children's rights approach. *Journal of School Psychology International, 30*(3), 282–290. https://doi.org/10.1177/0143034309106496

Crawford, E. R., Lepine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834–848. https://doi.org/10.1037/a0019364

Creswell, J. (2003). *Research design: Qualitative, quantitative, and mixed method approaches* (2nd ed.). Sage.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage.

Crutzen, R., & Peters, G.-J. Y. (2017). Scale quality: Alpha is an inadequate estimate and factor-analytic evidence is needed first of all. *Health Psychology Review, 11*(3), 242-247. https://doi.org/10.1080/17437199.2015.1124240

Dedeken, P., Vissoci, J. R. N., Sebera, F., Boon, P. A. J. M., Rutembesa, E., & Teuwen, D. E. (2020). Validity, reliability, and diagnostic cut-off of the Kinyarwandan version of the Hamilton Depression Rating Scale in Rwanda. *Frontiers in Psychology, 11*(1343), 1-7. https://doi.org/10.3389/fpsyg.2020.01343

De-la-Calle-Durán, M.-C., & Rodríguez-Sánchez, J.-L. (2021). Employee engagement and well-being in times of COVID-19: A proposal of the 5Cs model. *International Journal of Environmental Research and Public Health*, *18*(10), 5470–5485. https://doi.org/10.3390/ijerph18105470

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3)*,* 499–512. http://doi.org/10.1037/0021-9010.86.3.499

Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2005). Spillover and crossover of exhaustion and life satisfaction among dual-earner parents. *Journal of Vocational Behavior, 67*, 266–289. https://doi.org/10.1016/j.jvb.2004.07.001

Eder, P., & Eisenberger, R. (2008). Perceived organizational support: Reducing the negative influence of coworker withdrawal behavior. *Journal of Management, 34*(1), 55–68. https://doi.org/10.1177/0149206307309259

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology, 86*(1), 42–51. https://doi.org/10.1037/0021-9010.86.1.42

Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology, 82*(5), 812–820. https://doi.org/10.1037/0021-9010.82.5.812

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500–507. https://doi.org/10.1037/0021-9010.71.3.500

Eloff, I., O'Neil, S., & Kanengoni, H. (2021). Students' well-being in tertiary environments: Insights into the (unrecognised) role of lecturers. *Teaching in Higher Education*, 1–22. https://doi.org/10.1080/13562517.2021.1931836

Farr-Wharton, B., Charles, M. B., Keast, R., Woolcott, G., & Chamberlain, D. (2018). Why lecturers still matter: The impact of lecturer–student exchange on student engagement and intention to leave university prematurely. *Higher Education, 75*(1), 167–185. https://doi.org/10.1007/s10734-017-0190-5

Feisst, M., Hennings, A., Heil, J., Moosbrugger, H., Kelava, A., Stolpner, I., Kieser, M., & Rauch, G. (2019). Refining scores based on patient reported outcomes: Statistical and medical perspectives. *BMC Medical Research Methodology, 19*(167), 1–9. https://doi.org/10.1186/s12874-019-0806-9

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*(2), 103–110. https://doi.org/10.1037/1089-2680.9.2.103

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader–member exchange (LMX) theory of leadership over 25 years: Applying multi-level, multi-domain perspective. *Leadership Quarterly*, *6*(2), 219–247. https://doi.org/10.1016/1048-9843(95)90036-5

Gupta, M. (2017). Corporate social responsibility, employee–company identification, and organizational commitment: Mediation by employee engagement. *Current Psychology, 36*, 101–109. https://doi.org/10.1007/s12144-015-9389-8

Haggerty, G., Blake, M., & Siefert, C. J. (2010). Convergent and divergent validity of the relationship profile test: Investigating the relationship with attachment, interpersonal distress, and psychological health. *Journal of Clinical Psychology, 66*(4), 339–354. https://doi.org/10.1002/jclp.20654

Hernandez, M., & Guarana, C. L. (2018). An examination of the temporal intricacies of job engagement. *Journal of Management, 44*(5), 1711–1735. https://doi.org/10.1177/0149206315622573

Hox, J. J., Moerbeek, M., & Van de Schoot, R. (2018). *Multilevel analysis: Techniques and applications* (3rd ed.). Routledge. https://doi.org/10.4324/9781315650982

Huhtala, M., Tolvanen, A., Mauno, S., & Feldt, T. (2015). The associations between ethical organizational culture, burnout, and engagement: A multilevel study. *Journal of Business Psychology, 30*(2), 399–414. https://doi.org/10.1007/s10869-014-9369-2

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. R. (2006). A model of work-related well-being for educators in South Africa. *Stress and Health, 22*(4), 263–274. https://doi.org/10.1002/smi.1098

Jak, S., Oort, F. J., & Dolan, C. V. (2014). Measurement bias in multilevel data. *Structural Equation Modeling, 21*(1), 31–39. https://doi.org/10.1080/10705511.2014.856694

Johnson, S. M., & Naidoo, A. V. (2013). Transpersonal practices as prevention intervention for burnout among HIV/AIDS coordinator teachers. *South African Journal of Psychology, 43*(1), 59–70. https://doi.org/10.1177/0081246312474406

Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. https://doi.org/10.5465/256287

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Kenny, D. A., & Kashy, D. A. (2014). The design and analysis of data from dyads and groups. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 589–607). Cambridge University Press. https://doi.org/10.1017/CBO9780511996481.027

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford Press.

Kim, W., Kolb, J. A., & Kim, T. (2012). The relationship between work engagement and performance: A review of empirical literature and a proposed research agenda. *Human Resource Development Review, 12*(3), 248–276. https://doi.org10.1177/1534484312461635

Košir, K., & Tement, S. (2013). Teacher–student relationship and academic achievement: a cross-lagged longitudinal study on three different age groups. *European Journal of Psychology of Education,* 1-23. doi 10.1007/s10212-013-0205-2

Kotera, Y., & Ting, S. (2019). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*, *19*, 227–239. https://doi.org/10.1007/s11469-019-00169-z

Krasikova, D. V., & LeBreton, J. M. (2012). Just the two of us: Misalignment of theory and methods in examining dyadic phenomena. *Journal of Applied Psychology, 97*(4), 739–757. https://doi.org/10.1037/a0027962

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192–207. https://doi.org/10.1080/02678370500297720

Lam, L. W., Xu, A. J., & Loi, R. (2018). Is emotional engagement possible in emotionally demanding jobs? The role of leader–member exchange (LMX). *Journal of Personnel Psychology, 17*(1), 42–52. https://doi.org/10.1027/1866-5888/a000194

Lee, Y. (2019). JD-R model on psychological well-being and the moderating effect of job discrimination in the model: Findings from the MIDUS. *European Journal of Training and Development, 43*(3/4), 232–249. https://doi.org/10.1108/EJTD-07-2018-0059

Liu, D., Chen, Y., & Li, N. (2021). Tackling the negative impact of COVID-19 on work engagement and taking charge: A multi-study investigation of frontline health workers. *Journal of Applied Psychology, 106*(2), 185–198. https://doi.org/10.1037/apl0000866

Mathieu, J. E. (2016). The problem with [in] management theory. *Journal of Organizational Behavior, 37*(8), 1132–1141. https://doi.org/10.1002/job.2114

Mathieu, J. E., Aguinis, H., Culpepper, S. A., & Chen, G. (2012). Understanding and estimating the power to detect cross-level interaction effects in multilevel modeling. *Journal of Applied Psychology, 97*(5), 951–966. https://doi.org/10.1037/a0028380

McNeish, D., An, J., & Hancock, G. R. (2018). The thorny relation between measurement quality and fit index cut-offs in latent variable models. *Journal of Personality Assessment*, *100*(1), 43–52. https://doi.org/10.1080/00223891.2017.1281286

Mercali, G. D., & Costa, S. G. (2019). Antecedents of work engagement of higher education professors in Brazil. *Revista de Administração Mackenzie, 20*(1), 1–27. https://doi.org/10.1590/1678-6971/eramg190081

Mokgele, K. R. F. (2014). *Study demands, study resources and well-being of first-year students in South African higher education institutions* (Unpublished doctoral thesis). North-West University, Potchefstroom, South Africa.

Mokgele, K. R. F., & Rothmann, S. (2014). A structural model of student well-being. *South African Journal of Psychology, 44*(4), 514–527. https://doi.org/10.1177/0081246314541589

Moodley, P., & Singh, R. J. (2015). Addressing student dropout rates at South African universities. *Alternation Special Edition, 17*, 91–115.

Myers, S. A. (2006). Using leader–member exchange theory to explain students' motives to communicate. *Communication Quarterly*, *54*(3), 293–304. https://doi.org/10.1080/01463370600878008

Oades, L. G., Robinson, P., Green, S., & Spence, G. B. (2011). Towards a positive university. *The Journal of Positive Psychology, 6*(6), 432–439. https://doi.org/10.1080/17439760.2011.634828

Olckers, C., & Van Zyl, L. E. (2019). Psychometric properties of the Psychological Ownership Questionnaire. *Australian Journal of Psychology, 71*(2), 127–136. https://doi.org/10.1111/ajpy.12232

Pham-Thai, N., McMurray, A. J., Muenjohn, N., & Muchiri, M. (2018). Job engagement in higher education. *Personnel Review, 47*(4), 951–967. https://doi.org/10.1108/PR-07-2017-0221

Pouris, A., & Inglesi-Lotz, R. (2014). The contribution of higher education institutions to the South African economy. *South African Journal of Science, 110*(3/4), 1–5. https://doi.org/10.1590/sajs.2014/a0059

33

Power, R. L. (2013). Leader–member exchange theory in higher and distance education. *International Review of Research in Open and Distance Learning, 14*(4), 277–284. https://doi.org/10.19173/irrodl.v14i4.1582

Provenzano-Hass, N. (2017). The field of Industrial and Organizational Psychology: An early example of translational research. *Journal of Applied Behavioral Research, 22*(e12080), 1-15. https://doi.org/10.1111/jabr.12080

Raymond, I. J., & Raymond, C. M. (2019). Positive psychology perspectives on social values and their application to intentionally delivered sustainability interventions. *Sustainability Science, 14*(5), 1381–1393. https://doi.org/10.1007/s11625-019-00705-9

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal, 53*(3), 617–635. https://doi.org/10.5465/amj.2010.51468988

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research, 45*(3), 261–279. https://doi.org/10.1509/jmkr.45.3.261

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership & Organization Development Journal, 31*(4), 324–336. https://doi.org/10.1108/01437731011043348

Robins, T. G., Roberts, R. M., & Sarris, A. (2015). Burnout and engagement in health profession students: The relationships between study demands, study resources and personal resources. *Australasian Journal of Organisational Psychology, 8*(e1), 1–13. https://doi.org/10.1017/orp.2014.7

Rofcanin, Y., Heras, M. L., Bosch, M. J., Wood, G., & Mughal, F. (2019). A closer look at the positive crossover between supervisors and subordinates: The role of home and work engagement. *Human Relations, 72*(11), 1776–1804. https://doi.org/10.1177/0018726718812599

Rothmann, S., & Jordaan, G. M. E. (2006). Job demands, job resources and work engagement of academic staff in South African higher education institutions. *SA Journal of Industrial Psychology, 32*(4), 87–96. https://doi.org/10.4102/sajip.v32i4.247

Rusu, P. P., & Colomeischi, A. A. (2020). Positivity ratio and well-being among teachers. The mediating role of work engagement. *Frontiers in Psychology, 11*(1608), 1–10. https://doi.org/10.3389/fpsyg.2020.01608

Sadler, P., Ethier, N., & Woody, E. (2011). Tracing the interpersonal web of psychopathology: Dyadic data analysis methods for clinical researchers. *Journal of Experimental Psychopathology, 2*(2), 95–138. https://doi.org/10.5127/jep.010310

Salanova, M., Schaufeli, W. B., Martínez, I., & Bresó, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety, Stress and Coping, 23*(1), 53–70. DOI: 10.1080/10615800802609965

Salmela-Aro, K., & Read, S. (2017). Study engagement and burnout profiles among Finnish higher education students. *Burnout Research, 7*, 21–28. https://doi.org/10.1016/j.burn.2017.11.001

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (5th ed.). Pearson Education.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293–315. https://doi.org/10.1002/job.248

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health* (pp. 43–68). Springer. https://doi.org/10.1007/978-94-007-5640-3_4

Schaufeli, W. B., Van Dierendonck, D., & Van Gorp, K. (1996). Burnout and reciprocity: Toward a dual-level social exchange model. *Work & Stress, 10*(3), 225–237. https://doi.org/10.1080/02678379608256802

Seligman, M. E. P., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35*(3), 293–311. https://doi.org/10.1080/03054980902934563

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410–421. https://doi.org/10.1037/0003-066X.60.5.410

Shen, B., McCaughtry, N., Martin, J., Garn, A., Kulik, N., & Fahlman, M. (2015). The relationship between teacher burnout and student motivation. *British Journal of Educational Psychology*, *85*(4), 519–532. https://doi.org/10.1111/bjep.12089

Shimazu, A., Schaufeli, W. B., Kuboa, K., & Kawakami, N. (2012). Do workaholism and work engagement predict employee well-being and performance in opposite directions? *Industrial Health, 50*(4), 316–321. https://doi.org/10.2486/indhealth.ms1355

Shuck, B., & Reio, T. G. (2014). Employee engagement and well-being: A moderation model and implications for practice. *Journal of Leadership & Organizational Studies, 21*(1), 43–58. https://doi.org/10.1177/1523422311431153

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching & Teacher Education, 27*(6), 1029–1038. https://doi.org/10.1016/j.tate.2011.04.001

Sobral, S. R., Jesus-Silva, N., Cardoso, A., & Moreira, F. (2021). EU27 higher education institutions and COVID-19. *International Journal of Environmental Research and Public Health, 18*, 5963–5978. https://doi.org/10.3390/ijerph18115963

Sok-Foon, Y., Sze-Yin, J. H., & Yin-Fah, B. C. (2012). Student evaluation of lecturer performance among private university students. *Canadian Social Science, 8*(4), 238–243.

Sun, S., Goldberg, S. B., Lin, D., Qiao, S., & Operario, D. (2021). Psychiatric symptoms, risk, and protective factors among university students in quarantine during the COVID-19 pandemic in China. *Globalization and Health*, *17*(15), 1–14. https://doi.org/10.1186/s12992-021-00663-x

Tarique, I., & Schuler, R. S. (2010). Global talent management: Literature review, integrative framework, and suggestions for further research. *Journal of World Business, 45*, 122-133. doi:10.1016/j.jwb.2009.09.019

Taris, T. W., Schreurs, P. J. G., & Van Iersel-Van Silfhout, I. J. (2001). Job stress, job strain, and psychological withdrawal among Dutch university staff: Towards a dual process model for the effects of occupational stress. *Work & Stress, 15*(4), 283–296. https://doi.org/10.1080/02678370110084049

Tayfur, O., & Arslan, M. (2013). The role of lack of reciprocity, supervisory support, workload and work–family conflict on exhaustion: Evidence from physicians. *Psychology, Health & Medicine, 18*(5), 564–575. https://doi.org/10.1080/13548506.2012.756535

Van Horn, J. E., Schaufeli, W. B., & Enzmann, D. (1999). Teacher burnout and lack of reciprocity. *Journal of Applied Social Psychology, 29*(1), 91–108. https://doi.org/10.1111/j.1559-1816.1999.tb01376.x

Van Zyl, L. E., Rothmann, S., & Zondervan-Zwijnenburg, M. A. J. (2021). Longitudinal trajectories of study characteristics and mental health before and during the COVID-19 lockdown. *Frontiers in Psychology, 12*(633533), 1–13. https://doi.org/10.3389/fpsyg.2021.633533

Visser, M., & Law-Van Wyk, E. (2021). University students' mental health and emotional wellbeing during the COVID-19 pandemic and ensuing lockdown. *South African Journal of Psychology, 51*(2), 229–243. https://doi.org/10.1177/00812463211012219

Wang, J., & Wang, X. (2020). *Structural equation modeling: Applications using Mplus* (2nd ed.). John Wiley & Sons. https://doi.org/10.1002/9781119422730

Waterman, A. S. (2013). The humanistic psychology–positive psychology divide: Contrasts in philosophical foundations. *American Psychologist, 68*(3), 124–133. https://doi.org/10.1037/a0032168

West, L., & Halvorson, D. (2019). Student engagement and deep learning in the first-year international relations classroom: Simulating a UN Security Council debate on the Syrian crisis. *Journal of Political Science Education*, *17*(2), 173–190. https://doi.org/10.1080/15512169.2019.1616298

Wester, E. R., Walsh, L. L., Arango-Caro, S., & Callis-Duehl, K. L. (2021). Student engagement declines in STEM undergraduates during COVID-19-driven remote learning. *Journal of Microbiology & Biology Education, 22*(1), 1–11. https://doi.org/10.1128/jmbe.v22i1.2385

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54*(6), 717–751. https://doi.org/10.1177/0018726701546002

Westman, M., Brough, P., & Kalliath, T. (2009). Expert commentary on work–life balance and crossover of emotions and experiences: Theoretical and practice advancements. *Journal of Organizational Behavior, 30*(5), 587–595. https://doi.org/10.1002/job.616

Westman, M., Vinokur, A. D., Hamilton, V. L., & Roziner, I. (2004). Crossover of marital dissatisfaction during military downsizing among Russian army officers and their spouses. *Journal of Applied Psychology, 89*(5), 769–779. https://doi.org/10.1037/0021-9010.89.5.769

Williams, G., Thomas, K., & Smith, P. A. (2017). Stress and well-being of university staff: An investigation using the Demands-Resources-Individual Effects (DRIVE) model and Well-Being Process Questionnaire (WPQ). *Psychology, 8*(12), 1919–1940. https://doi.org/10.4236/psych.2017.812124

Young, J. L., Waehler, C. A., Laux, J. M., McDaniel, P. S., & Hilsenroth, M. J. (2003). Four studies extending the utility of the Schwartz Outcome Scale (SOS–10). *Journal of Personality Assessment, 80*(2), 130–138. https://doi.org/10.1207/S15327752JPA8002_02Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

2. CHAPTER 2: MANUSCRIPT 1

Engagement of academic staff during COVID-19: The role of perceived organisational support, burnout risk, and lack of reciprocity as psychological conditions

Abstract

The COVID-19 crisis has resulted in radical changes within the higher education system, requiring academia to rapidly transition from the traditional learning model to a distance or blended model of learning to ensure continuity of educational processes. These changes have placed additional demands on academic staff who already have a heavy workload (which includes having to produce increasing numbers of high-quality international publications). According to the job demands-resources (JD-R) model, these additional demands may have an impact on the burnout risk, engagement, and well-being of academic staff. In alignment with the premises of positive psychology and the efforts to promote psychological functioning, the primary objective of this study was to explore the interplay of three psychological conditions (meaningfulness, safety, and availability) needed to stimulate engagement. To investigate this interplay, the researcher connected Kahn's theory on engagement with current concepts that focus on the person-role relationship, such as those dealt with in the JD-R model, organisational support theory, and perceptions of reciprocity. Mediating effects between burnout risk, engagement, and psychological well-being, as well as the moderating effect of lack of reciprocity, were tested. The study used a purposive, non-probability sampling method and a cross-sectional survey research design. Participants were 160 academic staff members employed at a university in South Africa. The findings of this study revealed that the three psychological conditions (meaningfulness, safety, and availability), which were operationalised as lack of reciprocity, perceived organisational support, and burnout risk, were significantly related to emotional engagement. Perceived organisational support (job resources), which met the criteria for psychological safety and some components of meaningfulness, displayed the strongest association with engagement. Policy-makers within higher education institutions should be sensitive to the issues this study focused on, especially as regards the need to provide organisational support in times of crisis, such as the COVID-19

pandemic. The psychological well-being of our brightest scientific minds in the educational system should be a high national priority and should be protected at all costs and at all times, also during times of crisis.

2.1   Introduction

Higher education (HE) institutions play a key role in facilitating economic development and growth, and meeting the social needs of the 21st century (Boggs, 2003; Pouris & Inglesi-Lotz, 2014). The COVID-19 pandemic has, however, posed numerous challenges to employees (Liu et al., 2021) and organisations in all sectors. It has had a profound impact on people's behaviour, emotions, thoughts (Pillay & Barnes, 2020), and overall well-being (De-la-Calle-Durán & Rodríguez-Sánchez, 2021).

The pandemic has brought about changes requiring academia to rapidly transition from the traditional learning model to a distance or blended learning model to ensure continuity of educational processes (Ali, 2020; Armoed, 2021). In addition to coping with an already heavy workload, which include having to produce an increasing number of high-quality international publications (Barkhuizen et al., 2014), academic staff have had to offer extra support to students. Barkhuizen et al. (2014) asserted that all the demands made on academic staff may lead to their burnout and low levels of commitment.

Scholars have stated that even during times of change and uncertainty, engaging the workforce remains one of the key strategic imperatives to ensure success (Anthony-McMann et al., 2017) as it significantly affects essential business outcomes such as productivity, customer satisfaction, discretionary effort, commitment, and well-being (Shuck, 2011; Shuck & Reio, 2011; Shuck & Reio, 2014). In a study that Chanana and Sangeeta (2020) conducted during the pandemic, they maintained that engagement is now, more than ever, a key factor in the success of organisations.

40

2.2   Theoretical Framework

Grant and Osanloo (2014) described a theoretical framework as a "blueprint" to build, structure, and support a study as it undergirds the thinking and plans to explore a research topic. The present study drew on positive psychology to explore aspects that could produce a more fulfilling or productive life. Positive psychology is regarded as the study of positive character, positive emotions, and positive institutions (Seligman et al., 2005). Through the study of processes or conditions that contribute to the optimal functioning of institutions, groups, and people (Gable & Haidt, 2005), positive psychology makes a concerted effort to promote psychological functioning (Waterman, 2013). Important in the context of the present study is the concept of engagement, which Shuck (2011, p. 305) conceptualised as "a positive psychological state of motivation". In their recent study, Kotera and Ting (2019) reaffirmed that engagement is a positive psychological construct of particular importance to the HE context, especially to students' academic activities.

Through a process of inductive analysis, Kahn (1990) concluded that people's psychological experiences in the work role determine whether they express themselves (personally engage) or withdraw and defend themselves (personally disengage). According to Kahn, the presence of three experiential or psychological conditions influence people to "employ" or express themselves (self-in-role) and personally engage. These conditions are *meaningfulness*, *safety*, and *availability*. Kahn's theory is concerned with people's emotional reaction to unconscious and conscious phenomena and the objective properties of work contexts and roles.

More recently, Bailey et al. (2017) investigated the meaning, antecedents, and outcomes of engagement and found that most studies on the antecedents of engagement explored the experience of job-design-related factors, which included job demands or job resources. Accordingly, Mercali and Costa (2019) indicated that the job demands-resources (JD-R) model (Bakker & Demerouti, 2017; Demerouti et al., 2001) offers one of the most solid empirical foundations to clarify the psychological mechanisms that underlie engagement in a work context. In alignment with the premise of Kahn (1990) that the objective properties of a work context should be explored, the JD-R model provides a basis for understanding the roles of work

41

conditions as antecedents to burnout and engagement (Crawford et al., 2010). Bakker and Demerouti (2017) asserted that, irrespective of differences in working conditions, two general characteristics of a job, namely job demands and job resources, are definitive in the development of engagement and burnout (Cole et al., 2012; Demerouti et al., 2001) and that they affect the well-being and performance of individuals (Bakker & Demerouti, 2017; Demerouti et al., 2001).

Drawing on Kahn's (1990) theory and using the JD-R model as a framework, the present study explored the conditions that stimulated the positive psychological construct of engagement (Kotera & Ting, 2019) and investigated its role in contributing to optimal functioning (Gable & Haidt, 2005) in HE institutions.

2.3   Contribution of the Study

With the aim of contributing to the existing body of knowledge, the present study answered the call of scholars for more studies on the topic of engagement (Bailey et al., 2017), and specifically within the HE context, to explore the impact work demands and resources on the engagement of academic staff (Najeemdeen et al., 2018). As per the theory on personal engagement, the study answered the call of Kahn (1990) and Rothmann and Welsh (2013) for an exploration of the interplay between the three psychological conditions of meaningfulness, safety, and availability as antecedents and of the ways they interacted to produce engagement.

This study also aimed to establish conceptual connections between some aspects of Kahn's (1990) psychological conditions of meaningfulness, safety, and availability, and the JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001), which is regarded as a well-being and job design framework (Rattrie et al., 2020). Furthermore, this study aimed to establish connections between Kahn's (1990) theory on engagement and concepts relating to organisational support theory (Eisenberger et al., 1986) and perceptions of reciprocity (Schaufeli et al., 1996) to gain a better understanding of the conditions in an organisation that enable engagement and promote well-being in accordance with the tenets of positive psychology (Seligman et al., 2005).

2.4 Literature Review and Research Hypotheses

2.4.1 Engagement

Kahn (1990) described personal engagement as an employee who harness themselves to their work role and express their "preferred self" physically, cognitively, and emotionally when they perform their work. He likened personal engagement to "self-employment" and described it as inspiring aspects that can be termed flow, intrinsic motivation, involvement, and mindfulness. The expression and "employment" of the preferred self bring about behaviours that connect the self to the role, defining the essence of personal engagement (Kahn, 1990). These preferred behaviours and expressions promote full performance in the work role (Bakker, 2017; Kahn, 1990), creativity, non-defensive communication, ethical behaviour, playfulness, and connections to the work role and other people (Kahn, 1990).

In contrast, personal disengagement refers to the behaviour of members of an organisation who withdraw and defend themselves physically, cognitively, and emotionally while they perform their work (Kahn, 1990). Kahn described this state of personal disengagement as "unemployment of the self", a state that triggers behaviours such as becoming detached, defensive, and emotionally inexpressive or closed. These behaviours give rise to incomplete performance in the work role, the absence of personal or internal energy, the onset of passivity, the hiding of true thoughts and identity, and a diminished sense of personal connection with others (Kahn, 1990).

In later studies, Harter et al. (2002) referred to the concept as employee engagement and, in alignment with Gallup research, described it as involvement in, satisfaction with, and enthusiasm for work. A number of subsequent studies described engagement in alignment with Kahn (1990) as including cognitive, behavioural, and emotional components associated with role performance (Christian et al., 2011; Rich et al., 2010; Saks, 2006). Shuck and Wollard (2010), having synthesised various definitions and conceptual frameworks of engagement, similarly described employee engagement as the cognitive, emotional, and behavioural state of an employee that is directed toward desired organisational outcomes. The present study

43

adopted Kahn's (1990) conceptualisation of engagement which takes into account that the psychological experiences of work influence the attitudes and behaviour of individuals and that these experiences are, in turn, influenced by individual, interpersonal, and organisational factors.

2.4.2 The Relationship between Job Demands, Burnout Risk (Psychological Availability), and Engagement

The JD-R model stipulates that job demands refer to negatively valued physical, social, psychological, or organisational aspects that require continuous effort and cost or consume energy (Bakker & Demerouti, 2017; Schaufeli & Taris, 2014). Within the HE context, academic staff often need to reconcile the demands their teaching tasks and research work place on them. In addition to being responsible for teaching, administrative work, and community service, they are expected to conduct high-quality research (Houston et al., 2006; Taris et al., 2001). Taris et al. (2001) found that the time demands and pressure of having to do research and teach have a significant positive relationship with strain, which drains the energy of academic staff. Accordingly, they posited that the combination of teaching and research is a key source of stress for academic staff. Other studies conducted within an academic context conceptualised job demands (e.g. research, teaching, and administrative work) as time pressure (e.g. Skaalvik & Skaalvik, 2011) or as workload (Boyd et al., 2011).

The stress resulting from time pressure and workload has been exacerbated by the changes and challenges staff have experienced because of the global COVID-19 pandemic (Liu et al., 2021). A major challenge in the HE context has been the need to shift from the traditional learning model to the distance or blended learning model to ensure continuity of educational processes (Ali, 2020; Armoed, 2021). In alignment with research carried out by Taris et al. (2001) and others (e.g. Boyd et al., 2011; Skaalvik & Skaalvik, 2011) within the context of education, the present study adopted the description of job demands as relating to 1) time pressure, 2) relationships with colleagues, and 3) pressures stemming from teaching vs research tasks.

The JD-R model (Demerouti et al., 2001) outlines two psychological processes that are responsible for job demands and resources operating as antecedents to engagement and burnout. These processes include the *energetic* process and the *motivational* process (Jackson et al., 2006; Schaufeli & Bakker, 2004). According to the energetic process, job demands wear out and drain the energy of people, resulting in burnout or high levels of exhaustion. The JD-R model's proposed energetic process seems to map well onto the *strain coping mode* described in Hockey's (1997) state regulation model of compensatory control. This model takes into account different effects on observed performance under circumstances of high demands (e.g. workload or stress) and offers a framework for the analysis of issues associated with strain, fatigue, and psychological health. According to Hockey, an individual controls the process of maintaining performance stability under demanding conditions through mobilising mental effort (energy). He proposed that individuals have two options available in situations where demands are perceived as high/excessive: the *strain coping mode* and the *passive coping mode*. In the strain coping mode, individuals make an increased effort to accommodate the high demands, in this way maintaining levels of performance but at the cost of expending energy, which manifests itself psychologically in the form of exhaustion and/or physically in the form of an increased excretion of cortisol (which leads to, for example, burnout risk). In the passive coping mode, individuals' perception of excessive demands results in a downward adjustment of performance objectives, for example, by reducing their level of accuracy or paying less attention so as to avoid the cost of expending more energy (e.g. through mental activity), which they perceive to be high already. Hockey indicated that complete disengagement from task goals may result in extreme forms of passive control. The author noted specific examples of disengagement that result in stressful work conditions and the realisation that more effort is not effective in maintaining adequate performance. This suggests that high demands may lead to disengagement, which in turn may negatively affect performance. Rattrie et al. (2020), and Han et al. (2020) were in agreement. The scholars found a statistically significant (small effect) negative association between demands and engagement. Similarly, in a meta-analysis that Crawford et al. (2010) conducted, they found that job demands, considered as hindrances (e.g. role overload), were negatively associated with engagement. Thus, based on the descriptions of the energetic process, the strain, and passive

45

coping modes, and empirical work highlighted, the researcher formulated the following hypotheses for the present study:

H1: There is a statistically significant positive relationship between job demands and burnout risk.

H2: There is a statistically significant negative relationship between job demands and engagement.

The JD-R model's energetic process, in which job demands wear out and drain the energy of people, resulting in burnout risk or high levels of exhaustion seems to link well with Kahn's (1990) notion of (psychological) availability as referred to earlier. In Kahn's (1990) description, the availability of people is dependent upon how well they cope with the demands of life, be it work or non-work related. Thus, how available people are to engage despite the distractions experienced as members of a social system. These distractions that shape availability include: depletion of physical and emotional energy; outside lives (e.g. personal or non-work matters that drain or take away from one's psychological availability); and insecurity (e.g. concerns about the quality of one's work, how it compares with the work of others, and one's status in the role that distracts one or "occupied energies") (Kahn, 1990, p. 715). Burnout has been regarded as a metaphor for a state of mental weariness (Schaufeli & Bakker, 2004) or physical and emotional exhaustion (Kristensen et al., 2005). The Copenhagen Burnout Inventory, developed by Kristensen et al. (2005), operationalises burnout as consisting of fatigue and exhaustion. The questionnaire consists of three sub-dimensions, work-related burnout, where physical and psychological fatigue and exhaustion is attributed to concerns experienced in the work domain, client-related burnout, where fatigue is attributed to work with clients, and personal burnout, where fatigue is attributed to non-work factors or factors outside work life (Creedy et al., 2017; Kristensen et al., 2005). Hodson (2021) highlighted the importance of considering how the constructs we use within the field of psychology fit in with that already understood in the field. Based on this premise, and the highlighted linkages between the description of availability, the energetic process of how burnout risk is shaped, and the conceptualisation of burnout as per the Copenhagen Burnout Inventory, the researcher operationalised burnout risk as psychological availability.

The researcher also formulated a third hypothesis based on further findings in existing literature. The JD-R model further postulates that high levels of exhaustion threaten the energy resources of an engaged individual, which can impact levels of engagement negatively (Bakker & Demerouti, 2017; Jackson et al., 2006). In support of this postulation, Russell et al. (2020) indicated a significant negative relationship between burnout and work engagement. As referred to earlier, Kahn (1990) identified (psychological) availability as one of three conditions that shape whether a person will personally engage or not. Based on these criteria, the researcher formulated the following hypothesis:

H3: There is a statistically significant negative relationship between burnout risk and engagement.

2.4.3 The Relationship between Job Resources (Psychological Meaningfulness and Safety), Burnout Risk (Availability), and Engagement

The JD-R model explains that resources operate as antecedents to engagement (Jackson et al., 2006; Schaufeli & Bakker, 2004) by way of a *motivational* process: the resources employees have available motivate them to be committed and have positive attitudes toward work, and the resources lead to increased positive affect (Albrecht, 2012). Job resources are described as the organisational, psychological, social, or physical aspects of one's job that are functional in achieving goals. Further, job resources stimulate growth, offer information regarding the results of one's work activities, and contribute to work engagement (Bakker & Demerouti, 2017; Demerouti et al., 2001).

The JD-R model's motivational process seems to link well with the concept of perceived organisational support (POS). The concept of POS derives from organisational support theory (Eisenberger et al., 1986) and describes the degree to which employees perceive that their employer cares about their well-being and values their contribution (Eder & Eisenberger, 2008; Eisenberger et al., 2001; Kurtessis et al., 2017). POS encapsulates the general beliefs employees hold regarding the commitment of the organisation towards them as a result of perceived beneficial or harmful treatment by the organisation. These beliefs are informed by organisational aspects (e.g. traditions, practices, policies, job enrichment), as well as social aspects (e.g.

47

receiving sincere praise and approval) (Eisenberger et al., 1986). Similar to the premise of how resources motivate employees to be committed (Albrecht, 2012) and contribute to work engagement (Bakker & Demerouti, 2017; Demerouti et al., 2001); the held beliefs regarding POS influence work effort or behaviour. POS fosters positive affective commitment toward the organisation (Kurtessis et al., 2017); and contributes to work engagement (Rich et al., 2010; Zacher & Winter, 2011). Furthermore, with reference to the statement of Bakker and Demerouti (2017, p. 312) that resources are not only needed to effectively perform work but are also "important in their own right", POS can be regarded as a valued resource that helps employees carry out their work (Kraimer & Wayne, 2004).

A study that Bakker et al. (2007) conducted in an educational context indicated that job resources that were of particular importance to teachers and helped them cope with demands included supervisor support, appreciation, and the organisational climate. Xanthopoulou et al. (2007) mentioned five types of job resources that are recognised to exist in most occupations: social support, autonomy, supervisory support, opportunities for professional development, and performance feedback. Three of the five types of job resources, namely, opportunities for development, autonomy, and supervisor support, are highly associated with perceived organisational support (POS) (Kurtessis et al., 2017).

Apart from the condition of psychological availability that Kahn's (1990) grounded theory identifies as shaping personal engagement, the theory identifies the psychological conditions of safety and meaningfulness as necessary to stimulate personal engagement. Safety is experienced as feeling that one can express oneself without fear of negative consequences to one's career or self-image and is influenced by supportive interpersonal relationships, group dynamics, management style, and organisational norms. Safety was thus promoted in the following cases: 1) where interpersonal relationships were supportive and trusting; 2) where the unconscious roles individuals assumed and perceived as per the group dynamics promoted a feeling of safety in bringing "their selves into" role performance. Here, Kahn (1990) referred to perceptions regarding the distribution of power and authority among groups, and how this could suppress individuals' voices and negatively impact safety; 3) where the management style or processes were

48

supportive, consistent, predictable and created paths along which employees could safely travel; and 4) where the organisational norms, general expectations, cues or boundaries could govern employees to safely execute work (Kahn, 1990, p. 710).

Employees tend to personify organisations, viewing line managers as organisational agents and their actions toward them as reflecting the intentions or actions of the organisation (Eisenberger et al., 1986; Karagonlar et al., 2016). Eisenberger et al., (1986, p. 500) referred to this as "personification of the organisation". Therefore, POS can be regarded as consisting of aspects that reflect management/interpersonal relationships, group dynamics, and (organisational) norms/expectations. This assumption is based on the following grounds: 1) POS captures aspects related to supportive and trusting interpersonal relationships by tapping whether the organisation or rather organisational agents consider the interest of the employee in decision making, offer help when the employee is in need and care about their well-being; 2) by tapping whether organisational agents notice extra effort, consider employee feedback and goals, or whether organisational agents would undermine or exploit the employee, POS captures considerations regarding treatment by organisational members with authority or power, and the room this allows the employee to safely bring "their selves into" role performance; 3) by tapping whether organisational agents value employee contributions, tries to make the job more interesting and cares about the employees' work satisfaction, POS captures considerations regarding supportive management processes and opportunities for career growth; 4) by tapping the general beliefs regarding whether policies and governing practices are perceived as favourable, POS provides information regarding general norms which can inform appropriate or proportionate ways of working.

Meaningfulness is experienced when people feel they are valued, worthwhile, and not taken for granted (Kahn, 1990; Olivier & Rothmann, 2007). Factors that influence meaningfulness are whether tasks are challenging, allow for learning, and provide a sense of competence, whether employees' role is central to/needed by the institution, and whether work interactions with co-workers or clients are meaningful (Kahn, 1990). POS includes facets of meaningfulness that tap into perceptions of not being taken for

49

granted, working on challenging tasks, and performing a role that is of importance to an organisation. Thus, the present study operationalised POS as a job resource that included aspects of psychological meaningfulness and safety.

The possibility of POS as an antecedent to engagement has been considered within the business sector and within the HE context (e.g., Guan et al., 2014; Mabasa & Ngirande, 2015). Among staff at a business college, support was found that a relationship existed between POS and engagement (Najeemdeen et al., 2018). Kurtessis et al.'s (2017) view that POS should lessen burnout was confirmed in a study among academics that indicated that POS negatively affected levels of burnout (Yew & Ramos, 2019). In addition, results from a meta-analysis indicated a statistically significant association between job resources and both burnout and engagement (Rattrie et al., 2020). Based on these findings, the researcher formulated the following hypotheses:

H4: *There is a statistically significant positive relationship between POS and engagement.*
H5: *There is a statistically significant negative relationship between POS and burnout risk.*

2.4.4 *The Influence of Reciprocity (Psychological Meaningfulness) on Engagement*

According to the equity theory, reciprocity is pursued in interpersonal or organisational relationships and denotes the equality of exchange between two parties (Schaufeli et al., 1996). In the exchange relationship, the norm of reciprocity imposes an obligation on the receiving party to reciprocate the behaviour in kind if possible. In these cases, it is considered whether the return is sufficient or appropriate to the ratio of perceived investments made (Gouldner, 1960). Similarly, Rothmann and Welsh (2013) contended that social exchange relationships affect employee engagement. A study by Van Horn et al. (1999) put forth that teachers' views that there exists disagreement between what they have invested and the outcomes/return received (e.g. in terms of student progress, gratitude or enthusiasm) can result in disillusionment and energy depletion. This suggests that the perception of lack of reciprocity might increase states of weariness such as burnout risk, a view that was corroborated by Bakker et al. (2000) who found

that general practitioners' perception of a lack of reciprocity had a positive impact on emotional exhaustion. Another example of the negative impact of lack of reciprocity is Eisenberger et al.'s (2014) finding that in cases where supervisors held the general view that subordinates would not reciprocate favourable treatment (highly reciprocation-wary supervisors), it weakened the positive relationship between supervisor POS and high-quality relationships with the subordinate (leader–member exchange). By implication, apart from job demands and burnout risk, perceptions of lack of reciprocity from student groups may further deplete the energy of educators, or result in educators being unable to reciprocate with engagement for the high POS received. Therefore, in alignment with considerations by Lorah and Wong (2018) where the relationship between the independent variable (IV) and the dependent variable (DV) may differ or depend on the level of a third variable, called the moderator, lack of reciprocity was considered as a possible moderator in the relationships between the predictors of engagement as per the measurement model and engagement.

Lack of reciprocity seems to tick further criteria for Kahn's (1990) psychological meaningfulness domain in terms of work interactions with clients and the perception of being valued or appreciated by this group, which did not seem to be covered by POS. Based on the above deductions made and following Kahn's (1990) theory, the present study was able to test the coaction of psychological availability (burnout risk), safety (POS), and meaningfulness (POS and lack of reciprocity), by considering lack of reciprocity as a moderator in terms of the JD-R model's proposed relationships relating to engagement. Accordingly, the following hypotheses were formulated:

H6a: Perceived lack of reciprocity moderates the negative relationship between job demands and engagement, such that the relationship becomes stronger as lack of reciprocity increases.

H6b: Perceived lack of reciprocity moderates the positive relationship between POS and engagement, such that the relationship becomes weaker as lack of reciprocity increases.

H6c: Perceived lack of reciprocity moderates the negative relationship between burnout risk and engagement, such that the relationship becomes stronger as lack of reciprocity increases.

2.4.5 *The Relationship between Burnout Risk, Engagement, and Psychological Well-Being*

Robertson and Cooper (2010) stated that the fostering of a culture associated with high performance and organisational effectiveness required the consideration of critical aspects such as engagement and psychological well-being. Wright et al. (2007) described psychological well-being as the overall effective psychological functioning of a person.

Hockey (1997) posited that the adjustments individuals make to deal with adverse conditions (e.g. high job demands) must take into account the need to maintain an acceptable state of well-being, in addition to considering the achievement of performance goals. These considerations seem to be reasonable cautionary measures individuals should take because later studies have suggested that: (1) job demands are linked to challenges related to well-being because of burnout (Jackson et al., 2006; Schaufeli & Bakker, 2004); (2) dimensions of burnout have a significant negative impact on psychological well-being (Wright & Hobfoll, 2004); and (3) participants with lower cortisol output have higher levels of psychological well-being (Ryff, 2013). Based on these findings, the researcher formulated the following hypothesis:

H7: There is a statistically significant negative relationship between burnout risk and psychological well-being.

In alignment with Kahn's (1990) theory on engagement, Shuck and Reio (2014) postulated that employees are much more likely to experience negative emotions in the following cases: (1) where they perceive that the work they do is taken for granted; (2) where they perceive that there is a lack of contribution from the side of the organisation; or (3) where there exists a lack of managerial support. Accordingly, Shuck and Reio (2014) found that people who displayed high engagement had significantly higher levels of psychological well-being. Two relatively recent studies corroborated these scholars' finding. In the first place, Jena et al. (2018) found that meaningful engagement allowed employees to feel positive toward their organisation and work, leading to psychological well-being. In the second place, Rusu and Colomeischi

(2020) found a positive association between teacher engagement and well-being. Based on these findings, the researcher formulated the following hypothesis:

H8: There is a statistically significant positive relationship between engagement and psychological well-being.

Important in the context of the present study was the association found between psychological well-being and important outcomes such as better job performance and mental and physical health (Robertson & Cooper, 2010; Wright & Cropanzano, 2000). This association was confirmed in studies that showed strong links between well-being and performance (Daniels & Harris, 2000; Lee, 2019). Moreover, Wright (2014) asserted that psychological well-being can be regarded as a robust determinant of good performance. Accordingly, the researcher formulated the following hypothesis:

H9: There is a statistically significant positive relationship between psychological well-being and student-reported levels of lecturer performance.

2.4.6 The Mediating Role of Engagement and Burnout Risk

Studies have indicated that engagement plays a mediating role between antecedents and outcomes of engagement (Christian et al., 2011; Saks, 2006; Saks & Gruman, 2014). For example, Garg and Singh (2020) found that engagement mediated the association between work withdrawal behaviours and subjective well-being. A further finding was that engagement mediated the relationship between negative emotions and well-being (Rusu & Colomeischi, 2020). Based on these findings, the researcher of the present study formulated the following hypothesis:

H10: Engagement mediates the relationship between burnout risk and psychological well-being.

53

In a study among teachers, Skaalvik and Skaalvik (2018) found that teacher well-being (measured in terms of exhaustion, feelings of a diminished or depressed mood, and psychosomatic responses) mediated the relationship between job demands and engagement. Similarly, Russell et al. (2020) found that burnout risk mediated the relationship between job demands and work engagement among educators in the United States. Accordingly, the researcher of the present study formulated the following hypothesis:

H11: Burnout risk mediates the relationship between job demands and engagement.

Figure 2 below provides the conceptual theoretical framework which is based on the above hypotheses.

2.4.7 Conceptual Framework
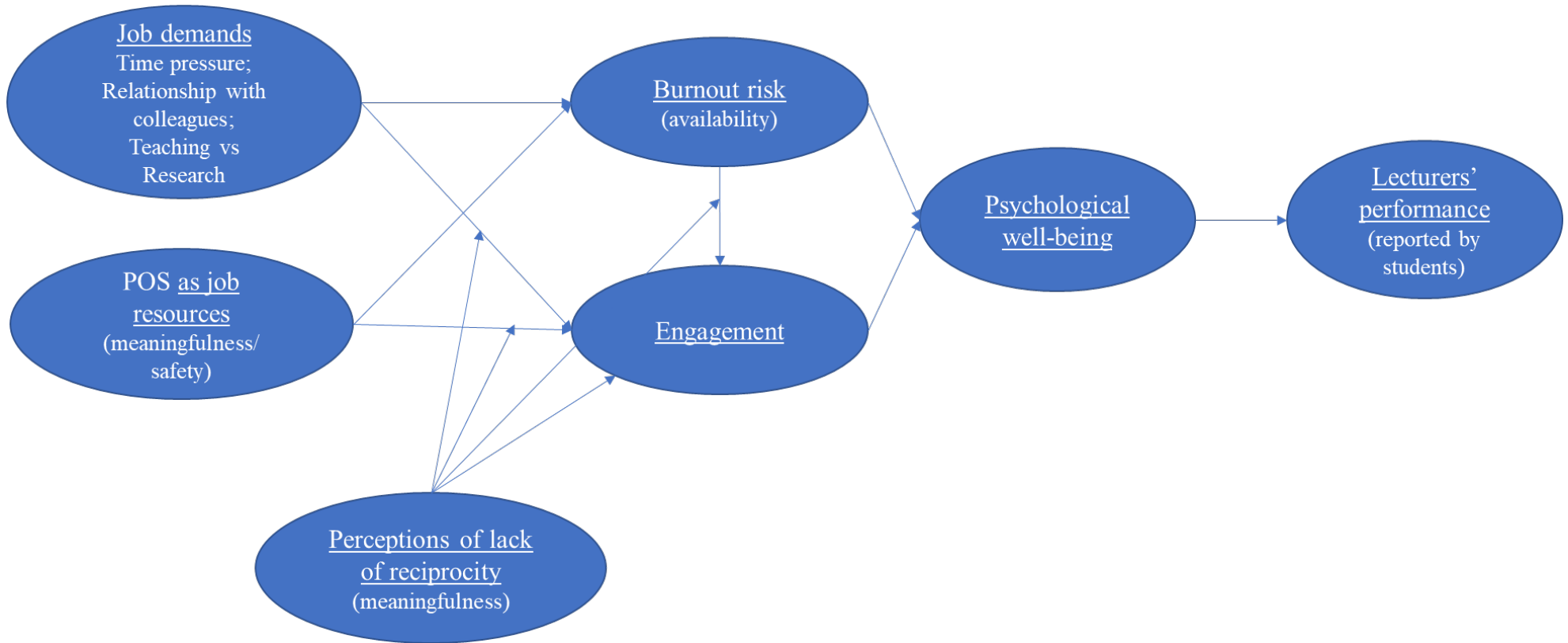
Figure 2: Conceptual framework (measurement model for the academic staff sample)

2.5 Method

2.5.1 Participants and Setting

The setting was a university in a province of South Africa. A cross-sectional survey research design was employed, and a purposive, non-probability sampling strategy was used. As this study formed part of a bigger multilevel research project, participating academic staff members needed to comply with the criterion of having lectured a second-semester undergraduate module during 2020. All in all, 295 academic staff members were invited during 2020, but, although 219 of them started the survey, only 174 valid responses were received. Students of participating lecturers were invited to report on the lecturers' performance in lecturing the relevant modules. Out of the 174 valid responses received from lecturers, 161 could be matched with students' reports. The data was checked for multivariate outliers using the Mahalanobis Distance test (Tabachnick & Fidell, 2013). One statistically significant multivariate outlier was removed from the data sets prior to conducting the analyses using a conservative $\chi 2$ critical probability value of 0.001, resulting in a total sample of 160 lecturers. Males comprised 52% of the sample of academic staff, and females made up 48% of the sample. Most respondents (29%) fell within the age group category of 30 to 39, followed by 28% who fell within the age group of 50 to 64, and 26% who fell in the category of 40 to 49 years old. Respondents' length of service in the various faculties ranged from periods of less than five years to over 31 years.

2.5.2 Measurement Instruments

The survey included the following measures (see Appendix C for all measurement instruments):

Job demands: In alignment with work that Taris et al. (2001) and Skaalvik and Skaalvik (2011) did among academic staff, the following scales were used to measure job demands: the 3-item scale on time pressure; the 3-item scale measuring relations with colleagues; and the 4-item scale focusing on teaching vs research. The measures of time pressure and relations with colleagues were adapted to better reflect the academic context. The researcher chose these measures as they could measure demands specific to the academic context. Sample items included: "Life, working at the university, is currently hectic and there is no time for

56

rest and recovery" (time pressure); "Because of your other tasks, you have little energy left to spend on your research" (teaching vs research); and "Educators at this university help and support each other" (relation with colleagues). In total, the scale consisted of ten items. Items for the scales of time pressure and relationship with colleagues were scored on a 6-point scale ranging from 1 = "completely disagree" to 6 = "completely agree". The items relating to the teaching vs research scale were scored on a 6-point scale ranging from 1 = "never" to 6 = "always". Cronbach's alpha reported by Taris et al. (2001) was $\alpha = 0.84$ (teaching vs research), and the reported reliability coefficients for scales reported by Skaalvik and Skaalvik (2011) were $\alpha = 0.86$ (relationship with colleagues), and $\alpha = 0.81$ (time pressure).

Job resources: Job resources were measured using the 16-item short version of the "Survey of Perceived Organisational Support" (Eisenberger et al. 1997). According to Worley et al. (2009), this 16-item version of the measure is just as effective as the original 36-item version of Eisenberger et al. (1986). The shortened 16-item scale addresses specific areas identified as particularly important to educators (Bakker et al., 2007), for example, appreciation (e.g. "The organisation values my contribution"), support (e.g. "Help is available from the organisation"), and climate (e.g. "The organisation cares about my opinion"). Items were scored on a 7-point scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". The word organisation was replaced with the word university. The single-factor unidimensional measure demonstrated reliability coefficients of 0.90 (Eisenberger et al., 1997).

Engagement of academic staff: The 18-item Job Engagement Scale (JES) (Rich et al., 2010) was used to measure engagement. The scale's items measure three dimensions of engagement, namely, emotional, cognitive, and physical. Respondents could score the items on a 5-point rating scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". Sample items included: "I exert a lot of energy on my job" (physical); "At work, my mind is focused on my job" (cognitive); and "I am proud of my job" (emotional). The JES has good internal consistency with a Cronbach's alpha equal to 0.95 (Rich et al., 2010).

Burnout risk: The 19-item Copenhagen Burnout Inventory (Kristensen et al., 2005) was used to measure burnout risk. The measure consists of three subscales, namely, personal, client, and work-related burnout. Example items include: "How often do you feel worn out?" (personal burnout); "Does it drain your energy to work with clients?" (client-related burnout); and "Does your work frustrate you?" (work-related burnout). In respect of 12 items, the rating is on a 5-point Likert scale, ranging from 1 = "always" to 5 = "never/almost never", and in respect of seven items the rating is on a scale of 1 = "to a very high degree" to 5 = "to a very low degree". Cronbach's alpha for the subscales was found to be as follows: α = 0.82 (client-related burnout), α = 0.85 (personal burnout), and α = 0.87 (work-related burnout) (Johnson & Naidoo, 2013).

Psychological well-being: The Schwartz Outcome Scale-10 (Blais et al., 1999) was used to measure psychological well-being. The scale, consisting of 10 items, has been used as a psychological well-being and psychological health measure in previous studies (e.g. Haggerty et al., 2010; Young et al., 2003). Items are rated on a 7-point scale ranging from 1 = "never" to 7 = "all of the time/nearly all of the time". A sample item is "I feel hopeful about my future". Cronbach's alpha coefficients were reported between α = 0.88 (Haggerty et al., 2010) and α = 0.92 (Shuck & Reio, 2014).

Lecturer performance: The lecturers' performance was reported by students. The researcher adapted questions taken from the student evaluation form that the university used and that focused on lecturers' characteristics and the conditions during lectures. The scale consisted of 22 items. Sample items on the university student evaluation form include: "The lecturer used practical examples to explain the learning material", and "The lecturer was well prepared for each class". The measure was rated on a 5-point rating scale ranging from 1 = "always" to 5 = "never". A similar approach had been used in a study exploring student evaluations of lecturers at private universities (Sok-Foon et al., 2012).

Reciprocity of student groups: In alignment with work done by Schaufeli et al. (1996) and Tayfur and Arslan (2013), lecturers' perceptions of reciprocity were measured using three items adapted from the

measures these scholars had used. The items were as follows: "I spend much time, effort and consideration on work for students in the specified module, but in general, students in the specified module give back little effort, appreciation, and interest"; "I invest more in the relationship with students in the specified module than what I receive back in return from them"; and "I know that my students will complain, no matter what I do." Respondents rated the questions on the following 5-point scale: 1 = "strongly disagree" to 5 = "strongly agree". Similarly, Van Horn et al. (1999) used two items to assess reciprocity: the one item gauged how much teachers put into the working relationship with students, and the other one measured teachers' perception about how much they got back from students.

2.6   Data Analysis

Mplus version 8.6 was used to conduct the statistical analyses. Latent models were estimated using structural equation modelling (SEM) and the maximum likelihood robust (MLR) estimator. The MLR estimation procedure was used to address non-normality in the data. This procedure, calculates robust standard error estimates of non-normal data and is regarded as similar to the bootstrap technique. Accordingly, with the MLR estimation, the delta method for estimating robust standard errors with a sandwich estimator was used for non-normal data, providing for standard errors similar to those provided for in the bootstrapping technique, this as bootstrapping is not available as an option in MLR estimation. As an extra precaution, all standard errors for the interaction effects were cross-checked for consistency using the bias-corrected bootstrapping technique with ML estimation (Muthén & Muthén, 2017; Schaap & Olckers, 2020). Two stages were followed in the analysis of the data. First, confirmatory factor analysis (CFA) was used to confirm the factor structure validity and psychometric properties of each of the scales in order to ensure factor manifest scores with the least possible error variance. Second, an evaluation was done of the structural model depicting the theoretically supported hypothesised relationships between the constructs that formed the focus of this study.

The testing of complex latent structural models that include all the measurement models is likely to lead to convergence problems. The quality of a measurement model affects the structural model and vice versa,

even in the case of well-fitting measurement models (Mcneish & Hancock, 2018). Therefore, a two-step process was used (Lu et.al., 2011). First, predictor factor scores were generated from the latent variable using the regression approach in Mplus, and, second, factor scores in the structural model were used. Thus, the full measurement model did not need to be included to test the structural model.

McNeish et al. (2018) cautioned against an overreliance on Hu and Bentler's (1999) goodness-of-fit cut-off values to determine model fit, as these values are not generalisable to all contexts, especially when indices are used to determine the fit for a structure-only model. Furthermore, in structural models with small degrees of freedom (df) (e.g. 5 df), model fit is inclined to be underestimated for the RMSEA and the Tucker-Lewis index (TLI) and should be interpreted with caution because of performance issues (Kenny et al., 2015; McNeish & Hancock, 2018). Paradoxically, for measurement models with multiple indicators, small factor loadings, and large samples, RMSEA is inclined to overestimate model fit. Bentler (2007) strongly recommended the inclusion of the standardised root mean square residual (SRMR) and at least one of the other fit indices (of which CFI is a popular choice) to test any model. CFI and the SRMR appear to be less susceptible to the effect of model size and, therefore, could be considered more reliable for evaluating model fit in the context of the present study (Kenny et al., 2015; McNeish et al., 2018). Following the guidelines suggested by Kenny et al. (2015), the present study considered model fit together with regression estimates, standard error, residuals, and underlying substantive theory. Accordingly, all the popular fit indices were considered and where degrees of freedom were low in models, the CFI and SRMR played a more decisive role in adjudicating model fit. Per the guidelines, model fit was appraised as: a CFI value above 0.90 but preferably above 0.95, a SRMR value preferably less than 0.08, a RMSEA value below 0.08, and a TLI value above 0.95 (Hu & Bentler, 1999; Olckers & Van Zyl, 2019).

McNeish and Wolf (2020) posited that possible differences in the relationship between items and the true latent score are ignored when using sum scoring or unit weighted scoring, resulting in less reliable scores. The use of optimally weighted regression scores entailed creating factor scores from the model for each construct separately and subsequently using these factor scores in the structural model (McNeish & Wolf,

60

2020). Optimally weighted factor scores are true to the factor model and limit the effect of measurement error in subsequent analyses. To isolate each construct and maximise the construct validity, a special effort was made to retain as many as possible of the original items for each construct that proved to be psychometrically sound in the measurement models and that allowed for limited bias in the single and univocal score obtained for each measure used in this study (Cole & Preacher, 2014). The retention of original items further aided in maximising the factor score determinacy, reliability, and domain representativeness.

The factor score determinacy is of special concern for unbiased univocal scoring of a measurement model (Gorsuch, 1983). Factor determinacies of 0.80 and above were regarded as demonstrating strong correlations among items with the latent factor and denoting good internal consistency (Gorsuch, 1983; Wang & Wang, 2020).

Univariate normality and multivariate normality were tested for skewness and kurtosis and were appraised in alignment with the recommendation by Anderson and Gerbing (1988) that values equal to >-1 and $< +1$ in the case of both skewness and kurtosis be used as indicators of normality. Also, the Mardia multivariate normality test was used to evaluate the normality assumption. Further, McNeish et al. (2018) recommended that researchers should use reliability measures based on the magnitude of the standardised loadings; therefore, McDonald's omega coefficient as apposed to the unit weighted Alpha coefficient was reported in this study. Values of 0.70 and 0.80 have been considered as the general rule of thumb when it comes to establishing acceptable or good reliability and have been commonly reported as the more popularly used Cronbach's alpha estimates (Crutzen & Peters, 2017; Hoekstra et al., 2019). Seemingly, scholars have applied a similar rule in judging McDonald's omega coefficient, putting forth that values of 0.80 can be regarded as demonstrating good internal reliability (Dedeken et al., 2020; Feisst et al., 2019). In alignment with findings that the omega coefficient offers a more accurate approximation of the internal structure of a scale (Crutzen & Peters, 2017; Dunn et al., 2014), the present study used the CFA factor loadings to calculate McDonald's omega coefficient.

61

In accordance with the guidelines of Cohen (1988) for research within the social sciences, effect sizes of regression coefficient estimates were interpreted as small ($r = 0.10$), medium ($r = 0.30$), and large ($r = 0.50$). Confidence intervals (CIs) were set at a level of 95% and, as recommended in the case of bootstrap results, the present study applied the guideline that where CIs did not include zero, the indirect effect was regarded as significant (Zhao et al., 2010).

2.7   Results

First, the results of the descriptive statistics, correlations, and reliabilities are reported, followed by the results of the evaluation of the measurement model, and then by the results of the regression analyses (path/structural model). To be noted is that all the SEM models in the study converged adequately and did not produce improper estimates (e.g. negative residual variances). Furthermore, it is noted that where this study made mention of mediation or mediation analysis, this was done to test indirect effects.

2.7.1   *Descriptive Statistics, Correlations, and Reliabilities*

Table 1 shows the descriptive statistics, skewness/kurtosis, correlations, factor determinacy values and McDonald's omega values of the latent variables.

Most variables show univariate skewnesses and kurtoses slightly outside of the range -1, 0 to +1 (Anderson & Gerbing, 1988). The Mardia multivariate skewness and kurtosis are 9.73 and 69.62 respectively (see Table 1), these values indicate non-normality in the data (Gao et al., 2008), justifying the use of the MLR estimator for non-normal data. The correlation matrix indicated statistically significant relationships ($p < 0.01$) between all variables. McDonald's omega coefficient values ranged between 0.81 and 0.97, demonstrating good reliability (Dedeken et al., 2020; Feisst et al., 2019; Hoekstra et al., 2019). Factor determinacy values were all above 0.90, demonstrating strong correlations among items with the latent factor (Wang & Wang, 2020) and supporting the use of factor scores in the structural model (Gorsuch, 1983). Simulation studies indicate that multi-collinearity will unlikely be a problem for SEM models with

62

inter-correlations below 0.8, scale reliabilities equal or larger than 0.8 and sample size ratio to latent variables exceeding 6:1 (Grewal et al., 2004). The results reported in Table 1 do not support the likelihood of adverse multi-collinearity as scale reliabilities are high (Omega $\geq$ 0.8) for the variables with high inter-correlations and sample size ($N = 160$) to the number of latent variables (6) exceeds a 6:1 ratio. The variables in the correlation matrix show discriminate validity as all values below the diagonal are lower than the square root of the average variance extracted (AVE) which is presented on the diagonal (Fornell & Larcker, 1981).

Table 1: Descriptive statistics, correlations, skewness/kurtosis, and factor determinacy (academic sample)

	Variable	Skewness	Kurtosis	1	2	3	4	5	6	FD	ω
1	Burnout risk	-0.08	-0.83	0.85						0.98	0.96
2	Emotional engagement	-0.73	-0.07	-0.51	0.81					0.98	0.94
3	Psychological well-being	-1.02	0.43	-0.61	0.51	0.72				0.96	0.91
4	Job demands	-1.07	0.88	0.65	-0.36	-0.47	0.77			0.98	0.91
5	POS	-0.16	-0.03	-0.57	0.53	0.54	-0.43	0.80		0.98	0.94
6	Lack of reciprocity	-0.60	-0.63	0.33	-0.36	-0.27	0.32	-0.34	0.75	0.93	0.81
7	Lecturer performance	1.27	2.12	-0.05	-0.11	0.03	-0.05	-0.04	0.07	0.99	0.97

Mardia's multivariate values	Estimate	*p*-value
Mardia's multivariate skewness	9.73	0.00
Mardia's multivariate kurtosis	69.62	0.00

Note. POS, Perceived organisational support; 160 participants made up the study sample; FD, Factor score determinacy; ω, McDonald's omega.

Factor scores are Z values with a mean of 0.

Underlined values on the diagonal represent the square root of the AVE (Fornell & Larcker, 1981).

All correlations are statistically significant ($p \leq 0.05$).

2.7.2 Measurement Model

The measurement model that allowed for the univocal scoring of each of the measures was tested. CFA with MLR estimation for non-normal data were used to assess whether items loaded significantly onto their associated measurement scales. Table 2 provides an overview of the constructs measured and the fit indices per construct. As the scales used had been validated in previously published studies, the use of CFA rather than exploratory factor analysis was selected. However, where the data did not support model fit or item loadings, the models were re-specified in accordance with theoretical guidelines to ensure that robust psychometric measurements were obtained for the variables used in the study's structural model.

Measurement models that were not supported by the data were adapted in accordance with the following principles: (1) Jöreskog's (1993) recommendation that by freeing a fixed or constrained parameter with the largest modification index (provided that this parameter can be interpreted substantively), the correct model can be readily obtained. (2) Jackson et al.'s (2009) advice that any post hoc model re-specifications should be kept to a minimum as such re-specifications could erroneously lead to data-driven models. The authors stated that post hoc modifications are supportable when these modifications are practically or theoretical justifiable. Recommendations in these cases include that post hoc modifications be labelled, thus revealing which latent variables were allowed to correlate or which correlated residuals were freed. Byrne et al. (1989) stated that parameter specifications are justifiable where they represent measurement error due to method effects (e.g. item format of subscales). These method effects or measurement errors are attributed to question wording (e.g. items containing similar words, phrases or similar meaning), negative scoring, the effect of item adjacency, close proximity or blocked items from the same construct that follow each other in direct sequence (Loiacono & Wilson, 2020; Podsakoff et al., 2012). (3) Reise et al.'s (2013) recommendation to avoid biased path estimates in SEM models tested by not treating unidimensional data as multidimensional and to rather use only measurement models where the fit indices support a sufficiently defined common or general factor that justifies univocal scoring.

65

The second-order measurement model for the job demands scale was non-identified and did not converge. It was found that the dimension of relationship with colleagues showed low correlations ($r = 0.10$; $r = 0.03$) with the dimensions of time pressure ($r = 0.10$) and teaching vs research ($r = 0.03$), suggesting that these constructs were unrelated. Upon reviewing the dimension of relationship with colleagues, it seemed that its items were formulated to contribute to job resources and not job demands (e.g. "Educators at this university help and support each other"). Consequently, a unidimensional model was tested that excluded this dimension. After excluding item v1 (which had a low factor loading of 0.28) and allowing the residuals of items v10 and v9 to correlate due to similar item content/method effects (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012), the model was supported by the data. Optimal weighted univocal factor scores were generated for the measurement model, and these scores were subsequently used in the different structural models tested. No absolute cut-off value for factor loadings was used; however, the approach followed was "the higher the better", with due consideration to item content and construct coverage. The job demands scale displayed reasonable fit (CFI = 0.94; TLI = 0.90; SRMR = 0.05; RMSEA = 0.14), and the factor loadings suggested a well-defined factor and measure of the construct (min. = 0.55; max. = 0.95; mean = 0.78). To be noted is that, in accordance with the work of Kenny et al. (2015), the low degrees of freedom (8) did indeed result in an elevated RMSEA value (see Table 2). The scale demonstrated good reliability with an omega coefficient (ω) of 0.98 (Dedeken et al., 2020) and a factor determinacy (FD) value of 0.91, which deomonstrates strong correlations among items with the latent factor (Wang & Wang,2020).

In this study, the construct of POS was measured using a one-factor/unidimensional model consisting of 16 items. Items v23 and v22, for which correlated residuals were allowed, scored negatively and were adjacent to each other, suggesting method effects (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012). The scale showed an acceptable model fit (CFI = 0.91; SRMR = 0.06; TLI = 0.90; RMSEA = 0.08), and factor loadings were well defined (min. = 0.48; max. = 0.85; mean = 0.71). The scale demonstrated good reliability (ω = 0.94) and internal consistency (FD = 0.98) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

The construct of burnout risk consisted of three subscales (i.e. personal, work-related, and client-related) (see Table 2). Client-related burnout displayed low correlations with both personal (0.35) and work-related burnout (0.43), and it displayed low loadings (0.45) on the second-order model (showing low model fit), and was thus removed. The scales personal and work-related burnout correlated highly ($r = 0.93$) and were grouped as one unidimensional scale. For all practical purposes, these two constructs could not be considered separate in the case of the sample group as working from home was a general trend during the COVID-19 pandemic. Residuals for items v27 and v28, as well as for v37 and v38, were allowed to correlate because of one or more method effects/measurement error as described earlier (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012). Item v39, the only negatively scored item that displayed low factor loadings (0.46), was removed, after which a good model fit was obtained (CFI = 0.93; SRMR = 0.04; TLI= 0.91; RMSEA = 0.12). Factor loadings were high (min. = 0.69; max. = 0.91; mean = 0.81), suggesting a well-defined factor, the scale further demonstrated good reliability ($\omega = 0.96$) and internal consistency (FD = 0.98) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

Data from the study did not support a second-order factor measure for the JES that would produce a univocal and non-biased factor score; therefore, the researcher considered the core focus of Kahn's (1990) theory, which is to simultaneously explain the emotional reactions of people to unconscious and conscious phenomena. Kahn entertained the possibility that a hierarchy of engagement or investment of the self in the work role exists, in that people may engage or invest themselves first physically, then cognitively, and lastly emotionally. Thus, the researcher explored this final level of the hierarchy (i.e. emotional engagement) and consequently excluded the cognitive and physical engagement dimensions from the measurement model. The retained emotional engagement subscale showed sufficient unidimensionality and model fit that would support univocal factor scoring and result in non-biased factor scores. The subscale consisted of six items and displayed good model fit (CFI = 0.98; SRMR = 0.02; TLI = 0.96; RMSEA = 0.09) with factor loadings that suggested a well-defined factor (min. = 0.74; max. = 0.93; mean = 0.85). The subscale demonstrated

good reliability (ω = 0.94) and internal consistency (FD = 0.98) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

The construct of psychological well-being, measured as a unidimensional scale, consisted of 10 items. Items v67 and v66 showed method effects (Byrne et al., 1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012) and demonstrated high correlated residuals; thus item v67, which clearly showed redundancy, was removed. Item v72 showed a high correlated residual with v71—which was attributed to method effects—and was allowed to correlate (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012). The scale displayed acceptable model fit (CFI = 0.97; SRMR = 0.04; TLI = 0.96; RMSEA = 0.07), and factor loadings indicated a clearly defined factor structure (min. = 0.61; max. = 0.89; mean = 0.75). The scale demonstrated good reliability (ω = 0.91) and internal consistency (FD = 0.96) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

The construct of lack of reciprocity consisted of three items; this three-item scale was a (just-) identified model (zero *df*) and displayed good model fit (CFI = 1.00; SRMR = 0.00; TLI= 1.00; RMSEA = 0.00). Factor loadings of the lack of reciprocity scale were well-defined (min. = 0.66; max. = 0.90; mean = 0.77) and the scale demonstrated good reliability (ω = 0.81) and internal consistency (FD = 0.93) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

An adapted version of the student evaluation form used by the university was employed to measure lecturer performance. The total score of the measure was used as a performance measure in practice (unit-weighted). The scale displayed acceptable model fit (CFI = 0.90; SRMR = 0.04; TLI = 0.89; RMSEA = 0.07), and factor loadings indicated a clearly defined factor structure (min. = 0.62; max. = 0.85; mean = 0.75). The scale demonstrated good reliability (ω = 0.97) and internal consistency (FD = 0.99) (Dedeken et al., 2020; Gorsuch, 1983; Wang & Wang, 2020).

Table 2: Fit statistics per measurement construct included (academic sample)

Construct measured	Subscales	Items used	$\chi2$	df	p	CFI	TLI	SRMR	RMSEA
a) Job demands (items v1–v10)	Time pressure (v1–3)	2	35.73	8	0.00	0.94	0.90	0.05	0.14
	Relationship with colleagues (v4–6)	3 (*removed*)							
	Teaching vs research (v7–10)	4							
b) Perceived organisational support (POS) (items v11–v26)	n/a	16	213.91	103	0.00	0.91	0.90	0.06	0.08
c) Burnout risk (items v27–v45)	Personal burnout (v27–32)	5	147.04	43	0.00	0.93	0.91	0.04	0.12
	Work-related burnout (v33–39)	6							
	Client-related burnout (v40–45)	6 (*removed*)							
d) Engagement (items v46–v63)	Physical engagement (v46-–1)	6 (*removed*)	22.17	9	0.01	0.98	0.96	0.02	0.09
	Emotional engagement (v52–57)	6							
	Cognitive engagement (v58–63)	6 (*removed*)							
e) Psychological well-being (items v64–v73)	n/a	8	36.38	20	0.01	0.97	0.96	0.04	0.07
f) Lack of reciprocity (items v75–v77)	n/a	3	0.00	0	0.00	1.00	1.00	0.00	0.00
g) Lecturer performance, measured by students using an adapted student evaluation form (items v98–v119)	n/a	22	1663.41	209	0.00	0.90	0.89	0.04	0.07

Note: $\chi2$, chi-square statistic; *df*, degrees of freedom; *p*, *p*-value; CFI, Comparative fit index; TLI, Tucker-Lewis Index; SRMR, Standardised root mean square residual; RMSEA, Root mean square error of approximation.

2.7.3 Testing the Path/Structural Model

As indicated in Table 3, the hypothesised measurement model (Model 1) provided a poor fit to the data (CFI = 0.83; SRMR = 0.09; TLI = 0.73; RMSEA = 0.12). Furthermore, the lecturer performance scale showed an insignificant regression path (close to 0) on well-being. Kenny (2020) asserted that a good-fitting measurement model is required before researchers can endeavour to interpret a structural model, but warned that once model fit drives the research, scholars move away from theory testing, and the latter is the purpose of SEM (Hooper et al., 2008). This study formed part of a multi-level research project, thus alternative models were tested based on prior empirical work.

The hypothesised model (Model 1) was used as a template for Model 2; however, an indirect path was included, based on the finding of Russell et al. (2020) that burnout partially mediates the relationship between job resources and work engagement, and similar findings by Hakanen et al. (2006) that burnout mediates the relationship between POS (job resources) and emotional engagement. The modified Model 2 showed improved model fit (CFI = 0.94; SRMR = 0.06; TLI = 0.90; RMSEA = 0.07), but, considering the recommendation of Cohen (as cited in Hox et al., 2018) that a power of 0.80 with a corresponding $\beta = 0.20$ is a high power value, the power of 0.67 displayed by Model 2, ($N = 160$; $df = 18$, effect size = 0.10, $\alpha = 0.05$) was insufficient. This finding was in alignment with the method of Satorra and Saris (1985) that recommends a power value of 0.80 to be desirable for SEM (Zhang & Yuan, 2018). To be more conservative, the researcher worked with an effect size of 0.10, which would provide for sufficient coverage of interaction effects that were inclined to be small but statistically significant. Model 2 served as a template for Model 3; however, the lecturer performance scale was excluded due to low power and the lecturer performance scale's demonstration of an insignificant regression path (close to 0) on well-being. After removal of the lecturer performance scale, improved overall model fit (CFI = 0.96; SRMR = 0.05; TLI = 0.92; RMSEA = 0.08) and sufficient power of 0.79 ($N = 160$; $df = 10$, effect = 0.10, $\alpha = 0.05$) was obtained. The researcher noted that statistical interaction effects lower than 0.10 were likely to not be recognised. The results obtained suggested that the empirical data were reproduced reasonably well in respect of the measurement models.

Table 3: Fit statistics of the path and alternative models (academic sample)

Model	χ^2	*df*	*p*-value	CFI	TLI	SRMR	RMSEA
1	63.01	19	0.00	0.83	0.73	0.09	0.12
2	33.81	18	0.01	0.94	0.90	0.06	0.07
3	18.98	10	0.04	0.96	0.92	0.05	0.08

Note. *N*=160

Model 1 (Hypothesised model).

Model 2 (Includes post hoc indirect effect: Burnout risk mediates the relationship between POS and engagement).

Model 3 (Includes post hoc indirect effect: Burnout risk mediates the relationship between POS and engagement. Excludes lecturer performance scale).

χ^2, chi-square statistic; *df*, degrees of freedom; CFI, Comparative fit index; TLI, Tucker-Lewis index; SRMR, Standardised root mean square residual; RMSEA, Root mean square error of approximation.

Model 3, which showed the best fit and power, formed the basis of the structural model. It should be noted that in the reporting of the results, significant implied "statistically significant".

As displayed in Figure 3 (the portion of the model predicting burnout risk), the direct effect of job demands ($\beta = 0.50$, $p < 0.01$) was significantly positive (large effect), providing support for hypothesis 1. The effect of POS ($\beta = -0.36$, $p < 0.01$) was significantly negative (medium effect), providing support for hypothesis 5. Job demands and POS explained 52% of the variance in burnout risk ($R^2 = 0.52$).

As displayed in Figure 3 (the portion of the model predicting emotional engagement), the direct effect of job demands ($\beta = -0.06$, $p = 0.57$) was not statistically significant; therefore, hypothesis 2 was not supported. Hypothesis 3 was supported because the effect of burnout risk ($\beta = -0.26$, $p < 0.01$) on emotional engagement was significantly negative (small effect). Hypothesis 4 was supported because the effect of POS ($\beta = 0.31$, $p < 0.01$) on engagement was significantly positive (medium effect).

Based on Kahn's theory of engagement and the testing of the coaction of psychological availability (burnout risk), safety (POS), and meaningfulness (POS and lack of reciprocity), the moderating effect of lack of reciprocity was included to explore the effect on engagement. As per the seven-step framework and guidelines in conceptualising moderating effects (XZ on Y) (Andersson et al., 2014; Memon et al., 2019)

71

(for details see the Discussion section), the relationship between the moderator (Z) and the outcome (Y) must be known. Also, X and Z and XZ form part of the equation to test the moderation effect (Gardner et.al., 2017; Memon et al., 2019). Accordingly, the relationship between the moderator (lack of reciprocity) and the outcome (emotional engagement) was tested. Results showed a significant negative relationship between lack of reciprocity and emotional engagement (β = -0.19, p < 0.01, small effect).

As regards indirect effects, deductions were made based on the statistical significance of interaction terms shown in Mplus (Hernandez & Guarana, 2018). Results of the moderation analyses revealed that the interaction term (XZ) i.e. job demands × lack of reciprocity (β = -0.04, p = 0.72; 95% CI [-0.26, 0.18], CIs included zero) was not significant, accordingly, hypothesis 6a was not supported. Similarly, the interaction term POS × lack of reciprocity (β = 0.03, p = 0.68; 95% CI [-0.12, 0.18], CIs included zero) was not significant, and the moderation proposed in hypothesis 6b could not be supported. Furthermore, the interaction term burnout risk × lack of reciprocity (β = -0.12, p = 0.26; 95% CI [-0.32, 0.09], CIs included zero) was not significant, and the moderation proposed in hypothesis 6c could not be supported. Thus, the independent variables POS (safety and meaningfulness), burnout risk (availability), and lack of reciprocity (meaningfulness) as direct effects explained 39% of the variance in emotional engagement (R^2 = 0.39).

For the portion of the model predicting psychological well-being (see Figure 3), the direct effects of burnout risk (β = -0.47, p < 0.01, medium effect) and emotional engagement (β = 0.27, p < 0.01, small effect) were respectively significantly negative and significantly positive. These relationships provided support for hypotheses 7 and 8. The two independent variables (burnout risk and emotional engagement) explained 42% of the variance in psychological well-being (R^2 = 0.42).

Hypothesis 9 proposed that psychological well-being would be positively related to students' reports on lecturers' levels of performance. Due to low power and the lecturer performance scale's demonstration of an insignificant regression path (close to 0) on well-being, the scale was removed from the path model.

The path model (using unstandardised path coefficients obtained from the Mplus analysis) tested three mediating effects. As proposed by hypothesis 10, it was tested if engagement mediated the relationship between burnout risk and psychological well-being. A negative and significant indirect effect of burnout risk on psychological well-being via engagement (β = -0.07; p = 0.03; 95% CI [-0.12, -0.01], CIs did not include zero) was found; therefore hypothesis 10 was supported. Further, hypothesis 11 was supported as the results revealed a negative and significant indirect effect of job demands on engagement via burnout risk (β = -0.12-; p = 0.01; 95% CI [-0.21, -0.03], CIs did not include zero). The path model included a post hoc hypothesis based on the work of Hakanen et al. (2006) and Russell et al. (2020), which was discussed earlier. This post hoc hypothesis (H12) proposed that burnout risk mediated the relationship between POS and emotional engagement. The proposal of hypothesis 12 was supported by the results which revealed a positive and significant indirect effect of POS on emotional engagement via burnout risk (β = 0.07; p = 0.02; 95% CI [0.01, 0.12], CIs did not include zero).
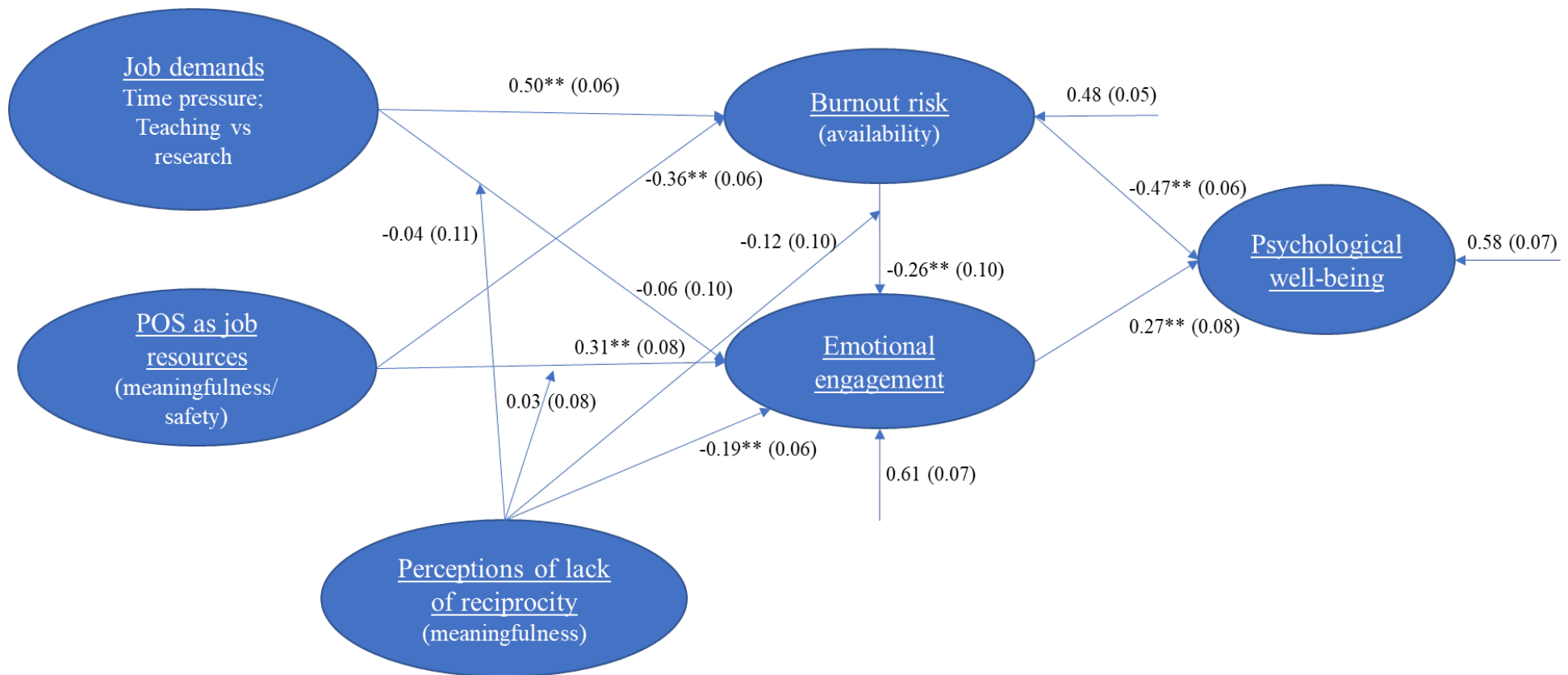
Figure 3: The path/structural model tested (academic staff sample)

Note. ** $p < 0.01$.

2.8 Discussion

The purpose of this study was to answer the call of scholars for more studies on the topic of engagement (Bailey et al., 2017), and within the HE context, to explore the impact of work demands and resources on the engagement of academic staff (Najeemdeen et al., 2018) during the COVID-19 pandemic. The study thus set out to explore the interplay of conditions that stimulate the positive psychological construct of engagement (Kotera & Ting, 2019) by integrating Kahn's (1990) theory on engagement with the JD-R model (Bakker & Demerouti, 2017) and other concepts such as reciprocity (Schaufeli et al., 1996) and POS (Eisenberger et al., 1986).

Findings from this study revealed that the three psychological conditions (meaningfulness, safety, and availability), which were operationalised as lack of reciprocity, POS, and burnout risk, were significantly related to emotional engagement. POS (job resources), which met the criteria of psychological safety and some of the components of meaningfulness, showed the strongest association with engagement (hypothesis 4). The effects of burnout risk (availability) (hypothesis 3) and lack of reciprocity (meaningfulness) on emotional engagement were small, though significant, in both cases, whereas job demands showed a non-significant association with engagement (hypothesis 2). As regards engagement, Kahn's (1990) theory focuses on understanding the objective properties of work contexts and roles and the importance of people's experiences in these contexts. In explaining engagement, the JD-R model focuses on job characteristics (job resources and demands) and whether they involve psychological/physiological costs or are functional in achieving work goals (Bakker & Demerouti, 2017). The results of the present study pointed to a greater focus by academic staff on their experiences of the organisational context, in other words to POS as a job resource. This finding supported the finding of Schneider et al. (2018) that organisational practices had the strongest correlation with work engagement, even stronger than work attributes. The non-significant association between job demands and engagement seems inconsistent with those who found a negative association between the constructs (e.g. Crawford et al. 2010; Han et al., 2020), however, previous studies (e.g. Gan & Gan 2014) have found no significant association between job demands and engagement. Further, the present study's finding may be regarded as corroborating the findings of Rothmann and

75

Rothmann (2010), Rothmann and Welsh (2013), Olivier and Rothmann (2007), May et al. (2004), and Liu et al. (2021). Rothmann and Rothmann (2010), Rothmann and Welsh (2013), Olivier and Rothmann (2007) and May et al. (2004) found that psychological meaningfulness was the strongest predictor of engagement. In this present study, POS involved aspects of both psychological meaningfulness and safety, which might explain the stronger association with engagement. Based on the findings of the study conducted by Liu et al. (2021) during the global COVID-19 pandemic, it might be that the academic staff participating in the present study perceived that organisational support functioned as an important safeguard against the negative impact of the pandemic on their experiences in the work context.

In the present study, consideration was given to lack of reciprocity (meaningfulness) being a moderator of the proposed antecedents to engagement, these include job demands, POS as job resources (safety and meaningfulness), and burnout risk (availability). However, none of these moderation interactions were found to be significant predictors of engagement (hypotheses 6a, b, and c). Reference may be made here to scholars' (Andersson et al., 2014; Memon et al., 2019) proposed seven-step framework in conceptualising moderating relationships. These steps include: 1) theory should underpin direct and moderating effects, 2) theory should guide how the direct effect and its mechanisms are explained, 3) use of the moderator variable should be justified theoretically, 4) direct effect of the moderator (e.g. lack of reciprocity) on the dependent variable (e.g. engagement) should be explained, clarifying the difference between the direct effect and the proposed moderating effect, 5) mechanisms of the moderating effect should be clarified (i.e. if it will weaken or strengthen the direct relationship), 6) reverse interaction in which the independent variable might be the moderator should be ruled out theoretically, and 7) theory should be used in interpreting the results. In alignment with Kahn's (1990) call to study how the proposed psychological conditions coact in predicting engagement, and in keeping to the proposed JD-R framework (Demerouti et al., 2001), the present study operationalised lack of reciprocity which carried components of psychological meaningfulness (i.e. work interactions with clients and the perception of being valued or appreciated by this group) as the moderator to explore the coaction. Accordingly, most of the mentioned steps were considered, although some, such as step number 6 may have required more consideration. These findings

76

indicate that the strength of lecturers' perceptions of lack of reciprocity from student groups, did not weaken or otherwise strengthen the respective positive and negative influences of POS (safety and components of meaningfulness) and burnout risk (availability) on emotional engagement.

As regards burnout risk and well-being, findings from this study aligned with the review study of Halbesleben and Buckley (2004) in that job demands (time pressure; teaching vs research) seemed to be the main initiator of burnout risk. Findings revealed that job demands' prediction of burnout risk was stronger than resources' protection against it (hypotheses 1 and 5). Furthermore, the negative association between burnout risk and psychological well-being (hypothesis 7) was even stronger than the positive influence engagement had in improving psychological well-being (hypothesis 8). In explaining this latter finding, reference may be made to recent studies (Denning et al., 2021; Kadhum et al., 2020) which highlighted the negative effect of the COVID-19 pandemic, particularly on employees' levels of burnout risk, and the ways in which the changes that the pandemic brought about threatened the psychological and overall well-being of people (Harju et al., 2021; Meyer et al., 2021).

The lecturer performance scale was removed from the structural model because the scale's inclusion resulted in the model showing low power. The scale further demonstrated an insignificant regression path (close to 0) on well-being. Hypothesis 9 could thus not be examined. However, previous research suggested that the rating by students of teaching effectiveness might be misleading as students tend to evaluate educators based on popularity rather than on effectiveness (Obenchain et al., 2001). Tan et al. (2019) concurred, stating that students evaluate educators' performance effectiveness based on their reactions to non-instructional or irrelevant characteristics, such as traits or attractiveness. The validity of measures using students' evaluations may thus be called into question.

Lastly, findings from the study provided support for the mediation effects proposed. Hypothesis 10 showed complementary mediation (Zhao et al., 2010), in that the mediated effect (burnout risk × emotional engagement) and the direct effect were both significant, and pointed in the same direction. These findings

77

revealed that lecturers' burnout risk had an indirect effect on their psychological well-being through the mediating role of emotional engagement. The findings suggest that experiencing high levels of burnout risk weakens the emotional engagement of academic staff, which in turn negatively influences their well-being. The post hoc hypothesis (hypothesis 12) also displayed complementary mediation (Zhao et al., 2010) in that the mediated effect (POS × burnout risk) and the direct effect were both significant, and pointed in the same direction. The results suggest that the lecturers' perception of organisational support and the indirect effects of burnout risk play an important role in shaping engagement. In both the above cases, the significant direct effects may suggest the existence of some omitted mediator which could be explored in future research (Zhao et al., 2010). Furthermore, results revealed that job demands had an indirect effect on the emotional engagement of academic staff through the mediating role of burnout risk (hypothesis 11). This offered a good example of indirect-only mediation and suggests that it is unlikely that there exist additional mediators (Zhao et al., 2010).

2.9   Limitations of the Study and Recommendations for Further Research

Although the study had strengths (e.g. a solid theory-driven approach and the inclusion of reliable measures), it also had a few limitations. First, the use of manifest factor scores with error variance might have attenuated the path coefficients to some extent, although the effect should be small where measurement models show high reliability and factor determinacy coefficients, as was the case in this study.

A second limitation of the study was its cross-sectional nature and its reliance on self-report data, making the study prone to common method variance (CMV) (Rindfleisch et al., 2008). CMV also referred to as common method bias (CMB) occurs when the measurement method rather than the construct of interest is responsible for the variance (Pham-Thai et al., 2018). Researchers have noted that method variance in organisational research accounts for less variance than previous studies have suggested (Lance et al., 2010). There has also been an ongoing debate regarding whether the presence and effects of CMV are of real concern for construct-valid self-report measures (Fuller et al., 2016; Spector, 2006). Nevertheless, future studies should implement efforts to mitigate variance. The present study implemented several strategies to

mitigate some of the issues associated with cross-sectional data and CMV (Chang et al., 2010). For example, it followed the suggestions of Podsakoff et al. (2003) to use different scale formats and anchors for the different constructs that were measured in order to be in alignment with how the relevant measures had been developed (Chang et al., 2010; Podsakoff et al., 2003). These efforts were shown to reduce the likelihood of cognitive processing (Rindfleisch et al., 2008). Efforts were also made to ensure that the wording of questions was concise and clear by using more familiar concepts rather than concepts that could be perceived as complex or unfamiliar (Rodríguez-Ardura & Meseguer-Artola, 2020). Scholars have noted that CMV in the measurement model needs to be substantial to significantly inflate or bias relationships in the structural model (Williams & Anderson, 1994). Besides method bias, the source of shared variance which is prevalent in CMV indicators, such as Harman's one-factor test, may also include variance between substantive latent constructs and it would be questionable to statistically control for such variance (Richardson & Sturman, 2009). In this study, the factor analysis options such as the unmeasured latent method construct to test for CMV across measures could not be effectively used. This, as the measurement models representing a singular unidimensional construct, were separately evaluated and scored before including the scores as variables in the structural model. However, evidence of correlated residuals between items caused by method artefacts in factor models may also suggest CMB. The correlated residuals ascribed to method artefacts found between the items in the CFA models tested in this study could have been expected due to model design features. The highly restrictive CFA unidimensional model is known to be highly sensitive to minor misspecifications attributed to method artefacts with negligible consequences (Byrne et al.,1989; Marsh et al., 2004; Reise et al., 2013). Thus, it could be argued that the relatively few (one to two per measure) though significant, correlated residuals attributed to method artefacts found in the questionnaire items of this study can be considered negligible and of little consequences to CMB, the integrity of the measures and study findings.

A third limitation was that data was collected over a period of four months to ensure a large enough sample size. Therefore, causal inferences cannot be made. Nevertheless, based on the tenets of the JD-R theory and the findings of previous longitudinal studies, it can be inferred that demands are predictive of burnout risk

79

and that resources are predictive of engagement (see, for example, Hakanen et al., 2008; Sonnentag et al., 2010). Future studies may nonetheless consider a longitudinal design to gain a better understanding of the interplay and causal influences among the constructs.

A fourth limitation was that the generalisability of the findings might be limited because all participants were academic staff and students from one South African tertiary institution. It is recommended that future studies explore these variables in different university settings locally or internationally. Future research could also examine the interaction of what Kahn (1990) termed psychological conditions in predicting personal engagement, and such an examination could use a longitudinal design and aim to validate causality among the variables. Lastly, as noted within the results section, power of 0.79 (N = 160; df = 10, effect = 0.10, α = 0.05) was obtained, thus statistical interaction effects lower than 0.10 were likely to not be recognised. With reference to the non-significant indirect and moderating effects, a limitation of the study may be that insufficient power existed to pick up lower-lying effect sizes. The notion is further supported by the relatively large confidence intervals reported for the statistically insignificant parameter estimates of the three moderator effects in the model. This is a common problem in studies reporting multiple moderating effects in the social sciences. Scholars noted that SEM models with multiple moderating effects require large samples to detect significant effects (Aguinis et al., 2017).

2.10   Implications of the Research

Although previous studies based on the JD-R model have highlighted five types of job resources (Xanthopoulou et al., 2007) (i.e. social support, autonomy, supervisory support, opportunities for professional development, and performance feedback) that are recognised as operating as antecedents to engagement in the majority of occupations, the present study demonstrated that, in alignment with organisational support theory, POS serves as a valued job resource (Kraimer & Wayne, 2004). POS not only taps into the five aforementioned categories (Eisenberger et al., 1997; Kurtessis et al. 2017) but further carries with it aspects that support psychological meaningfulness and safety, as conceptualised by Kahn (1990).

Through the integration of theory and literature on engagement (i.e. Kahn's (1990) theory and the JD-R model), the study found that Kahn's psychological conditions could be operationalised as POS (meaningfulness and safety), burnout risk (availability), and lack of reciprocity (meaningfulness). Findings indicated no relationship between job demands and emotional engagement but revealed a small negative and significant indirect effect of job demands on engagement via burnout risk. Furthermore, POS showed a stronger association with emotional engagement than did burnout risk and lack of reciprocity. With regard to this finding, reference can be made to Barrick et al.'s (2015) statement that strategic and deliberate management of organisational resources are required to foster an engaged workforce, as well as to Boikanyo and Heyns's (2019) statement that organisations need to view engagement as a broad organisational strategy. Considering these findings, the practical implication of the present study's findings is that it could assist university leaders in recognising the importance of creating conditions that enable the engagement of their staff. For example, universities could design policies and practices and consider strategies that are geared toward POS and that give employees the assurance that they are valued and regarded as important contributors to institutional objectives, particularly during times of change or crises.

Findings from the study also revealed that while burnout risk and emotional engagement explained 42% of the variance in psychological well-being, the negative effect of burnout risk was stronger than the positive effect of engagement. This finding highlights the importance that tertiary institutions (universities) should address burnout risk as it has implications for the psychological well-being of academic staff. University leaders could, therefore, consider strategies such as employee wellness/assistance programmes (online and face-to-face) to address psychosocial issues (e.g. burnout risk, work-/home-related stress). These programmes might not only provide the needed support to employees by addressing burnout risk but might also have the potential to create the positive perception among employees that their institution cares about their well-being and values them.

81

2.11   Conclusion

Kahn (1990) noted the importance of understanding (and investigating) the degree to which people are psychologically present during moments or circumstances of performing a certain role, and what their emotional reactions are to both conscious and unconscious phenomena. The present research study attempted to apply Kahn's (1990) theory on engagement by taking a closer look at the interplay of the psychological conditions (meaningfulness, safety, and availability) that stimulated the engagement of academic staff. The researcher provided support for Kahn's theory on personal engagement by connecting Kahn's psychological conditions with concepts focusing on the person-role relationship, such as those dealt with in the JD-R model, organisational support theory, and perceptions of reciprocity. The findings highlighted the importance of addressing these psychological conditions as they could lead to personal engagement. Further, the findings highlighted the implications of burnout risk and emotional engagement for the psychological well-being of academics.

It is hoped that the findings of this study might improve practices and policies within HE institutions and lead to a recognition of the importance for such practices and policies to be geared toward fostering engagement and well-being. Furthermore, the study's findings might motivate university leaders to take note of the impact of POS and the need not only to lend the required support to academics in the face of dealing with various stressors but also to improve academics' general engagement.

82

References

Aguinis, H., Edwards, J. R., & Bradley, K. J. (2017). Improving our understanding of moderation and mediation in strategic management research. *Organizational Research Methods, 20*(4), 665–685. https://doi.org/10.1177/1094428115627498

Albrecht, S. L. (2012). The influence of job, team and organizational level resources on employee well-being, engagement, commitment and extra-role performance. Test of a model. *International Journal of Manpower, 33*(7), 840–853. https://doi.org/10.1108/01437721211268357

Ali, W. (2020). Online and remote learning in higher education institutes: A necessity in light of Covid-19 pandemic. *Higher Education Studies, 10*(3), 16–25. https://doi.org/10.5539/hes.v10n3p16

Andersson, U., Cuervo-Cazurra, A., & Nielsen, B. (2014). From the editors: Explaining interaction effects within and across levels of analysis. *Journal of International Business Studies, 45*(9), 1063–1071. https://doi.org/10.1057/jibs.2014.50

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Anthony-McMann, P. E., Ellinger, A. D., Astakhova, M., & Halbesleben, J. R. B. (2017). Exploring different operationalizations of employee engagement and their relationships with workplace stress and burnout. *Human Resource Development Quarterly, 28*(2), 163–195. https://doi.org/10.1002/hrdq.21276

Armoed, Z. (2021). The Covid-19 pandemic: Online teaching and learning at higher education institutes. *IOP Conference Series: Earth and Environmental Science, 654*, 1–8. https://doi.org/10.1088/1755-1315/654/1/012026

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews*, *19*(1), 31–53. https://doi.org/10.1111/ijmr.12077

Bakker, A. B. (2017). Strategic and proactive approaches to work engagement. *Organizational Dynamics, 46*(2), 67–75. https://doi.org/10.1016/j.orgdyn.2017.04.002

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285.

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 389–411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement particularly when job demands are high. *Journal of Educational Psychology, 99*(2), 274–284. https://doi.org/10.1037/0022-0663.99.2.274

Bakker, A. B., Schaufeli, W. B., Sixma, H. J., Bosveld, W., & Van Dierendornck, D. (2000). Patient demands, lack of reciprocity, and burnout: A five-year longitudinal study among general practitioners. *Journal of Organizational Behavior, 21*(4), 425–441. https://doi.org/10.1002/(SICI)1099-1379(200006)21:4%3C425::AID-JOB21%3E3.0.CO;2-#

Barkhuizen, N., Rothmann, S., & Van de Vijver, F. J. R. (2014). Burnout and work engagement of academics in higher education institutions: Effects of dispositional optimism. *Stress & Health, 30*(4), 322–332. https://doi.org/10.1002/smi.2520

Barrick, M. R., Thurgood, G. R., Smith, T. A., & Courtright, S. H. (2015). Collective organizational engagement: Linking motivational antecedents, strategic implementation, and firm performance. *Academy of Management Journal, 58*(1), 111–135. https://doi.org/10.5465/amj.2013.0227

Bentler, P. M. (2007). On tests and indices for evaluating structural models. *Personality and Individual Differences, 42*(5), 825–829. https://doi.org/10.1016/j.paid.2006.09.024

Blais, M. A., Lenderking, W. R., Baer, L., deLorell, A., Peets, K., Leahy, L., & Burns, C. (1999). Development and initial validation of a brief mental health outcome measure. *Journal of Personality Assessment, 73*(3), 359-373.

Boggs, R. G. (2003). Leadership context for the twenty-first century. *New Directions for Community Colleges, 123*, 15–25. https://doi.org/10.1002/cc.118

Boikanyo, D. H., & Heyns, M. M. (2019). The effect of work engagement on total quality management practices in a petrochemical organisation. *South African Journal of Economic and Management Sciences, 22*(1), 1–13. https://doi.org/10.4102/sajems.v22i1.2334

Boyd, C. M., Bakker, A. B., Pignata, S., Winefield, A. H., Gillespie, N., & Stough, C. (2011). A longitudinal test of the job demands-resources model among Australian university academics. *Applied Psychology: An International Review, 60*(1), 112–140. https://doi.org/10.1111/j.1464-0597.2010.00429.x

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Chanana, N., & Sangeeta. (2020). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs, e2508*, 1–8. https://doi.org/10.1002/pa.2508

Chang, S., Van Witteloostuijn, A., & Eden, L. (2010). From the editors: Common method variance in international business research. *Journal of International Business Studies, 41*(2), 178–184. https://doi.org/10.1057/jibs.2009.88

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Cole, D. A., & Preacher, K. J. (2014). Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods, 19*(2), 300–315. https://doi.org/10.1037/a0033805

Cole, M. S., Walter, F., Bedeian, A. G., & O'Boyle, E. H. (2012). Job burnout and employee engagement: A meta-analytic examination of construct proliferation. *Journal of Management, 38*(5), 1550–1581. https://doi.org/10.1177/0149206311415252

Crawford, E. R., Lepine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834–848. https://doi.org/10.1037/a0019364

Creedy, D. K., Sidebotham, M., Gamble, J., Pallant, J., & Fenwick, J. (2017). Prevalence of burnout, depression, anxiety and stress in Australian midwives: A cross-sectional survey. *BMC Pregnancy and Childbirth*, *17*(13), 1–8. https://doi.org/10.1186/s12884-016-1212-5

Crutzen, R., & Peters, G.-J. Y. (2017). Scale quality: Alpha is an inadequate estimate and factor-analytic evidence is needed first of all. *Health Psychology Review, 11*(3), 242-247. https://doi.org/10.1080/17437199.2015.1124240

Daniels, K., & Harris, C. (2000). Work, psychological well-being and performance. *Occupational Medicine, 50*(5), 304–309. https://doi.org/10.1093/occmed/50.5.304

Dedeken, P., Vissoci, J. R. N., Sebera, F., Boon, P. A. J. M., Rutembesa, E., & Teuwen, D. E. (2020). Validity, reliability, and diagnostic cut-off of the Kinyarwandan version of the Hamilton Depression Rating Scale in Rwanda. *Frontiers in Psychology, 11*(1343), 1-7. https://doi.org/10.3389/fpsyg.2020.01343

De-la-Calle-Durán, M.-C., & Rodríguez-Sánchez, J.-L. (2021). Employee engagement and well-being in times of COVID-19: A proposal of the 5Cs model. *International Journal of Environmental Research and Public Health, 18*(10), 5470–5485. https://doi.org/10.3390/ijerph18105470

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3)*,* 499–512. http://doi.org/10.1037/0021-9010.86.3.499

Denning, M., Goh, E. T., Tan, B., Kanneganti, A., Almonte, M., Scott, A., Martin, G., Clarke, J., Sounderajah, V., Markar, S., Przybylowicz, J., Chan, Y. H., Sia, C.-H., Chua, Y. X., Sim, K., Lim, L., Tan, L., Tan, M., Sharma, V. … Kinross, J. (2021). Determinants of burnout and other aspects of psychological well-being in healthcare workers during the Covid-19 pandemic: A multinational cross-sectional study. *PLoS ONE, 16*(4), e0238666. https://doi.org/10.1371/journal.pone.0238666

Dunn, T. J., Baguley, T., & Brunsden, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology, 105*(3), 399–412. https://doi.org/10.1111/bjop.12046

Eder, P., & Eisenberger, R. (2008). Perceived organizational support: Reducing the negative influence of coworker withdrawal behavior. *Journal of Management, 34*(1), 55–68. https://doi.org/10.1177/0149206307309259

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology, 86*(1), 42–51. https://doi.org/10.1037/0021-9010.86.1.42

Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology, 82*(5), 812–820. https://doi.org/10.1037/0021-9010.82.5.812

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500–507. https://doi.org/10.1037/0021-9010.71.3.500

Eisenberger, R., Shoss, M. K., Karagonlar, G., Gonzalez-Morales, M. G., Wickham, R. E., & Buffardi, L. C. (2014). The supervisor POS–LMX–subordinate POS chain: Moderation by reciprocation wariness and supervisor's organizational embodiment. *Journal of Organizational Behavior, 35*(5), 635–656. https://doi.org/10.1002/job.1877

Feisst, M., Hennings, A., Heil, J., Moosbrugger, H., Kelava, A., Stolpner, I., Kieser, M., & Rauch, G. (2019). Refining scores based on patient reported outcomes: Statistical and medical perspectives. *BMC Medical Research Methodology, 19*(167), 1–9. https://doi.org/10.1186/s12874-019-0806-9

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Fuller, C. M., Simmering, M. J., Atinc, G., Atinc, Y., & Babin, B. J. (2016). Common methods variance detection in business research. *Journal of Business Research, 69*(8), 3192–3198. http://doi.org/10.1016/j.jbusres.2015.12.008

87

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*(2), 103–110. https://doi.org/10.1037/1089-2680.9.2.103

Gan, T., & Gan, Y. (2014). Sequential development among dimensions of job burnout and engagement among IT employees. *Stress and Health*, 30, 122-133. doi: 10.1002/smi.2502

Gao, S., Mokhtarian, P. L., & Johnston, R. A. (2008). Non-normality of data in structural equation models. *UC Berkeley: University of California Transportation Center*. https://escholarship.org/uc/item/11q0s48s

Gardner, R. G., Harris, T. B., Li, N., Kirkman, B. L., & Mathieu, J. E. (2017). Understanding "it depends" in organizational research: A theory-based taxonomy, review, and future research agenda concerning interactive and quadratic relationships. *Organizational Research Methods, 20*(4), 610–638. https://doi.org/10.1177/1094428117708856

Garg, N., & Singh, P. (2020). Work engagement as a mediator between subjective well-being and work-and-health outcomes. *Management Research Review, 43*(6), 735–752. https://doi.org/10.1108/MRR-03-2019-0143

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Lawrence Erlbaum.

Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25*(2), 161–178. https://doi.org/10.2307/2092623

Grant, C., & Osanloo, A. (2014). Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for your "house". *Administrative Issues Journal: Connecting Education, Practice, and Research, 4*(2), 12–26. https://doi.org/10.5929/2014.4.2.9

Grewal, R., Cote, J. A., & Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Marketing Science, 23*(4), 519–529. http://doi.org/10.1287/mksc.1040.0070

Guan, X., Sun, T., Hou, Y., Zhao, L., Luan, Y.-Z., & Fan, L.-H. (2014). The relationship between job performance and perceived organizational support in faculty members at Chinese universities: A questionnaire survey. *BMC Medical Education, 14*, 1–10. https://doi.org/10.1186/1472-6920-14-50

Han, J., Yin, H., Wang, J., & Zhang, J. (2020). Job demands and resources as antecedents of university teachers' exhaustion, engagement and job satisfaction. *Education Psychology, 40*(3), 318-335. doi: 10.1080/01443410.2019.1674249

Haggerty, G., Blake, M., & Siefert, C. J. (2010). Convergent and divergent validity of the relationship profile test: Investigating the relationship with attachment, interpersonal distress, and psychological health. *Journal of Clinical Psychology, 66*(4), 339–354. https://doi.org/10.1002/jclp.20654

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*(6), 495–513. https://doi.org/10.1016/j.jsp.2005.11.001

Hakanen, J. J., Schaufeli, W. B., & Ahola, K. (2008). The job demands-resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work & Stress*, *22*(3), 224–241. https://doi.org/10.1080/02678370802379432

Halbesleben, J. R., & Buckley, M. R. (2004). Burnout in organizational life. *Journal of Management, 30*(6), 859–879. https://doi.org/10.1016/j.jm.2004.06.004

Harju, L. K., Rokka, J., Lopes, M. M., Airoldi, M., & Raïes, K. (2021). Employee well-being profiles during COVID-19 lockdown: A latent profile analysis of French and UK employees. *Frontiers in Psychology, 12*(645300), 1–9. https://doi.org/10.3389/fpsyg.2021.645300

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*(2), 268–279. https://doi.org/10.1037/0021-9010.87.2.268

Hernandez, M., & Guarana, C. L. (2018). An examination of the temporal intricacies of job engagement. *Journal of Management, 44*(5), 1711–1735. https://doi.org/10.1177/0149206315622573

Hockey, G. R. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology, 45*(1–3), 73–93. https://doi.org/10.1016/s0301-0511(96)05223-4

Hodson, G. (2021). Construct jangle or construct mangle? Thinking straight about (nonredundant) psychological constructs. *Journal of Theoretical Social Psychology, 5*, 576-590. doi: 10.1002/jts5.120

Hoekstra, R., Vugteveen, J., Warrens, M. J., & Kruyen, P. M. (2019). An empirical analysis of alleged misunderstandings of coefficient alpha. *International Journal of Social Research Methodology*, *22*(4), 351–364. https://doi.org/10.1080/13645579.2018.1547523

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60.

Houston, D., Meyer, L. H., & Paewai, S. (2006). Academic staff workloads and job satisfaction: Expectations and values in academe. *Journal of Higher Education Policy and Management, 28*(1), 17–30. https://doi.org/10.1080/13600800500283734

Hox, J. J., Moerbeek, M., & Van de Schoot, R. (2018). *Multilevel analysis: Techniques and applications* (3rd ed.). Routledge. https://doi.org/10.4324/9781315650982

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jackson, D. D. L., Gillaspy, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods, 14*(1), 6–23. https://doi.org/10.1037/a0014694

Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. R. (2006). A model of work-related well-being for educators in South Africa. *Stress & Health, 22*(4), 263–274. https://doi.org/10.1002/smi.1098

Jena, L. K., Pradhan, S., & Panigrahy, N. P. (2018). Pursuit of organisational trust: Role of employee engagement, psychological well-being and transformational leadership. *Asia Pacific Management Review, 23*(3), 227–234. https://doi.org/10.1016/j.apmrv.2017.11.001

Johnson, S. M., & Naidoo, A. V. (2013). Transpersonal practices as prevention intervention for burnout among HIV/AIDS coordinator teachers. *South African Journal of Psychology, 43*(1), 59–70. https://doi.org/10.1177/0081246312474406

Jöreskog, K. G. (1993). Testing structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Sage focus editions* (Vol. 154, pp. 294–316). Sage.

Kadhum, M., Farrell, S., Hussain, R., & Molodynski, A. (2020). Mental well-being and burnout in surgical trainees: Implications for the post-COVID-19 era. *British Journal of Surgery*, *107*(8), e264. https://doi.org/10.1002/bjs.11726

Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. https://doi.org/10.5465/256287

Karagonlar, G., Eisenberger, R., & Aselage, J. (2016). Reciprocation wary employees discount psychological contract fulfilment. *Journal of Organizational Behavior, 37*(1), 23–40. https://doi.org/10.1002/job.2016

Kenny, D. A. (2020, June 5). *Measuring model fit*. http://www.davidakenny.net/cm/fit.htm.

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Kotera, Y., & Ting, S. (2019). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*, *19*, 227–239. https://doi.org/10.1007/s11469-019-00169-z

Kraimer, M. L., & Wayne, S. J. (2004). An examination of perceived organizational support as a multidimensional construct in the context of an expatriate assignment. *Journal of Management, 30*(2), 209–237. https://doi.org/10.1016/j.jm.2003.01.001

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192–207. https://doi.org/10.1080/02678370500297720

Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2017). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of Management, 43*(6), 1854–1884. https://doi.org/10.1177/0149206315575554

Lance, C. E., Dawson, B., Birkelbach, D., & Hoffman, B. J. (2010). Method effects, measurement error, and substantive conclusions. *Organizational Research Methods, 13*(3), 435–455. https://doi.org/10.1177/1094428109352528

Lee, Y. (2019). JD-R model on psychological well-being and the moderating effect of job discrimination in the model: Findings from the MIDUS. *European Journal of Training and Development, 43*(3/4), 232–249. https://doi.org/10.1108/EJTD-07-2018-0059

Liu, D., Chen, Y., & Li, N. (2021). Tackling the negative impact of COVID-19 on work engagement and taking charge: A multi-study investigation of frontline health workers. *Journal of Applied Psychology, 106*(2), 185–198. https://doi.org/10.1037/apl0000866

Loiacono, E., & Wilson, E. V. (2020). Do we truly sacrifice truth for simplicity: Comparing complete individual randomization and semi-randomized approaches to survey administration. *AIS Transactions on Human-Computer Interaction*, *12*(2), 45–69. https://doi.org/10.17705/1thci.00128

Lorah, J. A., & Wong, Y. J. (2018). Contemporary applications of moderation analysis in counseling psychology. *Journal of Counseling Psychology, 65*(5), 629-640. http://dx.doi.org/10.1037/cou0000290

Lu, I. R., Kwan, E., Thomas, D. R., & Cedzynski, M. (2011). Two new methods for estimating structural equation models: An illustration and a comparison with two established methods. *International Journal of Research in Marketing, 28*(3), 258–268. https://doi.org/10.1016/j.ijresmar.2011.03.006

Mabasa, F. D., & Ngirande, H. (2015). Perceived organisational support influences on job satisfaction and organisational commitment among junior academic staff members. *Journal of Psychology in Africa, 25*(4), 364–366. https://doi.org/10.1080/14330237.2015.1078102

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, *11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

May, D. R., Gilson, R. L., & Harter, L. M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational Psychology, 77*, 11-37

McNeish, D., An, J., & Hancock, G. R. (2018). The thorny relation between measurement quality and fit

index cut-offs in latent variable models. *Journal of Personality Assessment*, *100*(1), 43–52.

https://doi.org/10.1080/00223891.2017.1281286

McNeish, D., & Hancock, G. R. (2018). The effect of measurement quality on targeted structural model fit

indices: A comment on Lance, Beck, Fan, and Carter (2016). *Psychological Methods, 23*(June),

184–190. https://doi.org/10.1037/met0000157

McNeish, D., & Wolf, M. G. (2020). Thinking twice about sum scores. *Behavior Research Methods*, *52*(6),

2287–2305. https://doi.org/10.3758/s13428-020-01398-0

Memon, M. A., Cheah, J.-H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation

analysis: Issues and guidelines. *Journal of Applied Structural Equation Modeling, 3*(1), i–xi.

https://doi.org/10.47263/JASEM.3(1)01

Mercali, G. D., & Costa, S. G. (2019). Antecedents of work engagement of higher education professors in

Brazil. *Revista de Administração Mackenzie, 20*(1), 1–27. https://doi.org/10.1590/1678-

6971/eramg190081

Meyer, B., Zill, A., Dilba, D., Gerlach, R., & Schumann, S. (2021). Employee psychological well-being

during the COVID-19 pandemic in Germany: A longitudinal study of demands, resources, and

exhaustion. *International Journal of Psychology, 56*(4), 532-550.

https://doi.org/10.1002/ijop.12743

Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus user's guide* (8th ed.). Los Angeles, CA: Muthén &

Muthén.

Najeemdeen I. S., Abidemi, B. T., Rahmat, F. D., & Bulus, B. D. (2018). Perceived organizational culture

and perceived organizational support on work engagement. *Academic Journal of Economic Studies,

4*(3), 199–208.

Obenchain, K. M., Abernathy, T. V., & Wiest, L. R. (2001). The reliability of students' ratings of faculty

teaching effectiveness. *College Teaching, 49*(3), 100–104.

https://doi.org/10.1080/87567550109595859

Olckers, C., & Van Zyl, L. E. (2019). Psychometric properties of the Psychological Ownership Questionnaire. *Australian Journal of Psychology, 71*(2), 127–136. https://doi.org/10.1111/ajpy.12232

Olivier, A. L., & Rothmann, S. (2007). Antecedents of work engagement in a multinational oil company. SA Journal of Industrial Psychology, 33(3), 49-56.

Pham-Thai, N., McMurray, A. J., Muenjohn, N., & Muchiri, M. (2018). Job engagement in higher education. *Personnel Review, 47*(4), 951–967. https://doi.org/10.1108/PR-07-2017-0221

Pillay, A. L., & Barnes, B. R. (2020). Psychology and COVID-19: Impacts, themes and way forward. *South African Journal of Psychology, 50*(2), 148–153. https://doi.org/10.1177/0081246320937684

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Pouris, A., & Inglesi-Lotz, R. (2014). The contribution of higher education institutions to the South African economy. *South African Journal of Science, 110*(3/4), 1–5. https://doi.org/10.1590/sajs.2014/a0059

Rattrie, L. T. B., Kittler, M. G., & Paul, K. I. (2020). Culture, burnout, and engagement: A meta-analysis on national cultural values as moderators in JD-R theory. *Applied Psychology, 69*(1), 176–220. https://doi.org/10.1111/apps.12209

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment, 95*(2), 129–140. https://doi.org/10.1080/00223891.2012.725437

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal, 53*(3), 617–635. https://doi.org/10.5465/amj.2010.51468988

Richardson, H. A., Simmering, M. J., & Sturman, M. C. (2009). A tale of three perspectives: Examining post hoc statistical techniques for detection and corrections of common method variance. *Organizational Research Methods, 12*(4), 762–800. http://doi.org/10.1177/1094428109332834

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research,* 45(3), 261–279. https://doi.org/10.1509/jmkr.45.3.261

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership & Organization Development Journal, 31*(4), 324–336. https://doi.org/10.1108/01437731011043348

Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). Editorial: How to prevent, detect and control common method variance in electronic commerce research. *Journal of Theoretical and Applied Electronic Commerce Research, 15*(2), 1–5. https://doi.org/10.4067/S0718-18762020000200101

Rothmann, S., & Rothmann, S. Jr. (2010). Factors associated with employee engagement in South Africa. *SA Journal of Industrial Psychology, 36*(2), 1–12. https://doi.org/10.4102/sajip.v36i2.925

Rothmann, S., & Welsh, C. (2013). Employee engagement: The role of psychological conditions. *Management Dynamics, 22*(1), 14–25.

Rusu, P. P., & Colomeischi, A. A. (2020). Positivity ratio and well-being among teachers. The mediating role of work engagement. *Frontiers in Psychology, 11*(1608), 1–10. https://doi.org/10.3389/fpsyg.2020.01608

Russell, M. B., Attoh, P. A., Chase, T., Gong, T., Kim, J., & Liggans, G. L. (2020). Examining burnout and the relationships between job characteristics, engagement, and turnover intention among U.S. educators. *Sage Open, 10*(4), 1–15. https://doi.org/10.1177/2158244020972361

Ryff, C. D. (2013). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics, 83*(1), 10–28. https://doi.org/10.1159/000353263

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600–619. https://doi.org/10.1108/02683940610690169

Saks, A. M., & Gruman, J. A. (2014). What do we really know about employee engagement? *Human Resource Development Quarterly, 25*(2), 155–182. https://doi.org/10.1002/hrdq.21187

Satorra, A., & Saris, W. E. (1985). Power of the likelihood ratio test in covariance structure analysis. *Psychometrika*, *50*(1), 83–90. https://doi.org/10.1007/BF02294150

Schaap, P., & Olckers, C. (2020). Relationships between employee retention factors and attitudinal antecedents of voluntary turnover: An extended structural equation modelling approach. *SA Journal of Human Resource Management*, *18*, a1358. https://doi.org/10.4102/sajhrm.v18i0.1358

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293–315. https://doi.org/10.1002/job.248

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the job demands-resources model: Implications for improving work and health. In G. Bauer & O. Hämmig (Eds.), *Bridging occupational, organizational and public health* (pp. 43–68). Springer. https://doi.org/10.1007/978-94-007-5640-3_4

Schaufeli, W. B., Van Dierendonck, D., & Van Gorp, K. (1996). Burnout and reciprocity: Toward a dual-level social exchange model. *Work & Stress, 10*(3), 225–237. https://doi.org/10.1080/02678379608256802

Schneider, B., Yost, A. B., Kropp, A., Kind, C., & Lam, H. (2018). Workforce engagement: What it is, what drives it, and why it matters for organizational performance. *Journal of Organizational Behavior, 39*(4), 462–480. https://doi.org/10.1002/job.2244

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421. https://doi.org/10.1037/0003-066X.60.5.410

Shuck, B. (2011). Four emerging perspectives of employee engagement: An integrative literature review. *Human Resources Development Review, 10*(3), 304–328. https://doi.org/10.1177/1534484311410840

96

Shuck, B., & Reio, T. G. (2011). The employee engagement landscape and HRD: How do we link theory and scholarship to current practice? *Advances in Developing Human Resources, 13*(4), 419–428.

Shuck, B., & Reio, T. G. (2014). Employee engagement and well-being: A moderation model and implications for practice. *Journal of Leadership & Organizational Studies, 21*(1), 43–58. https://doi.org/10.1177/1523422311431153

Shuck, B., & Wollard, K. (2010). Employee engagement and HRD: A seminal review of the foundations. *Human Resource Development Review, 9*(1), 89–110. https://doi.org/10.1177/1534484309353560

Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching & Teacher Education, 27*(6), 1029–1038. https://doi.org/10.1016/j.tate.2011.04.001

Skaalvik, E. M., & Skaalvik, S. (2018). Job demands and job resources as predictors of teacher motivation and well-being. *Social Psychology of Education, 21*(5), 1251-1275. https://doi.org/10.1007/s11218-018-9464-8

Sok-Foon, Y., Sze-Yin, J. H., & Yin-Fah, B. C. (2012). Student evaluation of lecturer performance among private university students. *Canadian Social Science, 8*(4), 238-243.

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2010). Staying well and engaged when demands are high: The role of psychological detachment. *Journal of Applied Psychology, 95*(5), 965–976. https://doi.org/10.1037/a0020032

Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend ? *Organizational Research Methods, 9*(2), 221–232. http://doi.org/10.1177/1094428105284955

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Allyn and Bacon.

Tan, S., Lau, E., Ting, H., Cheah, J.-H., Simonetti, B., & Tan, H. L. (2019). How do students evaluate instructors' performance? Implication of teaching abilities, physical attractiveness and psychological factors. *Social Indicators Research, 146*(1–2), 61-76. https://doi.org/10.1007/s11205-019-02071-6

Taris, T. W., Schreurs, P. J. G., & Van Iersel-van Silfhout, I. J. (2001). Job stress, job strain, and psychological withdrawal among Dutch university staff: Towards a dual process model for the effects of occupational stress. *Work & Stress, 15*(4), 283–296. https://doi.org/10.1080/02678370110084049

Tayfur, O., & Arslan, M. (2013). The role of lack of reciprocity, supervisory support, workload and work–family conflict on exhaustion: Evidence from physicians. *Psychology, Health & Medicine, 18*(5), 564–575. https://doi.org/10.1080/13548506.2012.756535

Van Horn, J. E., Schaufeli, W. B., & Enzmann, D. (1999). Teacher burnout and lack of reciprocity. *Journal of Applied Social Psychology, 29*(1), 91–108. https://doi.org/10.1111/j.1559-1816.1999.tb01376.x

Wang, J., & Wang, X. (2020). *Structural equation modeling: Applications using Mplus* (2nd ed.). John Wiley & Sons. https://doi.org/10.1002/9781119422730

Waterman, A. S. (2013). The humanistic psychology–positive psychology divide: Contrasts in philosophical foundations. *American Psychologist, 68*(3), 124–133. https://doi.org/10.1037/a0032168

Williams, L. J., & Anderson, S. E. (1994). An alternative approach to method effects by using latent-variable models: Applications in organizational behavior research. *Journal of Applied Psychology, 79*(3), 323–331. http://doi.org/10.1037/0021-9010.79.3.323

Worley, J. A., Fuqua, D. R., & Hellman, C. M. (2009). The survey of perceived organisational support: Which measure should we use? *SA Journal of Industrial Psychology, 35*(1), 112–116. https://doi.org/10.4102/sajip.v35i1.754

Wright, T. A. (2014). Putting your best "face" forward: The role of emotion-based well-being in organizational research. *Journal of Organizational Behavior, 35*(8), 1153–1168. https://doi.org/10.1002/job.1967

Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology, 5*(1), 84-94. https://doi.org/10.1037/1076-8998.5.1.84

Wright, T. A., Cropanzano, R., & Bonett, D. G. (2007). The moderating role of employee positive well-being on the relation between job satisfaction and job performance. *Journal of Occupational Health Psychology, 12*(2), 93–104. https://doi.org/10.1037/1076-8998.12.2.93

Wright, T. A., & Hobfoll, S. E. (2004). Commitment, psychological well-being and job performance: An examination of conservation of resources (COR) theory and job burnout. *Journal of Business and Management, 9*(4), 389–406. https://doi.org/10.1016/j.orgdyn.2004.09.002

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121–141. https://doi.org/10.1037/1072-5245.14.2.121

Yew, V. G. W., & Ramos, H. M. (2019). The relationship between perceived organizational support, age, and burnout: Implications for the Malaysian higher education workplace. *International Journal of Employment Studies*, *27*(2), 35–57

Young, J. L., Waehler, C. A., Laux, J. M., McDaniel, P. S., & Hilsenroth, M. J. (2003). Four studies extending the utility of the Schwartz Outcome Scale (SOS–10). *Journal of Personality Assessment, 80*(2), 130–138. https://doi.org/10.1207/S15327752JPA8002_02

Zacher, H., & Winter, G. (2011). Eldercare demands, strain, and work engagement: The moderating role of perceived organizational support. *Journal of Vocational Behavour, 79*, 667-680. doi:10.1016/j.jvb.2011.03.020

Zhang, Z., & Yuan, K.-H. (2018). *Practical statistical power analysis using WebPower and R*. http://psychstat.org/semchisq

Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

3. CHAPTER 3: MANUSCRIPT 2

Student engagement and learning approaches during COVID-19: The role of study resources, burnout risk, and student leader–member exchange as psychological conditions

Abstract

The global COVID-19 pandemic has caused radical changes to methods of teaching and learning, as a consequence of which students may experience the factors that influence their engagement very differently. Therefore, it is important for universities to understand the conditions that may affect students' engagement during times of crisis. The primary objective of this study was to explore the interplay of psychological conditions that influenced personal engagement among university students. As a theoretical lens through which to investigate this, the study used the job demands-resources model, the study demands-resources model, and the leader–member exchange theory. This study further aimed to explore outcomes that supported students in becoming lifelong learners (i.e. deep-learning approach). Using purposive, non-probability sampling, 1 594 undergraduate students enrolled at a South African university participated in the study. A cross-sectional survey research design was used. Results showed that the psychological conditions of *meaningfulness* (study resources), *availability* (burnout risk), and *safety* (student leader–member exchange) as conceptualised in Kahn's grounded theory influenced student engagement. In addition, the results showed that study demands was positively associated with student engagement, although this association can be regarded as small. Furthermore, study resources and student engagement were associated with a deep approach to learning. Leaders in higher education are encouraged to focus not only on ensuring that students receive adequate support in terms of structures and physical resources during periods of uncertainty, such as the global COVID-19 pandemic, but to adopt a holistic approach that includes considering all the psychological conditions that encourage and promote students' engagement.

Keywords: Study demands-resources, burnout risk, student leader–member exchange, student engagement, deep and surface approaches to learning

100

3.1   Introduction

Against the backdrop of an increase in withdrawal behaviour among students, a decline in students' well-being (Auerbach et al., 2018), an increase in students' stress levels (Robotham, 2008), and students' experiences of academic isolation during the COVID-19 pandemic (Visser & Law-Van Wyk, 2021), it becomes imperative to explore aspects which, according to positive psychology, would promote a more productive and fulfilling life (Seligman & Csikszentmihalyi, 2000). In this regard, Kotera and Ting (2019) stated that engagement is a positive psychological construct that is of particular importance in the higher education (HE) context as far as students' academic activities are concerned.

Engagement has been found to assist one in performing one's work to the full (Bakker, 2017; Kahn, 1990), being creative, connecting to the work role and other people, focusing on moving ahead with work, and putting in an effort (Kahn, 1990). Although Kahn's conceptualisation of personal engagement is structured around employees in the workplace, scholars have put forth that, from a psychological stance, the core academic activities of university students can be considered as "work" as these activities are organised, coercive, and structured (Cilliers et al., 2018; De Jonge et al., 2019; Ouweneel et al., 2011).

3.2   Theoretical Framework

The present study drew on positive psychology to explore that conditions that enable the positive psychological construct of engagement (Kotera & Ting, 2019; Seligman et al., 2005) among students within HE. In so doing, this study drew on theories and models that aim to explain antecedents to engagement. Accordingly, the job demands-resources (JD-R) model (Demerouti et al., 2001) and the study demands-resources (SD-R) model (Mokgele & Rothmann, 2014) underpinned this research study. The JD-R model provides a basis for understanding the role of work conditions (job demands and resources) as antecedents to burnout and engagement (Crawford et al., 2010). The model explains how job demands cost or consume energy which leads to burnout, whilst resources are functional in achieving goals and promoting engagement (Bakker & Demerouti, 2017; Jackson et al., 2006). The SD-R model is based on the JD-R model and explains the effects of study characteristics (study demands and study resources) on student

burnout and engagement (Mokgele & Rothmann, 2014). The study further drew on Kahn's (1990) theory of personal engagement and extended this theory beyond the employee/employer context, to focus on students in HE.

3.3 Contribution of the Study

To better understand the circumstances that allow positive constructs such as engagement, to flourish, in accordance with the premise of positive psychology (Seligman et al., 2005), the present study investigated the psychological conditions that enable engagement as conceptualised by Kahn (1990). This investigation extended beyond the employee/employer context to focus on students in a HE context. This study made use of (1) the job demands-resources (JD-R) model (Bakker & Demerouti, 2017), a model which is regarded as one of the most solid empirical foundations in clarifying job characteristics that underlie engagement in the work context (Mercali & Costa, 2019), (2) the study demands-resources (SD-R) model (Mokgele & Rothmann, 2014), a model which was developed to understand the effects of study characteristics on students, and (3) the leader–member exchange (LMX) theory (Graen et al., 1982), as a theoretical lens through which to conceptualise the lecturer–student relationship which is regarded as in its infancy (Farr-Wharton et al., 2018).

As stated, the aim of this study was to better understand the construct of student engagement. The promotion of students' engagement is important as it is believed to enhance their abilities not only to perform well academically but also to learn how to learn and to become lifelong learners in a global and knowledge-based society (Taylor & Parsons, 2011). As a student's approach to learning has profound implications beyond the classroom, this study aimed to gain an understanding of learning quality in HE (Baron & Corbin, 2012; Cai & Liem, 2017; Fryer, 2017) and to explore students' learning approaches by extrapolating from work done using the JD-R model (Bakker & Demerouti, 2017). In so doing, this study endeavoured to extend the existing understanding of how student engagement influenced learning approaches and processes that reflected the students' intentions to understand the meaning of their work (Campbell & Cabrera, 2014; Fourie, 2003). The researcher hoped that findings from the study would offer support to leaders in HE to

102

consider the role of both engagement and learning approaches in addressing the quality of students' learning and academic performance.

3.4 Literature Review and Research Hypotheses

3.4.1 Defining Student Engagement

Student engagement has become an area of priority to HE institutions globally (Groccia, 2018; West & Halvorson, 2019), which explains the existence of a wide variety of definitions of student engagement (Mandernach, 2015). Groccia (2018) noted that Ralph Tyler, who was one of the pioneers in the study of student engagement during the 1930s, showed that time spent on tasks had positive effects on learning. Kuh (2003) described student engagement as the time and energy that students devote to educational activities, which include academic activities outside the classroom and also activities that institutional policies and practices encourage them to participate in. Axelson and Flick (2011) described student engagement as the level of involvement and interest students show in their learning, and their level of connectedness with their classes, peers, and the institution.

Kahn (2014) indicated that student engagement is characterised by the contributions students make to their learning; thus, the time, commitment, effort and resources they invest. Further, student engagement can be seen as reflecting similar investments by the academic institutions to optimise the students' learning experience and performance. Scholars have also described student engagement as a combination of diligence, willingness to participate in learning activities, involvement, and dedication toward studies (Mokgele & Rothmann, 2014; Salanova et al., 2010). The concept was further conceptualised by Gunuc and Kuzu (2015) as consisting of campus engagement (which describes the value students attach to their education, and students' sense of belonging) and class engagement (which describes students' cognitive, behavioural, and emotional reactions to both out-of-class and in-class educational activities). In other words, student engagement reflects students' investment in learning, their participation in academic activities, and their attitude to their teacher or their class (Gunuc & Kuzu). In a more recent study, Lee et al. (2019), in measuring student engagement in an online learning environment, conceptualised student

103

engagement as being comprised of six dimensions. These dimensions are psychological motivation (learners' feelings of being motivated and interested in following an online learning course), peer collaboration (learners' attempts to collaborate with peers, build knowledge, and discuss knowledge with peers), cognitive problem-solving (learners' use, application and understanding of knowledge), interactions with instructors (learners' communication with the instructor of the online course), community support (learners' emotional sense of belonging to the group of students enrolled for the online course), and learning management (learners' management of their learning and participation in the course, e.g. planning to attend online classes and submit all assignments).

Steele and Fullagar (2009) believed that there is no consensus about defining engagement and that most existing definitions lack a conceptual foundation or confuse outcomes or antecedents of engagement with their facets. It seems, however, that scholars are in agreement that student engagement includes a range of cognitive, affective, and behavioural components of students' learning experience (Burch et al., 2015; Cai & Liem, 2017; Lee et al., 2019; Handelsman et al. as cited in Mandernach, 2015). They describe affective components of student engagement as being the students' feelings or emotional engagement during the learning process (e.g. enjoyable states of mind), cognitive components as being the thinking strategies students use to process the information learned, and behavioural components as being the overt involvement of students during academic tasks. These views are in alignment with Kahn's (1990) conceptualisations relating to personal engagement and disengagement in the workplace.

Burch et al. (2015) developed a student engagement scale based on Astin's (1984) student involvement theory and Kahn's (1990) grounded theory of personal engagement and disengagement. According to Astin, student involvement denotes the quantity and quality of psychological and physical energy that students devote to the academic experience as well as the effectiveness of institutions' educational practices and policies that are directed toward increasing student involvement. Burch et al.'s (2015) student engagement scale is built on the definition that student engagement is a multidimensional construct of emotional, physical, and cognitive engagement both in and out of class. This conceptualisation seems to be supported

by more recent studies (e.g. Groccia, 2018) according to which student engagement operates on multiple cognitive, behavioural, and affective levels, both in and out of the classroom. For the purposes of the present study, Burch et al.'s (2015) definition of student engagement was adopted as it is grounded in a theoretical framework that is in alignment with the objectives of this study, and, further, as it can be regarded as inclusive of Lee et al.'s (2019) six dimensions of an online learning environment. As described earlier, these dimensions include psychological motivation (feelings of motivation and interest), community support or the sense of belonging to a group (emotional engagement), cognitive problem-solving (cognitive engagement), peer collaboration or attempts to collaborate, interactions with instructors, and learning management, which refers to the students' participation in the course (physical engagement).

3.4.2   The Relationship between Study Demands-Resources, Burnout risk, and Student Engagement

In response to the observation of Robotham (2008) that the interpretation or perception of high demands instead of the actual demands themselves can potentially cause harm, Salanova et al. (2010) asserted that it is essential to understand how students perceive their demands and resources. To gain such an understanding, this study applied the JD-R model. The JD-R model has been tested not only among staff in the HE sector (e.g. Bakker et al., 2005; Jonasson et al., 2017; Rothmann & Jordaan, 2006; Rothmann et al., 2006; Williams et al., 2017), but also among students (e.g. Mokgele & Rothmann, 2014; Robins et al., 2015).

Similar to the JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001), the SD-R model (Mokgele & Rothmann, 2014) proposes that study resources promote engagement, as they play a key role in motivating students and keeping them from withdrawal behaviour. The SD-R scale (Mokgele & Rothmann) measures study resources as consisting of lecturer support, peer support, growth, and information accessibility.

Important in the context of the present study, is Kahn's (1990) assertion that three conditions shape whether a person would personally engage or not. The first condition is that of *meaningfulness*, which is the state of

105

feeling that one is valued, is a worthy person, and is not taken for granted. This state of feeling is influenced by (a) whether one's work tasks are challenging, allow for learning, and provide a sense that one is competent; (b) whether one's role as an individual is central to or is needed by one's institution; and (c) work interactions with co-workers and clients. Likewise, the study resources as conceptualised by Mokgele and Rothmann (2014) and measured by the SD-R scale address the aspects of challenging tasks (e.g. "Do your studies make sufficient demands on your skills and capacities?"), learning (e.g. "Do your studies offer you opportunities for personal growth and development?"), and provision of a sense of competence (e.g. "Do your studies give you the feeling that you can achieve something?"). The SD-R scale further addresses work interactions with co-workers or peers (as in the case of the present study) (e.g. "Can you count on your fellow students when you run into difficulties in your studies?"), and whether students feel valued or central to the institution in terms of management decisions made in the specified course (e.g. "Are you kept up to date about issues within your module?" and "Is the decision-making processes within the module/department/faculty clear to you?"). Mokgele and Rothmann (2014) further indicated that feedback and support from lecturers and opportunities for growth and development affect psychological states such as meaningfulness. Therefore, the present study viewed study resources, as conceptualised in the SD-R scale (Mokgele & Rothmann), as addressing the criteria relevant to psychological meaningfulness. Thus, based on Kahn's (1990) conceptualisation that psychological meaningfulness is one of the antecedents to engagement, and based on the finding of empirical studies (e.g. Salmela-Aro & Upadyaya, 2014) that study-related resources can lead to engagement within a school context, as well as on the finding of Robins et al. (2015) that optimal study resources lead to increased levels of student engagement, the following hypothesis was postulated for the present study:

H1: There is a statistically significant positive relationship between study resources and student engagement.

Similar to the JD-R model, the SD-R model (Mokgele & Rothmann, 2014) proposes that students' study demands (time and study pressure) drain students' energy and cause fatigue or burnout. Zeijen et al. (2021)

106

confirmed that study demands (e.g. study workload, emotional demands, and study–home interference) are positively related to burnout of master's students. Similarly, an earlier study by Robins et al. (2015) found that study demands were positively related to burnout. Robins et al. also found a negative relationship between study demands and engagement. Other studies within a South African context corroborated the finding that students' study demands were significantly related to student engagement (e.g. Cilliers et al., 2018). A more recent meta-analysis done by Rattrie et al. (2020) showed associations between demands and engagement. Accordingly, the present study postulated the following hypotheses:

H2: There is a statistically significant positive relationship between study demands and burnout risk.

H3: There is a statistically significant negative relationship between study demands and student engagement.

The Copenhagen Burnout Inventory (Creedy et al., 2017) categorises burnout as personal and work-related burnout. Personal burnout refers to the degree of psychological and physical exhaustion or fatigue an individual experiences, and work-related burnout to the degree of psychological and physical exhaustion or fatigue the individual perceives as related to their work. Maroco and Campos (2012) referred to the latter category as studies-related burnout within a student context. Salmela-Aro and Upadyaya (2014) found that school burnout, which they described as the experience of feelings of inadequacy and exhaustion due to school demands, negatively influenced schoolwork engagement a year later. A study among PhD students similarly found that high burnout was related to low levels of engagement (Kusurkar et al., 2020).

According to Kahn (1990), the second condition that influences personal engagement is that of *availability*. Availability describes the physical and psychological resources people have available in light of distractions experienced, such as depletion of physical and emotional energy, outside lives or personal lives, and insecurity. Burnout seems to address components related to the depletion of physical and emotional energy and outside lives as per the availability condition specified by Kahn (1990). Accordingly, this study operationalised burnout risk as psychological *availability*, and postulated the following hypothesis:

107

H4: There is a statistically significant negative relationship between burnout risk and student engagement.

3.4.3 The Role of Physical Resources during COVID-19

Worldwide, the COVID-19 pandemic plunged educators and students, in particular at universities, into the unprecedented educational scenario of having to transition to either purely online or blended learning methods (Perets et al., 2020). Neuwirth et al. (2020) indicated that this transition has resulted in changes in student behaviours in classes; they have become predominantly inattentive, many are not physically/visually or mentally present, and they ask fewer questions, compared to the on-campus face-to-face classes before the pandemic. Neuwirth et al. stated that educators often rely on visual feedback from students to better gauge their understanding of the concepts in real-time. Consequently, the perceived invisibility of students (they turn their laptop cameras off) severely constrains teaching. These authors did, however, list a variety of difficulties that could underpin students' behaviour, such as a lack of quiet or private areas at home, distractions or noise in the background, hesitancy to let others see their home environment, and lack of online access and availability of physical resources. This is supported by findings from Tigaa and Sonawane (2020) that physical resources, such as electricity infrastructure and reliable internet access, influence student engagement. Accordingly, the following hypothesis was postulated:

H5: There is a statistically significant positive relationship between physical resources, such as adequate study conditions at home, access to a stable internet, electricity, and devices, and student engagement.

3.4.4 The Relationship between Student Engagement, Deep Learning, and Academic Performance

Student engagement has been regarded as a key component of student success in higher education institutions (Boulton et al., 2019; Kahn, 2014). Salanova et al. (2010) found that engagement was an important factor, even more important than study burnout, in predicting future performance. Engagement also plays an important role in the quality of student work (Kahu, 2013), in students' persistence, and in their retention (Schreiber & Yu, 2016). Further, student engagement is regarded as a key factor in promoting

outcomes such as academic achievement, the creation of a positive student experience, and the development of lifelong learners (Baron & Corbin, 2012; Cai & Liem, 2017; Kahn, 2014). Based on these findings, the present study postulated the following hypothesis:

H6: There is a statistically significant positive relationship between student engagement and academic performance.

As regards the benefits that have been associated with fostering lifelong learning, Floyd et al. (2009) found a significant and positive relationship between student engagement and a deep-learning strategy. These authors indicated that deep learning occurs in cases where students perceive themselves as engaged and the course content as valuable. Correspondingly, Bevan et al. (2014) contended that students' engagement with course material is critical in fostering deep learning. Deep learning, which is described as both intellectual and emotional (West & Halvorson, 2019), is regarded as the intrinsically motivated intention of students to understand the meaning of the work, to try and relate the work to ideas in other disciplines or subjects, and to organise the work holistically (Fourie, 2003; West & Halvorson, 2019). Surface learning, in contrast, is regarded as a more passive approach to learning, one that is characterised by memorising or reproducing that which was read or heard in a lecture without necessarily making sense of the work (Fourie, 2003). Accordingly, the present study postulated the following hypotheses:

H7a: There is a statistically significant positive relationship between student engagement and a deep-learning approach.
H7b: There is a statistically significant negative relationship between student engagement and a surface-learning approach.

A deep approach to learning has been described as a process of discovery, understanding, and growth rather than as simply a process of knowledge transfer (Platow et al., 2013). Deep-learning approaches are further considered as playing an important role in student outcomes such as persistence, the ability to more

109

effectively process information (Campbell & Cabrera, 2014), academic achievement (Zhang, 2000), and the attainment of better quality learning and development (Fourie, 2003). Accordingly, the present study postulated the following hypotheses:

H8a: There is a statistically significant positive relationship between a deep approach to learning and academic performance.

H8b: There is a statistically significant negative relationship between a surface approach to learning and academic performance.

3.4.5   The Influence of Student–LMX (Psychological Safety) on Engagement

Basson and Rothmann (2019) indicated that students' perceptions of their assets, workload, and support from lecturers are of crucial importance in determining whether they flourish or languish in their studies. Eloff et al. (2021) affirmed that lecturers play a substantial role in the well-being of students. Farr-Wharton et al. (2018) argued that LMX should be a central consideration in establishing a learner-centred pedagogy, but that the use of LMX as a theoretical lens to conceptualise the lecturer–student relationship is still in its infancy. LMX, which concerns the perception of the member or subordinate and their evaluation of the quality of the relationship with the leader, focuses on interpersonal relationships between superiors (leaders) and their followers (members) within the boundaries of an organisational structure (Kim & Yi, 2018). LMX theory postulates that leaders/superiors develop different relationships with members/followers and that this difference is reflected in the quality of the exchange relationship (Myers, 2006; Power, 2013). High-quality exchange relationships between leaders/superiors and members/followers are referred to as in-group relationships, whereas low-quality exchange relationships between the two parties are referred to as out-group relationships (Myers, 2006).

Relevant meta-analytic reviews have consistently found correlations between LMX and members' commitment, efforts in terms of job performance, and intentions to quit (Dulebohn et al., 2012; Gerstner & Day, 1997). Studies have also shown that LMX is positively related to social job resources (Radstaak &

Hennes, 2017) and negatively related to emotional exhaustion (Lai et al., 2018) and demands such as role overload (Tang & Vandenberghe, 2021). Furthermore, LMX has been shown to moderate the positive relationship between role overload and psychological strain, such that role overload is less positively related to strain when LMX levels are high (Tang & Vandenberghe, 2021). Lam et al. (2018), expanding on their finding that emotional job demands are positively related to emotional engagement where LMX is high, reported that employees regard line managers' guidance and support (high LMX) as a resource that allows them to handle emotionally demanding situations. Farr-Wharton et al. (2018) referred to student–LMX as the relationship which is formed during learning activities such as lectures, communication on online forums, and interactions between lecturers or tutors and their students. Based on the considerations by Lorah and Wong (2018), in the context of this study, student-LMX can similarly be regarded as possible moderator.

The third condition that has an influence on personal engagement is that of psychological *safety*, which describes the state of feeling no fear to express oneself because doing so would not have negative consequences for one's career or self-image (Kahn, 1990). The feeling of psychological safety is influenced by supportive interpersonal relationships, management style, and organisational norms or expectations (the general and appropriate ways of behaving or working, including predictability) (Kahn, 1990). According to Kahn, norms are based on the rules or cues that govern behaviour in a specific context. As student–LMX denotes the perception of students regarding how positive, reciprocal, and supportive the relationships with their lecturers are (Farr-Wharton et al., 2018), and as in-group or out-group exchange relationships affect students' motivation to communicate with their educators (Myers, 2006), one can argue that students' evaluation of their lecturers' management style (i.e. as supportive, consistent, and non-hypocritical) will influence the student–LMX relationship and determine the extent to which students feel safe to express themselves without fear of negative consequences. Thus, the present study deemed student–LMX to address components of psychological safety. In accordance with Kahn's directive to explain engagement by exploring the interaction of psychological conditions, the present study considered student–LMX as a

moderator in the associated relationships with engagement as proposed in the JD-R and SD-R models. Accordingly, this study put forth the following hypotheses:

H9a: Student–LMX, which carries aspects of psychological safety, moderates the relationship between study resources and engagement, such that high student–LMX strengthens the positive relationship between study resources and student engagement.

H9b: Student–LMX moderates the relationship between physical resources and student engagement, such that high student–LMX strengthens the positive relationship between adequate physical resources and student engagement.

H9c: Student–LMX moderates the relationship between study demands and student engagement, such that high student–LMX acts as a buffer against the negative effect of study demands on student engagement.

H9d: Student–LMX moderates the relationship between burnout risk and student engagement, such that burnout risk is less (vs. more) negatively related to student engagement at high student–LMX levels.

The hypothesised framework developed for this study is presented in Figure 4.

3.4.6   Conceptual Framework
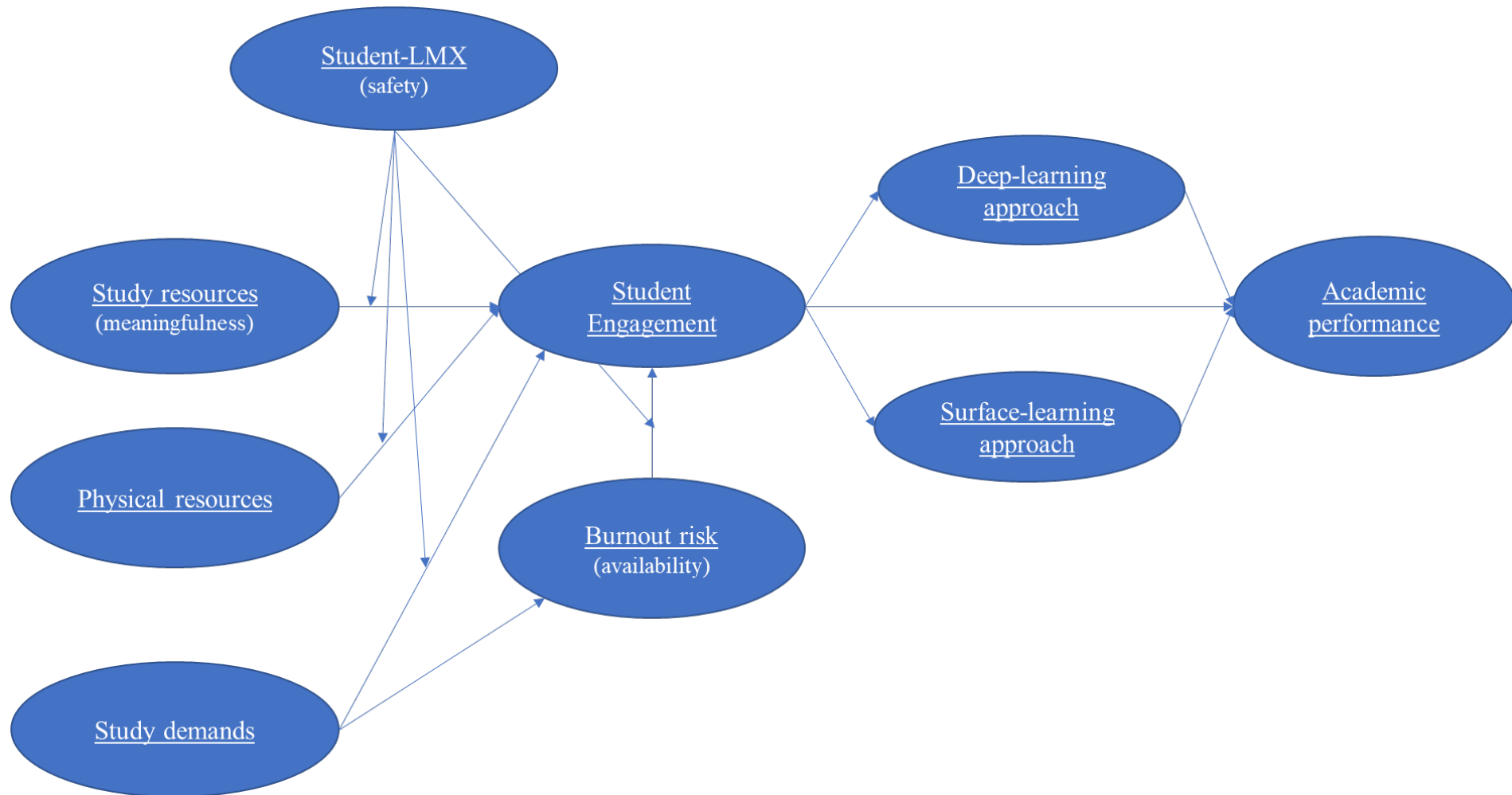
Figure 4: Conceptual framework (measurement model for the student sample)

3.5 Method

3.5.1 Participants and Setting

Participants were undergraduate students registered at a South African university. A purposive, non-probability sampling strategy was used and a cross-sectional survey research design was employed. The present study formed part of a bigger multilevel research project that involved students registered for a specified second-semester undergraduate module taught by the participating staff member during 2020. Participants' consent to take part in the survey was obtained, and of the 5 294 students who agreed to participate, only 1 663 could be included in the study. The data obtained from the excluded participants had to be omitted due to missing values on the variables of interest. Males comprised 44% of the sample and females 56%. The majority of the students were African (93%), fell within the age range of 20 to 22 years (38%), and were enrolled for degrees in the Faculty of Engineering, Built Environment, and Information Technology (47%). The characteristics of the participants are provided in Table 4.

Table 4: Characteristics of participants (student sample)

Item	Category	Percentage
Gender	Male	44%
	Female	56%
Age range	17–19	14%
	20–22	38%
	23–25	24%
	26–28	11%
	29–31	6%
	Older	7%
Ethnic group	African	93%
	Coloured	3%
	White	3%
	Indian or Asian	–
	Other	–
	Missing values	1%
Home language	English	19%
	Afrikaans	4%
	isiZulu	4%
	isiXhosa	10%
	Sepedi	1%
	Setswana	12%
	Sesotho	46%
	Xitsonga	1%
	siSwati	1%
	Tshivenda	1%
	isiNdebele	–
	Other: Please specify	–
Faculty	Faculty of Engineering, Built Environment, and Information Technology	47%
	Faculty of Health and Environmental Sciences	3%
	Faculty of Humanities	13%
	Faculty of Management Sciences	37%

Note: 1663 participants made up the study sample

115

3.5.2 Measurement Instruments

The survey included the following measures:

Study demands and resources: To measure study demands and resources, the 23-item Study Demands and Resources Scale (Mokgele, 2014) was used. The study demands scale comprises five items related to time and study pressure. The study resources scale comprises four dimensions, namely, lecturer support, peer support, growth, and information accessibility. Both the scales were rated on a 4-point rating scale ranging from 1 = "never" to 4 = "always", and sample items included "Do you have too much work to do?" (study demands), and "If necessary, can you ask your fellow students for help?" (study resources, growth). Mokgele and Rothmann (2014) reported reliability above 0.70 for all the resources sub-scale dimensions, and for the study demands sub-scale, moderate (0.61) reliability was reported.

Physical resources: In alignment with studies showing the importance of physical resources during the COVID-19 pandemic, the present study included items on physical resources. Four items, which were rated on a 4-point rating scale ranging from 1 = "never" to 4 = "always" were included, and a sample item was, "Are your study conditions adequate at home to allow for the attendance of online classes where needed and completion of academic work from home?"

Burnout risk: The 19-item Copenhagen Burnout Inventory was used to measure student burnout risk. Item wording was adapted for the student context, and sample items included "How often do you feel worn out?" (personal burnout), "Do your studies frustrate you?" (work-related burnout adapted to address study-related burnout), and "Does it drain your energy to work with peers?" (personal burnout adapted to address peer-related burnout) (Kristensen et al., 2005). Past studies reported the following Cronbach's alpha coefficients for the subscales: $\alpha = 0.82$ (client-related burnout), $\alpha = 0.85$ (personal burnout), and $\alpha = 0.87$ (work-related burnout) (Johnson & Naidoo, 2013).

116

Student engagement: The 24-item Burch Engagement Survey for Students (Burch et al., 2015) was used to measure student engagement, as this measure is in alignment with the definition of engagement adopted for the study. The scale measures four dimensions (emotional engagement, physical engagement, cognitive engagement in class, and cognitive engagement out of class), and includes the following sample items: "I feel energetic when I am in this class/attending a lecture (online)" (emotional engagement), "I exert my full efforts toward this class/course" (physical engagement), "When I am in the classroom for this module, via online platforms or traditional face-to-face classes, I pay a lot of attention to the lecture discussion and activities" (cognitive engagement in class), and "When I am reading or studying material related to this class/course, I focus a great deal of attention on class discussion and activities" (cognitive engagement out of class). The scale was adopted from the job engagement scale (Rich et al., 2010) and adapted to reflect the online/blended learning environment necessitated by the COVID-19 pandemic. A 5-point rating scale was used ranging from 1 = "strongly disagree" to 5 = "strongly agree". Cronbach's alpha coefficients were all above the recommended 0.70 and were as follows: $\alpha = 0.91$ (emotional engagement), $\alpha = 0.93$ (physical engagement), $\alpha = 0.96$ (cognitive engagement in class), and $\alpha = 0.96$ (cognitive engagement out of class) (Burch et al., 2015).

Approach to learning: The approach to learning was measured using the revised 20-item, two-factor Study Process Questionnaire (R-SPQ-2F) (Biggs et al., 2001). This scale, which measures deep- and surface-learning approaches, contains four subscales (deep motive, surface motive, deep strategy, and surface strategy). The deep approach to learning comprises the subscale of deep motive (of which an example item is, "I find that, at times, studying gives me a feeling of deep personal satisfaction") and the subscale of deep strategy (of which an example item is, "I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied"). The surface approach to learning comprises the subscale of surface motive (of which an example item is, "My aim is to pass the programme requirements while doing as little work as possible") and the subscale of surface strategy (of which an example item is, "I only study seriously what's given out in class or the course outlines"). The four subscales were scored on a 5-point scale ranging from 1 = "never or rarely true of me" to 5 = "always or almost always true of me". Cronbach's

alpha coefficients of the subscales were α = 0.62 (deep motive), α = 0.63 (deep strategy), α = 0.72 (surface motive), and α = 0.62 (surface strategy) (Biggs et al., 2001).

Academic performance: Students' marks for the specified semester module taught by the participating lecturer were used as a measure of their academic performance. The final semester mark for the specified module was used as an assessment of the students' knowledge of the module content covered during the semester.

Student–LMX: In alignment with work done by Farr-Wharton et al. (2018), the present study measured student–LMX using an adapted version of the seven-item LMX scale of Graen and Uhl-Bien (1995). The items were measured using a 5-point Likert scale, and sample items included "The lecturer of the specified module ... – would be willing to help me in their own time" and "... encourages a good learning relationship". Farr-Wharton et al. (2018) reported Cronbach's alpha above the threshold of 0.70 for student–LMX.

3.6   Data Analysis

This study used Mplus version 8.6 and followed two stages in conducting the data analysis. First, as the model tested was based on theory and previous empirical work, a confirmatory factor analysis (CFA) strategy was employed to confirm the factor structure validity and psychometric properties of the scales. This was followed by evaluating the supported hypothesised relationships between the constructs that the present study focused on. The path model of effects between constructs was tested using structural equation modelling (SEM). The testing of complex latent structural models that include all the measurement models is likely to lead to convergence problems and the quality of the measurement model (even a well-fitting measurement model) can influence the structural model and vice versa (McNeish & Hancock, 2018). Therefore, a two-step process was used as was suggested by Lu et al. (2011). First, predictor factor scores were generated from the latent variable using the regression approach in Mplus. Second, factor scores were

used in the structural model. Thus, the full measurement model did not have to be included to test the structural model.

Kenny et al. (2015) indicated that the χ^2 tends to be inflated in cases of non-normality, which tends to exacerbate problems with the root mean square error of approximation (RMSEA). Furthermore, the RMSEA value becomes substantially elevated in studies with small degrees of freedom (*df*) (Kenny et al.), which was the case in the present study. McNeish et al. (2018) and McNeish and Hancock (2018) corroborated and advocated that scholars should use the RMSEA and Tucker-Lewis index (TLI) with caution as both these are sensitive to model size and small *df*. Only the comparative fit index (CFI) seems not to be affected in these cases (McNeish et al., 2018). In the present study, all popular indices were reported as a matter of convention and where degrees of freedom were low in models, the CFI and SRMR played a more decisive role in judging model fit. Accordingly, model fit was appraised as acceptable in the following cases: a CFI value above 0.90 but preferably above 0.95, a SRMR value preferably less than 0.08, a RMSEA value below 0.08, and a TLI value above 0.95 (Hu & Bentler, 1999; Olckers & Van Zyl, 2019).

To assess the internal structure of the scales, the McDonald's omega coefficient was used, with values of 0.70 and 0.80 deemed as acceptable and good (Crutzen & Peters, 2017; Dedeken et al., 2020; Feisst et al., 2019). A factor determinacy value of 0.80 and above was regarded as demonstrating good internal consistency (Wang & Wang, 2020). Factor determinacy is the correlation between the factor score and latent factor, and this correlation should be high to ensure the factor score is a valid and reliable substitute for the latent factor. Effect sizes of correlation coefficients were interpreted as small ($r = 0.10$), medium ($r = 0.30$), and large ($r = 0.50$), in accordance with the guidelines provided by Cohen (1988).

Scholars have noted that although model modifications can be made, they should be made conservatively and transparently and should be supported by solid theoretical evidence (MacCallum et al., 1992). Further, model fit should be examined in combination with residual covariance matrices and reported in alignment

119

with the theoretical framework that supports the results (MacCallum, 1990). Hayduk et al. (2007, p. 843) argued that a theoretical understanding of models is best enhanced by "diagnostic evidence accompanying a model's failure to fit". Based on the aforementioned recommendations, the present study inspected residuals in the covariance matrix and identified the misspecifications or reasons for model misfit. The study also considered the possibility of oversights in presenting the original model or theory and Hayduk et al.'s (2007) suggestion that modifications should not be dismissed where substantiating evidence or theory is strong. The process of post-hoc modifications or transparently hypothesising after results are known is referred to as THARKing, discussed in Hollenbeck and Wright (2017). It allows for the better utilisation of the data and can inform future investigations, scholars should however note the fine balance between theory-driven and data-driven research to support post hoc modifications made. Guided by theory, the present study re-specified the models where model fit or item loadings were not supported by the data so as to ensure that robust psychometric measurements were obtained for the variables used in the structural model. Efforts were made to retain as many as possible of the original items for each construct that proved to be psychometrically sound in the measurement models and that allowed for a non-biased single-factor score for each measure (Cole & Preacher, 2014).

The study considered the finding of Anderson and Gerbing (1988) that, in cases of multivariate normal distribution, the skewness and kurtosis for each variable are zero, thus suggesting normality cutoff criteria equal to > -1 and < +1 for both. The bootstrapping technique is not available in Mplus with the maximum likelihood robust (MLR) estimation procedure that was used (Muthén & Muthén, 2017). Thus the delta method for estimating robust standard errors with a sandwich estimator was used for non-normal data, providing standard errors similar to those the bootstrapping technique would provide. Furthermore, standard errors for interaction effects were cross-checked for consistency using the bias-corrected bootstrapping technique and the ML estimator (Muthén & Muthén, 2017; Schaap & Olckers, 2020). To establish moderating effects, the following was considered: 1) whether the beta coefficient of the interaction term was significant (Lam et al., 2018), and 2) whether the confidence intervals (CIs) set at a level of 95% did not include zero (Zhao et al., 2010).

3.7 Results

This section reports the results of the descriptive statistics, the results relating to the evaluated measurement model, and the results of the regression analyses (path/structural model).

3.7.1 Descriptive Statistics

The descriptive statistics, skewness/kurtosis, correlations, factor determinacy values and McDonald's omega values of the latent variables are reported in Table 5. As the study formed part of a bigger multilevel research project involving students taught by a participating lecturer, the students' responses had to be matched with the relevant lecturer, as a result of which the sample was reduced to 1605. The data was further checked for multivariate outliers using the Mahalanobis Distance test (Tabachnick & Fidell, 2013). A total of 11 statistically significant multivariate outliers was removed from the data sets prior to conducting the analyses using a conservative $\chi 2$ critical probability value of 0.001, resulting in a total sample of 1594 students.

The Mardia multivariate test and the univariate indicators of skewness and kurtosis (which were 4.73 and 72.30 respectively) (see Table 5) indicated that the requirement of multivariate normality was not met (Anderson & Gerbing, 1988). Factor determinacy values ranged between 0.85 and 0.94, which demonstrated good correlations among the items of all the scales (Wang & Wang, 2020) and supported the use of factor scores as substitutes for latent factors in the structural model (Gorsuch, 1983). The variables in the correlation matrix show discriminate validity as all values below the diagonal are lower than the square root of the average variance extracted (AVE) which is presented on the diagonal (Fornell & Larcker, 1981).

121

Table 5: Descriptive statistics, correlations, skewness/kurtosis, and factor determinacy (student sample)

	Variable	Skewness	Kurtosis	1	2	3	4	5	6	7	8	FD	ω
1	Study resources	-1.14	0.95	<u>0.76</u>								0.91	0.84
2	Physical resources	-0.63	-0.08	0.33	<u>0.65</u>							0.87	0.74
3	Study demands	-0.66	0.15	-0.25	-0.22	<u>0.56</u>						0.85	0.68
4	Burnout risk	0.16	-0.58	-0.43	-0.33	0.39	<u>0.71</u>					0.95	0.86
5	Student engagement	-1.06	2.10	0.54	0.21	-0.13	-0.39	<u>0.80</u>				0.93	0.87
6	Student–LMX	-0.52	-0.58	0.65	0.23	-0.22	-0.33	0.47	<u>0.70</u>			0.94	0.87
7	Deep-learning approach	-0.19	-0.55	0.40	0.13	-0.06	-0.33	0.56	0.41	<u>0.63</u>		0.94	0.87
8	Surface-learning approach	0.46	-0.15	-0.02	-0.08	0.10	0.13	-0.07	0.01	0.19	<u>0.55</u>	0.90	0.81

Mardia's multivariate values	**Estimate**	***p*-value**
Mardia's multivariate skewness	4.73	0.00
Mardia's multivariate kurtosis	72.30	0.00

Note: 1 594 participants made up the study sample; FD, Factor score determinacy; ω, McDonald's omega.

Factor scores are Z values with a mean of 0 and a standard deviation of 1.

Underlined values on the diagonal represent the square root of the AVE (Fornell & Larcker, 1981).

All correlations are statistically significant ($p \leq 0.05$).

122

3.7.2 Measurement Model

The measurement model that allowed for the univocal scoring of each of the measures was tested using CFA with MLR estimation for non-normal data. Table 6 provides an overview of the fit statistics per the model constructs measured, the items per scale, and the relevant subscales per construct.

It should be recognised that unidimensional CFA models with numerous items are highly restrictive models and highly sensitive to misfit, where misfit may have only minor substantive meaning or can be considered a method artefact of measurement or method effect with negligible consequences (Byrne et al.,1989; Marsh et al., 2004; Reise et al., 2013). It is noted that measurement models which were not supported by the data were adapted in accordance with principles such as those by Jackson et al. (2009). According to Jackson et al. (2009) post hoc freeing of correlated residuals can be done only in cases of theoretical or strong pragmatic justification such as those related to method artefacts of measurement (Loiacono & Wilson, 2020; Podsakoff et al., 2012). Method artefacts or systematic error in a measure can be attributed to items containing similar words or phrases or similar meaning, negative scoring, the effect of adjacency, and close proximity or blocked items from the same construct that follow each other in direct sequence and which can lead to responding in the same or conforming manner). Also, modifications were only considered if freeing residuals did not significantly alter other structural and measurement parameters in the model and if these correlated errors were few (Byrne et al., 1989).

Study resources were measured as a unidimensional scale comprising four subscales (see Table 6). The scale displayed acceptable fit (CFI = 0.94; SRMR = 0.04; TLI = 0.93; RMSEA = 0.05), and its factor loadings were well defined (min. = 0.36; max. = 0.93; mean = 0.73). Physical resources, measured as a unidimensional scale, displayed good model fit (CFI = 0.99; SRMR = 0.01; TLI = 0.98; RMSEA = 0.04), and the factor loadings demonstrated a clearly defined factor structure (min. = 0.58; max. = 0.72; mean = 0.64). The study demands scale displayed acceptable model fit (CFI = 0.93; SRMR = 0.04;

TLI = 0.86; RMSEA = 0.09), and the factor loadings were clearly defined (min. = 0.38; max. = 0.67; mean = 0.54).

Burnout risk was measured as a second-order model comprising the subscales as indicated in Table 6. A univocal score was derived from the second-order factor. One item (v40), which was reverse-scored, was removed because its factor loading was low (0.32). Due to method artefacts or measurement error (e.g. error in a measure that could be attributed to items containing similar words or phrases and the effect of adjacency where items that measure the same construct were grouped together) (Loiacono & Wilson, 2020; Podsakoff et al., 2012), the residuals of items v34 and v35 were allowed to correlate. The scale displayed acceptable model fit (CFI = 0.91; SRMR = 0.04; TLI = 0.90; RMSEA = 0.07), and second-order factor loadings were well defined (min. = 0.34; max. = 0.99; mean = 0.72).

Student engagement was measured as a unidimensional scale comprising four subscales (see Table 6). The residuals of two items (v50 and v51) were allowed to correlate due to method effects/measurement error (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012). The student engagement scale displayed acceptable model fit (CFI = 0.95; SRMR = 0.04; TLI = 0.94; RMSEA = 0.05), and the factor loadings were high, suggesting a well-defined factor structure (min. = 0.68; max. = 0.88; mean = 0.79).

On the student–LMX scale, residuals of the first three items (v71, v72, and v73) were allowed to correlate due to showing high correlated residuals. As these three items of the scale, which strongly reflected the perceived personal interest of the lecturer in the student, were in close proximity to each other, the respondents could have given similar ratings for these items while avoiding cognitive dissonance (known as response set, a form of method bias that results in correlated residuals) (Loiacono & Wilson, 2020; Podsakoff et al., 2012). The model fit of the scale was good (CFI = 0.97; SRMR = 0.04; TLI = 0.94; RMSEA = 0.08), and factor loadings were well-defined (min. = 0.53; max. = 0.84; mean = 0.69).

Deep-learning approach was measured as a unidimensional scale comprising the two subscales mentioned in Table 6. Due to method effects (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012), two items (v94 and v95) were allowed to correlate. The scale displayed good model fit (CFI = 0.96; SRMR = 0.03; TLI = 0.95; RMSEA = 0.06), and factor loadings indicated a well-defined factor structure (min. = 0.44; max. = 0.72; mean = 0.63). Surface-learning approach was measured as a unidimensional scale comprising two subscales (see Table 6). Items v81 and v80, as well as items v93 and v96, showed method effects and were allowed to correlate (Byrne et al.,1989; Loiacono & Wilson, 2020; Podsakoff et al., 2012). The scale displayed acceptable model fit (CFI = 0.91; SRMR = 0.05; TLI = 0.87; RMSEA = 0.08), and factor loadings indicated a clearly defined factor structure (min. = 0.44; max. = 0.70; mean = 0.54).

The marks that the students received in the specified second-semester module code were used as a measure of their academic performance. The results obtained showed 46% missing values because some students had indicated incorrect module codes (e.g. by indicating the course or module name instead of the code or only the letter code without a number, or by not providing a module code).

McDonald's omega reliability coefficients for the scales were all above 0.70, which demonstrated acceptable to good reliability. An exception was the study demands scale ($\omega = 0.68$) which showed a value just below 0.70 and which, therefore, could be called into question (Crutzen & Peters, 2017; Dedeken et al., 2020; Feisst et al., 2019). Overall, the measurement models showed acceptable psychometric properties.

Table 6: Fit statistics per measurement construct included (student sample)

Construct measured	Subscales	Items used	χ^2	*df*	*p*	CFI	TLI	SRMR	RMSEA
a) Study resources (v6–23)	Growth (v6–11)	6	568.46	131	0.00	0.94	0.93	0.04	0.05
	Peer support (v12–14)	3							
	Information accessibility (v15–17)	3							
	Lecturer support (v18–23)	6							
b) Physical resources (v24–27)	n/a	4	7.98	2	0.00	0.99	0.98	0.01	0.04
c) Study demands (v1–5)	n/a	5	77.28	5	0.00	0.93	0.86	0.04	0.09
d) Burnout risk (v28–46)	Personal burnout (v28–33)	6	1267.29	132	0.00	0.91	0.90	0.04	0.07
	Study-related burnout (v34–40)	6							
	Peer-related burnout (v41–46)	6							
e) Student engagement (v47–70)	Emotional engagement (v47–52)	6	1140.02	247	0.00	0.95	0.94	0.04	0.05
	Physical engagement (v53–58)	6							
	Cognitive engagement in class (v59–64)	6							
	Cognitive engagement outside the classroom (v65–70)	6							
f) Student–LMX (v71–77)	n/a	7	128.72	11	0.00	0.97	0.94	0.04	0.08
g) Deep-learning approach	Deep motive (v78, 82, 86, 90, 94)	5	213.68	34	0.00	0.96	0.95	0.03	0.06
	Deep strategy (v79, 83, 87, 91, 95)	5							
h) Surface-learning approach	Surface motive (v80, 84, 88, 92, 96)	5	346.43	33	0.00	0.91	0.87	0.05	0.08
	Surface strategy (v81, 85, 89, 93, 97)	5							
i) Semester results used as a measure of academic performance	n/a	n/a							n/a

Note: ω, McDonald's omega; χ^2, chi-square statistic; *df*, degrees of freedom; *p*, *p*-value; CFI, Comparative fit index; TLI, Tucker-Lewis index; SRMR, Standardised root mean square residual; RMSEA, Root mean square error of approximation.

126

3.7.3   Testing the Path/Structural Model

As indicated in Table 7, the hypothesised model (Model 1, see Figure 4) provided a poor fit to the data (CFI = 0.69; SRMR = 0.10; TLI = 0.55; RMSEA = 0.10). As reported earlier, the results of students' academic performance showed 46% missing cases due to students indicating incorrect module codes. Consequently, the sample had to be reduced. Using the reduced sample to test the three hypotheses related to academic results (see Table 7), all three were found to be non-significant: H6 (supporting a significant positive relationship between student engagement and academic performance) (β = 0.08, p = 0.07); H8a (supporting a significant positive relationship between a deep approach to learning and academic performance) (β = -0.01, p = 0.75); and H8b (supporting a significant negative relationship between a surface learning approach and academic performance) (β = -0.02, p = 0.62).

Taking prior empirical work into consideration, alternative models were tested to see if they might improve model fit. In testing Model 2 using the hypothesised model (Model 1) as a template but excluding academic semester results, it was found that the model showed a slight improvement in model fit. However, as indicated in Table 7, the model fit was still inadequate (CFI = 0.77; SRMR = 0.10; TLI = 0.65; RMSEA = 0.10).

Next, a modified model, Model 3, was tested. It was a product of applying the THARKing process where exploratory hypotheses, guided by theory and data, supported the inclusion of additional paths (Hollenbeck & Wright, 2017). In this modified model, burnout risk and a deep approach to learning as dependent variables were regressed on study resources, and, in respect of these, two post hoc hypotheses, Hypothesis 10 and Hypothesis 11 respectively, were postulated). A surface-learning approach as the dependent variable was regressed on burnout risk (in respect of which post hoc Hypothesis 12 was formulated), and correlations were allowed between deep- and surface-learning approaches. The justification for testing these alternative paths was that the residuals of the covariance matrix showed that the addition of paths would improve the overall model fit. Although such an addition could be considered explorative, it was justified by empirical studies. For example, in their study among first-year students, Mokgele and Rothmann (2014) found that

both study demands and a lack of resources were associated with burnout, potentially resulting in students being unable to achieve their study goals. Further, to minimise the negative impact of burnout, students may reduce discretionary inputs. Mokgele and Rothmann further noted that burnout results in a loss of motivation. Deep learning takes place when students have the intrinsically motivated intention to understand the meaning of their work, whereas surface learning occurs when students take a passive stance (Fourie, 2003; West & Halvorson, 2019).

The modified model produced significantly improved model fit (CFI = 0.92; SRMR = 0.04; TLI = 0.86; RMSEA = 0.06) and, therefore, formed the basis of the structural model. It should be noted, however, that this model might not be generalisable to other samples and would require further confirmatory studies. Table 7 details the fit indices and standardised path coefficients of the path models as per the above discussion. Results as per the path/structural model are discussed below the table.

Table 7: Fit indices and standardised path coefficients of the path model and alternative models (student sample)

Description		Model 1 (hypothesised, Fig. 1)		Model 2		Model 3	
Sample size	n	853		1594		1594	
Fit indices	χ^2	350.05		410.40		157.52	
	df	35		25		22	
	p-value	0.00		0.00		0.00	
	CFI	0.69		0.77		0.92	
	TLI	0.55		0.65		0.86	
	SRMR	0.10		0.10		0.04	
	RMSEA	0.10		0.10		0.06	
		Estimate	SE	Estimate	SE	Estimate	SE
Direct effects on student engagement	Study resources	0.34**	(0.04)	0.36**	(0.03)	0.35**	(0.03)
	Physical resources	0.03	(0.03)	0.01	(0.02)	0.01	(0.02)
	Study demands	0.07*	(0.03)	0.09**	(0.03)	0.08**	(0.02)
	Student–LMX	0.24**	(0.04)	0.21**	(0.03)	0.20**	(0.03)
	Burnout risk	-0.21**	(0.04)	-0.21**	(0.03)	-0.20**	(0.03)
Interaction effects on student engagement	Student resources × student–LMX	-0.02	(0.05)	-0.01	(0.04)	-0.01	(0.04)
	Physical resources ×student–LMX	0.04	(0.04)	0.03	(0.03)	0.02	(0.03)
	Student demands × student–LMX	-0.03	(0.04)	-0.06*	(0.03)	-0.06*	(0.03)
	Burnout risk × student–LMX	-0.02	(0.05)	0.00	(0.03)	0.00	(0.03)
Direct effects on burnout risk	Study demands	0.37**	(0.03)	0.39**	(0.02)	0.30**	(0.02)
	Study resources	–	–	–	–	-0.36**	(0.02)
Direct effects on deep-learning approach	Engagement	0.57**	(0.03)	0.55**	(0.02)	0.49**	(0.03)
	Study resources	–	–	–	–	0.13**	(0.03)
Direct effects on surface-learning approach	Engagement	-0.10*	(0.04)	-0.06*	(0.03)	-0.01	(0.03)
	Burnout risk	–	–	–	–	0.15**	(0.03)
Direct effects on academic performance	Deep-learning approach	-0.01	(0.04)	–	–	–	–
	Surface-learning approach	-0.02	(0.04)	–	–	–	–
	Engagement	0.08	(0.05)	–	–	–	–
Surface-learning approach *with*	Deep-learning approach	–	–	0.28**	(0.03)	0.29**	(0.03)
Residual variances	Deep-learning approach	0.68**	(0.03)	0.70**	(0.02)	0.67**	(0.02)
	Surface-learning approach	0.99**	(0.01)	1.00**	(0.00)	0.98**	(0.01)
	Burnout risk	0.86**	(0.02)	0.85**	(0.02)	0.73**	(0.02)
	Student engagement	0.68**	(0.03)	0.69**	(0.02)	0.65**	(0.02)
	Semester results (academic performance)	0.99**	(0.01)	–	–	–	–

Note: The dash indicates that the path was not included in the model.

χ^2, chi-square statistic; df, degrees of freedom; CFI, Comparative fit index; TLI, Tucker-Lewis index; SRMR, Standardised root mean square residual; RMSEA, Root mean square error of approximation; SE, Standard error.

**$p < 0.01$, *$p < 0.05$.

129

With regard to the portion of the path/structural model predicting student engagement (refer to Table 7 and see Figure 5), the direct effect of study resources ($\beta = 0.35$, $p < 0.01$) showed a statistically significant positive result (medium effect size), providing support for Hypothesis 1. The direct effect of study demands ($\beta = 0.08$, $p < 0.01$) was statistically significant (small effect size); however, as it did not have the expected negative sign, Hypothesis 3 could not be supported. The direct effect of burnout risk ($\beta = -0.20$, $p < 0.01$) was statistically significant and negative (small effect size), and therefore Hypothesis 4 was supported. Because the effect of physical resources ($\beta = 0.01$, $p = 0.82$) was not statistically significant, Hypothesis 5 was not supported. To test the interplay of the psychological conditions on student engagement, the moderating relationship of student–LMX was included. In alignment with the guidelines for conceptualising moderating relationships, the direct effect of the moderator (e.g. student–LMX) on the dependent variable (e.g. engagement) needed to be clarified (Andersson et al., 2014; Memon et al., 2019). Hence, the relationship between student–LMX and engagement was tested and it showed a statistically significant positive relationship ($\beta = 0.20$, $p < 0.01$, small effect).

The results of the moderation analysis revealed that the interaction term between student resources and student–LMX was not statistically significant ($\beta = -0.01$, $p = 0.77$; 95% CI [-0.079, 0.0 59], CIs included zero). Also not statistically significant was the interaction term between physical resources and student–LMX ($\beta = 0.02$, $p = 0.34$; 95% CI [-0.025, 0.073], CIs included zero) and between burnout risk and student–LMX ($\beta = -0.00$, $p = 0.92$; 95% CI [-0.063, 0.057], CIs included zero). Thus, hypotheses 9a, 9b, and 9d were not supported. The interaction term between study demands and student–LMX was statistically significant and negative ($\beta = -0.06$, $p = 0.04$; 95% CI [-0.113, -0.003], CIs did not include zero) (small effect size). Although a significant moderating interaction was found, the direction of the interaction effect was opposite to what was formulated in hypothesis 9c. Consequently, Hypothesis 9c was not supported. Overall, four predictors, namely, study resources (meaningfulness), study demands, burnout risk (availability), and student–LMX (safety), and one interaction term (student demands × student–LMX) explained 35% of the variance in student engagement ($R^2 = 0.35$).

130

As regards the portion of the model predicting burnout risk (see Figure 5), the direct effects of study demands showed a statistically significant positive relationship (β = 0.30, p < 0.01, medium effect), providing support for Hypothesis 2. As referred to earlier, hypotheses 10, 11 and 12 were formulated post hoc (based on empirical work by scholars such as Mokgele & Rothmann, 2014 and West & Halvorson, 2019) and included in the structural model (modified Model 3). One of the hypotheses (H10) was supported in that study resources showed a statistically significant negative relationship with burnout risk (β = -0.36, p < 0.01, medium effect). Results revealed that 27% of the burnout risk score was explained by the two independent variables (R^2 = 0.27).

With regard to the portion of the model predicting a deep approach to learning(see Figure 5), the direct effect of student engagement showed a statistically significant positive relationship (β = 0.49, p < 0.01, large effect), providing support for Hypothesis 7a. The second post hoc hypothesis (H11), which postulated that study resources would positively influence a deep approach to learning, was supported because study resources showed a statistically significant positive relationship with a deep-learning approach (β = 0.13, p < 0.01, small effect). Results revealed that the two independent variables explained 33% of the variance in a deep learning approach (R^2 = 0.33).

Regarding the portion of the model predicting a surface learning approach (see Figure 5), the direct effect of student engagement (β = -0.01, p = 0.82) was not statistically significant. Thus, Hypothesis 7b, which stated that student engagement would be negatively related to a surface-learning approach, could not be supported. The third post hoc hypothesis (H12) was supported in that burnout risk showed a statistically significant positive relationship with a surface learning approach (β = 0.15, p < 0.01, small effect size). Results revealed that around 2% of the surface learning approach score was explained by burnout risk (R^2 = 0.02).
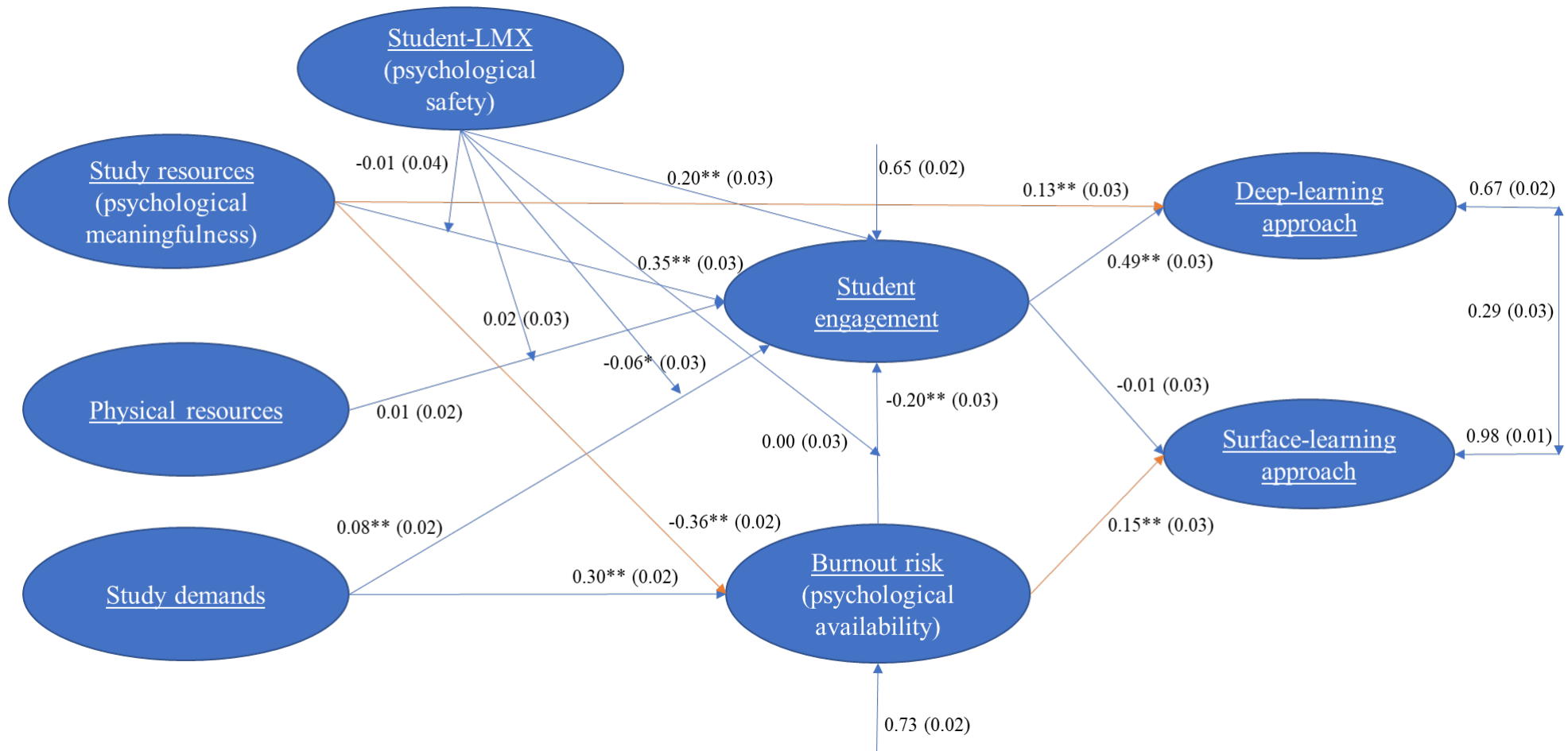
Figure 5: Model 3-The path/structural model tested (student sample)

Note. The orange arrows represent the three exploratory hypotheses guided by theory.

** $p < 0.01$; * $p < 0.05$.

132

3.8 Discussion

In this section, the results of the study are discussed in relation to the study purpose and the findings in existing literature. The primary objective of this study was to explore the interplay of psychological conditions that influenced engagement (Kahn, 1990) among university students. This study further aimed to explore students' learning approaches by extrapolating from findings reported in work done on the JD-R model (Bakker & Demerouti, 2017) to extend the existing understanding of how student engagement influenced learning approaches, which represented students' intentions to learn and the learning processes they followed (Campbell & Cabrera, 2014).

3.8.1 The relationships between study resources, physical resources, study demands, burnout risk, student-LMX and student engagement

Previous empirical studies within an education context have established that predictors of student engagement include study resources (Bakker et al., 2015; Mokgele & Rothmann, 2014; Robins et al., 2015), study demands (Cilliers et al., 2018; Robins et al., 2015), student–LMX (Farr-Wharton et al., 2018), and burnout (Salmela-Aro & Upadyaya, 2014; Singh et al., 2020), among other antecedents. To explore the psychological conditions that led to engagement, this study established connections between Kahn's (1990) theory on engagement, the JD-R model, the SD-R model, and LMX theory to operationalise study resources, burnout risk, and student–LMX as the psychological conditions of meaningfulness, availability, and safety.

Results showed that study resources (meaningfulness) (hypotheses 1), burnout risk (availability) (hypotheses 4), student–LMX (safety), and, to a lesser extent, study demands (hypotheses 3), accounted for 35% of the variance in student engagement. These results provided support for operationalising study resources, burnout risk, and student–LMX as psychological conditions and extrapolating Kahn's (1990) theory beyond the employer/employee context to the student environment. The results show that study resources (psychological meaningfulness) seemed of greater importance in explaining student engagement, as it showed a stronger association with engagement than did burnout risk, student–LMX, and study

demands. This strong association of study resources with student engagement aligns with the SD-R model (Mokgele & Rothmann, 2014). In addition to establishing that the three psychological conditions influenced student engagement, in contrast to hypothesis 3, the study found a positive association between study demands and engagement. Although the effect of this association was very small, the finding that study demands promoted student engagement was nonetheless unexpected as it contradicted findings from existing empirical work (e.g. Cilliers et al., 2018; Robins et al., 2015). Crawford et al. (2010) made a distinction between demands that hinder and those that challenge, stating that challenging demands are regarded as activities that may lead to individual growth or personal gain, thus triggerering strategies such as putting in more effort. Considering this statement in the context of the present study, it may be surmised that the challenging circumstances brought about by the COVID-19 pandemic (e.g. the interruption of educational activities and the extension of the academic year) created the opportunity for students to view study demands (e.g. time pressure, perceptions of having to work extra hard, and having a lot of work to do) (SD-R scale, Mokgele & Rothmann, 2014) as challenging demands that, if met, would lead to personal gain (e.g. the completion of their study year).

To test the coaction of the psychological conditions, the moderating relationship of student–LMX (safety) was included in the hypotheses (hypotheses 9a, 9b, 9c and 9d), and one interaction effect between study demands and student–LMX was found to be statistically significant. Although student–LMX did lessen the impact of study demands on engagement, an unexpected positive relationship was found between study demands and student engagement; therefore, Hypothesis 9c was not supported. The moderating effects as postulated in hypotheses 9a, 9b, and 9d were non-significant. The findings of De Moura et al. (2020) in their recent study may provide insight into the findings of the present study. These authors stated that extreme circumstances (e.g. a crisis such as COVID-19) may create an adverse environment for line managers to exert an influence over subordinates and that high-quality exchange relationships with line managers may no longer have the capability to, for example, buffer psychosocial stress at work. Similarly, in the context of student-lecturer relationships, a highly supportive student–LMX environment might not have the same influence in times of crisis as it would have had in normal circumstances.

134

Even though previous studies pointed toward the importance of physical resources in engaging students (Tigaa & Sonawane, 2020), especially during the period of COVID-19, findings from the present study indicated that the physical resources students had available did not influence their engagement (hypothesis 5). This might be due to an increase in support from the university during COVID-19, such as the provision to students of laptops and/or zero-rated data to ensure a continuation of academic activities. Recent studies have indicated that universities' efforts to manage the negative impact of the COVID-19 lockdown on students have resulted in more students taking the view that they have the required resources available for their studies (Van Zyl et al., 2021).

3.8.2 *The relationships between study demands, study resources and student burnout risk*

In alignment with previous studies (e.g. Mokgele & Rothmann, 2014; Robins et al., 2015), the present study found that both study demands and study resources were associated with burnout risk, and explained 27% of the variance in burnout risk (hypotheses 2 and 11). Contrary to expectations proposed in the JD-R model that demands would be most important in explaining burnout risk, study resources showed a stronger association with burnout risk than did study demands. This aligns with findings by Mokgele and Rothmann (2014). The scholars found that the effect of study resources on burnout risk was twice as strong as that of study demands. It should be noted that study demands other than those considered in the present study could be important in explaining student burnout risk.

3.8.3 *The relationships between student resources, student engagement, burnout risk and deep and surface approaches to learning*

Student engagement and student resources predicted around 33% of the variance in the students' deep approach to learning, with engagement showing a medium positive effect (hypothesis 7a), whereas the effect of study resources was regarded as small (hypothesis 10). This finding supported the findings of Floyd et al. (2009) and Bevan et al. (2014) that student engagement had a significant effect on students' deep-learning approach. In addition, Platow et al. (2013) suggested (but did not confirm by way of a test)

135

that the actual time and resources students have available could influence whether they engage in a deep-learning approach.

The present study's results further indicated that burnout risk only explained a very small percentage (2%) of the variance in a surface-learning approach (hypothesis 12), whilst engagement had no association with surface learning (hypothesis 7b). In a surface-learning approach, students choose to rely on memory rather than on comprehension, and their motivation or desire is to exert minimal effort in completing study tasks (Aharony, 2006). Mokgele and Rothmann (2014) posited that students may lose motivation and reduce discretionary inputs due to the negative effects of burnout. It did seem, however, that factors other than those tested in this study might rather lead to a surface learning approach, and that the view of Kuittinen and Meriläinen (2011) that a surface learning approach may be an inevitable survival strategy for students, might hold some merit. Accordingly, the assumption can be made that all the challenges caused by the COVID-19 pandemic (e.g. dealing with sick family members, adapting to a full or blended online mode of teaching, and dealing with study time pressure) may create the circumstances for students to have the perception that they need to do the bare minimum required to survive the academic year.

3.9   Limitations and Recommendations for Future Research

Although the study provided noteworthy insights in terms of extending Kahn's (1990) theory to the student context and connecting this theory with student–LMX and the JD-R model, the study had some limitations. First, as data was obtained from students in one university in one province in South Africa, the generalisation of the study's results was limited. Research that includes other universities in different provinces locally or internationally would be worthwhile to consider in future studies.

Second, because the study used self-report data and a cross-sectional approach, causal inferences could not be made, and the possibility of common method variance existed. An in-depth longitudinal design may aid in gaining a better understanding of the interplay and causal influences among the constructs. Although the study did implement methods to mitigate common method variance, for instance, the use of different scale

formats and anchors (Podsakoff et al., 2012), it is recommended that future studies should obtain data using different methods or obtain data from multiple respondents or sources.

A third limitation was related to the inclusion in the measurement model of students' marks in respect of a chosen semester and module as a measure of academic performance. The study relied on students to provide their student number and select a module code from a drop-down list, which included the option "Other" that allowed students to manually input the module code. Unfortunately, some students who chose this option either entered the incorrect module code or the course or module name instead of the module code or no alternative module code or no code number. As a result, the data on academic performance presented a large amount of missing values (46%). Consequently, a poor model fit was obtained for the measurement model, and the measure of academic performance had to be removed from this model and also could not be included in testing the structural model.

3.10   Implications of the Research

Kahn (2014) provided evidence that HE institutions had a lot to gain from fostering student engagement. However, Baron and Corbin (2012) indicated that, although many universities have a plethora of practices, initiatives, and policies in place to increase academic engagement, these are often fragmented, at times contradictory, and lacking in a common understanding of how to gauge engagement. These authors urged institutions to think more carefully and holistically about student engagement, to stop viewing it as a quality control indicator, and to rather see it as a matter that can generate meaningful dialogue. The findings of the present study revealed that Kahn's (1990) conceptualisation that specific conditions lead to engagement within the workplace held true in a student learning environment, and that the JD-R (or SD-R) model and the student–LMX theory could be used to operationalise these psychological conditions.

During the COVID-19 pandemic, most students experienced feelings of not being in control, of having to put their lives on hold, and of being isolated academically (Visser & Law-Van Wyk, 2021). The knowledge that one's context influences one's perception and one's decision to either engage or not (Kahn, 1990),

holds some implications. HE leaders are encouraged to focus efforts not only on ensuring that students perceive the structures and physical resources provided during periods of uncertainty, such as the global COVID-19 pandemic, as adequate, but rather also, holistically consider the conditions that encourage student engagement. These conditions include psychological meaningfulness (study resources), availability (burnout risk), and safety (student–LMX). Although the study's findings highlighted the importance of all these psychological conditions in fostering engagement, meaningfulness, which was operationalised as study resources, showed a stronger association with engagement than did student–LMX (safety), study demands and burnout risk (availability). These findings suggest that university leaders should give extra attention to providing study resources (growth, peer support, lecturer support, information accessibility) that tap the domain of meaningfulness, in an effort to promote student engagement.

Earlier studies indicated that the well-being and future workplace success of young people are dependent on them using their minds well, which they do when they are deeply engaged in learning (Dunleavy & Milton, 2008). West and Halvorson (2019) confirmed that heightened student engagement leads to deep learning. By extrapolating from work done on the JD-R model, findings from this study demonstrated that engagement influenced a deep-learning approach and that there was a clear gain in fostering student engagement in terms of achieving outcomes such as a deep-learning approach.

3.11 Conclusion

Kahn (1990) illustrated in his grounded theoretical framework on engagement that the psychological experiences of availability, safety, and meaningfulness lie at the foundation of decisions people make to either bring the "self" into a work role (i.e. to be psychologically present and personally engaged) or to withdraw. Findings from the present study demonstrated that Kahn's (1990) theory carried implications beyond the workplace and held true in a student learning environment. Further, an exploration of the psychological conditions that led to engagement showed that the JD-R model and the SD-R model could be used to operationalise study resources as psychological meaningfulness and burnout risk as availability.

Similarly, in the context of exploring the student-lecturer relationship, student–LMX could be operationalised as psychological safety.

In exploring outcomes (e.g. a deep approach to learning) that supported students in becoming lifelong learners, this study highlighted the important contribution of engagement, and it provided support for using the JD-R model and/or the SD-R model to explore a deep approach to learning in the context of student learning.

References

Aharony, N. (2006). The use of deep and surface learning strategies among students learning English as a foreign language in an Internet environment. *British Journal of Educational Psychology, 76*(4), 851–866. https://doi.org/10.1348/000709905X79158

Andersson, U., Cuervo-Cazurra, A., & Nielsen, B. (2014). From the editors: Explaining interaction effects within and across levels of analysis. *Journal of International Business Studies, 45*(9), 1063–1071. https://doi.org/10.1057/jibs.2014.50

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*(5), 518–529.

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., Kessler, R. C., & WHO WMH–ICS Collaborators. (2018). WHO world mental health surveys international college student project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology, 127*(7), 623–638. http://doi.org/10.1037/abn0000362

Axelson, R. D., & Flick, A. (2011). Defining student engagement. *Change: The Magazine of Higher Learning, 43*(1), 38–43. https://doi.org/10.1080/00091383.2011.533096

Bakker, A. B. (2017). Strategic and proactive approaches to work engagement. *Organizational Dynamics, 46*(2), 67–75. https://doi.org/10.1016/j.orgdyn.2017.04.002

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations, 58*(5), 661–689. https://doi.org/10.1177/0018726705055967

140

Bakker, A. B., Sanz-Vergel, A. I., & Kuntze, J. (2015). Student engagement and performance: A weekly diary study on the role of openness. *Motivation and Emotion, 39*(1), 49–62. https://doi.org/10.1007/s11031-014-9422-5

Baron, P., & Corbin, L. (2012). Student engagement: Rhetoric and reality. *Higher Education Research & Development, 31*(6), 759–772. https://doi.org/10.1080/07294360.2012.655711

Basson, M. J., & Rothmann, S. (2019). Pathways to flourishing among pharmacy students: The role of study demands and lecturer support. *Journal of Psychology in Africa, 29*(4), 338–345. https://doi.org/10.1080/14330237.2019.1647953

Bevan, S. J., Chan, C. W., & Tanner, J. A. (2014). Diverse assessment and active student engagement sustain deep learning: A comparative study of outcomes in two parallel introductory biochemistry courses. *Biochemistry and Molecular Biology Education*, *42*(6), 474–479. https://doi.org/10.1002/bmb.20824

Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology, 71*(1), 133-149. https://doi.org/10.1348/000709901158433

Boulton, C. A., Hughes, E., Kent, C., Smith, J. R., & Williams, H. T. P. (2019). Student engagement and wellbeing over time at a higher education institution. *PLoS ONE, 14*(11), 1–20. https://doi.org/10.1371/journal.pone.0225770

Burch, G. F., Heller, N. A., Burch, J. J., Freed, R., & Steed, S. A. (2015). Student engagement: Developing a conceptual framework and survey instrument. *Journal of Education for Business, 90*(4), 224–229. https://doi.org/10.1080/08832323.2015.1019821

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Cai, E. Y. L., & Liem, G. A. D. (2017). Why do I study and what do I want to achieve by studying? Understanding the reasons and the aims of student engagement. *School Psychology International, 38*(2), 131–148. https://doi.org/10.1177/0143034316686399

Campbell, C. M., & Cabrera, A. F. (2014). Making the mark: Are grades and deep learning related? *Research in Higher Education, 55*(5), 494–507. https://doi.org/10.1007/s11162-013-9323-6

Cilliers, J. R., Mostert, K., & Nel, J. A. (2018). Study demands, study resources and the role of personality characteristics in predicting the engagement of first-year university students. *South African Journal of Higher Education, 32*(1), 49–70. https://doi.org/10.20853/32-1-1575

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Cole, D. A., & Preacher, K. J. (2014). Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods, 19*(2), 300–315. https://doi.org/10.1037/a0033805

Crawford, E. R., Lepine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, *95*(5), 834–848. https://doi.org/10.1037/a0019364

Creedy, D. K., Sidebotham, M., Gamble, J., Pallant, J., & Fenwick, J. (2017). Prevalence of burnout, depression, anxiety and stress in Australian midwives: A cross-sectional survey. *BMC Pregnancy and Childbirth, 17*(13), 1–8. https://doi.org/10.1186/s12884-016-1212-5

Crutzen, R., & Peters, G.-J. Y. (2017). Scale quality: Alpha is an inadequate estimate and factor-analytic evidence is needed first of all. *Health Psychology Review*, *11*(3), 242-247. https://doi.org/10.1080/17437199.2015.1124240

Dedeken, P., Vissoci, J. R. N., Sebera, F., Boon, P. A. J. M., Rutembesa, E., & Teuwen, D. E. (2020). Validity, reliability, and diagnostic cut-off of the Kinyarwandan version of the Hamilton Depression Rating Scale in Rwanda. *Frontiers in Psychology, 11*(1343), 1-7. https://doi.org/10.3389/fpsyg.2020.01343

De Jonge, J., Peeters, M. C. W., & Taris, T. W. (2019). Feeling vital or fatigued? Relations with demands and resources in a university context. *International Journal of Environmental Research and Public Health, 16*(16), 2893–2917. https://doi.org/10.3390/ijerph16162893

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512. http://doi.org/10.1037/0021-9010.86.3.499

De Moura, E. C., Furtado, L., & Sobral, F. (2020). The burnout epidemic during the COVID-19 pandemic: The role of LMX in alleviating physicians' burnout. *Journal of Business Management, 60*(6), 426–436. https://doi.org/10.1590/s0034-759020200606

Dulebohn, J. H., Bommer, W. H., Liden, R. C., Brouer, R. L., & Ferris, G. R. (2012). A meta-analysis of antecedents and consequences of leader–member exchange: Integrating the past with an eye toward the future. *Journal of Management, 38*(6), 1715–1759. https://doi.org/10.1177/0149206311415280

Dunleavy, J., & Milton, P. (2008). Student engagement for effective teaching and deep learning. *Education Canada, 48*(5), 4–8.

Eloff, I., O'Neil, S., & Kanengoni, H. (2021). Students' well-being in tertiary environments: Insights into the (unrecognised) role of lecturers. *Teaching in Higher Education*, 1-22. https://doi.org/10.1080/13562517.2021.1931836

Farr-Wharton, B., Charles, M. B., Keast, R., Woolcott, G., & Chamberlain, D. (2018). Why lecturers still matter: The impact of lecturer–student exchange on student engagement and intention to leave university prematurely. *Higher Education, 75*(1), 167–185. https://doi.org/10.1007/s10734-017-0190-5

Feisst, M., Hennings, A., Heil, J., Moosbrugger, H., Kelava, A., Stolpner, I., Kieser, M., & Rauch, G. (2019). Refining scores based on patient reported outcomes: Statistical and medical perspectives. *BMC Medical Research Methodology, 19*(167), 1–9. https://doi.org/10.1186/s12874-019-0806-9

Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). The effect of engagement and perceived course value on deep and surface learning strategies. *Informing Science: The International Journal of an Emerging Transdiscipline, 12*, 181–190. https://doi.org/10.28945/435

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Fourie, C. M. (2003). Deep learning? What deep learning? *South African Journal of Higher Education, 17*(1), 123–131. https://doi.org/10.4314/sajhe.v17i1.25201

Fryer, L. K. (2017). Building bridges: Seeking structure and direction for higher education motivated learning strategy models. *Educational Psychology Review, 29*(2), 325–344. https://doi.org/10.1007/s10648-017-9405-7

Graen, G.B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (LMX) theory of leadership over 25 years: applying multi-level, multi-domain perspective. *Leadership Quarterly*, *6*(2), 219–247.

Gerstner, C. R., & Day, D. V. (1997). Meta-analytic review of leader–member exchange theory: Correlates and construct issues. *Journal of Applied Psychology, 82*(6), 827-844. https://doi.org/10.1037/0021-9010.82.6.827

Gorsuch, R. L. (1983). *Factor analysis* (2nd ed.). Lawrence Erlbaum.

Graen, G. B., Novak, M., & Sommerkamp, P. (1982). The effects of leader–member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior and Human Performance, 30*, 109–131. https://doi.org/10.1016/0030-5073(82)90236-7

Groccia, J. E. (2018). What is student engagement? *New Directions for Teaching and Learning,* (154), 11–20. https://doi.org/10.1002/tl.20287

Gunuc, S., & Kuzu, A. (2015). Student engagement scale: Development, reliability and validity. *Assessment & Evaluation in Higher Education, 40*(4), 587–610. https://doi.org/10.1080/02602938.2014.938019

Hayduk, L. A., Cummings, G., Boadu, K., Pazderka-Robinson, H., & Boulianne, S. (2007). Testing! Testing! one, two, three: Testing the theory in structural equation models! *Personality and Individual Differences, 42*(5), 841–850. https://doi.org/10.1016/j.paid.2006.10.001

Hollenbeck, J. R., & Wright, P. M. (2017). Harking, sharking, and tharking: Making the case for post hoc analysis of scientific data. *Journal of Management, 43*(1), 5–18. https://doi.org/10.1177/0149206316679487

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Jackson, D. D. L., Gillaspy, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *Psychological Methods, 14*(1), 6–23. https://doi.org/10.1037/a0014694

Jackson, L.T.B., Rothmann, S., & van de Vijver, F.J.R. (2006). A model of work-related well-being for educators in South Africa. *Stress and Health, 22*, 263-274

Johnson, S. M., & Naidoo, A. V. (2013). Transpersonal practices as prevention intervention for burnout among HIV/AIDS coordinator teachers. *South African Journal of Psychology, 43*(1) 59–70. https://doi.org/10.1177/0081246312474406

Jonasson, C., Lauring, J., Selmer, J., & Trembath, J. (2017). Job resources and demands for expatriate academics: Linking teacher-student relations, intercultural adjustment, and job satisfaction. *Journal of Global Mobility, 5*(1), 5–21. https://doi.org/10.1108/JGM-05-2016-0015

Kahn, P. E. (2014). Theorising student engagement in higher education. *British Educational Research Journal, 40*(6), 1005–1018. https://doi.org/10.1002/berj.3121

Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. https://doi.org/10.5465/256287

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758–773. https://doi.org/10.1080/03075079.2011.598505

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Kim, M.-H., & Yi, Y.-J. (2018). Impact of leader–member–exchange and team–member-exchange on nurses' job satisfaction and turnover intention. *International Nursing Review, 66*(2), 242–249. https://doi.org/10.1111/inr.12491

145

Kotera, Y., & Ting, S. (2019). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*, *19*, 227–239. https://doi.org/10.1007/s11469-019-00169-z

Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress, 19*(3), 192–207. https://doi.org/10.1080/02678370500297720

Kuh, G. D. (2003). What we're learning about student engagement from NSSE. *Change, 35*, 24–31. https://doi.org/10.1080/00091380309604090

Kuittinen, M., & Meriläinen, M. (2011). The effect of study-related burnout on student perceptions. *Journal of International Education in Business, 4*(1), 42–62. https://doi.org/10.1108/18363261111170586

Kusurkar, R. A., Van der Burgt, M. E., Isik, U., Mak-Van der Vossen, M., Wilschut, J., Wouters, A., & Koster, A. S. (2020). Burnout and engagement among PhD students in medicine: The BEeP study. *Perspectives on Medical Education, 10*, 110–117. https://doi.org/10.1007/s40037-020-00637-6

Lai, J. Y. M., Chow, C. W. C., & Loi, R. (2018). The interactive effect of LMX and LMX differentiation on followers' job burnout: Evidence from tourism industry in Hong Kong. *International Journal of Human Resource Management, 29*(12), 1972–1998. https://doi.org/10.1080/09585192.2016.1216875

Lam, L. W., Xu, A. J., & Loi, R. (2018). Is emotional engagement possible in emotionally demanding jobs? The role of leader–member exchange (LMX). *Journal of Personnel Psychology, 17*(1), 42–52. https://doi.org/10.1027/1866-5888/a000194

Lee, J., Song, H.-D., & Hong, A. J. (2019). Exploring factors, and indicators for measuring students' sustainable engagement in e-learning. *Sustainability, 11*, 985–997. https://doi.org/10.3390/su11040985

Loiacono, E., & Wilson, E. V. (2020). Do we truly sacrifice truth for simplicity: Comparing complete individual randomization and semi-randomized approaches to survey administration. *AIS Transactions on Human-Computer Interaction*, *12*(2), 45–69. https://doi.org/10.17705/1thci.00128

146

Lorah, J. A., & Wong, Y. J. (2018). Contemporary applications of moderation analysis in counseling psychology. *Journal of Counseling Psychology, 65*(5), 629-640. http://dx.doi.org/10.1037/cou0000290

Lu, I. R., Kwan, E., Thomas, D. R., & Cedzynski, M. (2011). Two new methods for estimating structural equation models: An illustration and a comparison with two established methods. *International Journal of Research in Marketing, 28*(3), 258–268. https://doi.org/10.1016/j.ijresmar.2011.03.006

MacCallum, R. C. (1990). The need for alternative measures of fit in covariance structure modeling. *Multivariate Behavioral Research, 25*(2), 157–162. https://doi.org/10.1207/s15327906mbr2502_2

MacCallum, R. C., Roznowski, M., & Necowitz, L. B. (1992). Model modifications in covariance structure analysis: The problem of capitalization on chance. *Psychological Bulletin, 111*(3), 490–504. https://doi.org/10.1037/0033-2909.111.3.490

Mandernach, B. J. (2015). Assessment of student engagement in higher education: A synthesis of literature and assessment tools. *International Journal of Learning, Teaching and Educational Research, 12*(2), 1–14.

Maroco, J., & Campos, J. A. D. B. (2012). Defining the student burnout construct: A structural analysis from three burnout inventories. *Psychological Reports: Human Resources & Marketing, 111*(3), 814–830. https://doi.org/10.2466/14.10.20.PR0.111.6.814-830

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal, 11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

McNeish, D., An, J., & Hancock, G. R. (2018). The thorny relation between measurement quality and fit index cut-offs in latent variable models. *Journal of Personality Assessment, 100*(1), 43–52. https://doi.org/10.1080/00223891.2017.1281286

McNeish, D., & Hancock, G. R. (2018). The effect of measurement quality on targeted structural model fit indices: A comment on Lance, Beck, Fan, and Carter (2016). *Psychological Methods, 23*(June), 184–190. https://doi.org/10.1037/met0000157

147

Memon, M. A., Cheah, J.-H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: Issues and guidelines. *Journal of Applied Structural Equation Modeling, 3*(1), i–xi. https://doi.org/10.47263/JASEM.3(1)01

Mercali, G. D., & Costa, S. G. (2019). Antecedents of work engagement of higher education professors in Brazil. *Revista de Administração Mackenzie, 20*(1), 1–27. https://doi.org/10.1590/1678-6971/eramg190081

Mokgele, K. R. F. (2014). *Study demands, study resources and well-being of first-year students in South African higher education institutions* (Unpublished doctoral thesis). North-West University, Potchefstroom, South Africa.

Mokgele, K. R. F., & Rothmann, S. (2014). A structural model of student well-being. *South African Journal of Psychology, 44*(4), 514–527. https://doi.org/10.1177/0081246314541589

Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus user's guide* (8th ed.). Los Angeles, CA: Muthén & Muthén

Myers, S. A. (2006). Using leader–member exchange theory to explain students' motives to communicate. *Communication Quarterly*, *54*(3), 293–304. https://doi.org/10.1080/01463370600878008

Neuwirth, L. S., Jović, S., & Mukherji, B. R. (2020). Reimagining higher education during and post-COVID-19: Challenges and opportunities. *Journal of Adult and Continuing Education, 0*(0), 1–16. https://doi.org/10.1177/1477971420947738

Olckers, C., & Van Zyl, L. E. (2019). Psychometric properties of the Psychological Ownership Questionnaire. *Australian Journal of Psychology, 71*(4), 127–136. https://doi.org/10.1111/ajpy.12232

Ouweneel, E., Le Blanc, P. M., & Schaufeli, W. B. (2011). Flourishing students: A longitudinal study on positive emotions, personal resources, and study engagement. *Journal of Positive Psychology, 6*(2), 142–153. https://doi.org/10.1080/17439760.2011.558847

Perets, E. A., Chabeda, D., Gong, A. Z., Huang, X., Fung, T. S., Ng, K. Y., Bathgate, M., & Yan, E. C. Y. (2020). Impact of the emergency transition to remote teaching on student engagement in a non-

STEM undergraduate chemistry course in the time of COVID-19. *Journal of Chemical Education, 97*(9), 2439–2447. https://doi.org/10.1021/acs.jchemed.0c00879

Platow, M. J., Mavor, K. I., & Grace, D. M. (2013). On the role of discipline-related self-concept in deep and surface approaches to learning among university students. *Instructional Science*, *41*(2), 271–285. https://doi.org/10.1007/s11251-012-9227-4

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Power, R. L. (2013). Leader–member exchange theory in higher and distance education. *International Review of Research in Open and Distance Learning, 14*(4), 277–284. https://doi.org/10.19173/irrodl.v14i4.1582

Radstaak, M., & Hennes, A. (2017). Leader–member exchange fosters work engagement: The mediating role of job crafting. *SA Journal of Industrial Psychology, 43*, a1458. https://doi.org/10.4102/sajip.v43.i0.1458

Rattrie, L. T. B., Kittler, M. G., & Paul, K. I. (2020). Culture, burnout, and engagement: A meta-analysis on national cultural values as moderators in JD-R theory. *Applied Psychology, 69*(1), 176–220. https://doi.org/10.1111/apps.12209

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment, 95*(2), 129–140. https://doi.org/10.1080/00223891.2012.725437

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal, 53*(3), 617–635. https://doi.org/10.5465/amj.2010.51468988

Robins, T. G., Roberts, R. M., & Sarris, A. (2015). Burnout and engagement in health profession students: The relationships between study demands, study resources and personal resources. *Australasian Journal of Organisational Psychology, 8*(e1), 1–13. https://doi.org/10.1017/orp.2014.7

Robotham, D. (2008). Stress among higher education students: Towards a research agenda. *Higher Education, 56*(6), 735–746. https://doi.org/10.1007/s10734-008-9137-1

Rothmann, S., & Jordaan, G. M. E. (2006). Job demands, job resources and work engagement of academic staff in South African higher education institutions. *SA Journal of Industrial Psychology, 32*(4), 87–96. https://doi.org/10.4102/sajip.v32i4.247

Rothmann, S., Mostert, K., & Strydom, M. (2006). A psychometric evaluation of the job demands-resources scale in South Africa. *SA Journal of Industrial Psychology, 32*(4), 76–86. https://doi.org/10.4102/sajip.v32i4.239

Salanova, M., Schaufeli, W. B., Martínez, I., & Breso, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety, Stress and Coping, 23*(1), 53–70. DOI: 10.1080/10615800802609965

Salmela-Aro, K., & Upadyaya, K. (2014). School burnout and engagement in the context of demands-resources model. *British Journal of Educational Psychology, 84*(1), 137-151. https://doi.org/10.1111/bjep.12018

Schaap, P., & Olckers, C. (2020). Relationships between employee retention factors and attitudinal antecedents of voluntary turnover: An extended structural equation modelling approach. *SA Journal of Human Resource Management, 18*, a1358. https://doi.org/10.4102/sajhrm.v18i0.1358

Schreiber, B., & Yu, D. (2016). Exploring student engagement practices at a South African university: Student engagement as reliable predictor of academic performance. *South African Journal of Higher Education, 30*(5), 157–175. https://doi.org/10.20853/30-5-593

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14. https://doi.org/10.1037/0003-066X.55.1.5

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421. https://doi.org/10.1037/0003-066X.60.5.410

Singh, L. B., Kumar, A., & Srivastava, S. (2020). Academic burnout and student engagement: A moderated mediation model of internal locus of control and loneliness. *Journal of International Education in Business*, 4–21. https://doi.org/10.1108/JIEB-03-2020-0020

Steele, J. P., & Fullagar, C. J. (2009). Facilitators and outcomes of student engagement in a college setting. *Journal of Psychology, 143*(1), 5–27. https://doi.org/10.3200/JRLP.143.1.5-27

Tang, W.-G., & Vandenberghe, C. (2021). Role overload and work performance: The role of psychological strain and leader–member exchange. *Frontiers in Psychology, 12*(691207), 1–14. https://doi.org/10.3389/fpsyg.2021.691207

Taylor, L., & Parsons, J. (2011). Improving student engagement. *Current Issues in Education, 14*(1), 1–33. https://doi.org/10.1177/0273475310392542

Tigaa, R. A., & Sonawane, S. L. (2020). An international perspective: Teaching chemistry and engaging students during the COVID-19 pandemic. *Journal of Chemical Education, 97*(9), 3318–3321. https://doi.org/10.1021/acs.jchemed.0c00554

Van Zyl, L. E., Rothmann, S., & Zondervan-Zwijnenburg, M. A. J. (2021). Longitudinal trajectories of study characteristics and mental health before and during the COVID-19 lockdown. *Frontiers in Psychology, 12*(633533), 1–13. https://doi.org/10.3389/fpsyg.2021.633533

Visser, M., & Law-Van Wyk, E. (2021). University students' mental health and emotional wellbeing during the COVID-19 pandemic and ensuing lockdown. *South African Journal of Psychology, 51*(2), 229–243. https://doi.org/10.1177/00812463211012219

Wang, J., & Wang, X. (2020). *Structural equation modeling: Applications using Mplus* (2nd ed.). John Wiley & Sons. https://doi.org/10.1002/9781119422730

West, L., & Halvorson, D. (2019). Student engagement and deep learning in the first-year international relations classroom: Simulating a UN Security Council debate on the Syrian crisis. *Journal of Political Science Education*, *17*(2), 173–190. https://doi.org/10.1080/15512169.2019.1616298

Williams, G., Thomas, K., & Smith, A. P. (2017). Stress and well-being of university staff: An investigation using the demands-resources-individual effects (DRIVE) model and well-being process questionnaire (WPQ). *Psychology, 8*(12), 1919–1940. https://doi.org/10.4236/psych.2017.812124

Zhang, L. (2000). University students' learning approaches in three cultures: An investigation of Biggs's 3P model. *Journal of Psychology, 134*(1), 37–55. https://doi.org/10.1080/00223980009600847

Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

Zeijen, M. E. L., Brenninkmeijer, V., Peeters, M. C. W., & Mastenbroek, N. J. J. M. (2021). Exploring the role of personal demands in the health-impairment process of the job demands-resources model: A study among master students. *International Journal of Environmental Research and Public Health, 18*(2), 632. https://doi.org/10.3390/ijerph18020632

4. CHAPTER 4: MANUSCRIPT 3

Crossover of engagement among academic staff and students during COVID-19

Abstract

Positive psychology involves the study of positive emotions, positive organisations, and constructs that cultivate and lead to optimal functioning. Engagement is regarded as a positive psychological construct and state of an employee that is directed toward achieving desired organisational outcomes. Among students, engagement is regarded as a requisite for the delivery of quality work and the development of life-long learners. Thus, in establishing positive outcomes for learning institutions, it seems clear that the engagement of both academic staff members and students is important. Past research on the topic of engagement has often focused on the student or academic staff member in isolation. The present study, however, explored engagement linkages among academic staff and students and drew on the premises of crossover theory and the theory on personal engagement for this purpose. In so doing, the study built on earlier findings relating to crossover among academic staff and students in the higher education context. Further, this study aimed to build on previous studies that highlighted the positive outcomes of engagement. With this in mind, it replicated and explored the psychological well-being benefit of engagement among academic staff, as well as the benefit of students' intrinsic motivation to persist in understanding the meaning of their work (deep approach to learning) in a crossover setting. A purposive, non-probability sample was employed and a cross-sectional survey research design was used. The sample consisted of a total of 1 594 students who were nested within 160 academic staff members. The average cluster size was 9.9 members. Findings highlighted the positive influence on student engagement of high student leader–member exchange (LMX) among students, and the negative impact of academic staff's experiences and observations regarding students' lack of reciprocity on the emotional engagement of academic staff. Against the backdrop of the COVID-19 pandemic and the priority of employers to reduce the negative psychological and behavioural challenges resulting from this pandemic, the present research intended to inform policy-makers in higher education institutions on how to approach aspects such as the engagement of both academic staff and

153

students in a collective manner. The benefits of this approach would be the improvement of employee well-being and the cultivation of a culture of life-long learning among students.

Keywords: Engagement, crossover theory, lack of reciprocity, psychological well-being, student leader–member exchange, deep and surface learning

4.1   Introduction

Globally, social distancing, experiencing lockdown, and working (or studying) remotely have become the new norm to limit the spread of the COVID-19 virus and ensure continuity of business processes (Jamal et al., 2021). A key priority for many organisations during this time was, and still is, to reduce the negative psychological and behavioural challenges resulting from the pandemic (Liu et al., 2021).

One of the fundamental roles of human resource management is to provide a positive working environment that is conducive to building the engagement and well-being of people (De-la-Calle-Durán & Rodríguez-Sánchez, 2021; Joo et al., 2017). Engagement and psychological well-being are regarded as emerging constructs within the positive psychology domain and have become essential considerations in an organisational context (Joo et al., 2017). Engagement has been found not only to enhance well-being (Rusu & Colomeischi, 2020; Shuck & Reio, 2014) but also to promote job performance, creativity, and connections to others (Bakker, 2017; Kahn, 1990). Psychological well-being is associated with optimal functioning (Brandel et al., 2017) and mental and physical health (Robertson & Cooper, 2010), and has been found to help individuals to accept change more readily (Joo et al., 2017).

A study by Pham-Thai et al. (2018) among academic staff affirmed the importance of engagement, its antecedents, and various positive outcomes for an organisation and those in the organisation (Huhtala et al., 2015). With regard to students, Lawson and Lawson (2013) stated that student engagement is one of the most important aspects that determine the success rate at schools and post-secondary education institutions. Kahn (1990) posited that individuals' engagement is formed by their psychological experiences

154

of their role and work environment, and that these experiences, in turn, influence the attitudes and behaviour of individuals. From a crossover theory perspective, the experiences of individuals may have implications for those with whom they interact (Westman, 2001). For example, studies have found that strain or exhaustion can at times transfer from one colleague to another (Bakker et al., 2006), and from one spouse to the other (Demerouti et al., 2005; Westman & Etzion, 1995). Similarly, positive aspects (e.g. engagement) can cross over between colleagues (Bakker et al., 2006), from line manager to subordinate (Bakker et al., 2009; Gutermann et al., 2017; Rofcanin et al., 2019), or from teacher to student (e.g. as with the crossover of flow) (Bakker, 2005).

Various empirical studies have been published on the crossover of "un-well-being" such as burnout, (e.g. Bakker et al., 2005; Bakker & Xanthopoulou, 2009; Hakanen et al., 2014; Westman & Bakker, 2008; Westman & Etzion, 1995), poor psychological health (e.g. Dikkers et al., 2007), and depression (e.g. Howe et al., 2004; Katz et al., 1999). Even though scholars have recently started to focus on the crossover of positive aspects such as flow (Bakker, 2005; Culbertson et al., 2015), work passion (Gilal et al., 2019), and engagement (Bakker et al., 2005; Bakker et al., 2006; Bakker & Xanthopoulou, 2009; Gutermann et al., 2017; Van Mierlo & Bakker, 2018; Wirtz et al., 2017), extant research indicates a greater focus on the crossover of negative emotions (Butt et al., 2019).

In establishing positive outcomes for higher education (HE) institutions, it seems clear that the engagement of both academic staff (in the present study, alternately referred to as lecturers) and students is of importance. It appears, however, that research which focused on the improvement of performance and excellence in HE (e.g. Coetzee & Rothmann, 2004; Moodley & Singh, 2015; Salanova et al., 2010) and which explored interactions that might facilitate the transference of positive (or negative) experiences (Rofcanin et al., 2019), often focused on the student or the lecturer in isolation. In contrast, the present study, instead of focusing on the engagement of students and academic staff as separate entities, aimed to explore the possibility of crossover of engagement among academic staff and students during periods of

155

great change, such as the COVID-19 pandemic, and also to focus on the benefits of engagement to both academic staff and students.

4.2   Theoretical Framework

Positive psychology involves the study of positive emotions, positive organisations/institutions (Seligman et al., 2005), and constructs that cultivate and lead to optimal functioning (Gable & Haidt, 2005). Scholars have described positive psychology as the study of positive emotions, meaning, and engagement (e.g. Seligman et al., 2005), and have described engagement as a positive psychological construct or the state of an employee that is directed toward achieving desired organisational outcomes (Kotera & Ting, 2019; Shuck, 2011; Shuck & Wollard, 2010). Kahn's (1990) work on personal engagement is regarded as significant. According to Kahn, personal engagement is based on two principles, the first being that the attitudes and behaviours of people are driven by the psychological experiences of their work, and, secondly, that these experiences are simultaneously influenced by "individual, interpersonal, group, intergroup, and organisational factors" (Kahn, 1990, p. 695).

Crossover theory puts forth the possibility of a dyadic, bi-directional and inter-individual transmission of both positive and negative emotions, moods, and dispositions (Westman et al., 2009); or positive and negative outcomes such as well-being of or strain between individuals in a similar social domain (Bakker et al., 2005; Bakker et al., 2009; Bakker & Xanthopoulou, 2009; Butt et al., 2019; Westman, 2001). Recent studies have corroborated the notion that not only strains or stressors but also positive emotions or constructs can act as antecedents to the crossover process (e.g. Gilal et al., 2019; Van Mierlo & Bakker, 2018). Based on evidence that engagement could be regarded as a positive psychological state or construct, the present study drew on crossover theory to explore how interpersonal variables acted as mediators in explaining the crossover of engagement among academic staff and students.

Given that lecturers can be important role models to their students or serve as a salient example (Farr-Wharton et al., 2018), the present study operationalised the leader–member exchange (LMX) theory as a

156

process that underlay and explained the crossover of engagement from lecturer to the student. This study utilised interpersonal processes of social interaction and exchange, such as reciprocity (Schaufeli et al., 1996), to explain the mechanisms that underlay the crossover of engagement from a group of students to a lecturer. Subsequently, the study explored the positive outcomes of engagement for both academic staff and students.

4.3   Contribution of the Study

Based on work that explored the teacher-student relationship in schools, Hagenauer and Volet (2014) suggested that a similar relationship exists between students and academic staff within HE. These authors posited that, despite a scarcity of academic studies in an HE context, mutual influences can be assumed between students and academic staff in a manner similar to that in schools. The significance of these influences in supporting student performance and motivation in schools has been widely recognised by scholars (Covell et al., 2009; Shen et al., 2015; Van Horn et al., 1999) who investigated the matter most often from the perspectives of attachment theory or self-determination theory (Hagenauer & Volet, 2014). Hagenauer and Volet called on researchers to study these mutual influences, and, in answer to this call, the present study drew on crossover theory (Westman, 2001) and the theory on engagement (Kahn, 1990) to explore engagement linkages among academic staff and students within HE.

To date, research has focused on crossover between spouses (e.g. Bakker et al., 2008; Demerouti et al., 2005; Westman & Etzion, 1995; Westman et al., 2009), colleagues (e.g. Bakker et al., 2006; Bakker & Xanthopoulou, 2009; Peeters et al., 2016), and line manager/subordinate dyads (e.g. Bakker et al., 2009; Gutermann et al., 2017; Li et al., 2016; 2017; Rofcanin et al., 2019; Ten Brummelhuis et al., 2014; Wirtz et al., 2017). Studies have also been conducted to explore crossover in schools between teachers and learners (e.g. Burgess et al., 2018; Frenzel et al., 2018; Tikkanen et al., 2021; Warwas & Helm, 2017) or among learners (Mendoza & King, 2020). To the knowledge of the present researcher, fewer studies have explored crossover between a lecturer and students in an HE context. Some examples include studies on the crossover of flow (Bakker, 2005; Culbertson et al., 2015), work passion (Gilal et al., 2019), and

157

emotions (Becker et al., 2014). Moreover, fewer studies focused on the crossover of positive emotions or constructs (Butt et al., 2019). The present study built on earlier studies and examined the crossover of positive constructs (i.e. engagement) among lecturers and students in an HE context during the COVID-19 pandemic.

Furthermore, this study aimed to build on previous studies that highlighted the positive outcomes of engagement. With this in mind, it replicated and explored the psychological well-being benefit of engagement among academic staff, as well as the benefit of students' intrinsic motivation to persist in understanding the meaning of their work (see deep vs. surface approach to learning, e.g. Fourie, 2003; Olpak & Korucu, 2016) in a crossover setting. In so doing, this study built on work that had explored the processes or conditions that promoted the optimal psychological functioning of institutions and people (Gable & Haidt, 2005; Waterman, 2013).

4.4 Review of the Literature and Research Hypotheses

4.4.1 Mechanisms Underlying Crossover

Westman (2001) described the concept of crossover as the experiences of one person impacting on the experiences of another person with whom they interact. Crossover may operate directly or indirectly and can, accordingly, be explained by two main processes that underlie each (Westman, 2001; Westman et al., 2009). The premise of direct crossover from one person to another is that crossover may operate via (1) *empathy* or an *empathetic reaction*, a process that is likely to occur between individuals who are closely related, share a big part of their lives, and care for one another (Westman, 2001; Westman et al., 2009). Dikkers et al.'s (2007) finding of empathy-based crossover of psychological health between husband and wife indicates support for this idea. An empathic reaction is said to occur in cases where one person (receiver) psychologically places themselves in the circumstances of another (sender) and shares their feelings. This process entails that the person (receiver) recognises and understands the feelings or thoughts of the other (sender) (Butt et al., 2019; Westman et al., 2009).

The premise of indirect processes of crossover is that crossover of stain occurs via (2) *mediators* or *moderators of interpersonal exchange* (Westman, 2001; Westman et al., 2004) such as personal attributes, social support, coping strategies, communication characteristics, and social undermining (Westman, 2001). Westman et al. (2004) found, for example, that wives' social undermining of their husbands leads to a significant increase in husbands' marital dissatisfaction. Butt et al. (2019) indicated that crossover occurs through a follower's personal identification with a leader. In their study conducted in an education context, Warwas and Helm (2017) found that crossover occurs through school teachers' characteristics (e.g. enthusiastic teaching, communication clarity and support) as mediators.

Scholars also explored (3) *various other mechanisms* to explain indirect processes of crossover, most of these seemingly being variants of what Westman (2001) referred to as aspects that underlie indirect mediating or moderating processes of crossover. Bakker and Demerouti (2009) found that the crossover of engagement between dual-earner parents is stronger when the men have high levels of perspective-taking. Li et al. (2016) found that abusive supervision accounts for crossover via a process of social interaction and explains why the psychological distress of the leader influences the psychological distress of the subordinate. Westman and Etzion (1995), for example, ascribed the crossover effect of burnout from one spouse (husband) to the other (wife) and vice versa to what they term a process of *contagion*. Contagion is described as a person's involuntary "catching" of the attitudes and behaviours of another within the same domain or with whom the person is connected (Burgess et al., 2018). Scholars (e.g. Carlson et al., 2011; Westman & Etzion, 1995) followed suit and ascribed the crossover between partners to a process of contagion. Conducting a study in the context of education, Bakker (2005) found that, based on the notion of emotional contagion, the flow of teachers (e.g. intrinsic work motivation, work enjoyment) has a positive influence on the flow of students. Bakker determined that interactive (verbal and non-verbal) processes and the role of the teacher in designing/facilitating lessons are aspects through which contagion takes place. Culbertson et al. (2015) corroborated Bakker's findings, stating that emotional contagion and crossover effects explain how the experiences of flow between the instructor and student influence each other.

159

4.4.1.1 The influence of academic staff on student engagement and outcomes

Scholars who explored the benefits of mutual influences between teachers and students in schools found that mutual influences support student performance and motivation (Covell et al., 2009; Shen et al., 2015; Van Horn et al., 1999). Further, Eloff et al. (2021) established that various aspects, such as lecturers' benevolence, support, interactions with students, and attitude toward their work, contribute to the well-being of students. This is consistent with work by Moos (1984) who put forth that the social climate (e.g. teacher support or lack thereof) influences morale and that cultivating positive interpersonal relationships can lead to personal growth and lower absenteeism.

Studies have highlighted that engaged workers are viewed as radiating energy and being a source of inspiration (Bakker & Xanthopoulou, 2009). Van Mierlo and Bakker (2018) agreed that the ways engaged people express themselves, their attitude, and their vocalisations can easily be "caught" by others. Crossover theory describes the bi-directional and inter-individual transmission of both positive and negative emotions, moods, and dispositions among individuals (Gilal et al, 2019; van Mierlo & Bakker, 2018; Westman et al., 2009). According to Warwas and Helm (2017), positive emotions enable individuals to show more helpful behaviour towards others, to be fair, and to implement more socially responsible behaviour in solving problems. Taking these findings into account, the present study focused on the emotional engagement of lecturers and the implications this might have for students.

Westman (2001) stated that communication characteristics (e.g. what a person says or how a person reacts) and social support (e.g. transactions with people that provide support) serve as mediators and moderators of crossover. Westman postulated that processes of social interaction with others (e.g. providing appraisal, information, or instrumental support) can account for crossover. Gutermann et al. (2017) built on this premise and, using LMX as a mediator in the crossover link between the engagement of leaders and followers, determined that the engagement of leaders can serve as a salient example to followers and can have an impact on followers' level of engagement. These scholars asserted that better relationships exist between highly engaged leaders and their followers (in-group) and that, because the

160

followers view the leaders as role models, good follower–leader relationships improve the engagement of the followers. Farr-Wharton et al. (2018) stated that leaders direct or guide the behaviour of members or subordinates; similarly, lecturers guide students' learning behaviour through interacting with their students. According to Gilal et al. (2019), lecturers can serve as role models to students, and students can emulate their lecturers' work behaviours. For example, if lecturers demonstrate their enjoyment of and interest in research and teaching, students can adopt similar attitudes.

Farr-Wharton et al. (2018) put forth the notion of student–LMX and described it as a temporal process due to the number of interactions between students and lecturers generally being limited over the period of a semester. They described positive student–LMX as generally characterised by supportive, reciprocal, and positive interactions between lecturers and students. Based on the premises of crossover theory and the findings of relevant prior empirical studies, the present study suggested that student–LMX could act as a mediator in the crossover of engagement from academic staff to students. Viewing LMX as a mediator in the crossover process is supported by crossover theory, it not only captures the notion that inter-relations exist between the sender and receiver within the work or study context as outlined in crossover theory (Westman, 2001), but it also provides for an alignment with Kahn's (1990) premise that the psychological experiences which lead to engagement are influenced by individual and interpersonal factors. Accordingly, the present study put forth the following hypotheses:

H1: There is a statistically significant positive relationship between academic staffs' emotional engagement and student engagement.

H2: There is a statistically significant positive relationship between academic staffs' emotional engagement and student–LMX.

H3: There is a statistically significant positive relationship between student–LMX and student engagement.

H4: The positive relationship between the emotional engagement of academic staff and student engagement is mediated by student–LMX.

161

Generally, engaged individuals are enthusiastic, take pride in their work, and are willing to put effort into their work (Schaufeli et al., 2002). A significant number of research studies have indicated that engaged employees outperform employees who are disengaged (e.g. Bailey et al., 2017; Christian et al., 2011; Kim et al., 2012; Saks, 2006; Rana et al., 2014; Shuck & Reio, 2014). This finding is in alignment with Kahn's (1990) description of personally engaging behaviours that bring alive the person and the obligatory role (e.g. becoming physically involved, cognitively vigilant, and emotionally connected to others in how the work in the obligatory role is performed). A similar observation can be made in respect of students; engaged students show interest in terms of learning activities (Axelson & Flick, 2011) and performing better academically (Kahn, 2014). Student engagement, which is a multidimensional construct comprising emotional engagement, physical engagement, and cognitive engagement (in and out of class) (Burch et al., 2015) has been indicated as valuable because of its association with positive outcomes such as improved academic performance (Bakker et al., 2015; Mandernach, 2015), student well-being (Bowden et al., 2021), and retention (Schreiber & Yu, 2016). Therefore, universities need to take cognisance of the importance of student engagement. Studies have further emphasised the importance of engagement in students' learning approach (Axelson & Flick 2011; Farr-Wharton et al., 2018), and demonstrated its association with deep learning (e.g. Floyd et al., 2009; Muñoz-García & Villena-Martínez, 2021).

Scholars have advocated a focus on deep approaches to learning because deep learning is regarded as more closely aligned with the overarching purpose of education, which is to "sow the seed of lifelong learning" for the good of the public (Hughes, 2020, p. 71). This is in agreement with an earlier study conducted in HE by Donnison and Penn-Edwards (2012) in which they explain that a deep approach to learning is preferable to a surface approach, although the latter (in the form of, for example, a rote-learning strategy) is required at times.

162

Students' deep approach to learning has been described as an intrinsic motivation to understand the work studied, and this approach has been associated with a personal commitment to studies (Aharony, 2006; Borrendon et al., 2011). Deep learning is regarded as making an important contribution to students' success at universities (Fourie, 2003), and also preparing students to be life-long collaborative and connected problem-solvers (Fullan & Langworthy, 2013). On the other hand, the surface learning approach is regarded as the tendency to study by relying on memorisation rather than comprehension, and on the accumulation of information for the purpose of meeting an extrinsic objective, for example, passing a test or an exam (Aharony, 2006; Borrendon et al., 2011). Based on the importance of engagement in supporting the intrinsically motivated intent of students to understand the meaning of their work (Fourie, 2003; Olpak & Korucu, 2016; West & Halvorson, 2019), and on the findings of previous studies that demonstrate the influence of engagement on learning approaches (e.g. Bevan et al., 2014; Floyd et al., 2009; Muñoz-García & Villena-Martínez, 2021; Olpak & Korucu, 2016), the present study proposed the following hypotheses:

H5a: There is a statistically significant positive relationship between student engagement and a deep-learning approach.

H5b: There is a statistically significant negative relationship between student engagement and a surface-learning approach.

Figure 6 provides an overview of the proposed theoretical framework for the crossover of engagement from academic staff to students.

163

Lecturers' emotional engagement

Level 2

- -

Level 1

Within

Student-LMX

Student engagement

Deep-learning approach

Surface-learning approach
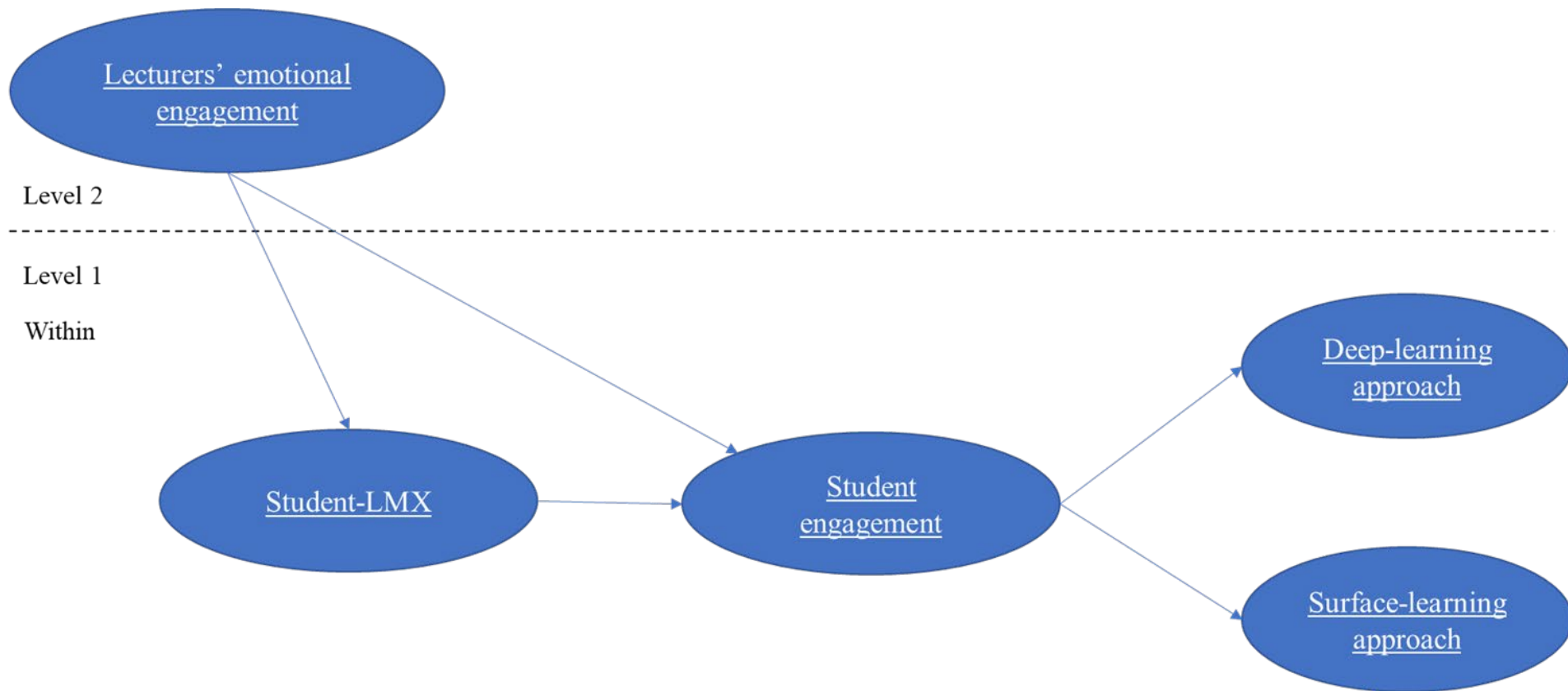
Figure 6: Conceptual framework: - Crossover of engagement from lecturer to students

164

4.4.1.2   The influence of students on academic staff engagement and outcomes

Past research has focused on the role of the lecturer as the promoter of outcomes relating to students, such as providing the needed support or resources that would influence students' academic achievement, work passion, exhaustion, engagement, and well-being (Eloff et al., 2021; Gilal et al., 2019; Klem & Connell, 2004; Roth et al., 2007; Tikkanen et al., 2021). In their study, Wirtz et al. (2017) asks the question, "What about the leader?" Similarly, the present study posed the question, "What about the lecturer?" and examined the influence of students on lecturers' perceptions and psychological outcomes.

Van Horn et al. (1999) cited an example in which an educator described the scenario of putting in a lot of effort into the job and not reaching learners or getting back little in return in terms of enthusiasm or progress, as depressing. Van Horn et al. referred to this discrepancy between the person's internal standards, the person's investments and outcomes as a lack of reciprocity. Of importance here is Kahn's (1990) assertion that interpersonal and group factors, among others, influence psychological experiences in a work context, and that these experiences, in turn, influence personal engagement or disengagement. It can thus be assumed that perceptions regarding the existence of interpersonal exchanges or the lack thereof can act as antecedents to employee engagement. Studies have found that a lack of reciprocity in relationships (i.e. where more is given than is received) results in emotional exhaustion and burnout (Bakker et al., 2000; Tayfur & Arslan, 2013). Exhaustion and burnout may lead to the withdrawal of internal energy from emotional, cognitive, and physical labour, a situation which Kahn (1990) described as disengagement. Accordingly, the present study formulated the following hypothesis:

H6: There is a statistically significant negative relationship between academic staff's perceptions of a lack of reciprocity and their emotional engagement.

Munyon et al. (2009) stated that the process of reciprocity complements the process of crossover in which one individual's psychological states may affect (directly, or through mediators of interpersonal

exchange) another individual's experience of similar states in the same social domain (Bakker et al., 2006; Westman, 2001; Westman & Etzion, 1995). Wirtz et al. (2017) provided an example of the aforementioned process: leaders who perceive the members of their team as being engaged, tend to experience higher levels of engagement themselves because they can rely on their team members' efforts, commitment, and performance. Therefore, the present study put forth that lack of reciprocity as an interpersonal exchange process allows for crossover from the students to the academic staff member. This notion is in alignment with past studies' finding that the engagement of the follower influences the engagement of the leader (Wirtz et al., 2017). Similarly, studies have shown that psychological states can transfer from the group or team to the individual (e.g. Bakker et al., 2006; Mendoza & King, 2020). Further, Bakker et al. (2006) argued that a collective mood (e.g. a shared feeling of work engagement at team level) can cross over from the collective to the individual, an argument for which they have found support. Thus, in relation to the teacher-student social-exchange relationship, premises regarding indirect processes of crossover, and assumption based on the empirical studies listed above, the present study formulated the following hypotheses:

H7: There is a statistically significant positive relationship between student engagement and lecturers' emotional engagement.

H8: There is a statistically significant negative relationship between student engagement and lecturers' perceptions of lack of reciprocity.

H9: The positive relationship between student engagement and lecturers' emotional engagement is mediated by lecturers' perceptions of lack of reciprocity.

Van Horn et al. (1999) argued that, in the teacher-student exchange relationship, the outcomes of students are associated with teacher burnout. Jackson et al. (2006) included burnout, engagement, and psychological/physical ill health in their conceptualisation of positive and negative aspects of work-related well-being. This study regarded the physical, emotional, and cognitive engagement of students as outcomes that had implications for lecturers' engagement, and, in turn, lecturers' well-being. Models

166

that describe well-being as a state of relatively stable optimal human functioning, refer to eudaimonic or psychological well-being (Burns & Machin, 2009). Wright and Hobfoll (2004) and Cilliers and Flotman (2016) argued that psychological well-being can assist individuals to better cope with the demands of life and work. Psychological well-being is not only associated with positive mental and physical health (Robertson & Cooper, 2010; Ryff, 2013) but has further been shown to enhance productivity and performance (Robertson & Cooper, 2010; Wright & Cropanzano, 2000). Considering the importance of well-being, scholars have called for deliberate efforts to both assess and promote well-being (Brandel et al., 2017).

Past studies have shown that high levels of engagement are positively associated with well-being (Rusu & Colomeischi, 2020; Shuck & Reio, 2014). Further, scholars have identified engagement as an indicator of positive well-being in the workplace (Sonnentag et al., 2010). Robertson and Cooper (2010) argued that, in order to determine the full extent of employees' engagement, their psychological well-being must be included. The present study aimed to replicate the psychological well-being benefit of engagement in a crossover setting, and, in this regard, it put forth the following hypothesis:

H10: *There is a statistically significant positive relationship between lecturers' emotional engagement and psychological well-being.*

Figure 7 depicts the main elements of the proposed theoretical framework for the crossover of engagement from students to academic staff, and the well-being benefit of engagement.
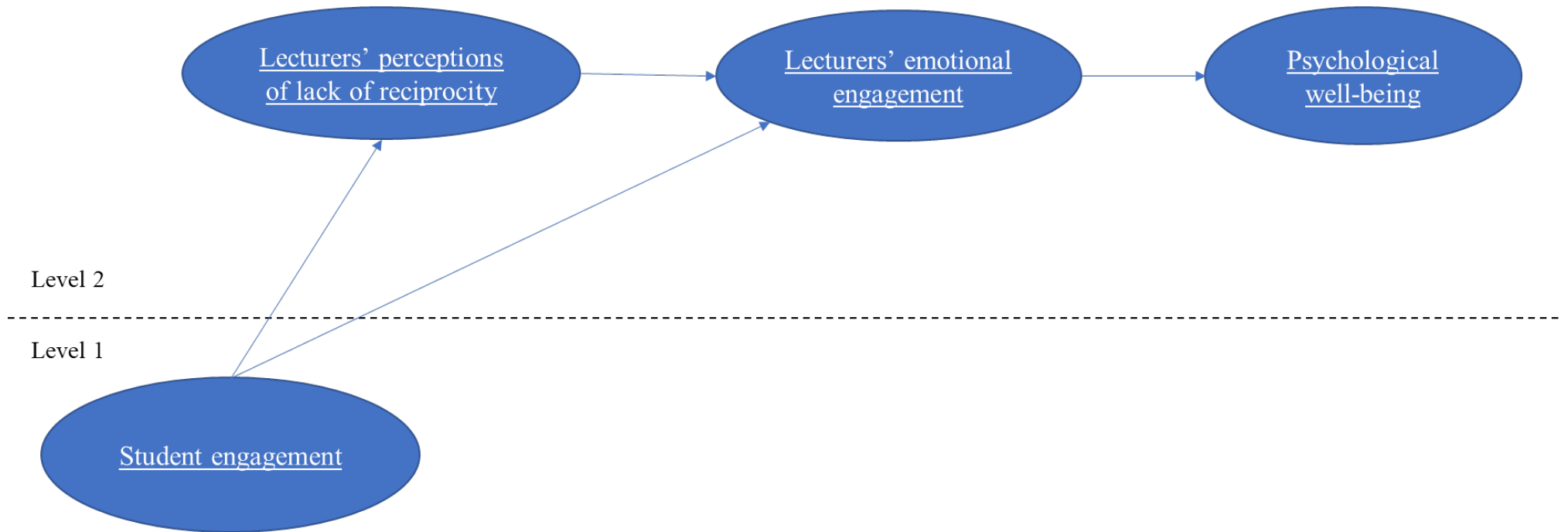
Figure 7: Conceptual framework - Crossover of engagement from students to lecturers

4.5   Method

4.5.1   *Participants and Setting*

Cross-sectional data were collected by means of electronic surveys distributed to academic staff and students at a South African university. Purposive, non-probability sampling was used as a sampling strategy. Academic staff members had to have lectured a second-semester undergraduate module during 2020 or a first-semester module during 2021 to meet the criteria for inclusion in the study. As students were nested within lecturers, the students needed to have registered for a specified module taught by a participating lecturer. The responses of students who were not matched with a participating lecturer were excluded, as matching was a requirement for testing the hypotheses.

Maximising the sample size of level 2 participants (i.e. the lecturers in the present study) is more important than maximising the sample size of level 1 participants (i.e. the students in the present study) when researchers wish to draw inferences about contextual or group effects, and particularly about variation in groups (Jak et al., 2014). The proportion of singletons ($n = 1$) or small cluster sizes (e.g. $n = 2$) has little impact on either the point or interval estimates of model parameters when large numbers (e.g. 200) of level 2 units are included (Bell et al., 2008; Clarke, 2008). Only 13% singletons were included in the present study, a percentage which was expected not to have an adverse impact on the parameter estimates. Also, the level 2 sample size was maximised to ensure sufficient power for the model estimates on level 2. In total, 1 594 students (level 1) were nested within 160 lecturers (level 2), and the sample was drawn from all the faculties in the university. The average cluster size comprised 9.9 members. In the student sample, 56% were female and 44% male. The majority of the respondents fell within the age category of 20 to 22 years old (38%), followed by the age category of 23 to 25 years old (24%). In the lecturer sample, 48% were female and 52% male. The majority of the respondents fell within the category of 30 to 39 years old (29%), followed by the category of 50 to 64 years old (28%). The majority (97%) of the lecturers occupied permanent (including fixed-term contract) positions, and only 3% of the sample were in temporary positions.

169

4.5.2 Measurement Instruments

The paragraphs below provide information on the measurement of academic staff's engagement, psychological well-being, and perceptions of lack of reciprocity.

Engagement of academic staff: The Job Engagement Scale (JES) (Rich et al., 2010) was chosen as a measure of engagement. A second-order factor measure of the JES was not supported by the data. Thus, in alignment with Kahn's (1990) premise relating to the explanation of the emotional reactions of people to conscious and unconscious phenomena, the six-item emotional engagement subscale of the JES was used to measure emotional engagement. The scale demonstrated omega reliability (ω) of 0.94 and factor determinacy (FD) of 0.98. The model fit in respect of the scale was good (comparative fit index (CFI) = 0.98; standardised root mean square residual (SRMR) = 0.02). Respondents could score the items on a 5-point rating scale ranging from 1 = "strongly disagree" to 5 = "strongly agree".

Psychological well-being: The Schwartz Outcome Scale-10 (SOS-10) (Blais et al., 1999) was used to measure psychological well-being. The scale consists of 10 items; however, due to method effects which showed item redundancy, only eight items were included in the present study (Marsh et al., 2004; Reise et al., 2013). The scale demonstrated ω = 0.91, and FD = 0.96, and the model fit was good (CFI = 0.97; SRMR = 0.04). Items were rated on a 7-point scale ranging from 1 = "never" to 7 = "all of the time/nearly all of the time".

Lack of reciprocity: In alignment with work done by Schaufeli et al. (1996) and Tayfur and Arslan (2013), perceptions of lack of reciprocity were measured by three items. These items were adapted to reflect the HE context. The items read as follows: "I spend much time, effort and consideration on work for students in the specified module, but in general, students in the specified module give back little effort, appreciation, and interest", "I invest more in the relationship with students in the specified module than what I receive back in return from them", and "I know that my students will complain, no matter what I do". Items could be rated on a 5-point scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". The scale was a

just-identified model (zero degrees of freedom (*df*)), and it demonstrated good model fit (CFI = 1.00; SRMR = 0.00), ω = 0.81, and FD = 0.93.

The paragraphs below provide information on the measurement of students' engagement, approaches to learning, and student–LMX.

Student engagement: The 24-item Burch Engagement Survey for Students (BESS) (Burch et al., 2015) was used to measure students' engagement. Due to method effects of item redundancy and item adjacency (Byrne et al.,1989; Loiacono & Wilson, 2020; Reise et al., 2013), the residuals of two items (v51 and v50) were allowed to correlate. Item adjacency is prevalent when items are block-ordered for each measure used in a survey, which creates a high likelihood of respondents rating items similarly in a process to avoid cognitive dissonance, resulting in elevated correlated residuals (Loiacono & Wilson, 2020; Podsakoff et al., 2012). The scale demonstrated ω = 0.91, FD = 0.93, and the model fit of the scale was good (CFI = 0.95; SRMR = 0.04). The measure was rated on a 5-point scale ranging from 1 = "strongly disagree" to 5 = "strongly agree".

Approaches to learning: The approach to learning was measured by the 20-item Revised Two-Factor Study Process Questionnaire (R-SPQ-2F) (Biggs et al., 2001). The scale measures deep- and surface-learning approaches, and contains four subscales (deep motive, surface motive, deep strategy, and surface strategy). In respect of the deep-learning approach subscale, two items were allowed to correlate due to method effects of item redundancy and adjacency (Byrne et al., 1989; Loiacono & Wilson, 2020; Reise et al., 2013). The scale demonstrated good model fit (CFI = 0.96; SRMR = 0.03; Tucker-Lewis index (TLI) = 0.95; root mean square error of approximation (RMSEA) = 0.06), ω = 0. 87, and FD = 0.94. In respect of the surface-learning approach subscale, method effects were apparent, and, accordingly, items v93 and v96, and items v80 and v81 were allowed to correlate (Marsh et al., 2004; Reise et al., 2013). The scale demonstrated good model fit (CFI = 0.91; SRMR = 0.05; TLI = 0.87; RMSEA = 0.08), ω = 0. 81, and FD = 0.90.

Student–LMX: Student–LMX was measured using an adapted version of the seven-item LMX scale of Graen and Uhl-Bien (1995), which is measured on a 5-point Likert scale. The first three items of the scale were allowed to correlate. These items, due to their being in close proximity to each other and reflecting the perceived personal interest of the lecturer in the student, might have resulted in respondents giving similar ratings and avoiding cognitive dissonance (Loiacono & Wilson, 2020; Podsakoff et al., 2012). The scale demonstrated good model fit (CFI = 0.97; SRMR = 0.04), ω = 0. 87, and FD = 0.94.

4.6   Data Analysis

The path model of effects between all the constructs was tested using structural equation modelling (SEM) in Mplus version 8.6. The maximum likelihood robust (MLR) estimator was used to address non-normality in the data (Muthén & Muthén, 1998/2017). Based on recommendations by Kenny et al. (2015) and McNeish et al. (2018), model fit was appraised by considering CFI and SRMR, although other popular indices, such as TLI and RMSEA, were also reported. Note should be taken of the effect of the degrees of freedom (*df*) on the model fit of TLI and RMSEA (all the models in the study had very low *df*). A CFI value above 0.90 but preferably more than 0.95, and SRMR of preferably less than 0.08 (Hu & Bentler, 1999; Olckers & Van Zyl, 2019) were used. Hu and Bentler (1999) reported cutoffs for TLI and RMSEA at more than 0.95 and less than 0.08 respectively. FD coefficients for each of the adapted measurement models were relevant to ensure the factor scores closely represented the latent variables or constructs of concern. The variables used in the structural models were optimally weighted regression factor scores that represented the latent variables under investigation in the present study. A factor score determinacy value of 0.80 and above was regarded as demonstrating good internal consistency (Wang & Wang, 2020). Correlation results were interpreted as small (*r* = 0.10), medium (*r* = 0.30), and large (*r* = 0.50) (Cohen, 1988). Confidence intervals (CIs) were set at a level of 95% and evaluated in accordance with the guidelines for bootstrap results (i.e. where CIs did not include zero, the indirect effect was regarded as significant) (Zhao et al., 2010). Further, to ensure non-biased indirect effects, the delta method with a sandwich estimator for estimating robust standard errors for non-normal data was used. MLR in Mplus does not allow for bootstrapping to determine the standard errors for non-normal data and therefore, the sandwich estimator

which provides similar estimates as those obtained when using the bootstrapping technique was used (Muthén & Muthén, 1998/2017).

As each student group was nested within one lecturer, multilevel modelling was required (Nezlek, 2011). To justify the use of the multilevel analysis of nested data, the intraclass correlation (ICC) coefficients were calculated. The ICC coefficient examines the proportion of variance of a single variable that can be accounted for at the between-group level (Jak et al., 2014). Thomas and Heck (2001) (see also Jak et al., 2014) recommended ICC values of 0.05 and higher. All predictors were grand mean centred. This was done because the students participating in the study were enrolled in different modules that were facilitated by a specific lecturer, and grand mean centring allowed for the interpretation of the intercept as the expected outcome (Paccagnella, 2006) (i.e. the mean across all the students enrolled in the module facilitated by the specific lecturer). Due to the sparseness of data on level 1 (model of students), regression scores of student engagement per class size were used on the level 2 unit (model of academic staff). Between-cluster variance was estimated using random intercepts. To be noted is Clarke's (2008) simulation results which show that when the average cluster size of balanced and unbalanced data exceeds five observations for two-level models, valid and reliable estimates of all parameters can be obtained.

4.7   Results

This section presents the results relating to the descriptive statistics, the evaluated measurement models, and the regression analyses (path/structural model). It is noted that where this study made mention of mediation or mediation analysis, this was done to test indirect effects.

4.7.1   Descriptive Statistics, Correlations, and Reliabilities

Tables 8 and 9 show the standard deviations, correlations, and skewness/kurtosis of all the variables (as listed in these tables) in the analyses. The data had no missing values. Mardia's multivariate skewness and kurtosis coefficients for the lecturer sample (n = 160; b = 9.72, 69.62) and for the student sample (n = 1 594; b = 4.7, 72.30) were statistically significant, which suggested non-normal data distribution, and which

justified the use of MLR estimation in the study. As reported in Table 9, the results did not support the likelihood of adverse multicollinearity as the scale reliabilities of the variables with high intercorrelations were high ($\omega \geq 0.8$), and the ratio of sample size ($N = 160$) to the number of latent variables (6) exceeded 6:1 (Grewal et al., 2004).

174

Table 8: Descriptive statistics, correlations, skewness and kurtosis of study variables at the within level and the between level (crossover of lecturer engagement to students)

Variable	Skewness	Kurtosis	1	2	3	4	5	FD	ω
1 Lecturers' emotional engagement (between level)	-0.73	-0.06	0.81					0.98	0.94
2 Student–LMX	-0.52	-0.58	-0.02	0.70				0.94	0.87
3 Student engagement	-1.06	2.10	-0.13	0.44*	0.80			0.93	0.87
4 Students' deep-learning approach	-0.19	-0.55	0	0.41*	0.56*	0.63		0.94	0.87
5 Students' surface-learning approach	0.46	-0.15	0	0.03	-0.06	0.19	0.55	0.90	0.81

Student sample, $N = 1\,594$.

Note: FD, Factor score determinacy; ω, McDonald's omega. Underlined values on the diagonal represent the square root of the average variance extracted (AVE) (Fornell & Larcker, 1981).

The variables in the correlation matrix show discriminate validity for all values below the diagonal are lower than the square root of the AVE presented on the diagonal.

Factor scores are Z values with a mean of 0 and a standard deviation of 1.

* statistically significant at $p \leq 0.05$.

Table 9: Descriptive statistics, correlations, skewness and kurtosis of study variables at the within level and the between level (crossover of student engagement to lecturers)

Variable	Skewness	Kurtosis	1	2	3	4	FD	ω
1 Students' engagement	-1.06	2.10	0.70				0.93	0.87
2 Lack of reciprocity	-0.60	-0.63	-0.16	0.75			0.93	0.81
3 Lecturer's emotional engagement	-0.73	-0.06	-0.05	-0.36	0.81		0.98	0.94
4 Psychological well-being	-1.02	0.44	-0.01	-0.27	0.51	0.72	0.96	0.91

Lecturer sample, $N = 160$.

Note: FD, Factor score determinacy; ω, McDonald's omega. Underlined values on the diagonal represent the square root of the AVE (Fornell & Larcker, 1981). The variables in the correlation matrix show discriminate validity for all values below the diagonal are lower than the square root of the AVE presented on the diagonal.

Factor scores are Z values with a mean of 0.

* statistically significant at $p \leq 0.05$.

4.7.2 Testing the Path/Structural Model

The ICC values found were 0.075 for student engagement and 0.095 for student–LMX. These values justified the use of multilevel analyses. Table 10 presents the fit statistics of the multilevel path model of the crossover of academic staff's emotional engagement to students via student–LMX, as well as the statistics of the student sample prior to the crossover effects. The results showed that, when considering CFI and SRMR as the decisive indicators where low degrees of freedom ($df = 2$) were evident, the multilevel path model of the crossover of lecturers' emotional engagement to students via student–LMX (Model 1) provided adequate model fit (CFI = 0.91, SRMR$_{Within}$ = 0.05, SRMR$_{Between}$ = 0.02; TLI = 0.61; RMSEA = 0.18). Table 11 presents the fit statistics of the multilevel path model of the crossover of student engagement to academic staff via lecturers' perceptions of lack of reciprocity, as well as the statistics of the academic staff sample prior to the crossover effects. The multilevel path model of the crossover of student engagement to academic staff via lack of reciprocity (Model 3) was a (just-) identified model which fitted the data well (CFI = 1.00, SRMR$_{Within}$ = 0.00, SRMR$_{Between}$ = 0.02; TLI = 1.00; RMSEA = 0.00). Furthermore, both models without the crossover effects (models 2 and 4) displayed good model fit: student–LMX model (CFI = 0.96, SRMR$_{Within}$ = 0.04, SRMR$_{Between}$ = 0.00; TLI = 0.88; RMSEA = 0.12); lack of reciprocity model (CFI = 0.98, SRMR$_{Within}$ = 0.00, SRMR$_{Between}$ = 0.03; TLI = 0.98; RMSEA = 0.03).

Table 10: Fit statistics of path models (crossover of lecturers' emotional engagement to students via student–LMX)

Model	χ^2	df	*p*-value	CFI	TLI	SRMR$_B$	SRMR$_w$	RMSEA
1. Multilevel model: Student–LMX	99.61	2	0.00	0.91	0.61	0.02	0.05	0.18
2. Student–LMX model (without crossover)	44.05	2	0.00	0.96	0.88	0.00	0.04	0.12

Note: χ2, chi-square statistic; *df*, degrees of freedom; CFI, Comparative fit index; TLI, Tucker-Lewis index; SRMR$_B$, Standardised root mean square residual value for Between; SRMR$_W$, Standardised root mean square residual value for Within; RMSEA, Root mean square error of approximation.

Table 11: Fit statistics of path models (crossover of student engagement to academic staff via lack of reciprocity)

Model	χ^2	df	*p*-value	CFI	TLI	SRMR$_B$	SRMR$_w$	RMSEA
3. Multilevel model: Lack of reciprocity	1.66	2	0.44	1.00	1.00	0.02	0.00	0.00
4. Lack of reciprocity model (without crossover)	2.15	1	0.14	0.98	0.95	0.03	0.00	0.03

Note: χ2, chi-square statistic; *df*, degrees of freedom; CFI, Comparative fit index; TLI, Tucker-Lewis index; SRMR$_B$, Standardised root mean square residual value for Between; SRMR$_W$, Standardised root mean square residual value for Within; RMSEA, Root mean square error of approximation.

To test the hypotheses, the MLR estimator in Mplus was used. Figures 8 and 9 illustrate the results of the multilevel path analysis of the proposed crossover of engagement from lecturer to students and vice versa. It should be noted that, for purposes of reporting the results, significant implies "statistically significant".

To test the first crossover hypotheses, lecturers' emotional engagement was regressed on student–LMX and student engagement, and student–LMX was regressed on student engagement. At the between level, the emotional engagement of lecturers showed an insignificant relationship to student engagement (β = -0.14, p = 0.40). Therefore, hypothesis 1 could not be supported. Hypothesis 2 was also not supported, as results showed a non-significant relationship between the emotional engagement of academic staff and student–LMX (β = -0.02, p = 0.90). At the within level, the direct effect of student–LMX on student engagement (β = 0.44, p < 0.01) was significantly positive (medium effect), providing support for hypothesis 3. To test the indirect effect, unstandardised path coefficients obtained from the Mplus analysis were used. Hypothesis 4 (i.e. student–LMX mediated the positive relationship between the engagement of academic staff and students) was not supported (β = -0.00; p = 0.89; 95% CI [-0.05, 0.04], CIs included zero). Student–LMX explained 20% of the variance in student engagement (R^2 = 0.20).

To test hypotheses 5a and 5b, student engagement was regressed on a deep- and a surface- learning approach. A significantly positive relationship was found between student engagement and a deep-learning approach (β = 0.56, p < 0.01, large effect). A significantly negative relationship was found between student engagement and a surface-learning approach (β = -0.06, p = 0.05, small effect). Therefore, both hypotheses 5a and 5b were supported. Student engagement explained 31% of the variance in a deep-learning approach (R^2 = 0.31), whereas student engagement explained only 0.4% of the variance in a surface-learning approach (R^2 = 0.004), a percentage indicating that it was of almost no practical significance.

For the portion of the model predicting lecturers' emotional engagement (see Figure 9) at the between level, the direct effect of lack of reciprocity on lecturers' emotional engagement (β = -0.38, p < 0.01) was negative and statistically significant (medium effect), providing support for hypothesis 6. Hypothesis 7

178

($\beta = -0.11$, $p = 0.32$) and hypothesis 8 ($\beta = -0.15$, $p = 0.29$) were not supported. Furthermore, the proposed indirect effect of lack of reciprocity in the relationship between the engagement of students and the emotional engagement of academic staff (hypothesis 9) was non-significant ($\beta = 0.15$; $p = 0.31$; 95% CI [-0.14, 0.43], CIs included zero). Lack of reciprocity explained 14% of the variance in emotional engagement ($R^2 = 0.14$).

For the portion of the model predicting psychological well-being (see Figure 9) at the between level, the direct effect of lecturers' emotional engagement ($\beta = 0.51$, $p < 0.01$, large effect) was significantly positive, providing support for hypothesis 10. Emotional engagement explained 26% of the variance in psychological well-being ($R^2 = 0.26$).

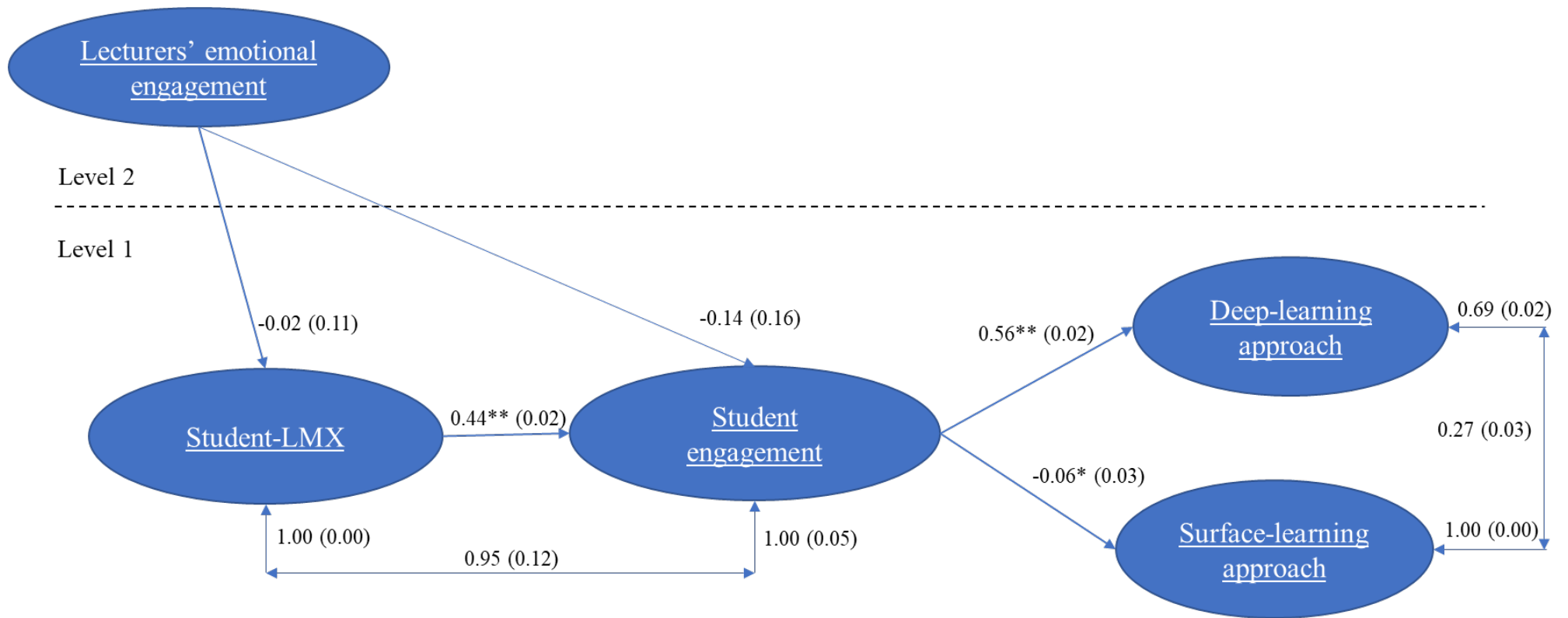*Figure 8: The path/structural model tested (crossover of engagement from lecturer to students)*

Note: ** $p < 0.01$; * $p \leq 0.05$.
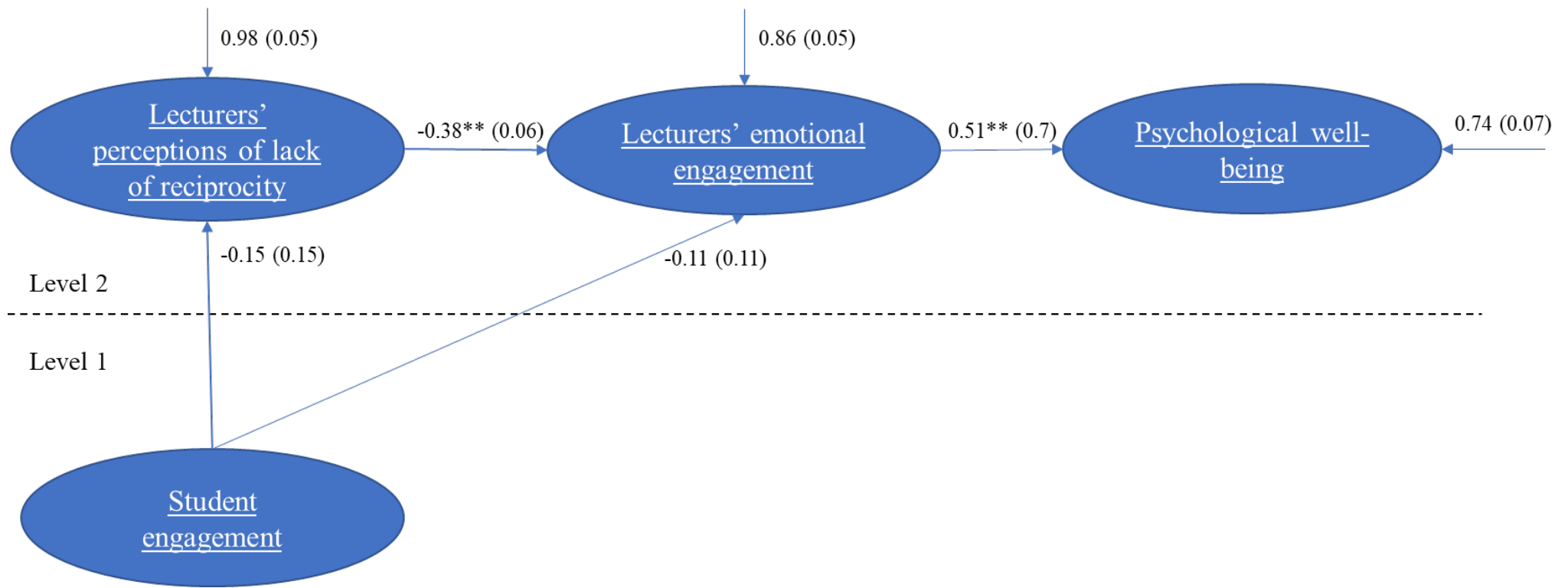
Figure 9: The path/structural model tested (crossover of engagement from students to lecturers)

Note: ** *p* < 0.01; * *p* ≤ 0.05.

181

4.8 Discussion

The present study answered the call of Hagenauer and Volet (2014) for the study of mutual influences among students and academic staff within HE. Accordingly, the purpose of this study was to explore the idea of linkages between the engagement of lecturers and students from a crossover theory perspective, with a particular focus on the positive outcomes associated with the engagement of both academic staff and students.

4.8.1 The Influence of Engagement between Academic Staff and Students

This study operationalised student–LMX as underlying and explaining the crossover process from lecturers to students, and similarly, lack of reciprocity as underlying and explaining the crossover process from students to lecturers. The findings of the study revealed non-significant relationships in respect of the following crossover relationships proposed: between lecturers' emotional engagement and student engagement (hypothesis 1), between lecturers' emotional engagement and student–LMX (hypothesis 2), between student engagement and lecturers' emotional engagement (hypothesis 7), and between student engagement and lecturers' perceptions of lack of reciprocity (hypothesis 8). The results did not provide support for the two indirect effects of student–LMX and lack of reciprocity as mediators in the crossover process (hypotheses 4 and 9). These findings were inconsistent with findings in similar previous research that showed crossover from the teacher/lecturer to the student through mediators such as enthusiastic teaching, clarity in teaching (Warwas & Helm, 2017), and emotional contagion (Gilal et al., 2019). The absence of statistically significant effects between lecturer and students gives the impression that crossover might depend on the context in which the instructional interaction takes place (e.g. lecturer–student relationships during a global pandemic, which are characterised by remote or blended instructional interactions). Bakker and Xanthopoulou (2009) stated that the engagement of the actor crosses over to the partner in cases where there are frequent interactions and communication, and that this, in turn, enhances the partner's performance. Similarly, Warwas and Helm (2017) found that the observable characteristics of teachers, such as enthusiastic teaching behaviour, allowed for the crossover of enjoyment to students. In a longitudinal study, Wirtz et al. (2017) did not find a direct crossover of emotional exhaustion from the

182

employees to their leader. They explained this finding by arguing that the power distance and limited interactions between the employees and the leader might have created an emotional distance that hindered the crossover process. Similarly, the nature of the interactions between lecturers and students during the COVID-19 pandemic (when teaching was mainly virtual—video voice-over lecture recordings—or blended) might have caused a greater emotional distance between lecturers and students, which hindered crossover. Furthermore, the qualitatively different and possibly limited instructional interactions during the pandemic might have inhibited the direct effect of lecturers' emotional engagement on students via LMX as well as the influence of student engagement on lecturers via reciprocity.

Although the results did not reveal crossover effects from academic staff to students and vice versa, the findings did show that students' perceptions of high-quality relationships with lecturers (student–LMX) were significantly related to their engagement (hypothesis 3). In alignment with the premise of LMX theory, these results confirmed that the behaviour and attributes of leaders (lecturers in this study) influenced subordinates (students in this study) where leaders/lecturers and subordinates/students regarded themselves as belonging to a group (Cropanzano & Mitchell, 2005; Farr-Wharton et al., 2018). These findings further supported work by other scholars who found significant positive associations between student–LMX and engagement (Farr-Wharton et al., 2018). As regards academic staff, the results revealed that their perceptions of lack of reciprocity were negatively associated with their emotional engagement (hypothesis 6), supporting previous findings that lack of reciprocity within the lecturer–student relationship results in educators feeling emotionally exhausted and depleted (Van Horn et al., 2001).

4.8.2 Positive Outcomes of the Engagement of Academic Staff and Students

Apart from studying the crossover of engagement among academic staff and students, this study also explored the positive outcomes associated with the engagement of both academic staff and students. The purpose of any learning, including online learning, is to broaden the learners' understanding and knowledge of a subject (Morgan-Thomas & Dudau, 2019). Findings from the study revealed that students' engagement was significantly related to their learning approaches. The results showed that student engagement was

183

positively related to a deep-learning approach (hypothesis 5a), and negatively related to a surface-learning approach (hypothesis 5b). These findings suggest that when students are engaged, they tend to be intrinsically motivated to understand the meaning of the material they study and not to opt for rote-learning strategies (Borrendon et al., 2011; Floyd et al., 2009).

In alignment with numerous studies that have highlighted the well-being benefit of engagement (e.g. Jena et al., 2018; Rusu & Colomeischi, 2020; Shuck & Reio, 2014), the findings of the present study revealed a positive significant relationship between the emotional engagement and psychological well-being of academic staff (hypothesis 10).

4.9   Limitations of the Study and Recommendation Further Research

This study collected data from respondents at only one South African university, which created a limitation in terms of the generalisability of the findings. It is recommended that future studies should include populations of academic staff and students from HE institutions in other provinces of South Africa. In doing that, studies could also address the aspect of obtaining a bigger level 2 (i.e. academic staff) sample size. A second limitation was that the study employed a cross-sectional design, and measured all variables using self-report instruments, as a result of which the study was limited in terms of testing the causality underlying the research hypotheses and was subjected to the possibility of common method bias (Rindfleisch et al., 2008). Longitudinal designs should be considered in future research to better determine causality in terms of proposed crossover interactions. Furthermore, given the lack of significance of the crossover relationship found in this study, it may be interesting for future studies to explore the role of other connecting variables that may shape engagement among academic staff and students.

4.10   Implications of the Research

Gable and Haidt (2005) expressed the hope that future studies in the field of positive psychology will improve functioning in the workplace, schools, and government. It is believed that the findings of the

184

present study relating to aspects such as engagement in a HE context, students' learning approaches and lecturers' psychological well-being, could assist in improving the functioning of HE institutions.

The positive psychological construct of engagement has been identified as an essential part of human resource management and has been described as one of the most critical talent development initiatives (Arrowsmith & Parker, 2013; Kwon & Park, 2019; Shuck & Wollard, 2010). Since the seminal work of Kahn (1990), there has been a growing interest in engagement in the domain of both work (employees' engagement) and education (student engagement) (Arrowsmith & Parker, 2013; Bailey et al., 2017; James & Hudspeth, 2017; Shuck et al., 2017), with numerous studies highlighting its importance and contribution in supporting optimal functioning within organisations and institutions of learning (Bailey et al., 2017; Boulton et al., 2019; Bowden et al., 2021; Kotera & Ting, 2019). In this regard, the present study aimed to contribute to the existing body of knowledge by exploring the implications of mutual influences among academic staff and students for engagement and the positive outcomes of engagement for both groups. In the context of the challenges that organisations the world over have experienced and are still experiencing as a result of the COVID-19 pandemic, it seems even more imperative to better understand and improve engagement. Scholars have advocated the need for educational institutions to recognise the importance of lecturers in providing student support and enhancing student well-being (Eloff et al., 2021). The present study aimed to explore these needs by, for example, focusing on the influence of student–LMX on student engagement. The findings revealed that students' perceptions of high-quality relationships with their lecturer (student–LMX) had a significant influence on student engagement, and, further, that lecturers' perceptions of lack of reciprocity from the student group had a significant negative impact on their emotional engagement. The study's findings seem to align with the findings of Myers (2006) that, in cases of perceived in-group relationships as per LMX processes, students' communication with instructors is motivated by the hope to develop interpersonal relationships (relational), the desire to demonstrate an understanding of course material (participatory), the hope to make a good impression (sycophantic), and the desire to attempt to learn more (functional). The findings of the present study highlighted the importance of the lecturer–student exchange relationship in addressing engagement and well-being-related aspects in

185

respect of academic staff and students, especially when circumstances necessitated mainly online or remote student–lecturer interactions. University management might find it worthwhile to consider aspects that could support and better equip lecturers to develop high-quality exchange relationships with their students. A suggestion that Farr-Wharton et al. (2018) offered is to support lecturers who do academic research because, according to them, research-active lecturers tend to be more able to develop high-quality student relationships and to be content experts (leaders) who can give guidance to students (followers) who are novice researchers.

In exploring the processes or conditions that promote the optimal psychological functioning of institutions and people, this study further revealed that engagement played a key role in supporting psychological well-being among academic staff and in fostering a deep approach to learning among students. In the light of these findings, university leaders could consider designing policies and practices that foster engagement, as engagement supports well-being among employees and promotes deep approaches to learning among students. To summarise, university leaders should recognise the importance of identifying and cultivating engagement as a holistic approach and a core institutional strategy.

4.11   Conclusion

This study answered the call of scholars to address the scarcity of studies investigating mutual influences between students and academic staff within HE (Hagenauer & Volet, 2014), as well as the scarcity of studies on the crossover of positive emotions and constructs (Butt et al., 2019). Drawing on crossover theory and the founding principles of the theory on personal engagement, the study proposed that the mutual influences between lecturers and students had implications for their engagement. The findings highlighted the positive influence of high student–LMX on student engagement, and the negative impact on lecturers' emotional engagement of their experiences and observations regarding students' lack of reciprocity. The research aimed to inform policy-makers in HE institutions on how to approach aspects such as the engagement of both academic staff and students in a collective manner. This approach would allow for the

186

improvement of well-being among employees and the cultivation of a culture of life-long learning among students, which would hold significant benefits.

187

References

Aharony, N. (2006). The use of deep and surface learning strategies among students learning English as a foreign language in an Internet environment. *British Journal of Educational Psychology, 76*(4), 851–866. https://doi.org/10.1348/000709905X79158

Arrowsmith, J., & Parker, J. (2013). The meaning of "employee engagement" for the values and roles of the HRM function. *International Journal of Human Resource Management, 24*(14), 2692–2712.

Axelson, R. D., & Flick, A. (2011). Defining student engagement. *Change: The Magazine of Higher Learning*, *43*(1), 38–43. https://doi.org/10.1080/00091383.2011.533096

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews, 19*(1), 31–53. https://doi.org/10.1111/ijmr.12077

Bakker, A. B. (2005). Flow among music teachers and their students: The crossover of peak experiences. *Journal of Vocational Behavior, 66*(1), 26–44. https://doi.org/10.1016/j.jvb.2003.11.001

Bakker, A. B. (2017). Strategic and proactive approaches to work engagement. *Organizational Dynamics, 46*(2), 67–75. https://doi.org/10.1016/j.orgdyn.2017.04.002

Bakker, A. B., & Demerouti, E. (2009). The crossover of work engagement between working couples. A closer look at the role of empathy. *Journal of Managerial Psychology*, *24*(3), 220–236. https://doi.org/10.1108/02683940910939313

Bakker, A. B., Demerouti, E., & Dollard, M. F. (2008). How job demands affect partners' experience of exhaustion: Integrating work–family conflict and crossover theory. *Journal of Applied Psychology, 93*(4), 901–911. https://doi.org/10.1037/0021-9010.93.4.901

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2005). The crossover of burnout and work engagement among working couples. *Human Relations, 58*(5), 661–689. https://doi.org/10.1177/0018726705055967

Bakker, A. B., Schaufeli, W. B., Sixma, H. J., Bosveld, W., & Van Dierendonck, D. (2000). Patient demands, lack of reciprocity and burnout: A five-year longitudinal study among general

188

practitioners. *Journal of Organizational Behavior, 21*(4), 425–441. https://doi.org/10.1002/(SICI)1099-1379(200006)21:4%3C425::AID-JOB21%3E3.0.CO;2-#

Bakker, A. B., Van Emmerik, H., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations, 33*(4), 464–489. https://doi.org/10.1177/0730888406291310

Bakker, A. B., Vergel, A. I. S., & Kuntze, J. (2015). Student engagement and performance: A weekly diary study on the role of openness. *Motivation and Emotion, 39*(1), 49–62. https://doi.org/10.1007/s11031-014-9422-5

Bakker, A. B., Westman, M., & Van Emmerik, I. J. H. (2009). Position paper advancements in crossover theory. *Journal of Managerial Psychology, 24*(3), 206–219. https://doi.org/10.1108/02683940910939304

Bakker, A. B., & Xanthopoulou, D. (2009). The crossover of daily work engagement: Test of an actor–partner interdependence model. *Journal of Applied Psychology, 94*(6), 1562-1571. https://doi.org/10.1037/a0017525

Becker, E. S., Götz, T., Morger, V., & Ranellucci, J. (2014). The importance of teachers' emotions and instructional behavior for their students' emotions—An experience sampling analysis. *Teaching and Teacher Education*, *43*, 15–26. https://doi.org/10.1016/j.tate.2014.05.002

Bell, B. A., Ferron, J. M., & Kromrey, J. D. (2008). Cluster size in multilevel models: The impact of sparse data structures on point and interval estimates in two-level models. *Joint Statistical Meetings Proceedings* [Section on Survey Research Methods], 1122-1129. Institute for Social and Economic Research, University of Essex. http://www.asasrms.org/Proceedings/y2008/Files/300933.pdf

Bevan, S. J., Chan, C. W., & Tanner, J. A. (2014). Diverse assessment and active student engagement sustain deep learning: A comparative study of outcomes in two parallel introductory biochemistry courses. *Biochemistry and Molecular Biology Education*, *42*(6), 474–479. https://doi.org/10.1002/bmb.20824

Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology, 71*(1), 133-149. https://doi.org/10.1348/000709901158433

189

Blais, M. A., Lenderking, W. R., Baer, L., deLorell, A., Peets, K., Leary, L., & Burns, C. (1999). Development and initial validation of a brief mental health outcome measure. *Journal of Personality Assessment, 73*(3), 359–373. https://doi.org/10.1207/S15327752JPA7303_5

Borrendon, L., Deffayet, S., Baker, A. C., & Kolb, D. (2011). Enhancing deep learning: Lessons from the introduction of learning teams in management education in France. *Journal of Management Education, 35*(3) 324–350. https://doi.org/10.1177/1052562910368652

Boulton, C. A., Hughes, E., Kent, C., Smith, J. R., & Williams, H. T. P. (2019). Student engagement and wellbeing over time at a higher education institution. *PLoS ONE, 14*(11), 1–20. https://doi.org/10.1371/journal.pone.0225770

Bowden, J. L.-H., Tickle, L., & Naumann, K. (2021). The four pillars of tertiary student engagement and success: A holistic measurement approach. *Studies in Higher Education, 46*(6), 1207–1224. https://doi.org/10.1080/03075079.2019.1672647

Brandel, M., Vescovelli, F., & Ruini, C. (2017). Beyond Ryff's scale: Comprehensive measures of eudaimonic well-being in clinical populations. A systematic review. *Clinical Psychology and Psychotherapy, 24*(6), O1524–O1546. https://doi.org/10.1002/cpp.2104

Burch, G. F., Heller, N. A., Burch, J. J., Freed, R., & Steed, S. A. (2015). Student engagement: Developing a conceptual framework and survey instrument. *Journal of Education for Business, 90*(4), 224–229. https://doi.org/10.1080/08832323.2015.1019821

Burgess, L. G., Riddell, P. M., Fancourt, A., & Murayama, K. (2018). The influence of social contagion within education: A motivational perspective. *Mind, Brain, and Education, 12*(4), 164–174. https://doi.org/10.1111/mbe.12178

Burns, R. A., & Machin, M. A. (2009). Investigating the structural validity of Ryff's psychological well-being scales across two samples. *Social Indicators Research, 93*(2), 359–375. https://doi.org/10.1007/s11205-008-9329-1

Butt, H. P., Tariq, H., Weng, Q., & Sohail, N. (2019). I see you in me, and me in you: The moderated mediation crossover model of work passion. *Personnel Review, 48*(5), 1209–1238. https://doi.org/10.1108/PR-05-2018-0176

190

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105*(3), 456–466. https://doi.org/10.1037/0033-2909.105.3.456

Carlson, D. S., Ferguson, M., Perrewé, P., & Whitten, D. (2011). The fallout from abusive supervision: An examination of subordinates and their partners. *Personnel Psychology, 64*, 937–961. https://doi.org/10.1111/j.1744-6570.2011.01232.x

Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work engagement: A quantitative review and test of its relations with task and contextual performance. *Personnel Psychology, 64*(1), 89–136. https://doi.org/10.1111/j.1744-6570.2010.01203.x

Cilliers, F., & Flotman, A.-P. (2016). The psychological well-being manifesting among master's students in Industrial and Organisational Psychology. *SA Journal of Industrial Psychology, 42*(1), a1323. https://doi.org/10.4102/sajip.v42i1.1323

Clarke, P. (2008). When can group-level clustering be ignored? Multilevel models versus single-level models with sparse data. *Journal of Epidemiology and Community Health, 62*(8), 752–758. https://doi.org/10.1136/jech.2007.060798

Coetzee, S. E., & Rothmann, S. (2004). An adapted model of burnout for employees at a higher education institution in South Africa. *SA Journal of Industrial Psychology, 30*(3), 29–40. https://doi.org/10.4102/sajip.v30i3.157

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Covell, K., McNeil, J. K., & Howe, R. B. (2009). Reducing teacher burnout by increasing student engagement. A children's rights approach. *Journal of School Psychology International, 30*(3), 282–290. https://doi.org/10.1177/0143034309106496

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*(6), 874–900. https://doi.org/10.1177/0149206305279602

Culbertson, S. S., Fullagar, C. J., Simmons, M. J., & Zhu, M. (2015). Contagious flow: Antecedents and consequences of optimal experience in the classroom. *Journal of Management Education*, *39*(3), 1–31. https://doi.org/10.1177/1052562914545336

De-la-Calle-Durán, M.-C., & Rodríguez-Sánchez, J.-L. (2021). Employee engagement and well-being in times of COVID-19: A proposal of the 5Cs model. *International Journal of Environmental Research and Public Health, 18*(10), 5470–5485. https://doi.org/10.3390/ijerph18105470

Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2005). Spillover and crossover of exhaustion and life satisfaction among dual-earner parents. *Journal of Vocational Behavior, 67*, 266–289. https://doi.org/10.1016/j.jvb.2004.07.001

Dikkers, J. S. E., Geurts, S. A. E., Kinnunen, U., Kompier, M. A. J., & Taris, T. W. (2007). Personality and social sciences: Crossover between work and home in dyadic partner relationships. *Scandinavian Journal of Psychology, 48*(6), 529–538. https://doi.org/10.1111/j.1467-9450.2007.00580.x

Donnison, S., & Penn-Edwards, S. (2012). Focusing on first year assessment: Surface or deep approaches to learning? *International Journal of the First Year in Higher Education, 3*(2), 9–20. https://doi.org/10.5204/intjfyhe.v3i2.127

Eloff, I., O'Neil, S., & Kanengoni, H. (2021). Students' well-being in tertiary environments: Insights into the (unrecognised) role of lecturers. *Teaching in Higher Education*, 1-22. https://doi.org/10.1080/13562517.2021.1931836

Farr-Wharton, B., Charles, M. B., Keast, R., Woolcott, G., & Chamberlain, D. (2018). Why lecturers still matter: The impact of lecturer–student exchange on student engagement and intention to leave university prematurely. *Higher Education, 75*(1), 167–185. https://doi.org/10.1007/s10734-017-0190-5

Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). The effect of engagement and perceived course value on deep and surface learning strategies. *Informing Science: The International Journal of an Emerging Transdiscipline, 12*, 181–190. https://doi.org/10.28945/435

Fourie, C. M. (2003). Deep learning? What deep learning? *South African Journal of Higher Education, 17*(1), 123–131. https://doi.org/10.4314/sajhe.v17i1.25201

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. https://doi.org/10.2307/3151312

Frenzel, A. C., Becker-Kurz, B., Pekrun, R., Goetz, T., & Lüdtke, O. (2018). Emotion transmission in the classroom revisited: A reciprocal effects model of teacher and student enjoyment. *Journal of Educational Psychology, 110*(5), 628–639. https://doi.org/10.1037/edu0000228

Fullan, M., & Langworthy, M. (2013). *Towards a new end: New pedagogies for deep learning*. Collaborative Impact. http://www.newpedagogies.nl/images/towards_a_new_end.pdf

Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology, 9*(2), 103–110. https://doi.org/10.1037/1089-2680.9.2.103

Gilal, F. G., Channa, N. A., Gilal, N. G., Gilal, R. G., & Shah, S. M. M. (2019). Association between a teacher's work passion and a student's work passion: A moderated mediation model. *Psychology Research and Behavior Management, 12*, 889–900. https://doi.org/10.2147/PRBM.S212004

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader–member exchange (LMX) theory of leadership over 25 years: Applying multi-level, multi-domain perspective. *Leadership Quarterly*, *6*(2), 219-247. https://doi.org/10.1016/1048-9843(95)90036-5

Grewal, R., Cote, J. A., & Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: Implications for theory testing. *Marketing Science*, *23*(4), 519–529. https://doi.org/10.1287/mksc.1040.0070

Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M., & Voelpel, S. C. (2017). How leaders affect followers' work engagement and performance: Integrating leader−member exchange and crossover theory. *British Journal of Management, 28*(2), 299–314. https://doi.org/10.1111/1467-8551.12214

Hagenauer, G., & Volet, S. E. (2014). Teacher–student relationship at university: An important yet under-researched field. *Oxford Review of Education, 40*(3), 370–388. https://doi.org/10.1080/03054985.2014.921613

Hakanen, J. J., Perhoniemi, R., & Bakker, A. B. (2014). Crossover of exhaustion between dentists and dental nurses. *Stress and Health, 30*, 110-121

Howe, G., Levy, M., & Caplan, R. (2004). Job loss and depressive symptoms in couples: Common stressors, stress transmission, or relationship disruption? *Journal of Family Psychology, 18*(4), 639–50. https://doi.org/10.1037/0893-3200.18.4.639

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughes, C. (2020). COVID-19 and the opportunity to design a more mindful approach to learning. *Prospects, 49*, 69–72. https://doi.org/10.1007/s11125-020-09492-z

Huhtala, M., Tolvanen, A., Mauno, S., & Feldt, T. (2015). The associations between ethical organizational culture, burnout, and engagement: A multilevel study. *Journal of Business Psychology, 30*(2), 399–414. https://doi.org/10.1007/s10869-014-9369-2

Jackson, L. T. B., Rothmann, S., & Van de Vijver, F. J. R. (2006). A model of work-related well-being for educators in South Africa. *Stress and Health, 22*(4), 263–274. https://doi.org/10.1002/smi.1098

Jak, S., Oort, F. J., & Dolan, C. V. (2014). Measurement bias in multilevel data. *Structural Equation Modeling, 21*(1), 31–39. https://doi.org/10.1080/10705511.2014.856694

Jamal, M. T., Anwar, I., Khan, N. A., & Saleem, I. (2021). Work during COVID-19: Assessing the influence of job demands and resources on practical and psychological outcomes for employees. *Asia-Pacific Journal of Business Administration*, *13*(3), 293–319. https://doi.org/10.1108/APJBA-05-2020-0149

James, P., & Hudspeth, C. (2017). How do you take learning beyond the classroom in an interdisciplinary first-year seminar? *New Directions for Teaching and Learning*, (151), 79–95. https://doi.org/10.1002/tl.20250

Jena, L. K., Pradhan, S., & Panigrahy, N. P. (2018). Pursuit of organisational trust: Role of employee engagement, psychological well-being and transformational leadership. *Asia-Pacific Management Review, 23*(3), 227–234. https://doi.org/10.1016/j.apmrv.2017.11.001

Joo, B.-K., Zigarmi, D., Nimon, K., & Shuck, B. (2017). Work cognition and psychological well-being: The role of cognitive engagement as a partial mediator. *Journal of Applied Behavioral Science, 53*(4), 446–469. https://doi.org/10.1177/0021886316688780

Kahn, P. E. (2014). Theorising student engagement in higher education. *British Educational Research Journal, 40*(6), 1005–1018. https://doi.org/10.1002/berj.3121

Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. https://doi.org/10.5465/256287

Katz, J., Beach, S., & Joiner, T. (1999). Contagious depression in dating couples. *Journal of Social and Clinical Psychology*, *18*(1), 1–13. https://doi.org/10.1521/jscp.1999.18.1.1

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486–507. https://doi.org/10.1177/0049124114543236

Kim, W., Kolb, J. A., & Kim, T. (2012). The relationship between work engagement and performance: A review of empirical literature and a proposed research agenda. *Human Resource Development Review, 12*(3), 248–276. https://doi.org10.1177/1534484312461635

Klem, A. M., & Connell, J. P. (2004). Relationships matter: Linking teacher support to student engagement and achievement. *Journal of School Health, 74*(7), 262–273. https://doi.org/10.1111/j.1746-1561.2004.tb08283.x

Kotera, Y., & Ting, S. (2019). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction*, *19*, 227–239. https://doi.org/10.1007/s11469-019-00169-z

Kwon, K., & Park, J. (2019). The life cycle of employee engagement theory in HRD research. *Advances in Developing Human Resources, 21*(3), 352–370. https://doi.org/10.1177/1523422319851443

Lawson, M. A., & Lawson, H. A. (2013). New conceptual frameworks for student engagement research, policy, and practice. *Review of Educational Research, 83*(3), 432–479. https://doi.org/10.3102/0034654313480891

Li, Y., Wang, Z., Yang, L.-Q., & Liu, S. (2016). The crossover of psychological distress from leaders to subordinates in teams: The role of abusive supervision, psychological capital, and team performance. *Journal of Occupational Health Psychology, 21*(2), 142–153. https://doi.org/10.1037/a0039960

195

Li, J., Zhang, J., & Yang, Z. (2017). Associations between a leader's work passion and an employee's work passion: A moderated mediation model. *Frontiers in Psychology, 8*, 1447–1459. https://doi.org/10.3389/fpsyg.2017.01447

Liu, D., Chen, Y., & Li, N. (2021). Tackling the negative impact of COVID-19 on work engagement and taking charge: A multi-study investigation of frontline health workers. *Journal of Applied Psychology, 106*(2), 185–198. https://doi.org/10.1037/apl0000866

Loiacono, E., & Wilson, E. V. (2020). Do we truly sacrifice truth for simplicity: Comparing complete individual randomization and semi-randomized approaches to survey administration. *AIS Transactions on Human-Computer Interaction*, *12*(2), 45–69. https://doi.org/10.17705/1thci.00128

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, *11*(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2

Mandernach, B. J. (2015). Assessment of student engagement in higher education: A synthesis of literature and assessment tools. *International Journal of Learning, Teaching and Educational Research, 12*(2), 1–14.

McNeish, D., An, J., & Hancock, G. R. (2018). The thorny relation between measurement quality and fit index cut-offs in latent variable models. *Journal of Personality Assessment*, *100*(1), 43–52. https://doi.org/10.1080/00223891.2017.1281286

Moodley, P., & Singh, R. J. (2015). Addressing student dropout rates at South African universities. *Alternation Special Edition, 17*, 91–115.

Moos, R. H. (1984). Context and coping: Toward a unifying conceptual framework. *American Journal of Community Psychology, 12*(1), l–36. https://doi.org/10.1007/BF00896933

Morgan-Thomas, A., & Dudau, A. (2019). Of possums, hogs, and horses: Capturing the duality of student engagement in elearning. *Academy of Management Learning & Education*, *18*(4), 564–580. https://doi.org/10.5465/amle.2018.0029

Mendoza, N. B., & King, R. B. (2020). The social contagion of student engagement in school. *School Psychology International, 41*(5), 454–474. https://doi.org/10.1177/0143034320946803

Muñoz-García, A., & Villena-Martínez, D. (2021). Influences of learning approaches, student engagement, and satisfaction with learning on measures of sustainable behavior in a social sciences student sample. *Sustainability, 13*(2), 541. https://doi.org/10.3390/su13020541

Munyon, T. P., Breaux, D. M., Rogers, L. M., Perrewé, P. L., & Hochwarter, W. A. (2009). Mood crossover and relational reciprocity. *Career Development International, 14*(5), 408–427. https://doi.org/10.1108/13620430910989825

Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén. (Original work published 1998).

Myers, S. A. (2006). Using leader–member exchange theory to explain students' motives to communicate. *Communication Quarterly*, *54*(3), 293–304. https://doi.org/10.1080/01463370600878008

Nezlek, J. B. (2011). *Multilevel modeling for social and personality psychology*. Sage. https://doi.org/10.4135/9781446287996

Olckers, C., & Van Zyl, L. E. (2019). Psychometric properties of the Psychological Ownership Questionnaire. *Australian Journal of Psychology, 71*(2), 127–136. https://doi.org/10.1111/ajpy.12232

Olpak, Y. Z., & Korucu, A. T. (2016). Investigation of the relationship between learning approaches and academic engagement of teacher candidates. *Journal of Learning and Teaching in Digital Age, 1*(1), 55–62.

Paccagnella, O. (2006). Centering or not centering in multilevel models? The role of the group mean and the assessment of group effects. *Evaluation Review, 30*(1), 66–85. https://doi.org/10.1177/0193841X05275649

Pham-Thai, N., McMurray, A. J., Muenjohn, N., & Muchiri, M. (2018). Job engagement in higher education. *Personnel Review, 47*(4), 951–967. https://doi.org/10.1108/PR-07-2017-0221

Peeters, M. C. W., Arts, R., & Demerouti, E. (2016). The crossover of job crafting between coworkers and its relationship with adaptivity. *European Journal of Work and Organizational Psychology, 25*(6), 819–832. https://doi.org/10.1080/1359432X.2016.1160891

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Rana, S., Ardichvili, A., & Tkachenko, O. (2014). A theoretical model of the antecedents and outcomes of employee engagement: Dubin's method. *Journal of Workplace Learning, 26*(3/4), 249–266. https://doi.org/10.1108/JWL-09-2013-0063

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment, 95*(2), 129–140. https://doi.org/10.1080/00223891.2012.725437

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *Academy of Management Journal, 53*(3), 617–635. https://doi.org/10.5465/amj.2010.51468988

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research, 45*(3), 261–279. https://doi.org/10.1509/jmkr.45.3.261

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership & Organization Development Journal, 31*(4), 324–336. https://doi.org/10.1108/01437731011043348

Rofcanin, Y., Heras, M. L., Bosch, M. J., Wood, G., & Mughal, F. (2019). A closer look at the positive crossover between supervisors and subordinates: The role of home and work engagement. *Human Relations, 72*(11), 1776–1804. https://doi.org/10.1177/0018726718812599

Roth, G., Assor, A., Kanat-Maymon, Y., & Kaplan, H. (2007). Autonomous motivation for teaching: How self-determined teaching may lead to self-determined learning. *Journal of Educational Psychology, 99*(4), 761–774. https://doi.org/10.1037/0022-0663.99.4.761

198

Rusu, P. P., & Colomeischi, A. A. (2020). Positivity ratio and well-being among teachers. The mediating role of work engagement. *Frontiers in Psychology, 11*(1608), 1–10. https://doi.org/10.3389/fpsyg.2020.01608

Ryff, C. D. (2013). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics, 83*(1), 10–28. https://doi.org/10.1159/000353263

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology, 21*(7), 600–619. https://doi.org/10.1108/02683940610690169

Salanova, M., Schaufeli, W. B., Martínez, I., & Breso, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study burnout and engagement. *Anxiety, Stress and Coping, 23*(1), 53–70. DOI: 10.1080/10615800802609965

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B (2002). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies, 3*, 71–92. https://doi.org/10.1023/A:1015630930326

Schaufeli, W. B., Van Dierendonck, D., & Van Gorp, K. (1996). Burnout and reciprocity: Toward a dual-level social exchange model. *Work & Stress, 10*(3), 225–237. https://doi.org/10.1080/02678379608256802

Schreiber, B., & Yu, D. (2016). Exploring student engagement practices at a South African university: Student engagement as reliable predictor of academic performance. *South African Journal of Higher Education, 30*(5), 157–175. https://doi.org/10.20853/30-5-593

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421. https://doi.org/10.1037/0003-066X.60.5.410

Shen, B., McCaughtry, N., Martin, J., Garn, A., Kulik, N., & Fahlman, M. (2015). The relationship between teacher burnout and student motivation. *British Journal of Educational Psychology*, *85*(4), 519–532. https://doi.org/10.1111/bjep.12089

Shuck, B. (2011). Four emerging perspectives of employee engagement: An integrative literature review. *Human Resources Development Review, 10*(3), 304–328. https://doi.org/10.1177/1534484311410840

Shuck, B., Algaraja, M., Rose, K., Owen, J., Osam, K., & Bergman, M. (2017). The health-related upside of employee engagement: Exploratory evidence and implications for theory and practice. *Performance Improvement Quarterly, 30*(3), 165–178. https://doi.org/10.1002/piq.21246

Shuck, B., & Reio, T. G. (2014). Employee engagement and well-being: A moderation model and implications for practice. *Journal of Leadership & Organizational Studies, 21*(1), 43–58. https://doi.org/10.1177/1523422311431153

Shuck, B., & Wollard, K. (2010). Employee engagement and HRD: A seminal review of the foundations. *Human Resource Development Review, 9*(1), 89–110. https://doi.org/10.1177/1534484309353560

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2010). Staying well and engaged when demands are high: The role of psychological detachment. *Journal of Applied Psychology, 95*(5), 965–976. https://doi.org/10.1037/a0020032

Tayfur, O., & Arslan, M. (2013). The role of lack of reciprocity, supervisory support, workload and work–family conflict on exhaustion: Evidence from physicians. *Psychology, Health & Medicine, 18*(5), 564–575. https://doi.org/10.1080/13548506.2012.756535

Ten Brummelhuis, L. L., Haar, J. M., & Roche, M. (2014). Does family life help to be a better leader? A closer look at crossover processes from leaders to followers. *Personnel Psychology, 67*(4), 917–949. https://doi.org/10.1111/peps.12057

Tikkanen, L., Pyhältö, K., Soini, T., & Pietarinen, J. (2021). Crossover of burnout in the classroom—Is teacher exhaustion transmitted to students? *International Journal of School & Education Psychology, 9*(4), 326–339. https://doi.org/10.1080/21683603.2021.1942343

Thomas, S. L., & Heck, R. H. (2001). Analysis of large-scale secondary data in higher education research: Potential perils associated with complex sampling designs. *Research in Higher Education*, *42*, 517–540. https://doi.org/10.1023/A:1011098109834

Van Horn, J. E., Schaufeli, W. B., & Enzmann, D. (1999). Teacher burnout and lack of reciprocity. *Journal of Applied Social Psychology, 29*(1), 91–108. https://doi.org/10.1111/j.1559-1816.1999.tb01376.x

Van Horn, J. E., Schaufeli, W. B., & Taris, T. W. (2001). Lack of reciprocity among Dutch teachers: Validation of reciprocity indices and their relation to stress and well-being. *Work & Stress, 15*(3), 191–213. https://doi.org/10.1080/02678370110066571

Van Mierlo, H., & Bakker, A. B. (2018). Crossover of engagement in groups. *Career Development International, 23*(1), 106–118. https://doi.org/10.1108/CDI-03-2017-0060

Wang, J., & Wang, X. (2020). *Structural equation modeling: Applications using Mplus* (2nd ed.). John Wiley & Sons. https://doi.org/10.1002/9781119422730

Warwas, J., & Helm, C. (2017). Enjoying working and learning in vocational education: A multilevel investigation of emotional crossover and contextual moderators. *Empirical Research in Vocational Education and Training, 9*(11), 1–20. https://doi.org/10.1186/s40461-017-0055-2

Waterman, A. S. (2013). The humanistic psychology–positive psychology divide: Contrasts in philosophical foundations. *American Psychologist, 68*(3), 124–133. https://doi.org/10.1037/a0032168

West, L., & Halvorson, D. (2019). Student engagement and deep learning in the first-year international relations classroom: Simulating a UN Security Council debate on the Syrian crisis. *Journal of Political Science Education*, *17*(2), 173–190. https://doi.org/10.1080/15512169.2019.1616298

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54*(6), 717–751. https://doi.org/10.1177/0018726701546002

Westman, M., & Bakker, A. B. (2008). Crossover of burnout among health care professionals. In J. Halbesleben (Ed.), *Stress and burnout in health care* (pp. 111-125). Nova Science.

Westman, M., Brough, P., & Kalliath, T. (2009). Expert commentary on work–life balance and crossover of emotions and experiences: Theoretical and practice advancements. *Journal of Organizational Behavior, 30*(5), 587–595. https://doi.org/10.1002/job.616

Westman, M., & Etzion, D. (1995). Crossover of stress, strain and resources from one spouse to another. *Journal of Organizational Behavior, 16*(2), 169–181. https://doi.org/10.1002/job.4030160207

Westman, M., Vinokur, A. D., Hamilton, V. L., & Roziner, I. (2004). Crossover of marital dissatisfaction during military downsizing among Russian army officers and their spouses. *Journal of Applied Psychology, 89*(5), 769–779. https://doi.org/10.1037/0021-9010.89.5.769

Wirtz, N., Rigotti, T., Otto, K., & Loeb, C. (2017). What about the leader? Crossover of emotional exhaustion and work engagement from followers to leaders. *Journal of Occupational Health Psychology, 22*(1), 86–97. https://doi.org/10.1037/ocp0000024

Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology, 5*(1), 84-94. https://doi.org/10.1037/1076-8998.5.1.84

Wright, T. A., & Hobfoll, S. E. (2004). Commitment, psychological well-being and job performance: An examination of conservation of resources (COR) theory and job burnout. *Journal of Business and Management, 9*(4), 389–406. https://doi.org/10.1016/j.orgdyn.2004.09.002

Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257

5.   CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1   Introduction

Macey and Schneider (2008) asserted that making changes to prices or products might be easy, but that it is another thing entirely to create an engaged workforce. Considering the nature of academic work in higher education (HE), scholars have stressed the importance of measures that increase work engagement and decrease burnout (Barkhuizen et al., 2014). In answering the call of scholars for more research on the antecedents of (Rothmann & Welsh, 2013) and the concept of engagement, and for such research to be in alignment with this concept's positive psychological roots (Bailey et al., 2017), the present study explored the conditions that enabled engagement and optimal functioning within the HE context during the COVID-19 pandemic. Further, the study explored the impact of mutual influences among academic staff and students, and the impact of these influences on the engagement of both staff and students.

To address the overall purpose of the research, the researcher conducted three studies, and dedicated a manuscript to each. In the first manuscript, Kahn's (1990) theory on personal engagement was applied to better understand the interplay of the psychological conditions (meaningfulness, safety, and availability) that stimulated engagement among academic staff. In so doing, the study established conceptual connections by integrating Kahn's (1990) theory on engagement with the job demands-resources (JD-R) model (Bakker & Demerouti, 2017), and other concepts such as reciprocity (Schaufeli et al., 1996) and perceived organisational support (POS) (Eisenberger et al., 1986). The study further set out to understand the role of engagement in promoting employee well-being, and to do so against the backdrop of the goals of positive psychology.

In the second manuscript, the objective shifted to that of student engagement. To gain a better understanding of the construct of student engagement, the study used the JD-R model as a framework and applied the psychological conditions as conceptualised by Kahn (1990) beyond the employee–employer context to include a focus on students in an HE context. The study further explored the impact of engagement on student learning. In respect of the study presented in the third manuscript, the objective was to explore the

203

possibility of mutual influences among academic staff and students as well as the impact of these influences on the engagement of both staff and students as seen from a crossover theory perspective.

5.2 Summary of Main Findings of Each Manuscript

5.2.1 *Chapter 2: Manuscript 1; Engagement of Academic Staff during COVID-19: The Role of Perceived Organisational Support, Burnout Risk, and Lack of Reciprocity as Psychological Conditions*

Chapter 2 addressed the first two secondary objectives of this research study, which were, 1) to explore the psychological conditions that enable engagement among academic staff, and 2) to investigate the outcomes of engagement on the optimal functioning of academic staff. Data for this study were collected from electronic surveys completed by 160 respondents, of whom 48% were female and 52% male. In respect of these two secondary objectives, the findings revealed that the three psychological conditions (i.e. meaningfulness, safety, and availability), which were operationalised as lack of reciprocity, POS, and burnout risk, were significantly related to emotional engagement. These findings provided support for connecting Kahn's (1990) theory on engagement with the JD-R model (Bakker & Demerouti, 2017), and other concepts such as reciprocity (Schaufeli et al., 1996) and POS (Eisenberger et al., 1986). POS (job resources), which met the criteria of psychological safety and some of the components of meaningfulness, showed the strongest association with emotional engagement. This finding supported the findings of Rothmann and Rothmann (2010), Rothmann and Welsh (2013), and Schneider et al. (2018). The first two of these scholars found that psychological meaningfulness was the strongest predictor of engagement, whereas the third scholars found that organisational practices showed the strongest correlation with work engagement, even stronger than did work attributes. Findings further revealed that burnout risk and emotional engagement explained 42% of the variance in psychological well-being, with burnout risk showing a medium negative effect on the psychological well-being of academic staff, and emotional engagement showing a small positive effect. These results indicated a possible alignment with recent work which highlights the negative effects of the COVID-19 pandemic on employees' levels of burnout, and the ways in which the changes that this pandemic has brought about threaten the psychological and overall

204

well-being of people (Denning et al., 2021; Harju et al., 2021; Meyer et al., 2021). The hypotheses for this study were tested using structural equation modelling (SEM), and the statistical analyses were conducted in Mplus version 8.6. Table 12 provides an overview of the results of the hypotheses. More detailed explanations of these results are presented in Chapter 2.

Table 12: Results of the hypotheses tested in Chapter 2

	Hypothesis	Result
H_1	There is a statistically significant positive relationship between job demands (time pressure, relationship aspects, and teaching vs. research) and burnout risk.	Supported
H_2	There is a statistically significant negative relationship between job demands and engagement.	Not supported
H_3	There is a statistically significant negative relationship between burnout risk (availability) and engagement.	Supported
H_4	There is a statistically significant positive relationship between POS (meaningfulness, safety) and engagement.	Supported
H_5	There is a statistically significant negative relationship between POS (meaningfulness, safety) and burnout risk.	Supported
H_{6a}	Perceived lack of reciprocity moderates the negative relationship between job demands and engagement, such that the relationship becomes stronger as lack of reciprocity increases.	Not supported
H_{6b}	Perceived lack of reciprocity moderates the positive relationship between POS and engagement, such that the relationship becomes weaker as lack of reciprocity increases.	Not supported
H_{6c}	Perceived lack of reciprocity moderates the negative relationship between burnout risk and engagement, such that the relationship becomes stronger as lack of reciprocity increases.	Not supported
H_7	There is a statistically significant negative relationship between burnout risk and psychological well-being.	Supported
H_8	There is a statistically significant positive relationship between engagement and psychological well-being.	Supported
H_9	There is a statistically significant positive relationship between psychological well-being and student-reported levels of lecturer performance.	Not included in the structural model
H_{10}	Engagement mediates the relationship between burnout risk and psychological well-being.	Supported
H_{11}	Burnout risk mediates the relationship between job demands and engagement.	Supported
H_{12}	Burnout risk mediates the relationship between POS and engagement.	Supported

5.2.2 Chapter 3: Manuscript 2; Student Engagement and Learning Approaches during COVID-19: The Role of Study Resources, Burnout Risk, and Student Leader–Member Exchange as Psychological Conditions.

Chapter 3 addressed the third and fourth secondary objectives of this research study, which aimed to explore the psychological conditions that enabled engagement among students, and to investigate the outcomes of engagement on the students' intent to understand the meaning of their work (i.e. students' learning approaches). Data for this study were collected from electronic surveys completed by 1 594 respondents, of whom 56% were female and 44% male. In respect of these two secondary objectives, the findings of the

205

study revealed that the conditions of meaningfulness (study resources), availability (burnout risk), and safety (student–LMX) significantly influenced student engagement, providing support for operationalising these conditions as psychological conditions, and for extending Kahn's (1990) theory beyond the employer–employee context to include a focus on the student context. Study resources (psychological meaningfulness) seemed of greater importance in explaining student engagement, as it showed a stronger association with engagement than did burnout risk, student–LMX, and study demands. This strong association of study resources with student engagement aligns with the corresponding premise in the study demands-resources (SD-R) model (Mokgele & Rothmann, 2014). Findings further revealed that student engagement and student resources predicted around 33% of the variance in the students' deep approach to learning, with engagement showing a medium positive effect, and resources showing a small effect. This supported the findings of Floyd et al. (2009) and Bevan et al. (2014) that student engagement has a significant effect on students' deep-learning approach. Notable here is Platow et al.'s (2013) suggestion (which, however, has not been tested) that the actual time and resources students have available could influence whether they engage in a deep-learning approach. The hypotheses for this study were tested using SEM, and the statistical analyses were conducted in Mplus version 8.6. Table 13 provides an overview of the results of each of the hypotheses tested in this study. More detailed explanations of the results are presented in Chapter 3.

Table 13: Results of the hypotheses tested in Chapter 3

	Hypothesis	Result
H_1	There is a statistically significant positive relationship between study resources and student engagement.	Supported
H_2	There is a statistically significant positive relationship between study demands and burnout risk.	Supported
H_3	There is a statistically significant negative relationship between study demands and student engagement.	Not supported
H_4	There is a statistically significant negative relationship between burnout risk and student engagement.	Supported
H_5	There is a statistically significant positive relationship between physical resources, such as adequate study conditions at home, access to a stable internet, electricity, and devices, and student engagement.	Not supported
H_6	There is a statistically significant positive relationship between student engagement and academic performance.	Not supported
H_{7a}	There is a statistically significant positive relationship between student engagement and a deep-learning approach	Supported
H_{7b}	There is a statistically significant negative relationship between student engagement and a surface-learning approach.	Not supported
H_{8a}	There is a statistically significant positive relationship between a deep approach to learning and academic performance.	Not supported
H_{8b}	There is a statistically significant negative relationship between a surface approach to learning and academic performance.	Not supported
H_{9a}	Student–LMX, which carries aspects of psychological safety, moderates the relationship between study resources (meaningfulness) and engagement, such that high student–LMX strengthens the positive relationship between study resources and student engagement.	Not supported
H_{9b}	Student–LMX moderates the relationship between physical resources and student engagement, such that high student–LMX strengthens the positive relationship between adequate physical resources and student engagement.	Not supported
H_{9c}	Student–LMX moderates the relationship between study demands and student engagement, such that high student–LMX acts as a buffer against the negative effect of study demands on student engagement.	Not supported
H_{9d}	Student–LMX moderates the relationship between burnout risk (availability) and student engagement, such that burnout risk is less (vs. more) negatively related to student engagement at high student–LMX levels.	Not supported
H_{10}	There is a statistically significant positive relationship between study resources and a deep approach to learning.	Supported
H_{11}	There is a statistically significant negative relationship between study resources and burnout risk.	Supported
H_{12}	There is a statistically significant positive relationship between burnout risk and a surface approach to learning.	Supported

5.2.3 *Chapter 4: Manuscript 3; Crossover of Engagement among Academic Staff and Students during COVID-19.*

Chapter 4 addressed the fifth secondary objective of this research study, which was to investigate the possibility of mutual influences among academic staff and students (crossover of engagement) and to explore the positive outcomes of engagement in respect of both parties. Data for this study were collected

207

using electronic surveys. The students included in the sample were nested within lecturers; therefore students needed to be registered for a specified module taught by the participating lecturer. The sample, which comprised 1 594 students (level 1), who were nested within 160 lecturers (level 2), was obtained from all the faculties in the university, and the average cluster size was 9.9 members. Of the students, 56% were female and 44% male. Of the lecturers, 48% were female and 52% male. As regards the secondary objective, the study's findings revealed non-significant relationships for both the crossover relationships proposed between academic staff and students. Although the results did not reveal crossover effects from academic staff to students and vice versa, the findings did show that students' perceptions of high-quality relationships with academic staff (student–LMX) were significantly related to their engagement. These findings indicated that the behaviour and attributes of leaders (academic staff in this study) influenced subordinates (students in this study) who regarded themselves as belonging to a member group (Cropanzano & Mitchell, 2005; Farr-Wharton et al., 2018).

In terms of academic staff, the findings revealed that perceptions of lack of reciprocity were negatively associated with the staffs' emotional engagement. This echoed the finding reported in previous studies that lack of reciprocity within the lecturer–student relationship caused academic staff to feel emotionally exhausted and depleted (Van Horn et al., 2001). Findings further revealed that student engagement was positively related to a deep-learning approach, and negatively related to a surface-learning approach. This suggested that when students were engaged, they tended to be intrinsically motivated to understand the meaning of the material they studied, and not to follow rote learning strategies (Borrendon et al., 2011; Floyd et al., 2009). Furthermore, supporting past studies which highlighted the well-being benefit of engagement (e.g. Jena et al., 2018; Rusu & Colomeischi, 2020; Shuck & Reio, 2014), this study found a positive significant association between the emotional engagement and psychological well-being of academic staff. The hypotheses for this study were tested using SEM, and the statistical analyses were conducted in Mplus version 8.6. As each group of students was nested within one lecturer, a multilevel analysis of the nested data had to be done, and to justify this analysis, the intraclass correlation (ICC)

208

coefficients were calculated. Table 14 provides an overview of the results of testing each of the hypotheses formulated for this study. More detailed explanations of these results are presented in Chapter 4.

Table 14: Results of the hypotheses tested in Chapter 4

	Hypothesis	Result
H_1	There is a statistically significant positive relationship between academic staffs' emotional engagement and students' engagement.	Not supported
H_2	There is a statistically significant positive relationship between academic staffs' engagement and student–LMX.	Not supported
H_3	There is a statistically significant positive relationship between student–LMX and student engagement.	Supported
H_4	The positive relationship between the emotional engagement of academic staff and student engagement is mediated by student–LMX.	Not supported
H_{5a}	There is a statistically significant positive relationship between student engagement and a deep-learning approach.	Supported
H_{5b}	There is a statistically significant negative relationship between student engagement and a surface-learning approach.	Supported
H_6	There is a statistically significant negative relationship between academic staff's perceptions of a lack of reciprocity and their emotional engagement.	Supported
H_7	There is a statistically significant positive relationship between student engagement and lecturers' emotional engagement.	Not supported
H_8	There is a statistically significant negative relationship between student engagement and lecturers' perceptions of lack of reciprocity.	Not supported
H_9	The positive relationship between students' engagement and lecturers' emotional engagement is mediated by lecturers' perceptions of lack of reciprocity.	Not supported
H_{10}	There is a statistically significant positive relationship between engagement and psychological well-being.	Supported

5.3 Contributions of the Study

In alignment with past research (e.g. Pham-Thai et al., 2018; Shuck, 2011; Shuck & Reio, 2011; Shuck & Reio, 2014), recent studies conducted during the COVID-19 pandemic reaffirmed the importance of cultivating engagement not only among employees (Chanana & Sangeeta, 2020) but also among students, as student engagement was indicated as a prerequisite for learning (Chiu, 2021). In exploring the construct of engagement, the present study aimed to contribute theoretically and practically to the existing knowledge of this construct in the ways outlined in the paragraphs that follow.

This research study responded to the call for more studies to be conducted on the antecedents (Rothmann & Welsh, 2013) and topic of engagement, and to do so in alignment with the construct's positive psychological roots (Bailey et al., 2017). The study aimed to make a contribution by exploring the

209

conditions that enabled engagement and optimal functioning within the HE context during the COVID-19 pandemic. For this purpose, the study established conceptual connections among existing concepts and theories that explained engagement, and these included Kahn's (1990) theory on personal engagement, and the JD-R model (Bakker & Demerouti, 2017; Demerouti et al., 2001). In delineating the psychological conditions that determined engagement (as put forth in Kahn's (1990) theory on personal engagement), the study established further conceptual connections with other existing concepts and theories that aligned with these psychological conditions, namely, the organisational support theory (OST) (Eisenberger et al., 1986), and perceptions of reciprocity (Schaufeli et al., 1996). The research further addressed the call of Kahn (1990) to explore the interplay of the three psychological conditions of meaningfulness, safety, and availability to better understand the antecedents of engagement (Rothmann & Welsh, 2013). In doing that, the study extended Kahn's theory (which was based on the employee–employer context) to include a focus on students in HE with the aim of providing a better understanding of the conditions that enabled engagement within HE institutions. Furthermore, the research aimed to encourage management within HE to gear its efforts towards creating conditions that would promote well-being in accordance with the premise of positive psychology (Seligman et al., 2005).

In investigating the positive outcomes of engagement in supporting optimal functioning, this research extrapolated from work done using the JD-R model (Bakker & Demerouti, 2017) with the aim of making a contribution through expanding on the existing understanding of how student engagement influenced learning approaches and processes that reflected the students' intentions to understand the meaning of their work as per the deep approach to learning (Campbell & Cabrera, 2014; Fourie, 2003). Based on the results obtained, the study could make a call on policy-makers to think carefully and holistically about approaches to gauge student engagement.

Another contribution of this study was to build on previous studies that highlighted the positive outcomes of engagement by exploring these outcomes in a crossover setting. The study provided evidence of the benefit of engagement to the psychological well-being of academic staff, as well as the benefit of students'

210

adoption of a deep approach to learning (i.e. in being intrinsically motivated to persist and to understand the meaning of their work) (Fourie, 2003; Olpak & Korucu, 2016) instead of a surface approach to learning. In exploring the positive outcomes of engagement in a crossover setting, the study addressed the call made by Hagenauer and Volet (2014) for investigations into the mutual influences between students and academic staff from perspectives other than the perspectives of the attachment theory and the self-determination theory. Further, in exploring crossover between academic staff and students in an HE context, the research expanded on previous crossover research which focused mainly on crossover relationships between spouses within a work–family domain (Demerouti et al., 2005), and between team members in a working relationship (Bakker et al., 2006). Based on the results obtained, the research could draw the attention of university management to the importance of the lecturer–student exchange relationship in addressing engagement and well-being among academic staff and students.

5.4 Recommendations Based on Research Objectives

The primary objective of this study was to explore the conditions that enabled engagement and optimal functioning within the HE context during the COVID-19 pandemic. In support of the primary objective, five secondary objectives were formulated, and these are outlined below along with the recommendations made relating to each.

Objective 1: To explore the psychological conditions that enable engagement among academic staff.
Objective 1 was addressed in Chapter 2 (Manuscript 1). With the aim of exploring the psychological conditions that enabled engagement among academic staff, the study established conceptual connections between Kahn's (1990) theory on engagement, the JD-R model (Bakker & Demerouti, 2017), the concept of reciprocity (Schaufeli et al., 1996), and the concept of POS (Eisenberger et al., 1986). Based on the findings outlined in section 5.2.1, a recommendation of the study would be that university leaders should recognise the importance of addressing conditions (psychological meaningfulness, safety, and availability) that would enable the engagement of their academic staff. The study highlighted that POS, which carried components of psychological meaningfulness and safety, showed a stronger association with emotional

211

engagement than did burnout risk (psychological availability) and lack of reciprocity (meaningfulness). Thus, the recommendations to university management would include the design of policies, procedures, strategies, and/or interventions that should be geared towards POS with the intention of giving employees the assurance that they are valued, and that the university cares about their well-being and regards them as important contributors to its institutional objectives, particularly during times of change or crisis. Universities could, for example, create opportunities for the development of their employees (Kurtessis et al., 2017; Najeemdeen et al., 2018), and, in the light of the findings that employees view their leaders as organisational agents (Eisenberger et al., 1986), university leadership should be supportive and considerate (Kim et al., 2016; Kurtessis et al., 2017). These recommendations are based on findings that the aforementioned aspects improve POS (Kim et al., 2016; Kurtessis et al., 2017).

Objective 2: To investigate the outcomes of engagement on the optimal functioning of academic staff

Objective 2, which was addressed in Chapter 2 (Manuscript 1), focused on the influence of burnout risk and engagement on the psychological well-being of academic staff. Based on the findings of the study (see section 5.2.1), the recommendation could be made that universities should address the problem of burnout risk as it has implications for the psychological well-being of academic staff. For example, university leaders could consider implementing strategies, such as employee wellness and/or assistance programmes (online and face-to-face) to address psychosocial issues (e.g. burnout risk, work–home-related stress). These programmes might not only provide the needed support to employees by addressing burnout risk, but they might also have the potential to create the positive perception among employees that their institution cares about their well-being and values them.

Objective 3: To explore the psychological conditions that enable engagement among students

Objective 3 was addressed in Chapter 3 (Manuscript 2), and was investigated by extending Kahn's (1990) theory on the conditions that enable engagement beyond the employee–employer context to focus on students in the HE context. Considering the findings of this study (see section 5.2.2), the recommendation would be for university leaders to holistically consider the conditions that encourage student engagement.

212

For example, universities could implement interventions that address student burnout risk (psychological availability), improve high-quality exchange relationships among staff and students (psychological safety), and, more especially, improve study resources (psychological meaningfulness) such as growth, peer support, lecturer support, and information accessibility. Notable in this regard was the study's findings that study resources were of the greatest importance in explaining student engagement.

Objective 4: To investigate the outcomes of engagement relating to students' intent to understand the meaning of their work (i.e. students' learning approaches)

Objective 4 was addressed in Chapter 3 (Manuscript 2), and was investigated by extrapolating from work done using the JD-R model (Bakker & Demerouti, 2017), thus expanding on the existing understanding of how student engagement influenced learning approaches and processes that reflected the students' intentions to understand the meaning of their work. Donnison and Penn-Edwards (2012; Muñoz-García & Villena-Martínez, 2021) argued that the purpose of undergraduate education includes the development of a students' lifelong learning skills, and to support the students' progress toward a deeper learning approach. Based on the finding that high levels of student engagement fostered a deep-learning approach (see section 5.2.2), the recommendation to university leadership would be to take cognisance of the clear gain in fostering student engagement. This recommendation is made as the outcome of a deep-learning approach enables the attainment of better quality learning and development (Fourie, 2003), it supports the core purpose of sustainable education (Donnison & Penn-Edwards, 2012; Muñoz-García & Villena-Martínez, 2021), and further enables what scholars have termed an intrinsically motivated intention of the student to reflect on, integrate and understand the meaning of the learning material (Borrendon et al., 2011; Muñoz-García & Villena-Martínez, 2021).

Objective 5: To investigate the possibility of mutual influences among academic staff and students (crossover of engagement), and to explore the positive outcomes of engagement for both parties

Objective 5 was addressed in Chapter 4 (Manuscript 3), and the investigation was underpinned by crossover theory (Westman, 2001). Based on the findings of this study (see section 5.2.3), the recommendation would

be for university management to consider the importance of the lecturer–student exchange relationship when designing policies to improve the engagement of both academic staff and students. Thus, university leaders are encouraged to consider interventions that may support and better equip lecturers to develop high-quality exchange relationships with students. These interventions include, for example, supporting research in teaching, and offering research support, because research-active lecturers have been found to be able to develop high-quality student relationships (Farr-Wharton et al., 2018). Further, student–LMX has implications relating to students' communication and students' behaviour toward their studies and lecturers (Myers, 2006), implications which can have an impact on academic staff's perceptions of student reciprocity.

5.5 Limitations of the Study and Directions for Future Research

Although the study had strengths and provided noteworthy insights, it also had a number of limitations.

Data were obtained from academic staff and students at a university in one province in South Africa, thus the generalisability of the study's findings might be limited. Research that includes other universities in different provinces locally or internationally would be worthwhile to consider for future studies. A study conducted in accordance with this directive should be able to also address the aspect of obtaining a level 2 (academic staff in this study) sample size that is big enough. In the light of the problem the present study experienced with the high number of responses that could not be used, and with missing data (particularly in the students' surveys), researchers of future studies could consider offering an incentive to students to participate, but setting the proviso that surveys should be completed in full. The length of the survey that the present study used (and the time it took to complete) might have played a role in discouraging the respondents from completing their surveys in full. It might thus be worthwhile for future research to take the length of a survey into account.

Furthermore, because the study used self-report data and a cross-sectional approach, causal inferences could not be made, and the possibility of common method variance existed (Rindfleisch et al., 2008). Although

the study did implement methods to mitigate common method variance, for instance, by using different scale formats and anchors (Podsakoff et al., 2012), and ensuring that the wording of questions was concise and clear (Rodríguez-Ardura & Meseguer-Artola, 2020), it would be advisable for future studies to obtain data using different methods, or to obtain data from multiple sources. Furthermore, future studies could consider using a longitudinal design to gain a better understanding of the interplay and causal influences among the constructs investigated. In addition, it may be worthwhile for future studies to consider these variables in a non-crisis state, such as when the COVID-19 pandemic has passed.

5.6 Conclusion

In addressing the research question on how the psychological conditions of meaningfulness, safety, and availability, and the perceptions of academic staff pertaining to their role and work context influenced their engagement, the first manuscript of this study answered the call of Kahn (1990) that researchers should take a closer look at the interplay of these psychological conditions in leading to engagement. The study found support for Kahn's theory on personal engagement by establishing connections between Kahn's psychological conditions and concepts that focused on the person–role relationship such as those dealt with in the JD-R model (Demerouti et al., 2001), organisational support theory (Eisenberger et al., 1986), and perceptions of reciprocity (Schaufeli et al., 1996). Further, the study identified the implications of academic staff's engagement in enhancing optimal functioning in the workplace. The researcher hopes that the study's findings might motivate university leaders to take note of the impact of POS, and of the need not only to lend the required support to academics in the face of dealing with various stressors, but also to improve academics' general engagement and address burnout risk as these aspects have implications for the psychological well-being of academic staff.

By looking at the roles of psychological conditions and the perceptions of students in an academic context, the study presented in the second manuscript demonstrated that Kahn's (1990) theory on personal engagement was applicable not only to employers and employees in a working environment but also to students in a learning environment. The study highlighted the important contribution of engagement in

215

reinforcing students' intention to understand the meaning of their work (i.e. to follow a deep approach to learning), and it provided support for extrapolating from work done using the JD-R (Bakker & Demerouti, 2017; Demerouti et al., 2001) and the SD-R model (Mokgele & Rothmann, 2014) to include a deep approach to learning within the student learning context. In the light of the study's findings, management within HE would do well to focus their efforts on ensuring that students perceive that they receive adequate support in terms of structures and physical resources during periods of uncertainty, such as a global pandemic. Further, it is especially important for management to holistically consider the elements (psychological meaningfulness, safety, and availability) that are conducive to the improvement of student engagement.

By drawing on crossover theory (Westman, 2001), the study presented in the third manuscript aimed to answer the call of Hagenauer and Volet (2014) for researchers to explore the extent to which mutual influences exist between academic staff and students in HE, and to establish whether these mutual influences support the engagement of both academic staff and students. The study's findings highlighted that students' perceptions of high-quality relationships with lecturers (LMX) were significantly related to students' engagement, and that lecturers' emotional engagement was negatively impacted by their experiences of students' lack of reciprocity. Further, the study highlighted that engagement played a key role in supporting psychological well-being among academic staff, and in fostering a deep approach to learning among students. The researcher expresses the hope that these findings might encourage university leaders to consider the importance of the lecturer–student exchange relationship, to pay careful attention to aspects that might support and better equip lecturers to develop high-quality exchange relationships with students, and to take cognisance of findings that these high-quality exchange relationships have implications relating to students' communication and their behaviour towards their studies and lecturers (Myers, 2006). Furthermore, it is hoped that the findings serve to inform policy-makers in HE institutions on how to approach aspects such as the engagement of both academic staff and students in a collective manner, because a collective approach holds the benefits associated with an improvement in employee well-being and the cultivation of a culture of life-long learning among students.

This research, by drawing from approaches that support optimal functioning, and by considering the processes or conditions in organisations that enable the engagement and well-being of individuals, while, at the same time, keeping to the positive psychological roots of the phenomenon of engagement, has made a contribution to the literature on engagement.

References

Bailey, C., Madden, A., Alfes, K., & Fletcher, L. (2017). The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews*, *19*(1), 31–53. https://doi.org/10.1111/ijmr.12077

Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Bakker, A. B., Van Emmerik, H., & Euwema, M. C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations, 33*(4), 464–489. https://doi.org/10.1177/0730888406291310

Barkhuizen, N., Rothmann, S., & Van de Vijver, F. J. R. (2014). Burnout and work engagement of academics in higher education institutions: Effects of dispositional optimism. *Stress and Health, 30*(4), 322–332. https://doi.org/10.1002/smi.2520

Bevan, S. J., Chan, C. W., & Tanner, J. A. (2014). Diverse assessment and active student engagement sustain deep learning: A comparative study of outcomes in two parallel introductory biochemistry courses. *Biochemistry and Molecular Biology Education*, *42*(6), 474–479. https://doi.org/10.1002/bmb.20824

Borrendon, L., Deffayet, S., Baker, A. C., & Kolb, D. (2011). Enhancing deep learning: Lessons from the introduction of learning teams in management education in France. *Journal of Management Education, 35*(3), 324–350. https://doi.org/10.1177/1052562910368652

Campbell, C. M., & Cabrera, A. F. (2014). Making the mark: Are grades and deep learning related? *Research in Higher Education, 55*(5), 494–507. https://doi.org/10.1007/s11162-013-9323-6

Chanana, N., & Sangeeta. (2020). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs, e2508*, 1–8. https://doi.org/10.1002/pa.2508

Chiu, T. K. F. (2021). Applying the self-determination theory (SDT) to explain student engagement in online learning during the COVID-19 pandemic. *Journal of Research on Technology in Education*, 1–18. https://doi.org/10.1080/15391523.2021.1891998

Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of Management, 31*(6), 874–900. https://doi.org/10.1177/0149206305279602

218

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86,* 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2005). Spillover and crossover of exhaustion and life satisfaction among dual-earner parents. *Journal of Vocational Behavior, 67*(2), 266–289. https://doi.org/10.1016/j.jvb.2004.07.001

Denning, M., Goh, E. T., Tan, B., Kanneganti, A., Almonte, M., Scott, A., Martin, G., Clarke, J., Sounderajah, V., Markar, S., Przybylowicz, J., Chan, Y. H., Sia, C.-H., Chua, Y. X., Sim, K., Lim, L., Tan, L., Tan, M., Sharma, V. … Kinross, J. (2021). Determinants of burnout and other aspects of psychological well-being in healthcare workers during the Covid-19 pandemic: A multinational cross-sectional study. *PLoS One, 16*(4), e0238666. https://doi.org/10.1371/journal.pone.0238666

Donnison, S., & Penn-Edwards, S. (2012). Focusing on first year assessment: Surface or deep approaches to learning? *International Journal of the First Year in Higher Education, 3*(2), 9–20. https://doi.org/10.5204/intjfyhe.v3i2.127

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500–507. https://doi.org/10.1037/0021-9010.71.3.500

Farr-Wharton, B., Charles, M. B., Keast, R., Woolcott, G., & Chamberlain, D. (2018). Why lecturers still matter: The impact of lecturer–student exchange on student engagement and intention to leave university prematurely. *Higher Education, 75*(1), 167–185. https://doi.org/10.1007/s10734-017-0190-5

Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). The effect of engagement and perceived course value on deep and surface learning strategies. *Informing Science: The International Journal of an Emerging Transdiscipline, 12*, 181–190. https://doi.org/10.28945/435

Fourie, C. M. (2003). Deep learning? What deep learning? *South African Journal of Higher Education, 17*(1), 123–131. https://doi.org/10.4314/sajhe.v17i1.25201

Hagenauer, G., & Volet, S. E. (2014). Teacher–student relationship at university: An important yet under-researched field. *Oxford Review of Education, 40*(3), 370–388. https://doi.org/10.1080/03054985.2014.921613

Harju, L. K., Rokka, J., Lopes, M. M., Airoldi, M., & Raïes, K. (2021). Employee well-being profiles during COVID-19 lockdown: A latent profile analysis of French and UK employees. *Frontiers in Psychology, 12*(645300), 1–9. https://doi.org/10.3389/fpsyg.2021.645300

Jena, L. K., Pradhan, S., & Panigrahy, N. P. (2018). Pursuit of organisational trust: Role of employee engagement, psychological well-being and transformational leadership. *Asia Pacific Management Review, 23*(3), 227–234. https://doi.org/10.1016/j.apmrv.2017.11.001

Kahn, W. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692–724. https://doi.org/10.5465/256287

Kim, K. Y., Eisenberger, R., & Baik, K. (2016). Perceived organizational support and affective organizational commitment: Moderating influence of perceived organizational competence. *Journal of Organizational Behavior, 37*(4), 558–583. https://doi.org/10.1002/job.2081

Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2017). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of Management, 43*(6), 1854–1884. https://doi.org/10.1177/0149206315575554

Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1, 3-30

Meyer, B., Zill, A., Dilba, D., Gerlach, R., & Schumann, S. (2021). Employee psychological well-being during the COVID-19 pandemic in Germany: A longitudinal study of demands, resources, and exhaustion. *International Journal of Psychology, 56*(4), 532-550. https://doi.org/10.1002/ijop.12743

Mokgele, K. R. F., & Rothmann, S. (2014). A structural model of student well-being. *South African Journal of Psychology, 44*(4), 514–527. https://doi.org/10.1177/0081246314541589

Muñoz-García, A., & Villena-Martínez, D. (2021). Influences of learning approaches, student engagement, and satisfaction with learning on measures of sustainable behavior in a social sciences student sample. *Sustainability, 13*(2), 541. https://doi.org/10.3390/su13020541

Myers, S. A. (2006). Using leader–member exchange theory to explain students' motives to communicate. *Communication Quarterly*, *54*(3), 293–304. https://doi.org/10.1080/01463370600878008

Najeemdeen I. S., Abidemi, B. T., Rahmat, F. D., & Bulus, B. D. (2018). Perceived organizational culture and perceived organizational support on work engagement. *Academic Journal of Economic Studies, 4*(3), 199–208.

Olpak, Y. Z., & Korucu, A. T. (2016). Investigation of the relationship between learning approaches and academic engagement of teacher candidates. *Journal of Learning and Teaching in Digital Age, 1*(1), 55–62.

Pham-Thai, N., McMurray, A. J., Muenjohn, N., & Muchiri, M. (2018). Job engagement in higher education. *Personnel Review, 47*(4), 951–967. https://doi.org/10.1108/PR-07-2017-0221

Platow, M. J., Mavor, K. I., & Grace, D. M. (2013). On the role of discipline-related self-concept in deep and surface approaches to learning among university students. *Instructional Science*, *41*(2), 271–285. https://doi.org/10.1007/s11251-012-9227-4

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Rattrie, L. T. B., Kittler, M. G., & Paul, K. I. (2020). Culture, burnout, and engagement: A meta-analysis on national cultural values as moderators in JD-R theory. *Applied Psychology, 69*(1), 176–220. https://doi.org/10.1111/apps.12209

Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C. (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research*, *45*(3), 261–279. https://doi.org/10.1509/jmkr.45.3.261

Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). Editorial: How to prevent, detect and control common method variance in electronic commerce research. *Journal of Theoretical and Applied Electronic Commerce Research, 15*(2), 1–5. https://doi.org/10.4067/S0718-18762020000200101

Rothmann, S., & Rothmann, S. Jr. (2010). Factors associated with employee engagement in South Africa. *SA Journal of Industrial Psychology, 36*(2), 1–12. https://doi.org/10.4102/sajip.v36i2.925

Rothmann, S., & Welsh, C. (2013). Employee engagement: The role of psychological conditions. *Management Dynamics, 22*(1), 14–25.

Rusu, P. P., & Colomeischi, A. A. (2020). Positivity ratio and well-being among teachers. The mediating role of work engagement. *Frontiers in Psychology, 11*(1608), 1–10. https://doi.org/10.3389/fpsyg.2020.01608

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*, 293–315. https://doi.org/10.1002/job.248

Schaufeli, W. B., Van Dierendonck, D., & Van Gorp, K. (1996). Burnout and reciprocity: Toward a dual-level social exchange model. *Work & Stress, 10*(3), 225–237. https://doi.org/10.1080/02678379608256802

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410-421. https://doi.org/10.1037/0003-066X.60.5.410

Shuck, B. (2011). Four emerging perspectives of employee engagement: An integrative literature review. *Human Resources Development Review, 10*(3), 304–328. https://doi.org/10.1177/1534484311410840

Shuck, B., & Reio, T. G. (2011). The employee engagement landscape and HRD: How do we link theory and scholarship to current practice? *Advances in Developing Human Resources, 13*(4), 419–428. https://doi.org/10.1177/1523422311431153

222

Shuck, B., & Reio, T. G. (2014). Employee engagement and well-being: A moderation model and implications for practice. *Journal of Leadership & Organizational Studies, 21*(1), 43–58. https://doi.org/10.1177/1523422311431153

Schneider, B., Yost, A. B., Kropp, A., Kind, C., & Lam, H. (2018). Workforce engagement: What it is, what drives it, and why it matters for organizational performance. *Journal of Organizational Behavior, 39*(4), 462–480. https://doi.org/10.1002/job.2244

Van Horn, J. E., Schaufeli, W. B., & Taris, T. W. (2001). Lack of reciprocity among Dutch teachers: Validation of reciprocity indices and their relation to stress and well-being. *Work & Stress, 15*(3), 191–213. https://doi.org/10.1080/02678370110066571

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54*(6), 717–751. https://doi.org/10.1177/0018726701546002

Appendix A: Consent form

An E-mail/notice with the survey link

SUBJECT LINE: SURVEY ON STUDENT ENGAGEMENT / ENGAGEMENT OF ACADEMIC STAFF

Dear Respondent

(Intro Student version)

In alignment with the importance the institution places on the engagement and well-being of students and the drive behind helping students succeed, you are invited to participate in a research study conducted by Ms. Reynell van der Ross. The purpose of the study is to investigate factors contributing to engagement among students registered for undergraduate courses at the institution. The survey will take roughly 20 minutes to complete. Your answers will be confidential and all information will be consolidated.

(Intro Academic staff version)

In alignment with the importance the institution places on the engagement and well-being of staff, the drive behind helping students succeed; and equally important, the objective to support staff, without whom success may not be possible, you are herewith requested to participate in this research study conducted by Ms. Reynell van der Ross. The purpose of the study is to investigate factors contributing to the personal engagement and well-being of academic staff. The survey will take roughly 20 minutes to complete. Your individual answers will be confidential and all information will be consolidated.

(Body / content)

Please contact the researcher, Reynell van der Ross on mvanderross@cut.ac.za if you have any questions or comments regarding the study.

Please scroll up and down if you complete the survey from a mobile device. If you are interrupted during your response, you can access the survey again through the link that you received. Please use the same device when you re-enter the survey.

Please note that your participation is voluntary and there will be no penalty or loss of benefit if you decide not to take part. You may thus withdraw at any time without having to explain why. We would like to thank you sincerely for your participation in the study.

Please click here to start the survey

Kind regards

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

www.up.ac.za

224

© University of Pretoria

Appendix B: Biographical Information: Academic sample

Please provide the following biographical information.

List of second-semester modules you teach

Please list all the second-semester modules you teach (excluding practicals), please indicate should you not lecturer any second-semester modules.

| Option 1 | Open ended, they list the module codes |
| Option 2 | No second-semester modules |

Please indicate your method of teaching during the 2020 second semester:

Online classes only

Blended (online and traditional face to face classes)

Traditional face to face classes (on-campus) only

Faculty
- Faculty of Engineering, Built Environment & Information Technology (FEBIT)
- Faculty of Health and Environmental Sciences (FHES)
- Faculty of Humanities (FHUM)
- Faculty of Management Sciences (FMS)

Please indicate your gender (GENDER)
- ○ Male (1)
- ○ Female (2)

Please indicate your preferred home language
- ○ English (1)
- ○ Afrikaans (2)
- ○ isiZulu (3)
- ○ isiXhosa (4)
- ○ Sepedi (5)
- ○ Setswana (6)
- ○ Sesotho (7)
- ○ Xitsonga (8)
- ○ SiSwati (9)
- ○ Tshivenda (10)
- ○ isiNdebele (11)
- ○ Other: Please specify (12) _____

Please indicate your age category
- ○ 29 years old or younger
- ○ 30-39 years old
- ○ 40-49 years old
- ○ 50-64 years old
- ○ 65 years and over

Please indicate your ethnic group
- ○ African (1)
- ○ Coloured (2)
- ○ Indian or Asian (3)
- ○ White (4)
- ○ Other: Please specify (5) _____

225

How long have you been working at the institution?
- Less than 5 years
- Between 5 - 10 years
- Between 11 - 15 years
- Between 16 - 20 years
- Between 21 - 25 years
- Between 26 - 30 years
- 31 + years

On what basis were you employed?
- Permanent (Full-time)
- Permanent (Part-time)
- Fixed term contract (Full-time)
- Fixed term contract (Part-time)
- Temporary appointment

226

The following paragraph formed part of the introductory instructions of the survey:

Please think of your working experience during COVID-19, in answering the survey.

In addition to the introductory instructions, the below paragraph formed part of survey sections:

Please think of your working experience during this time (this semester and COVID-19).

Measures included:

Job demands and resources (POS)

For each item please rate the following questions as per the scale indicated:

1	2	3	4	5	6
Completely Disagree	Mostly Disagree	Slightly Disagree	Slightly Agree	Mostly Agree	Completely Agree

1. Preparation for teaching must often be done after normal working hours (beyond the norm of an 8-hour working day).
2. Meetings, administrative work, and documentation take much of the time that should be used for teaching preparation.
3. Life at the university is hectic and there is no time for rest and recovery.
4. In educational matters, I can always get good help from my colleagues.
5. Educators at this university help and support each other.
6. The relations among the colleagues at this university are characterized by friendliness and concern for each other.

Please rate the following questions on a scale ranging from 0="never" to 5="always".

0	1	2	3	4	5
Never	Very rarely	Rarely	Occasionally	Very frequently	Always

How often does it occur to you that...'

7. `... you are unable to concentrate on your research due to your other (management / admin teaching) tasks?
8. ' you are unable to focus on your research because you keep thinking about your other tasks?
9. `... you, because of your other tasks, have little energy left to spend on your research?
10. `... you have so many other tasks that it seriously affects your research?

Please indicate the degree of your agreement or disagreement with each of the below statements by selecting the option that best represents your point of view about your working experiences at the institution. Please rate the below items on a scale ranging from 0="strongly disagree" to 6="strongly agree".

227

0	1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree

11. The university values my contribution to its well-being / success.

12. If the university could hire someone to replace me at a lower salary it would do so.

13. The university fails to appreciate any extra effort from me.

14. The university strongly considers my goals and values.

15. The university would ignore any complaint from me.

16. The university disregards my best interests when it makes decisions that affect me.

17. Help is available from the university when I have a problem.

18. The university really cares about my well-being.

19. Even if I did the best job possible, the university would fail to notice.

20. The university is willing to help me when I need a special favour.

21. The university cares about my general satisfaction at work.

22. If given the opportunity, the university would take advantage of me.

23. The university shows very little concern for me.

24. The university cares about my opinion.

25. The university takes pride in my accomplishments at work.

26. The university tries to make my job as interesting as possible.

Engagement

Please rate the following questions by indicating your agreement from 1="strongly disagree" to 5="strongly agree".

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

27. I work with intensity on my job

28. I exert my full effort to my job

29. I devote a lot of energy to my job

30. I try my hardest to perform well on my job

31. I strive as hard as I can to complete my job

32. I exert a lot of energy on my job

33. I am enthusiastic in my job

34. I feel energetic doing my job

35. I am interested in my job

36. I am proud of my job

228

37. I feel positive about my job

38. I am excited about my job

39. At work or whilst performing work from home, my mind is focused on my job

40. At work or whilst performing work from home, I pay a lot of attention to my job

41. At work or whilst performing work from home, I focus a great deal of attention on my job

42. At work or whilst performing work from home, I am absorbed by my job

43. At work or whilst performing work from home, I concentrate on my job

44. At work or whilst performing work from home, I devote a lot of attention to my job

Burnout Risk

Please rate the following questions as per the response categories indicated:

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

45. How often do you feel tired?

46. How often are you physically exhausted?

47. How often are you emotionally exhausted?

48. How often do you think: "I can't take it anymore"?

49. How often do you feel worn out?

50. How often do you feel weak and susceptible to illness?

1= "to a very high degree"	2= "to a high degree"	3= "somewhat"	4= "seldom"	5= "to a very low degree"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

51. Is your work emotionally exhausting?

52. Do you feel burnt out because of your work?

53. Does your work frustrate you?

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

54. Do you feel worn out at the end of the working day?

55. Are you exhausted in the morning at the thought of another day at work / just working?

56. Do you feel that every working hour is tiring for you?

57. Do you have enough energy for family and friends during leisure time?

1= "to a very high degree"	2= "to a high degree"	3= "somewhat"	4= "seldom"	5= "to a very low degree"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

58. Do you find it hard to work with clients?

59. Do you find it frustrating to work with clients?

60. Does it drain your energy to work with clients?

61. Do you feel that you give more than you get back when you work with clients?

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

62. Are you tired of working with clients?

63. Do you sometimes wonder how long you will be able to continue working with clients?

Psychological Well-being

Please rate the following questions on a scale ranging from 0= "never" to 6=" all of the time or nearly of the time" by indicating "how you have generally been over the last seven days".

0	1	2	3	4	5	6
Never	Very rarely	Seldom	Occasionally	About half of the time	Usually	Always/ or nearly all of the time

64. Given my current physical condition, I am satisfied with what I can do.

65. I have confidence in my ability to sustain important relationships.

66. I feel hopeful about my future.

67. I am often interested in and excited about things in my life.

68. I am able to have fun.

69. I am generally satisfied with my psychological health.

70. I am able to forgive myself for my failures.

71. My life is progressing according to my expectations.

72. I am able to handle conflicts with others.

73. I have peace of mind.

Lack of reciprocity

The below three questions require that you think of one specific undergraduate second-semester module that you teach.

Please indicate the module code that the below three questions will bear reference to: _____

Rate the below question on the following 5-point scale:

1	2	3	4	5
I strongly disagree	I slightly disagree	I neither agree, nor disagree	I slightly agree	I strongly agree

74. I spend much time, effort, and consideration on work for students in the specified module, but in general, students in the specified module give back little effort, appreciation, and interest.

75. It is my view that I invest more in the relationship with students in the specified module than what I receive back in return from them.

76. I know that my students will complain, no matter what I do.

Please provide the below biographical information.

Student number
Faculty
Programme enrolled for
Year of study

Please note that you will be asked some questions regarding your learning experience as part of a specific second-semester module that you list here.

Please enter the module code
Please enter the name of the lecturer responsible for teaching this module code

Please indicate the method of teaching that was used for the listed module during the second semester:

Online classes only
Blended (online and traditional face to face classes)
Traditional face to face classes (on-campus) only

Please indicate your gender:
❍ Male (1)
❍ Female (2)

Please indicate your preferred home language.
❍ English (1)
❍ Afrikaans (2)
❍ isiZulu (3)
❍ isiXhosa (4)
❍ Sepedi (5)
❍ Setswana (6)
❍ Sesotho (7)
❍ Xitsonga (8)
❍ SiSwati (9)
❍ Tshivenda (10)
❍ isiNdebele (11)
❍ Other: Please specify (12) _____

What is your age?
❍ 17-19
❍ 20-22
❍ 23-25
❍ 26-28
❍ Other: please specify _____

Please indicate your ethnic group.
❍ African (1)
❍ Coloured (2)
❍ Indian or Asian (3)
❍ White (4)
❍ Other: Please specify (5) _____

The following paragraph formed part of the introductory instructions of the survey:

Please note that you will be asked some questions regarding your learning experience during COVID-19, as part of this semester. Your answers will be kept confidential as all responses will be consolidated. No lecturer or any other CUT staff member except for the study owner, Ms. R. van der Ross, will have access to your responses. We therefore encourage honest responses.

In addition to the introductory instructions, the below paragraph formed part of survey sections:

As you answer the questionnaire, please think of your academic learning experience during this semester and COVID-19. Please also consider the one module you have indicated.

Measures included:

Student demands-resources

Please rate the below statements on a scale from 1="never" to 4="always"

1. Do you have too much work to do within the module?
2. Do you work under time pressure?
3. Do you have to work extra hard to complete something?
4. Do you have to give continuous attention to your studies within the module?
5. Do you have to remember many things in your studies for the module?
6. Do your studies in the module require creativity?
7. Do your studies within the module make sufficient demands on your skills and capacities?
8. Do you have enough variety in your studies in the module?
9. Do your studies in the module offer you opportunities for personal growth and development?
10. Do your studies give you the feeling that you can achieve something?
11. Do your studies in the module give you the opportunity for independent thought and action?
12. Can you count on your fellow students when you run into difficulties in your studies for the module?
13. If necessary, can you ask your fellow students for help?
14. Do you get on well with your fellow students?
15. Can you count on your lecturer if you run into difficulties in your studies?
16. Do you get on well with your lecturer?
17. Do you know exactly what your lecturer expects of you in your studies?
18. Do you know exactly what your lecturer thinks of your performance?
19. Do you receive sufficient information on the results of your studies for the module?
20. Can you discuss study problems with your lecturer?
21. Are you kept adequately up-to-date about issues within your module / faculty?
22. Is the decision-making process of your faculty / university clear to you?

23. Is it clear to whom you should address within the faculty / university if you experience specific problems?

Physical Resources

Please rate the below statements on a scale from 1="never" to 4="always"

1	2	3	4
Never	Seldom	Sometimes	Always

24. Do you have access to stable internet for attendance of online lectures (where needed) or downloading of online lecture recordings/work?
25. Are your study conditions adequate at home to allow for the attendance of online classes where needed and completion of academic work from home?
26. Do you have access to a laptop/tablet/desktop or smart phone to access online study material and lectures?
27. Do you have adequate financial resources to allow for the continuation of academic work (e.g. financial resources to buy data, electricity etc.)

Burnout Risk

Please rate the following questions as per the response categories indicated:

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

28. How often do you feel tired?
29. How often are you physically exhausted?
30. How often are you emotionally exhausted?
31. How often do you think: "I can't take it anymore"?
32. How often do you feel worn out?
33. How often do you feel weak and susceptible to illness?

1= "to a very high degree"	2= "to a high degree"	3= "somewhat"	4= "seldom"	5= "to a very low degree"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

34. Is your academic work emotionally exhausting?
35. Do you feel burnt out because of your academic work?
36. Does your academic work frustrate you?

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

234

37. Do you feel worn out at the end of the day after academic work?

38. Are you exhausted in the morning at the thought of another day working on your studies?

39. Do you feel that every academic working hour is tiring for you?

40. Do you have enough energy for family and friends during leisure time?

1= "to a very high degree"	2= "to a high degree"	3= "somewhat"	4= "seldom"	5= "to a very low degree"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

41. Do you find it hard to work with peers?

42. Do you find it frustrating to work with peers?

43. Does it drain your energy to work with peers?

44. Do you feel that you give more than you get back when you work with peers?

1= "always"	2= "often"	3= "sometimes"	4= "seldom"	5= "never/almost never"
Scoring 100	Scoring 75	Scoring 50	Scoring 25	Scoring 0

45. Are you tired of working with peers?

46. Do you sometimes wonder how long you will be able to continue working with peers?

Student Engagement

Please rate the following questions by indicating your agreement on a scale from 1="strongly disagree" to 5="strongly agree". Please think of the module you listed at the start of this survey.

47. I am enthusiastic about this class/module.

48. I feel energetic when I am in this class (either via online platforms or traditionally through face to face on-campus sessions).

49. I am interested in material I learn in this module.

50. I am proud of assignments I complete in this module.

51. I feel positive about the assignment I complete in this class/module.

52. I am excited about coming to this class (or attending via online platforms).

53. I work with intensity on assignments for this module.

54. I exert my full efforts toward this module.

55. I devote a lot of energy toward this module.

56. I try my hardest to perform well for this module.

57. I strive as hard as I can to complete assignments for this module.

58. I exert a lot of energy for this module.

59. When I am in the classroom for this module or attend this module via online platforms, my mind is focused on class discussion and activities.

60. When I am in the classroom for this module or attend this module via online platforms, I pay a lot of attention to class discussion and activities.

61. When I am in the classroom for this module or attend this module via online platforms, I focus a great deal of attention on class discussion and activities.

62. When I am in the classroom for this module or attend this module via online platforms, I am absorbed by class discussion and activities.

63. When I am in the classroom for this module or attend this module via online platforms, I concentrate on class discussion and activities.

64. When I am in the classroom for this module or attend this module via online platforms, I devote a lot of attention to class discussion and activities.

65. When I am reading or studying material related to this module, my mind is focused on class discussion and activities.

66. When I am reading or studying material related to this module, I pay a lot of attention to class discussion and activities.

67. When I am reading or studying material related to this module, I focus a great deal of attention on class discussion and activities.

68. When I am reading or studying material related to this module, I am absorbed by class discussion and activities.

69. When I am reading or studying material related to this module, I concentrate on class discussions and activities.

70. When I am reading or studying material related to this module, I devote a lot of attention to class discussions and activities.

Student Leader-Member Exchange

Please think of the lecturer responsible for the listed module and rate the below statements on the following scale 1="Rarely"; 2="occasionally";3 ="sometimes"; 4 ="fairly often"; 5="very often".

In my view, the lecturer of the specified module:

71. is satisfied with my work

72. understands my study problems and needs

73. recognises my potential

74. is willing to use his/her position to help me solve study-related problems

75. would be willing to help me in their own time

76. makes good decisions and I would defend or justify these decisions if they were not present to do so

77. encourages a good learning relationship

Learning Approach

The below questions are about your attitudes towards your studies and your usual way of studying.

There is no right or wrong answer and your answer would depend on what suits your own style. Please think of the specified module when answering the questions and answer each question as honestly as you can.

You need to rate the below responses on the following scale 1="never or rarely true of me", 2="sometimes true of me", 3="true of me about half the time", 4="frequently true of me", and 5="always or almost always true of me".

78. I find that at times studying gives me a feeling of deep personal satisfaction.
79. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.
80. My aim is to pass the module requirements while doing as little work as possible.
81. I only study seriously what's given out in class/via online platforms or in the module outlines.
82. I feel that virtually any topic can be highly interesting once I get into it.
83. I find most new topics interesting and often spend extra time trying to obtain more information about them.
84. I do not find the module very interesting so I keep my work to the minimum.
85. I learn some things by memorisation, going over and over them until I know them by heart even if I do not understand them.
86. I find that studying academic topics can at times be as exciting as a good book or movie.
87. I test myself on important topics until I understand them completely.
88. I find I can get by in most assessments by memorising key sections rather than trying to understand them.
89. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.
90. I work hard at my studies because I find the material of the module interesting.
91. I spend a lot of my free time finding out more about interesting topics which have been discussed in different online or traditional face to face classes.
92. I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance/familiarity with topics.
93. I believe that lecturers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined.
94. I come to or attend (via online platforms) most classes with questions in mind that I want answering.
95. I make a point of looking at most of the suggested readings that go with the lectures.
96. I see no point in learning material which is not likely to be in the examination.
97. I find the best way to pass examinations is to try to remember answers to likely questions.

Lecturer Performance

This section will require you to evaluate teaching and assessment during the second semester. Think of the lecturer responsible for the module you listed and rate the below statements on the following scale 1="always"; 2="regularly"; 3 ="sometimes"; 4 ="almost never"; 5="never"

98. The lecturer encouraged students to ask questions and express ideas (whether for online or traditional f2f classes).
99. The lecturer was available for consultations during set times (on-campus or via online platforms).
100.   The lecturer treated all students with respect and with patience during this period of online / blended learning.
101.   The lecturer used practical examples to explain the learning material.

102.   The practical examples were useful to the module.

103.   The lecturer was well prepared for each lecture/online meeting.

104.   The lecturer provided useful feedback when returning tests and assignments.

105.   The lecturer explained things well.

106.   The lecturer gave clear and satisfactory answers to questions.

107.   In this module, the assessments given (electronic or f2f) covered the content that was facilitated by the lecturer.

108.   The lecturer covered all the work at a steady pace.

109.   The lecturer showed a thorough knowledge of the subject.

110.   The lecturer communicated his/her subject well.

111.   The lecturer challenged me intellectually.

112.   The lecturer clearly interpreted abstract/theoretical ideas and theories.

113.   The lecturer encouraged students to think for themselves.

114.   The lecturer showed enthusiasm in the way the module was presented online.

115.   The lecturer always showed up for planned teaching whether online or on-campus.

116.   The lecturer marked and returned assessments within a reasonable time.

117.   The lecturer informed students as to how they were to be evaluated.

118.   Instructions for assignments were clearly worded.

119.   The lecturer regularly highlights current developments in this field.

FM WEISS

Translation and editing

MA (Applied Linguistics and Literary Science)
(cum laude)

21 Nama Rua, 262 Sprite Avenue,
Faerie Glen, Pretoria 0043

Tel: 012 361 4918
Cell: 084 519 9032
Email: rikaweiss@telkomsa.net

22 November 2021

DECLARATION OF PROFESSIONAL EDIT

Engagement among academic staff and undergraduate students: A multilevel analysis

by

Reynell van der Ross

Student number 14387906

This is to confirm that I edited this doctoral thesis, submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Industrial and Organisational Psychology) in the Faculty of Economic and Management Sciences at the University of Pretoria.

My involvement as an editor was restricted to checking the language usage, spelling, consistency, completeness and referencing style. The editing was done using track changes and comment boxes, and the onus was on the student to attend to the suggested changes. Therefore, responsibility for the final document rests with the student.

Yours faithfully

F. M. Weiss   22 November 2021

Appendix G: Ethical Clearance

Approval Certificate

29 June 2020

Ms MR van der Ross
Department: Human Resource Management

Dear Ms MR van der Ross

The application for ethical clearance for the research project described below served before this committee.

Protocol No:	EMS105/20
Principal researcher:	**Ms MR van der Ross**
Research title:	Engagement among academic staff and undergraduate students: a multilevel analysis
Student/Staff No:	14387906
Degree:	Doctoral
Supervisor/Promoter:	Prof C Olckers
Department:	Human Resource Management

The decision by the committee is reflected below:

Decision:	Approved
Conditions (if applicable):	
Period of approval:	2020-07-20 - 2021-06-30

Sincerely

pp **PROF JA NEL**
CHAIR: COMMITTEE FOR RESEARCH ETHICS