



School of Management Studies

## The Antecedents of Work-School Conflict and Work-School Enrichment

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### COMPULSORY DECLARATION

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### Abstract

The cost of higher education is rapidly increasing on both a global scale (Creed, French & Hood, 2015), and in the local South African context (Calitz & Fourie, 2016). This rise in costs has seen a commensurate increase in the number of university students who work, largely as a means to fund the increasing cost of their higher education (Butler, 2007; Cinamon, 2016; Owen, Kavanagh & Dollard, 2018). These working students are frequently referred to as non-traditional students in the academic literature. The psychological experiences of non-traditional students who work is a pertinent and expanding area of interest for multiple stakeholders (Owen et al., 2018). These experiences can be classified through the constructs of Work-School Conflict (WSC) and Work-School Enrichment (WSE), which refer, respectively, to the negative and positive aspects of the work-school interface (Butler, 2007). The antecedents of WSC and WSE experiences amongst non-traditional working students have to date not received any empirical attention in the South African research literature. This study aims to address this gap by contributing to the national body of knowledge in this area. The measures used were secondary self-report survey data completed by post-graduate university students who are simultaneously engaged in paid work ( $N=330$ ). Multiple regression analyses indicated that time demands, job demands and social support from work explained a significant proportion of WSC; whilst job-school congruence and social support within the work context were statistically significant predictors of WSE. Moderation analyses revealed that social support at work influenced the relationship between job demands and WSC, whilst employee role saliency significantly interacted with job-school congruence to influence WSE. The results of this study are aligned to international work-school research findings, which support the additive model of job characteristics as antecedents to WSC and WSE. These results also provide deeper insight into the less explored moderation effects of work resources and demands interacting to influence WSC and WSE. Theoretical, management and educational implications of these findings are considered in relation to the existing literature.

*Keywords:* Work-school conflict, work-school enrichment, antecedents, time demands, job demands, role saliency, social support from work, job-school congruence, job control

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## **Introduction**

### **Background**

The cost of higher education is rapidly increasing on a global scale (Archibald & Feldman, 2008; Creed et al., 2015; Park & Sprung, 2013). This trend is also prevalent in South Africa (SA), where inflation in higher education tuition for each year between 2009 and 2015 far exceeded the national general inflation rate (Calitz & Fourie, 2016).

The rise in higher education costs has seen a commensurate rise in global tertiary student employment rates, presumably as a means to fund the increasing cost of their higher education (Broadbridge & Swanson, 2005; Butler, 2007; Cinamon, 2016; Owen et al, 2018). For example, in the United States 76% of postgraduate students are employed for at least 30 hours per week (Carnevale, Smith, Melton & Price, 2015). Further support of this global trend has been widely observed in Australia (Hall, 2010), the United Kingdom (Broadbridge & Swanson, 2005), Nigeria (Adebayo, 2006) and Portugal (Andrade & Matias, 2017), amongst many other countries. These pervasive employment levels amongst tertiary level students have been found to occur irrespective of students' backgrounds (McNall & Michel, 2011).

On a global level, the financial necessity of covering tuition and living costs are most frequently cited as students' primary reason for engaging in paid employment (Curtis & Shani, 2002; Park & Sprung, 2013). Not only has the number of working university students grown substantially but there has also been a steady increase in the number of hours that students are dedicating to work offering financial remuneration (Coates, 2011). This has led to a decrease in the number of hours students dedicate to their school roles (Hall, 2010). Therefore, financial need is a key driver of the inexorable growth of university students who also work.

### **Motivation for this research**

Whilst there has been moderate global research focusing on the interface between the work and school domains, there is consensus amongst researchers in the field that the literature has not yet been conceptually nor empirically developed to its full extent (Broadbridge & Swanson, 2005; Cinamon, 2016; Creed et al., 2015). Particularly within the local SA context, there is a dearth of literature addressing the work-study interface of university students who are engaged in paid work (Subotzky & Prinsloo, 2011). Given the increasing prevalence of individuals necessarily navigating these multiple life roles, it has been acknowledged that a

deeper understanding of the work-school interface would be of relevance and value to multiple stakeholders (Butler, 2007).

A range of negative and positive potential consequences of simultaneous participation in both work and study roles have been identified (Olsen, 2014). These relate to performance, satisfaction and commitment across both the work and academic domains (Butler, 2007; Owen et al., 2018). There are also various health-related outcomes for individuals engaging in the dual roles of work and study, including psychological health (Park & Sprung, 2013) and general well-being (Creed et al., 2015). The impact of these consequences is important to multiple stakeholders, namely: (a) individual students who simultaneously engage in both roles, (b) the organisations who employ these individuals and who often sponsor their tuition, (c) academic institutions whose success is measured by outcomes such as student satisfaction and through-put, and (d) general society which places value on tertiary education as foundational for future prosperity (Owen et al., 2018). A clearer understanding of the antecedents that contribute to these outcomes will assist in providing better insight into how to more effectively support stakeholders to both attenuate the negative aspects and build on the positive aspects of occupying these multiple life roles (Owen et al., 2018).

### **Research question**

Focusing on those who simultaneously work and study at the post-graduate level in SA, this research concentrates on the antecedents of Work-School Conflict (WSC) and Work-School Enrichment (WSE) and asks: To what extent are time demands, job demands, social support at work and job control related to WSC? To what extent are job-school congruence, social support at work, job control and time demands related to WSE? Additionally, with regards to the moderators, to what extent do the interaction effects between work demands and work resources moderate the relationships between demands on WSC, and resources on WSE?

### **Research focus**

#### **Theoretical frame**

Role theory (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964) has provided the predominant theoretical foundation and framework which has been applied to the work-other role interface of multiple role involvement (Hecht & McCarthy, 2010). It is the key framework for this research together with additional complementary frameworks which have been recognised as germane to this field.

### **Multiple life roles**

Research into multiple role involvement was initially established by study of the work-family interface within the organisational stress literature. This has provided foundational knowledge to guide the more recent research of working whilst simultaneously holding additional life roles other than the family (Kossek & Lee, 2017). These include the student role (e.g. Butler, 2007) and caregiver role (e.g. Gordon, Pruchno, Wilson-Genderson, Murphy & Rose, 2012), amongst others. The interface between multiple life role domains has been examined from both a negative and more recently from a positive perspective, respectively inter-role conflict and inter-role enrichment (Creed et al., 2015).

### **The work-school domain**

Within the work-school domain, the constructs of WSC and WSE have emerged from the literature, and respectively refer to the negative and positive aspects of multiple role involvement (Butler, 2007).

The majority of global research relating to the work-school domain has historically focused on WSC as opposed to WSE, with few studies having focused holistically on both the positive and negative aspects (Cinamon, 2016; McNall & Michel, 2011). Much of the work-school research has focused on various outcomes which result from the experience of WSC or WSE, as these are often the most salient aspects for stakeholders (Park & Sprung, 2013). Therefore, there is scope to address the relevance of the antecedents of these phenomena in order to gain a fuller understanding of the causes of the various interplays between the work and school domains.

### **The antecedents of work-school conflict and work-school enrichment**

The antecedents of WSC and WSE are an important research focus as they can both predict and moderate WSC and WSE, which in turn have been shown to mediate academic, workplace and health-related outcomes (Butler, 2007). An increased understanding of the antecedents will provide valuable insight for multiple stakeholders (Owen et al., 2018).

### **Structure of the dissertation**

This introductory chapter establishes the background and rationale for the research. Chapter Two covers the theoretical and empirical foundations of the research by reviewing the extant literature on multiple role involvement, and focuses on the constructs of WSC and WSE and their antecedents and moderators to propose the research hypotheses. The method of

investigating the proposed hypotheses is detailed in Chapter Three. Chapter Four presents the results of the statistical data analyses. The results are discussed in Chapter Five, where the findings are linked to the literature and contributions to the existing body of knowledge are identified. An account of the research limitations and suggestions for future research are offered, and thereafter theoretical and management implications are considered.

## **Literature Review**

This chapter presents a structured overview of the theoretical and empirical knowledge relating to the work-school interface. The review is organised into four main sub-sections. Firstly, an overview of the search procedure and the context of the research is given for an understanding of its location within the wider literature. Secondly, a theoretical framework is provided along with an overview of the work-family domain, which offers the foundational basis for the work-school literature. Thirdly, the concepts of WSC and WSE are presented, along with an overview of their antecedents, moderators and outcomes together with the research propositions. Finally, the scope and aims of the current research project will be delineated.

### **Literature search procedure**

The procedure used to search for relevant literature was an online database search on EBSCO HOST via both UCT PRIMO and Google Scholar. The searched databases included Academic Search Premier, PsycINFO, Business Source Premier, Emerald and JSTOR. The search focused on academic peer-reviewed articles, however due to limited work-school literature at times also included unpublished research papers where these were deemed to be of relevance. The primary literature search was conducted from February 2018 to May 2018, and follow up searches were conducted through to April 2019 for new published studies. The searches included empirical and conceptual literature on the work-school interface, its antecedents and the theoretical underpinnings of the field. A Boolean search strategy was employed by searching key terms such as work-school, work-study, work-other, inter-role, conflict, interference, enrichment, facilitation, spillover, antecedents, moderators and social support. The reference lists of relevant articles were also scanned for additional research papers of interest. A total of 236 articles were identified in the searches.

### **Research context**

#### **The origins of work-school research**

Research into the work-school domain was initially located in the field of adolescent employment and focused on the impact of part-time employment on high school students (Cinamon, 2018). Early work-school researchers Wirtz, Rohrbeck, Charner & Fraser (1988) studied the link between job characteristics and academic outcomes amongst a group of high school students who were employed part-time. The researchers investigated the mechanism by which the intensity of perceived working hours inversely affected academic grades, and

proposed that an internal perception of strain and external social support was the link between hours and academic performance. Subsequently, other early research suggested that the quality of the job plays a mediating role in the perceived conflict between the work and school roles (Barling, Rogers & Kelloway, 1995).

Building upon this limited empirical work, Markel and Frone (1998) borrowed insights from the organisational stress literature covering adults who occupy both work and family roles. Their study was based on the seminal work-family research by Greenhaus and Beutell (1985), who investigated the competing pressures experienced by adults occupying these dual roles. Markel and Frone hypothesised that both school and work are similarly primary life roles for adolescents. Their research was the first to develop an integrative model of the antecedents and outcomes of WSC, explaining how WSC is the linking mechanism which is key to understanding the effect of work characteristics on school outcomes. The origins of work-school research were therefore broadly located in the adolescent employment literature, and also framed within the context of the adult organisational stress literature relating to multiple role involvement.

It is noted that the use of the term *school* in the work-school literature may stem from the majority of early work-school research initially focusing on high school students. A review of the literature indicates the use of the term *school* is also commonly used to refer to North American tertiary education institutions, with many universities being referred to as *colleges*. The British, Australasian and South African education systems tend to primarily use the term *university*. This disparity in terminology is aligned to the substantial differences which have been noted between the North American education system and those in other countries (Tight, 2007). Butler (2007) conducted seminal research into the work-school domain of tertiary education students. Using the term work-school, the researcher noted that the study of university students is an extension of the work-school literature, which is logical given the dual meaning of the term *school* in the American education system. This study will follow the same convention as previous researchers who have generally retained the use of the *work-school* term to refer to both high school and university students, even in the case of non-North American samples (Cinamon, 2016, 2018; Creed et al., 2015).

A lack of general research into the work-school domain of tertiary level students has been noted by several researchers (e.g. Cinamon, 2016; Creed et al., 2015; Owen et al., 2018; Park & Sprung, 2013). It has therefore been recommended that future research examines both the

negative and positive predictors and outcomes of the work-school interface at the tertiary level (Butler, 2007; McNall & Michel, 2011). This background to the origins of the work-school field is provided as a foundational context of the present study.

### **The non-traditional university student**

The socio-demographic characteristics of university students have generally been divided into two broad categories: (i) traditional, and (ii) non-traditional (Adebayo, 2006; Bamber & Tett, 2000). Although there is no clear agreement amongst researchers on the precise definitions, there are various factors which have been considered to distinguish between types of university students. These include age, employment responsibilities and family obligations (Crossan, Field, Gallacher & Merrill, 2003). Donohue and Wong (1997) classify non-traditional students as those who are 25 years of age and older, whereas Eppler and Harju (1997) define non-traditional students as those who have experienced a period of time out of the education system. Markle (2015) offers a definition of the non-traditional student as meeting any one of the following criteria: (a) aged 25 years or older, (b) at least a 5-year gap since previous schooling, (c) employed on either a part-time or full-time basis, or (d) fulfilling the role of spouse, parent or caregiver.

Although the various criteria differ somewhat, there is general consensus that a traditional student could be considered to be someone younger with less onerous work and family responsibilities. In contrast, a non-traditional student is often considered such by virtue of characteristics which predispose them to increased role challenges, such as their older age and increased levels of work and family responsibilities (Crossan et al., 2003; Gilardi & Guglielmetti, 2011).

A number of researchers have argued in favour of the value of obtaining a better understanding of the non-traditional university student, especially considering the rapidly increasing prevalence of this cohort (Adebayo, 2006; Creed et al., 2015; Donohue & Wong, 1997). The focus of the current study is post-graduate students who are engaged in paid work, and who are considered non-traditional students due to their employment status (Markle, 2015). For example, an employed professional who has returned to pursue a post-graduate qualification in their professional field (Donohue & Wong, 1997). This is in response to calls for more research to focus on adults who study. This can be contrasted with students who take on

secondary work responsibilities in addition to their primary student role, which underpins the bulk of the work-school literature (Cinamon, 2016).

### **The South African context**

Analogous to global trends, and especially given the rising cost of education and living in SA, the number of non-traditional students engaged in paid employment has steadily climbed (Calitz & Fourie, 2016).

In one of the first studies focusing on the prevalence and success factors of non-traditional adult students in SA, it was recorded that over 50% of enrolled students at one of the three universities in the study were over the age of 23 (Buchler, Castle, Osman & Walters, 2007). The study found that this student demographic held additional responsibilities requiring them to balance other key life roles stemming from their work and family commitments (Buchler et al., 2007). The majority of students enrolled at higher education institutions in SA depend on earning a living to support their studies and their families (Walters, 2010). Similarly, Letseka (2010) found that 25% of students enrolled in higher education institutions in SA work to supplement their living costs. Specifically focused at the undergraduate level, Koetsier (2009) found that over 90% of first year students enrolled in a part-time programme were employed and had family responsibilities. This indicates that financial need and additional role responsibilities impact on many of those enrolled in tertiary education in SA.

A unique plight facing SA universities are the challenges of low retention and success rates, despite national policies which attempt to facilitate positive outcomes (Subotzky & Prinsloo, 2011). Given that SA has a prevalence of high drop-out and stop-out rates amongst university students which is predominantly linked to lack of finances (Letseka, 2010), it follows that the individual experiences of those who simultaneously hold both work and study roles within SA is an important research area, as this juxtaposition of roles is perhaps becoming the new normal (Carnevale et al., 2015). The above evidence indicates an increasing prevalence of non-traditional students in SA, as well as increasing demands placed upon these individuals coupled with a limited understanding of the work-school domain in the SA context.

### **Post-graduate tertiary level**

Some researchers have noted a dearth of literature focusing on the post-graduate level, both globally (Cinamon, 2016; Park & Sprung, 2013) and in SA (Subotzky & Prinsloo, 2011). The notion of continuous lifelong learning to keep professional knowledge updated has helped

fuel the prevalence of non-traditional students, many of whom return to study at the post-graduate level (Crossan et al., 2003). This trend is driven by the rapid pace of change required for individuals and organisations to remain competitive in the knowledge economy (Clark, Jassal, Van Noy & Paek, 2018). These returning students are often funded via company-sponsored development programmes (Wyland, Lester, Mone & Winkel, 2013). Given the increasing prevalence of returning students and the multiple stakeholders involved, there is value in specifically examining the experiences of non-traditional post-graduate students.

### **Theoretical framework**

The predominant theoretical framework guiding the study of inter-role conflict and inter-role enrichment has been role theory (Kahn et al., 1964), and remains so today (Butler, 2007). Role theory has two hypotheses or perspectives, the scarcity perspective and the expansionist perspective, which respectively account for the negative and positive spheres of multiple role involvement. Role theory will therefore be used as the primary theoretical foundation and conceptual framework for the current research.

Recognised relevant complementary theories will also be considered. These are resource drain theory (Goode, 1960), resource expansion theory (Barnett & Hyde, 2001), the resource gain development (RGD) perspective (Wayne, Grzywacs, Carlson & Kacmar, 2007) and the job demands-resource (JD-R) model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

A background to the development and explanation of the scarcity perspective, followed by the expansionist perspective is provided, along with an outline of the related theories. Additionally, the JD-R model will be considered as a complementary theoretical framework, as recent research into the balancing of multiple life roles has highlighted this theory as providing a supporting perspective to role theory (Bakker, ten Brummelhuis, Prins & van der Heijden, 2011; Owen et al., 2018).

#### **The scarcity perspective of multiple life role involvement**

Since the 1960s the scarcity perspective has been the initial and prevailing approach to examining the issue of holding multiple life roles (Biddle, 1986). It is based on role conflict theory developed by occupational stress researchers Kahn et al. (1964), who investigated the types of conflict inherent within the work role. Kahn et al. define role conflict as the "simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make more difficult compliance with the other" (1964, p. 19). Greenhaus and Beutell

(1985) pioneered inter-role research by focusing on the work-family interface, two primary life roles which many individuals are required to navigate. These authors built upon role stress theory noting that intra-role conflict could occur when incompatible pressures are experienced within a single role, whereas inter-role conflict could result from incompatible pressures arising from participation in multiple roles. The scarcity hypothesis focuses on the negative aspect of multiple role involvement, and is characterised by its address of finite resources with which to meet the time-, strain- or behaviour-based demands of these roles (Greenhaus & Beutell, 1985).

The scarcity hypothesis is also built upon the theory of role strain proposed by Goode (1960), which proposes that individuals have conflicting role demands due to limited and finite resources (Goode, 1960). It therefore follows that resources used in one role take away from available resources which could be used in another role, leading to inter-role conflict if demands in the other domains cannot be met (Greenhaus & Beutell, 1985). The resultant strain which could result from these incompatible and competing role demands is known as inter-role conflict.

The theoretical underpinning of WSC is the scarcity hypothesis, which focuses on the stress which arises from juggling multiple roles. However, this negative perspective does not explain the positive benefits which may emerge as a result of participation in multiple roles.

### **The expansionist perspective of multiple life role involvement**

The positive or expansionist perspective of role theory posits that participation in one role can generate additional resources which can then be harnessed and utilised in a different life role, leading to inter-role enrichment (Greenhaus & Powell, 2006).

Contrasting schools of thought began to emerge in the 1970's which challenged the notion of a purely negative side of the inter-role interface. Sieber (1974) posited that multiple role involvement positively enhances the individual rather than simply depletes a set of finite resources. Marks (1977) argued that personal resources can expand from an increase in energy when individuals fulfil multiple roles simultaneously, leading to physical and psychological health benefits.

Frustrated by outdated and irrelevant theory to account for the changing demographics of the workforce, Barnett and Hyde (2001) proposed a new theoretical model of work, gender and family nested in the work-family domain. The authors argued that simultaneous fulfilment of work and family roles can also be beneficial to an individual. These benefits are derived from processes resulting from performing multiple roles and may include a buffering effect, additional

income, increased social support, learning opportunities, alternative perspectives and an enhanced sense of self-efficacy. However, these positive outcomes are mediated by the number and quality of roles one assumes, and the time invested in each role (Barnett & Hyde, 2001). The inter-role enrichment literature is rooted in the expansionist hypothesis, and is a bi-directional construct with its own set of antecedents (Grzywacs & Butler, 2005).

Given the limited frameworks for understanding the positive aspects of multiple role involvement, the RGD perspective (Wayne et al., 2007) was developed as a conceptual model to explain both how and why inter-role facilitation occurs. Wayne et al. argue that a combination of propositions from certain theories can be integrated to identify the predictors, moderators and outcomes of inter-role enrichment. These are: (a) positive organisational scholarship (POS) (Cameron, Dutton & Quinn, 2003), which maintains that individuals are predisposed to seeking positive experiences as a means to developing their strengths for beneficial functioning; (b) ecological systems (ES) theory (Bronfenbrenner, 1979), which postulates that individuals are inclined to positively develop themselves through a process of interaction with the resources and demands in their environment; and (c) conservation of resources (COR) theory (Hobfoll, 1989), which provides a framework for identifying various types of resources in the environment. Hobfoll organised these into the categories of personal characteristics, objects, conditions, energy and support. POS and ES theories therefore inform why inter-role enrichment occurs, and the addition of COR theory accounts for how it occurs (Wayne et al., 2007). The RGD perspective proposes that individuals are predisposed to positive development through the use of personal and environmental domain resources, which enable enrichment in the other role (Wayne et al., 2007).

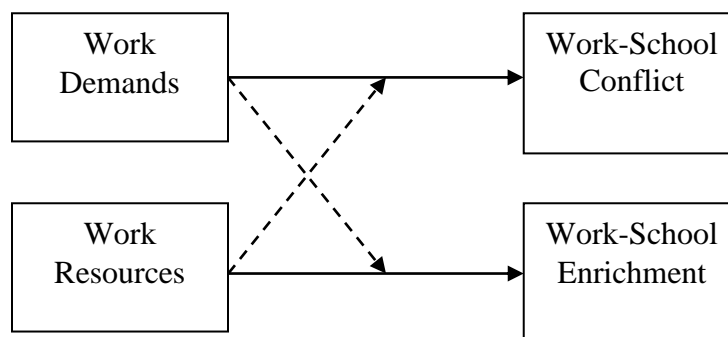
### **The Job Demands-Resource model as a complementary perspective**

The constructs of inter-role conflict and inter-role enrichment can also be considered using a complementary perspective, which could help to counter some of the limitations of role theory. For example, the latter does not specify any mechanisms by which moderating variables could intervene and buffer the negative effects of role demands (Grandey & Cropanzano, 1999). Therefore, it is useful to consider additional theories which can aid a more comprehensive and holistic understanding of the interface between work and study.

The JD-R model (Demerouti et al., 2001) is a conceptual framework which can be applied to understand how combinations of job characteristics impact on WSC and WSE (Bakker

et al., 2011). The roots of the JD-R model are located in the occupational health and safety field and focus on job design, viewed as a combination of job demands and job resources. Job demands refer to stressors and overload, whereas job resources refer to positive aspects of the role such as autonomy and skills development (Demerouti et al., 2001). These job characteristics should be considered as combinations of demands and resources which require balance to ensure well-being and protect from stress overload and burnout (Bakker & Demerouti, 2007). Despite many researchers investigating job characteristics as additive antecedents, Bakker et al. (2011) have called for inter-role researchers to consider the interaction of resources and demands when investigating the impact of work on other primary life roles.

Responding to this call, Owen et al. (2018) drew on the JD-R model to propose a comprehensive model which can be used to examine the work-school interface; and the researchers labelled this model the psychosocial safety climate extended job-demands resource model (Owen et al., 2018). This extended model maintains that to exclusively extract insights from role theory as applied to the work-family domain may not be especially relevant given that work is a task-based role and family is a social-based role. As the work-school concept entails two task-based roles, there may be different dynamics at play (Owen et al., 2018). In Figure 1 below, the direct relationship is indicated between the demands and the conflict and the resources and the enrichment. There are also secondary moderating relationships which can provide a more accurate account of the work-school interface. The work demands could include time demands whereas work resources could include job control.



*Figure 1.* A portion of the model of the proposed work-study interface according to the extended JD-R model, adapted from Bakker et al. (2011) and Owen et. al. (2018); solid lines indicate a direct relationship and dotted lines indicates a secondary moderating relationship.

### **The work-family domain as a scaffold to the work-school domain**

Research into the balancing of multiple life roles has largely focused on the work-family interface, resulting in a plethora of research into the work-family domain (Allen, Johnson, Saboe, Cho, Dumani & Evans, 2012; Byron, 2005). Although the work-family interface is not the focus of the current research, the work done in this domain has informed the foundation of the work-school literature, so a brief outline of the work-family literature is provided.

#### **Work-family conflict**

Greenhaus and Beutell (1985) conducted seminal inter-role research of the work-family domain by examining the antecedents of work-family conflict (WFC). The authors found that inter-role conflict occurs when there is incompatibility between the pressures stemming from multiple roles, such that partaking in one role makes partaking in another role more challenging. The components of this inter-role conflict can be characterised as being one of, or a combination of, time-based, strain-based or behaviour-based demands. For example, time-based demands relate to the number of work hours required by employers, strain-based demands include psychological strain between role demands, and behaviour-based refers to incompatible behaviours in terms of normative role characteristics (Greenhaus & Beutell, 1985).

Frone, Russell and Cooper (1992) extended the work-family literature by studying the antecedents and outcomes of WFC. They found there was a bidirectional relationship between the two domains, with unique cross-domain antecedents for each type of conflict. Job stressors and job involvement were associated with the work role conflicting with the family role, whilst family stressors and family involvement were associated with the family role conflicting with the work role (Frone et al., 1992).

#### **Work-family enrichment**

The work-family research that followed Greenhaus and Beutell (1985) and Frone et al. (1992) initially focused exclusively on the negative facet of inter-role occupancy. Based on research by Sieber (1974), Marks (1977), and incorporating Barnett and Hyde's (2001) expansionist perspective, work-family researchers such as Carlson, Kacmar, Wayne and Grzywacz (2006) have more recently begun investigating the possibilities of work-family enrichment (WFE), which is characterised by resource accumulation in the work role positively spilling over to assist with family responsibilities, thereby enhancing the family role.

Greenhaus and Powell (2006) synthesised prior WFE research to develop a model of inter-role enrichment, positing that enrichment occurs when resources are generated in one life role, which can then become available for use in another life role through an instrumental or affective pathway. The five different categories of resources which can be generated in the work role and spill over to be utilizable in another life role are: (a) skills and perspectives, (b) psychological and physical, (c) socio-capital, (d) flexibility and (e) material (Greenhaus & Powell, 2006).

Another integrative resource-based model was developed by Wayne et al. (2007), the RGD perspective. Accounting for how and why inter-role facilitation occurs, it maintains that individuals are predisposed towards positive development, and that the interplay between personal and environmental resources and demands is key to facilitation or enrichment.

Enrichment arising from the participation in multiple life roles has also been given other names to describe the same effect. For example, *facilitation* (Butler, 2007) which has a slightly different distinction regarding the level of analysis (systems level), yet is often used interchangeably by researchers. The term *enrichment* (individual level) will be used for the purposes of this research.

### **Conceptualisation of work-school conflict and work-school enrichment**

The work-family literature demonstrates how an individual occupying more than one role can experience a scarcity of resources leading to inter-role conflict, and/or a generation of resources leading to inter-role enrichment. As work and school are also two primary life roles, these insights have been extrapolated and used as a basis to guide the newer research area of the work-school domain (Butler, 2007). Grzywacz and Butler (2005) found evidence to support WSC and WSE as distinct constructs each with its own unique set of antecedents. The authors suggested that inter-role conflict emanates from competing demands in different domains. Whereas inter-role enrichment stems from resources gained in one domain which enable development of further resources in a different domain, thereby improving performance and positive affect. The direction of the relationship is often cross-domain i.e. antecedents in the work role impact the study role, but there is also evidence of same-domain effects i.e. antecedents in the work role impacting the work role and vice versa. The definitions of WSC and WSE follow on respectively from the theoretical perspectives of resource scarcity and resource expansion.

### **Work-school conflict**

Markel and Frone (1998) define WSC as the degree to which requirements to use resources in the work domain utilise resources which then reduce the availability of resources to manage requirements in the school domain. These requirements could be time-based, strain-based or behaviour-based (Greenhaus & Beutell, 1985). Grounded in the work-family literature, alternative names for WSC include *interference* and *negative spillover*.

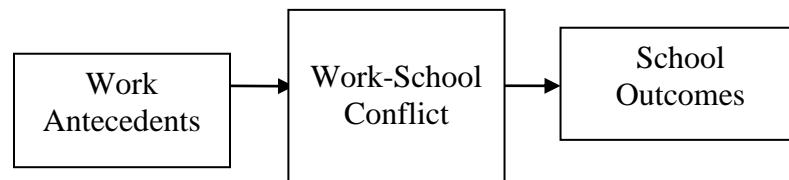
### **Work-school enrichment**

Using Greenhaus and Powell's (2006) model of work-family enrichment, WSE can be defined as the resources generated in the work role being available for use in the school role. Therefore, positive enhancements in the school domain result from resources gained from participating in the work domain (Butler, 2007). Alternative terms for WSE include *facilitation* and *positive spillover*.

### **Antecedents and outcomes of work-school conflict and work-school enrichment**

Initially, research into the work-school domain focused on the negative aspects, namely WSC (Markel & Frone, 1998). More recently researchers have shifted their focus and now also give attention to the positive side of the work-school interface, WSE (Butler, 2007). An outline of prior research findings on the antecedents and outcomes of WSC and WSE will follow to offer a holistic basis for the research propositions. These propositions will also be presented.

Much of the work-school literature points towards unique antecedents predicting WSC and WSE (refer to Figures 2 and 3 below), although there has also been overlap of some antecedents influencing both constructs. In terms of directionality, the literature strongly supports cross-domain effects, meaning that characteristics of the work role impact on outcomes in the school role (McNall & Michel, 2011). In addition, some evidence of same-domain effects has been examined and supported (Hammer, Grigsby & Woods, 1998). The scope of this study is limited to examining the cross-domain effects.



*Figure 2.* A simple path model of WSC and cross-domain effects, adapted from Markel and Frone (1998).

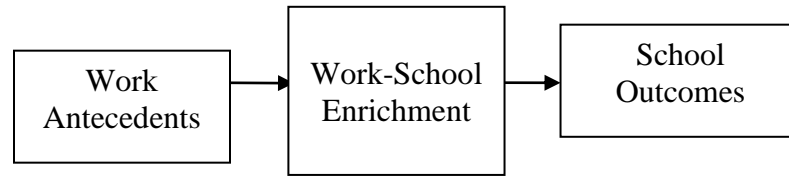


Figure 3. A simple path model of WSE and cross-domain effects, adapted from Butler (2007).

### **Antecedents of work-school conflict**

The antecedents of WSC are comprised of demands which can be one or a combination of either time-based, strain-based or behaviour-based (Greenhaus & Beutell, 1985). The antecedents of WSC are predominantly comprised of cross-domain job characteristics emanating from the work domain, which deplete available resources and therefore lead to interference with the study role (Butler, 2007). This discussion of the antecedents of WSC includes the construct definitions and the research propositions which follow from the literature.

*Time-based demands* refer to the number of hours dedicated to the work role within a weekly time period (Butler, 2007). These time demands have been strongly associated with WSC across numerous studies, with increasing work hours predicting higher levels of WSC as available study time is reduced (Butler, 2007; Cinamon, 2016; Creed et al., 2015; Markel & Frone, 1998). In contrast to these results Cinamon (2018) found that the number of working hours did not predict higher levels of WSC in a sample of high school students, which could be attributed to the life stage of that specific sample, less stressful jobs and their differing appraisal of time-based resources.

**Hypothesis A1:** *Time demands* are directly and positively related to WSC.

*Job demands* refer to the workload attached to a work role, which impacts on the time and energy spent to meet the demands of that role (Butler, 2007). Researchers have found strong evidence to support the link between job demands positively correlating with WSC, meaning that as the demands of the job increase, so too does WSC (Butler, 2007; Meeuwisse, de Meijer, Born & Severiens, 2017; Wyland, Lester, Ehrhardt & Standifer, 2016). Similarly, Markel and Frone (1998) found that workload was positively related to WSC. Support for job demands as a strong antecedent to WSC was also established by Olson (2014), who found that work demands significantly related to increased time-, strain- and behaviour-based WSC. Conversely, Creed et al. (2015) found that strain and behaviour-based demands of the work role, whilst bi-variately

correlated with WSC, did not explain any additional unique variance in the WSC model over and above that explained by time demands. This was an unexpected result, and Creed et al. suggested that their scales measured fairly broad demand constructs instead of including more specific and detailed items which may have been more relevant for working students.

***Hypothesis A2:*** *Job demands* are directly and positively related to WSC.

*Job control* refers to the latitude afforded to the employee to decide on and therefore control the nature and timing of work for which they are responsible. This autonomy generates positive resources such as self-efficacy which can then be used to assist with responsibilities in both the school and work domains (Butler, 2007). Butler drew on findings from the work-family literature to hypothesise that decreased job control would be related to increased WSC. The results Butler obtained supported this hypothesis, which echoes findings by Barling et al. (1995) and Meeuwisse et al. (2017) who also established an inverse relationship. However, Wyland et al. (2016) found no support to suggest that job control was negatively correlated to WSC. Although this finding was unexpected, the authors argue it could be plausible that having more control at work does not necessarily translate to an ability to influence study-related schedules and deadlines.

***Hypothesis A3:*** *Job control* is directly and negatively related to WSC.

*Social support at work* refers to perceived support for the school role from different work sources including supervisors and co-workers (Cinamon, 2018; Cinamon, 2016). Perceived organisational support and an interest in the study role from workplace colleagues and supervisors has been shown to have a strong negative correlation with WSC (Adebayo, 2006; McNall & Michel, 2017; Wyland et al., 2016). Similarly, Cinamon (2018) found that low levels of social support were associated with more WSC in high school students.

However, evidence of the relationship between social support and WSC amongst university students is mixed. For example, McNall and Michel (2017) established that school-specific social support from the workplace reduced WSC in working university students but found that school-specific social support specifically from the family domain was not related to WSC. The authors emphasise that both the source and type of social support are important factors. This is consistent with Kossek, Pichler, Bodner and Hammer (2011) who conducted a meta-analysis of social support in the work-family domain, and identified differences between

the impact of various sources and types of social support. Unexpectedly, Cinamon (2016) found no relationship between social support and WSC in a sample of Israeli university students. Although Cinamon does not specifically account for this finding, it is possibly linked to the social support scales which asked about general social support from family, friends and significant others, as opposed to social support from the work domain. Therefore, there is evidence to support the notion that social support can originate from a number of sources some of which may be more impactful than others. There is strong cross-domain substantiation for social support originating in the work domain being a negative predictor of WSC.

***Hypothesis A4:*** *Social support at work* is directly and negatively related to WSC.

More recently, there has been a focus on researching *dispositional variables* as antecedents to WSC. For example, McNall and Michel (2011; 2017) found that the psychological resource of core self-evaluations (CSEs) was negatively related to WSC. However, contrary to their initial expectation the psychological resource of proactive personality was not related to WSC (McNall & Michel, 2011). The antecedents of WSC can be summarised as the resource draining elements of a job, such as time-based and strain-based demands, as well as personal factors such as individual differences.

#### ***Outcomes of work-school conflict***

Although the focus of this study is on the antecedents of the work-school interface, a brief review of the outcomes of WSC is necessary for appropriate context.

An expected consequence of unidirectional WSC is that the work role negatively impacts on academic performance, but there is mixed support for this in the literature. There is moderately strong empirical support for WSC being negatively related to school performance (Butler, 2007; Cinamon, 2016; Markel & Frone, 1998). There is also support to suggest that WSC is associated with lower academic behaviour, for example poorer attendance levels, and that WSC detrimentally affects academic plans (Cinamon, 2016; Cinamon, 2018; McNall & Michel, 2011). The findings of McNall and Michel (2011) however, did not support grade point average (GPA) as an outcome of WSC.

Olson (2014) found that higher WSC was significantly related to decreased academic satisfaction and Creed et al. (2015) found that higher WSC was positively associated with adverse feelings towards the university. Similarly, Markel and Frone (1998) established an indirect link between WSC and school dissatisfaction. These results have been mixed. Although

expecting a negative relationship between WSC and school satisfaction, no evidence to support this hypothesis was found by either Butler (2007) nor McNall and Michel (2011).

Some evidence has been found to support the same-domain effect of WSC inversely impacting on job satisfaction but not on job performance (McNall & Michel, 2011; McNall & Michel, 2017; Olson, 2014; Wyland et al., 2016). Evidence of higher WSC correlating with decreased life satisfaction has not been established (Cinamon, 2016; Cinamon, 2018).

In terms of health outcomes, WSC has been significantly linked to negative impacts on psychological health (Park & Sprung, 2013), school burnout (McNall & Michel, 2017) and depression (Cinamon, 2016). However, no significant relationship was found between WSC and physical health (Park & Sprung, 2013), possibly because physical symptoms may take longer to manifest. Therefore, there has been mixed evidence of the inverse impact of WSC on academic outcomes, and job-related outcomes. There has been support for negative psychological health outcomes of WSC.

### **Antecedents of work-school enrichment**

This discussion of the antecedents of WSE includes the research propositions which follow from the WSE literature and the construct definitions. As some have already been defined as part of the review of the antecedents of WSC, those definitions will not be repeated in this section. In his seminal work-school research, Butler (2007) drew upon findings in the work-family literature to postulate that certain job characteristics were related to WSE.

*Job-school congruence* refers to the content of the work role being aligned to the content learned in the school role. This leads to employees having the opportunity to practice and apply their knowledge and skills within a relevant context, thereby increasing their levels of learning which, in turn may have positive effects across both the work and school domains (Butler, 2007). Job-school congruence was therefore proposed by Butler as an antecedent of WSE, and his findings supported this proposition. Further support of this relationship was obtained by Meeuwisse et al. (2017), who found that work-study congruence is a significant predictor of WSE.

***Hypothesis B1:*** *Job-school congruence* is directly and positively related to WSE.

*Job control* was found to be a significant predictor of WSE by Butler (2007), Meeuwisse et al. (2017) and Wyland et al. (2016).

***Hypothesis B2:*** *Job control* is directly and positively related to *WSE*.

*Social support* from multiple sources has been established as an antecedent of *WSE*. Cinamon (2016; 2018) found interpersonal social support was associated with increased *WSE* for working students at both the high school and university levels, and academic social support was associated with increased *WSE* for working university students (Cinamon, 2016). Wyland et al. (2016) and McNall and Michel (2017) found that school-specific social support from the work domain was positively related to *WSE*. However, contrary to initial expectations, school-specific social support from the family domain was not related to *WSE* (McNall & Michel, 2017).

***Hypothesis B3:*** *Social support at work* is directly and positively related to *WSE*.

Cinamon (2016) found that university students who have higher *time demands* in terms of number of hours spent in the workplace, experience lower levels of *WSE*. Following on from the strong support for number of work hours positively correlating to *WSC*, together with this finding from Cinamon, a logical inference is that the number of working hours could be negatively associated with *WSE* (Butler, 2007; Cinamon, 2016; Creed et al., 2015). However, given the lack of strong support in the literature for time demands predicting *WSE*, there may also be a case of a Goldilocks effect occurring where an ideal number of hours is beneficial to both the work and school domains (Dundes & Marx, 2007). These authors have suggested that there is an optimal number of working hours before any negative effects set in, which has been proposed as a possible explanation to account for these inconsistent findings.

***Hypothesis B4:*** *Time demands* are directly and negatively related to *WSE*.

McNall and Michel (2011; 2017) focused on *dispositional variables* in their research and found that both general *CSEs* and school-specific *CSEs* as well as proactive personality were positively related to *WSE*. Creed et al. (2015) found that enabling resources such as skills, psychological rewards and job involvement were positively associated with *WSE*.

Interestingly, Wyland et al. (2016) unexpectedly found that job demands were positively related to *WSE*, speculating that this could be due to: (a) university students appraising work demands as challenges rather than threats, or (b) the nature of the work role leading to enrichment of the school role, or (c) dispositional differences which played a significant role.

The antecedents of *WSE* include resource-enhancing job characteristics such as job control and job-school congruence as well as social support from work. There is some support

for number of working hours negatively predicting WSE, whilst some evidence to point towards dispositional variables being associated with WSE.

### ***Outcomes of work-school enrichment***

Although the focus of this study is on the antecedents of the work-school interface, a brief review of the outcomes of WSE is relevant for a more comprehensive understanding.

WSE has been positively related to increased academic performance (Butler, 2007), better grades and academic behaviour (Cinamon, 2018), higher GPA scores (McNall & Michel, 2011), further study (Cinamon, 2016) and increased academic engagement (Creed et al., 2015). However, in a later study, McNall and Michel (2017) found contradictory evidence suggesting that WSE was not positively related to GPA, which they suggested may have been due to substantial missing data on the GPA variable.

WSE has shown to be significantly and positively related to both academic and job satisfaction (Butler, 2007; McNall & Michel, 2017; McNall & Michel, 2011; Wyland et al., 2016). WSE has also been positively associated with life satisfaction (Cinamon, 2016).

Wyland et al. (2016) found that WSE was related to job performance at work, although McNall and Michel (2011) did not establish a relationship between WSE and job performance.

In terms of psychological health, Creed et al. (2016) found that WSE was positively associated with well-being, although Cinamon found that WSE did not negatively correlate with depression, which was contrary to the expected finding. Also contrary to expectation, McNall and Michel (2017) found that WSE was not associated with psychological health nor burnout.

There is moderate to strong support that the outcomes of WSE are positive performance and satisfaction in the school domain, and some support for positive psychological well-being as a consequence of WSE.

### **Moderators of work-school conflict and work-school enrichment**

The work-school antecedents have been considered in terms of their direct relationships with WSC and WSE. However, research extending beyond the establishment of direct associations can derive a more nuanced understanding of the boundary conditions of these relationships (Hayes, 2018). According to Hayes, this entails assessing whether the association between two variables depends on the level of a third moderator variable.

Research into the moderators of the work-school interface is underdeveloped, and largely based on the work-family literature. Some researchers have suggested that gender (Greenhaus &

Powell, 2006), work role salience (Greenhaus & Beutell, 1985) and social support (Carlson & Perrewe, 1999) may act as moderating variables of the work-family interface. However, evidence is inconclusive and many potential moderators may also act as antecedents. For example, Greenhaus and Beutell (1985) suggested that work role salience could be both a direct antecedent of WFC and a positive moderator of the relationship between antecedents and WFC.

In terms of work-school, there has been some support that the quality of the work role moderates WSC (Barling et al., 1995). On the alternative side of the interface, some evidence of moderating variables on WSC and WSE and their respective outcomes has been established. For example, Park and Sprung (2013) found that supervisor support, personal fulfilment at work and WSE moderated the effect of WSC on psychological health.

In studying the work-school interface of university students who also work, Butler (2007) used role theory and the additive model of antecedents as the predominant theoretical framework. Based on the work of Demerouti et al. (2001) and the JD-R model, Butler also proposed a secondary set of interaction hypotheses to investigate the moderating effects of demands on resources and vice versa, if any. Butler examined the combined effects of the work resources (work demands) moderating the work demands (work resources) on WSC (WSE). As no evidence was found to support these proposed interaction effects, Butler concluded that an additive work-school model was likely more accurate. Although, Butler noted that the interaction effects remained understudied in the work-school research, and should be further explored. This is in alignment with Broadbridge and Swanson (2005) who argue that there is room for further development in defining the theoretical basis of the work-school literature. As Butler's sample only focused on traditional undergraduate university students in the United States, a study investigating these interaction effects when examining non-traditional post-graduate students in the SA context may be a useful addition to the local body of knowledge on this subject.

Owen et al. (2018) and Bakker et al. (2011) have called for the JD-R model (Demerouti et al., 2001) to be tested as a complementary theoretical framework of the work-school interface. The extended JD-R model (Owen et al., 2018), together with the recommendations by Butler (2007) will therefore be used to propose a secondary set of hypotheses. The interaction effects which may impact on the psychological experiences of those who work and study will be examined. It is expected that resources will moderate the relationship between demands and WSC, whilst demands will moderate the relationship between resources and WSE.

### **Work resources**

The work resources which may moderate the relationship between demands and WSC are *job-school congruence*, *job control* and *social support at work*. The precise location of social support has been considered in a number of permutations within models of the work-family interface (Carlson & Perrewe, 1999; Kossek et al., 2011; Michel, Mitchelson, Pichler & Cullen, 2010). Social support has often been proposed as a moderating variable which buffers the relationship between WFC or WFE and outcomes of WFC (Kossek et al., 2011). In terms of the antecedents of inter-role conflict, social support has been proposed as: (a) an independent contributor to role conflict, (b) as a mediating variable between role stressors and role conflict, and (c) as an antecedent to role stressors, which then predict role conflict (Carlson & Perrewe, 1999).

Owen et al. (2018) have noted that the work-school research is distinct from the work-family domain, with work and school both being task-based roles, while family is a social role. It is argued that the more comprehensive JD-R model could potentially better account for the dynamics of the work and school interface (Bakker et al., 2011).

Kossek et al. (2011) found that supervisor work-family support had a significant direct effect on WFC, when controlling for other predictors. These authors have called for a nuanced consideration of the sources of social support which may play parts in multiple life roles, and whether these sources are located in the same-domain or cross-domain. The empirical research into the work-school domain tends towards the use of social support as a direct antecedent to conflict and/or enrichment. This is the case even when the full model from antecedent through to consequence of WSC and WSE was studied (Adebayo, 2006; Cinamon, 2016; McNall & Michel, 2011; McNall & Michel, 2017; Wyland et al., 2016). Thus, social support as a direct antecedent to WSC and WSE is a primary hypothesis of this study. The secondary set of hypotheses based on the JD-R model include social support postulated as part of a combination of resources buffering demands and its relationship with WSC.

In terms of the interactions between demands and resources on WSC, the following hypotheses are proposed (*JC = job control*; *JSC = job-school congruence*; *SSW = social support at work*):

**Hypothesis A5:** Resources (*JC*, *JSC* or *SSW*) negatively moderate the effect of *time demands* on *WSC*, with increasing resources associated with lower levels of *WSC*.

**Hypothesis A6:** Resources (*JC*, *JSC* or *SSW*) negatively moderate the effect of *job demands* on *WSC*, with increasing resources associated with lower levels of *WSC*.

**Hypothesis A7:** Resources (*JC*, *JSC* or *SSW*) negatively moderate the effect of *employee role saliency* on *WSC*, with increasing resources associated with lower levels of *WSC*.

### **Work demands**

The work demands which could moderate the relationship between resources and WSE are *job demands*, *time demands* and *employee role saliency*.

*Employee role saliency* can be classified as a type of demand originating in the work-domain which impacts on the school domain. According to Greenhaus and Beutell (1985), role saliency refers to which one of the multiple primary life roles is considered more central to an individual's self-concept. It is related to a similar construct which is role involvement, or the extent to which an individual identifies with the importance of a particular role which comprises a major component of their self-concept (Lodahl & Kejner, 1965). Employee role saliency can either be viewed as a characteristic of the work role or as a type of personal demand originating in the work domain, as it may relate to the nature of the work as well the individual's perception of the centrality of work involvement in their life (Aldous, 1969).

Greenhaus and Beutell (1985) have suggested that employee role saliency may act as an antecedent or a moderator in their proposed model. Although Frone et al. (1992) expected job involvement to positively predict WFC, this was not supported by their study. Cinamon (2016) expected to find that work role salience was positively correlated with both WSC and WSE but found that work role salience was only a positive predictor of WSE. Similarly, Singla (2013) investigated the related concept of role involvement as an antecedent to both WSC and WSE, however neither of these associations were supported. Carlson et al. (2006) found that role salience was a moderator of WFE. Based on the inter-role literature, there is therefore limited support for employee role saliency being an antecedent, thus it will only be considered as a potential moderator in the current study.

The following hypotheses are proposed in terms of the interactions between resources and demands on WSE (*TD* = *time demands*; *JD* = *job demands*; *ERS* = *employee role saliency*):

**Hypothesis B5:** Demands (*TD*, *JD* or *ERS*) negatively moderate the effect of *job control* on *WSE*, with increasing demands associated with lower levels of *WSE*.

**Hypothesis B6:** Demands (*TD*, *JD* or *ERS*) negatively moderate the effect of *job-school congruence* on *WSE*, with increasing demands associated with lower levels of *WSE*.

**Hypothesis B7:** Demands (*TD*, *JD* or *ERS*) negatively moderate the effect of *social support at work* on *WSE*, with increasing demands associated with lower levels of *WSE*.

### **Socio-demographic variables**

The socio-demographic variables of respondents considered as co-variables in a number of other inter-role studies include age and gender. In their study focusing on the impact of job characteristics on WFE, Grzywacz and Butler (2005) controlled for gender and age and found that older females reported higher levels of WFE. Butler (2007) found that older working students worked increased hours and had more job control. McNall and Michel (2017) recommended that *dispositional variables* such as personality should be studied in more detail. A related area is *socio-demographic variables* which will therefore be included in the current study.

### **Defining the scope of the current research project**

#### **Directionality**

Like Frone et al. (1992), other work-family researchers have also focused on the bi-directionality of the relationships between the work and family domains and this trend has also extended into the work-school research domain. Although some work-school researchers have studied a bidirectional approach (Creed et al., 2015; Wyland et al., 2013) the scope and timeframes of the present research necessitate limiting the focus to a unidirectional approach. The aim in this study is to isolate work factors that impact specifically on the school domain.

#### **Research aims**

Given the increasing prevalence of individuals who work and study, the aim of this research is to examine the antecedents of WSC and WSE amongst non-traditional post-graduate students. There is limited knowledge of the work-school interface in SA, and this research attempts to fill a gap by contributing to the empirical body of knowledge and the existing literature to increase local knowledge in SA. This study aims to examine key job characteristics of the work context as antecedents to WSC and WSE. Specifically, this research aims to examine the relationships between *job demands*, *job control*, *social support at work* and *time demands* on *WSC*; and *job control*, *job-school congruence*, *social support at work* and *time demands* on *WSE*, using secondary cross-sectional self-report survey data. The interaction effects between demands and resources on *WSC* and *WSE* will also be considered.

**Expected results**

It is expected that the work stressor antecedents will be positively related to WSC whilst the work resource antecedents will be negatively associated with WSC. It is also expected that the role resource antecedents will be positively related to WSE whilst role demand antecedents will be negatively associated with WSE. In terms of interaction effects, it is expected that work resources will buffer the relationship between work demands and WSC, whilst work demands will negatively moderate the relationship between work resources and WSE.

**Conceptual Framework**

The proposed model indicating the additive and moderation hypotheses is illustrated in Figure 4 below.

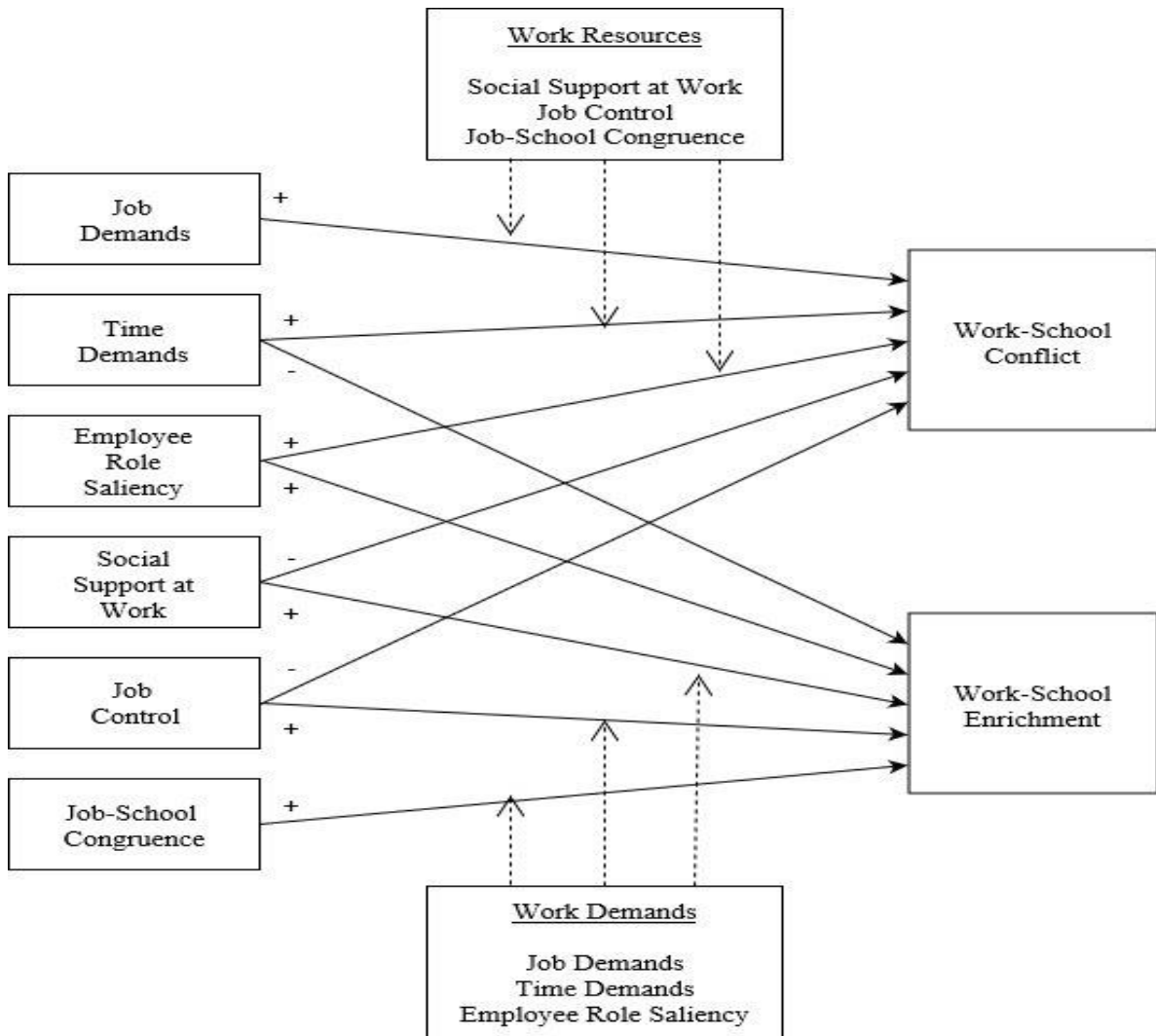


Figure 4. A conceptual model of the current study representing the proposed relationships. Solid lines indicate direct and dotted lines indicate moderated relationships.

**Final notes**

This chapter has provided an overview of the negative and positive aspects of managing multiple role involvement in the work and school domains. The constructs of WSC and WSE were considered from both a role theory and job design perspective, and located within the wider context of existing literature on the work-school and work-family interface. An account of the existing empirical support for the antecedents and outcomes of WSC and WSE was provided. The main focus of this research is an examination of the antecedents, which are neither conceptually nor empirically developed to their full potential. A consideration of some of the potential moderators are also included for a more nuanced understanding of the boundary conditions of these relationships. This will add to the existing knowledge of successfully managing the work-school interface across both domains. This knowledge is crucial to enable interventions at individual, organisational and institutional levels, and will fill a gap in existing research relating to antecedents of WSC and WSE amongst post-graduate university students in the SA context.

## Method

The purpose of the current research is to examine the relationships between various job characteristics as workplace antecedents and moderators to WSC and WSE amongst non-traditional post-graduate students in SA. This chapter presents the methods used to achieve this study's stated aims. It is divided into five sub-sections, which describe the research design, participants, measures, procedure and statistical analyses.

### Research design

According to Burns and Burns (2008), the research design is based on the purpose of the research, the research question and the derived hypotheses. A quantitative, descriptive and cross-sectional research design using secondary self-report survey data was deemed appropriate as this study aims to measure and describe the reported relationship between the key variables. Secondary data is data collected by another researcher and not explored in the primary study (Trzesniewski, Donnellan & Lucas, 2011). There has been increased interest in the use of secondary data in research to avoid unnecessarily requesting additional human participants to complete surveys when previously collected data may be accessed and utilised (Trzesniewski et al., 2011).

### Participants

The primary dataset used in this study comprised of 425 participants. After cleaning the data and removing participants who did not meet the qualifying criteria as well as those who did not complete the survey items relevant to this study, the final dataset comprised of 330 participants. These participants met the required criteria of working while concurrently studying, being enrolled in post-graduate studies and completing responses on all variables of interest for this study ( $N = 330$ ).

The age of the participants ranged from 21 to 60 ( $M = 31.15$ ,  $SD = 8.46$ ), with 76% of participants being 35 years or younger. The majority of participants were female (60%) and most worked for 40 or more hours per week (50%). Considering the full-time working commitments of a large number of respondents, it follows that 59% of the sample identified their primary role as that of employee, with the remaining participants identifying primarily with the student role. A significant number of respondents indicated they had no dependents (67%) and a slight majority (52%) classified themselves as not married.

Almost all of the participants were enrolled at the University of Cape Town (UCT) (97%) with a handful of participants enrolled at four other tertiary institutions. The participants' self-indicated faculty memberships were Humanities (32%), Commerce (21%), Engineering and the Built Environment (20%), Health Sciences (17%), Science (10%) and Law (1%).

The majority of respondents were enrolled in Masters degrees (53%), followed by Doctoral studies (15%), Honours level studies (14%) and Post-Graduate Diploma studies (11%). Regarding the nature of qualifications, there was a diverse spread amongst the various faculty sections, with notable qualification types being Leadership and Management (including MBA) (12%), Health Care (10%), Engineering (9%), Information Technology (6%), Education (6%) and Psychology (5%). Refer to Table 1 below for a more detailed breakdown of demographic characteristics of the sample, and Table 2 below for a breakdown of faculty, level of study and job category.

Table 1

*Demographic Characteristics of the Participants (N =330)*

| Demographic                     | Category                | Frequency | %     |
|---------------------------------|-------------------------|-----------|-------|
| Number of hours worked per week | Less than 20 hours      | 83        | 25.2% |
|                                 | Between 20 and 39 hours | 83        | 25.2% |
|                                 | 40 or more hours        | 164       | 49.7% |
| Primary role                    | Student                 | 135       | 40.9% |
|                                 | Employee                | 195       | 59.1% |
| Gender                          | Female                  | 197       | 59.7% |
|                                 | Male                    | 131       | 39.7% |
|                                 | Prefer not to answer    | 2         | 0.6%  |
| Race                            | African                 | 76        | 23%   |
|                                 | Coloured                | 58        | 17.6% |
|                                 | Indian                  | 23        | 7%    |
|                                 | White / Caucasian       | 152       | 46.1% |
|                                 | Prefer not to answer    | 21        | 6.4%  |
| Marital status                  | Married                 | 109       | 33%   |
|                                 | Not married             | 170       | 51.5% |
|                                 | Living with partner     | 51        | 15.5% |
| Number of dependents            | None                    | 221       | 67%   |
|                                 | One or more             | 109       | 33%   |

Table 2

*Work and Study Characteristics of the Participants (N =330)*

| Demographic    | Category                                  | Frequency | %     |
|----------------|---|-----------|-------|
| Faculty        | Commerce                                  | 70        | 21.2% |
|                | Engineering & the Built Environment (EBE) | 65        | 19.7% |
|                | Science                                   | 32        | 9.7%  |
|                | Humanities                                | 105       | 31.8% |
|                | Health Sciences                           | 56        | 17%   |
|                | Law                                       | 2         | 0.6%  |
| Level of study | Post-Graduate Certificate                 | 2         | 0.6%  |
|                | Post-Graduate Diploma                     | 35        | 10.6% |
|                | Honours                                   | 47        | 14.2% |
|                | Masters                                   | 174       | 52.7% |
|                | Doctorate                                 | 48        | 14.5% |
|                | Unspecified Post-Graduate                 | 24        | 7.3%  |
| Job category   | Managers                                  | 62        | 18.8% |
|                | Professionals                             | 25        | 7.6%  |
|                | Technician and Associate Professionals    | 154       | 46.7% |
|                | Clerical Support Workers                  | 57        | 17.3% |
|                | Service and Sales Workers                 | 27        | 8.2%  |
|                | Skilled Outdoor and Trades Workers        | 1         | 0.3%  |
|                | Unspecified                               | 4         | 1.2%  |

## Measures

Jacobs (2018) conducted research into WSC and WSE and their respective outcomes, and also collected data pertaining to the antecedents of WSC and WSE. That study used a self-report survey consisting of Likert-type scale items. Six of the subscales relating to WSC, WSE and their antecedents were used as the measuring instruments in the present study. Jacobs collected data across a number of subscales, however only certain subscales were used in the primary study, as the focus was solely on outcomes of WSC and WSE. Prior to the present study the data pertaining to the antecedents had not been examined, and therefore were appropriate for use in this study. A summary of each subscale's origin, previous use, reliability, response options together with an example of a typical item is provided for each measure used in the present study.

In the study by Jacobs (2018), the primary researcher conducted a pilot study before the primary dataset was collected. Based on feedback received, a few minor adaptations were made to some of the wording of items. These changes are indicated and explained where applicable. Refer to Appendix A which details the full list of items for each subscale used in the primary research. Various demographic data were also collected from the participants to allow for a sample description.

The subscales were identified and chosen based on prior research into the work-school domain. For the purposes of this study, the primary researcher was interviewed for insight into the selection rationale for specific subscales. The reasons provided related to the efficacy of the subscales used in prior work-school research (Jacobs, 2018). Regarding the social support scales, these were selected as they distinguish between the various sources of social support, as suggested by Kossek et al. (2011).

#### **Work-school conflict subscale**

*Work-school conflict* was measured using four items from Markel and Frone's (1998) work-school conflict scale, and which reported a Cronbach alpha reliability of .86. This scale has since been used by other researchers investigating WSC, all of whom have reported high levels of internal consistency. For example, Cronbach alpha reliability scores for this subscale were reported as .88 by Butler (2007), .87 by Jacobs (2018), .82 by McNall and Michel (2011), .82 by Creed et al. (2015), .92 by Park and Sprung (2013) and .87 by McNall and Michel (2017).

Jacobs (2018) adapted the wording of this subscale to make it more relevant to the local sample by replacing the term "*school*" with the term "*university*". This was done because the scales originated in the American educational context where the term *school* is also used to refer to a tertiary institution, unlike in SA where the term *university* denotes a tertiary institution. An example item from this subscale is "My job demands and responsibilities interfere with my university work." Response options on this five-point Likert-type scale ranged from 1 = Never to 5 = Always. Following on from the primary researcher's pilot study, a sixth response option of "not applicable" was added to the scale range for the item "Because of my job, I go to university tired." This was to account for working students who do not necessarily attend lectures nor have a need to go to the university campus (Jacobs, 2018). These would typically be students completing research only degrees with no coursework component.

### **Work-school enrichment subscale**

*Work-school enrichment* was measured using the five items from Butler's (2007) work-school enrichment scale, which showed a high level of internal consistency with Cronbach alpha reliability of .85 in their sample. Other researchers have subsequently made use of this scale, for example Jacobs (2018) reporting a Cronbach alpha of .73, Wyland et al. (2016) reporting a Cronbach alpha of .77 and Creed et al. (2015) reporting a Cronbach alpha of .73 in their respective samples. Jacobs (2018) adapted the wording to make it more relevant to the sample by replacing the term "*school*" with the term "*university*". An example item from this subscale is "Having a good day at work makes you a better student." Response options on this five-point Likert-type scale ranged from 1 = Strongly Disagree to 5 = Strongly Agree.

### **Job demands subscale**

*Job demands* were measured using six items used by Butler (2007) and based on Karasek's (1979) job demands scale, which focuses on stressful and demanding job characteristics. Butler reported a high level of internal consistency with a Cronbach alpha reliability of .81, whilst Wyland et al. (2016) reported a Cronbach alpha of .82 in their sample. An example item from this subscale is "To what extent is there excessive work in your job?" Response options on this five-point Likert-type scale ranged from 1 = Never to 5 = Always.

### **Job control subscale**

*Job control* was measured by means of three items used by Butler (2007) and based on Karasek's (1979) decision authority scale, which focuses on the degree of control one has over their work. Butler reported a high level of internal consistency with a Cronbach alpha reliability of .85, whilst Wyland et al. (2016) reported a Cronbach alpha reliability of .60 in their sample. An example item from this subscale is "To what extent do you have control over what happens on your job?" Response options on this five-point Likert-type scale ranged from 1 = Never to 5 = Always.

### **Social support subscales**

*Social support* was measured using two categories of subscales relating to social support from supervisors and co-workers. This four-item subscale was used by Gordon et al. (2012) to investigate the balance of work and caregiving support and was developed by combining supervisor support-related items from Clark's (2001) and Voydanoff's (2004) studies, as cited in

Gordon et al. (2012). Response options on this five-point Likert-type scale ranged from 1 = Strongly Disagree to 5 = Strongly Agree.

#### ***Social support supervisor subscale***

An example item from the *supervisor social support* category of subscale is “My work supervisor understands my academic demands.” High levels of internal consistency were found by Gordon et al. (2012) in their sample, with Cronbach alpha reliability scores of .87 for supervisor support. Jacobs (2018) found similarly high levels of internal consistency with Cronbach alpha reliability scores of .90 for supervisor social support.

#### ***Social support co-worker subscale***

*Co-worker social support* was measured by Gordon et al. (2012) generating a parallel subscale using relevant replacement terms. An example item from this category of subscale is “My co-worker acknowledges that I have academic obligations.” High levels of internal consistency were found by Gordon et al. (2012) in their sample, with Cronbach alpha reliability scores of .88 for co-worker support. Jacobs (2018) found similarly high levels of internal consistency with scores of .92 for co-worker social support.

#### ***Job-school congruence subscale***

*Job-school congruence* was measured using three items from Butler’s (2007) job-school congruence scale, which focuses on the degree of overlap and relevance between the content of the work role and the content of the school role. Butler (2007) reported a high Cronbach alpha reliability of .87 in their sample. An example item from this subscale is “I use skills that I gained in university on my job.” Response options on this five-point Likert-type scale ranged from 1 = Strongly Disagree to 5 = Strongly Agree.

#### ***Socio-demographic variables***

*Socio-demographic variables* were created to describe the characteristics of the sample and to provide further insight into job characteristics which included: *time demands* (measured using three categories of working hours per week: less than 20 hours, between 20 and 39 hours, 40 or more hours), *role saliency* (measured using two categories of primary role identification: student, employee), *gender* (measured using three categories: female, male, prefer not to answer), *race* (measured using five categories: African, Coloured, Indian, White / Caucasian, prefer not to answer), *marital status* (measured using three categories: married, not married, living with partner), *dependent status* (coded using two categories: none, one or more), academic

institution, faculty, qualification and job title. Data was collected on these socio-demographics because previous research indicated that these may be variables of interest relevant to researching the work-school domain (Jacobs, 2018). The survey also included an open-ended section for participants to include written narrative comments regarding their own experience of simultaneously working and studying.

## **Procedure**

### **Secondary data analysis**

The procedure for conducting secondary data analysis starts with locating relevant data collected by other researchers (Brewer, 2011; Bryman, 2012). The primary data collected by Jacobs (2018) is a relevant secondary dataset as it measures the constructs through variables of interest relevant to the current study, and is therefore according to Trzesniewski et al. (2011) well-suited to the analytic needs of the present research.

Prior to commencing this research project, permission to access the relevant primary dataset was obtained from the primary researcher. It was not necessary to obtain additional ethical clearance from the University of Cape Town (UCT) Commerce Faculty's Ethics in Research Committee, as ethical approval for the primary study had already been obtained. This complies with the directive in the Ethics in Research Committee (EiRC) of the Faculty of Commerce Handbook (2018), wherein secondary data analysis is exempt from a new ethical clearance process if it is based on a data set which received ethics approval prior to the initial data collection.

Brewer (2011) suggested ethical concerns in secondary data analysis relate to the anonymity of participants and the integrity of the data remaining intact. In the present study, these risks are not applicable as participants are unidentifiable in the secondary data set, making their anonymity guaranteed. The primary researcher undertook to ensure that the integrity of the data file remained intact.

The secondary data analysis process described by Windle (2010) and Bryman (2012) was followed to minimise potential limitations. Firstly, detailed information was sought about the original data collection process and the method employed for the primary research, by interviewing the primary researcher about her study and reading the methods chapter of the primary study.

### **Process followed by primary researcher**

An online survey was developed by the primary researcher, who employed a non-probability convenience sampling technique as described by Burns and Burns (2008), to distribute the online link to working post-graduate students enrolled in selected faculties at UCT during the period August to September 2017. To increase the response rate, the primary researcher employed a non-probability snowball sampling technique to later extend the survey request to other faculties and individuals, with a request to those faculties to forward the survey to suitable individuals within their networks (Jacobs, 2018).

Once the primary research method was thoroughly understood by the current researcher, the secondary data set was obtained for analysis from the primary researcher through informal dissemination, as described by Trzesniewski et al. (2011).

According to the process described by Burns and Burns (2008), a purposive sampling technique was employed to select the participants from the obtained dataset. Specifically, all cases with completed scales of interest, enrolled in a post-graduate programme and with completed demographic variables were selected. This decision was made to identify any particular socio-demographic variables of interest which may influence the work-school interface.

### **Statistical analysis**

The dataset was received in IBM Software Package for the Social Sciences (SPSS) file format, and SPSS version 25 was used to analyse the data (Field, 2013).

### **Accuracy of the data**

Prior to the commencement of the data analysis, it was necessary to check the accuracy of the data file, and clean and code the data (Tabachnick & Fidell, 2014). Variable scores were checked for errors by running frequency distribution tests and confirming that all scores were within the possible ranges (Pallant, 2010). String variables were coded according to logical categories defined through the process of observing and analysing the comments provided by participants (Pallant, 2010).

### **Missing data**

During the data screening process, missing data values were identified and considered decisions were made regarding how to proceed. The primary dataset comprised of 425 participants, 26 of whom did not meet the criteria of working while concurrently studying, and

were therefore excluded from completing the rest of the survey (93.9% qualified to participate). Of the 399 who started the survey, 19 participants did not complete any variables of interest for the present study, and were therefore excluded from further analysis (4.5% of total respondents were excluded due to non-completion of survey).

A multiple imputation analysis was run to observe the patterns of missing data (Tabachnick & Fidell, 2014). It was established that the fourth item on the WSC scale was problematic, as there were a large number of cases who did not complete the item “Because of my job, I go to university tired.” Given the sample characteristics it was inferred that a number of participants may be enrolled in academic programmes where they are not required to attend physical classes, so this item may not be applicable to all participants. Therefore, a decision was taken to remove the item from further analysis to prevent the results of the data analysis being skewed. The WSC scale in this study comprised of the remaining three items. Due to other randomly missing data plus some undergraduate respondents, listwise deletion was used to exclude a further 50 participants (Tabachnick & Fidell, 2014). The final dataset comprised of participants who met the criteria of working while studying a post-graduate qualification, had completed scores on all variables of interest and had provided complete demographic data ( $N=330$ ).

### **Descriptive statistics**

Basic descriptive statistics were conducted to determine and describe the demographic characteristics of the sample (Pallant, 2010).

### **Psychometric properties of the measures**

The validity and the reliability of the scales were assessed to determine the accuracy and consistency of the measures (Burns & Burns, 2008). Trzesniewski et al. (2011) emphasise that measurement of reliability and validity are of particular importance when analysing secondary data. The validity of the scales was checked using exploratory factor analysis, whilst the reliability of the subscales was tested with Cronbach Alpha (Pallant, 2010).

### **Inferential statistical analysis**

Various inferential statistical analyses were conducted to test the hypotheses in the present study. These included correlation analysis, comparison of means between groups using analysis of variance (ANOVA) and independent sample t-tests, linear multiple regression

analysis, and moderation analysis using hierarchical multiple regression (Tabachnick & Fidell, 2014).

The following chapter presents a description of each of these statistical techniques, accounts for assumption checks and describes the results which were obtained from the statistical analyses which were conducted.

## Results

This chapter is divided into seven sub-sections. It provides a summary of the results from the statistical analyses which were conducted to examine the study hypotheses relating to the antecedents and moderators of WSC and WSE. The first sub-section examines the psychometric properties of the measures using exploratory factor analysis and reliability analysis. Secondly, the descriptive statistics of the composite scores for each variable are presented. The third sub-section provides the correlation analyses of the hypotheses, whilst the fourth indicates the differences between groups based on key demographic variables. The fifth sub-section presents the results of the multiple regression analyses which assessed the predictive relationship between the variables of interest. The sixth sub-section presents the results of the moderation analyses which investigated the presence of any interaction effects. The seventh and final sub-section provides a summary of the findings and links these to the research hypotheses.

Basic descriptive statistics indicated the final dataset after data cleaning comprised of non-traditional student participants who met the criteria of working while studying, were enrolled on a post-graduate qualification programme, had completed scores on all variables of interest and had provided complete demographic data ( $N = 330$ ).

### Psychometric properties of the measures

#### Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA)

EFA is a factor analytic technique which summarises the data from a large set of variables into the smallest set of factors or components (Field, 2013; Pallant, 2010). Principal Component Analysis (PCA) was selected as a suitable technique as it extracts the maximum variance of the data and provides a practical summary of the data set, as well as avoiding some of the potential concerns of other options. It is however important to carefully select the number of components to ensure that the data is not overly reduced (Tabachnick & Fidell, 2014).

Prior to performing PCA, the suitability of data for factor analysis was assessed for satisfactory sample size and adequate strength of the relationships between the variables (Field, 2013). The diagnostics were checked and all conditions regarding KMO and Bartlett were found to be satisfactory in all instances to conduct PCA (Pallant, 2010). In order to assess the number of components to retain, Kaiser's criterion of retaining eigenvalues greater than 1.00 and Catell's scree plots were used (Tabachnick & Fidell, 2014). Where EFA suggested more than one factor, these were checked for cross-loadings between components but no marked cross-loadings were

observed. An oblique rotation was selected to potentially improve the interpretation of extracted components, as the theoretical evidence suggested that some of the factors in the subscales were related, making orthogonal rotation an unsuitable option (Field, 2013; Bryman & Cramer, 2011).

For all analyses, SPSS 25 (Field, 2013) was used to conduct PCA on the items of each scale for the sample of 330 participants. Listwise deletion was unnecessary due to full data completion across the scales. See Appendix B for the full PCA tables per subscale.

#### ***Work-school conflict PCA***

PCA was performed on the three items of the WSC scale. The KMO measure of .732 exceeded the minimum required value of .50. Bartlett's Test of Sphericity showed statistical significance ( $\chi^2(3) = 519.69, p < .001$ ). One component was extracted with an eigenvalue greater than 1.00, which accounted for 80% of the variance in work-school conflict. The component loadings were all above .871 and the communality values of all items were greater than .759. All items were therefore retained. Component one was labelled as *work-school conflict (WSC)*.

#### ***Work-school enrichment PCA***

PCA was performed on the five items of the WSE scale. The KMO measure of .756 was acceptable and Bartlett's Test of Sphericity was statistically significant ( $\chi^2(10) = 307.56, p < .001$ ). One component was extracted which accounted for 47% of the variance in the subscale, and labelled as *work-school enrichment (WSE)*. The component loadings were all above .559 and as the communality values of all items were greater than .313, all items were retained.

#### ***Job demands PCA***

PCA was performed on the six items of the job demands scale. The KMO measure of .821 exceeded the minimum value of .50 and Bartlett's Test of Sphericity was statistically significant ( $\chi^2(15) = 902.49, p < .05$ ). Fifty-nine percent of the variance in job demands could be accounted for by one component which was extracted and labelled as *job demands*. All items were retained as component loadings were all above .726 and the communality values of all items exceeded .527.

#### ***Job control PCA***

PCA was performed on the three items of the job control scale. The KMO measure of .703 exceeded the minimum value and Bartlett's Test of Sphericity was statistically significant ( $\chi^2(3) = 317.38, p < .001$ ). One component was extracted and labelled as *job control*, which

accounted for 72% of the variance in job control. The component loadings were all above .815 and the communality values of all items were greater than .664, so all items were retained.

#### ***Job-school congruence PCA***

The PCA performed on the three items of the job-school congruence scale revealed an acceptable KMO measure of .652. and Bartlett's Test of Sphericity was significant ( $\chi^2(3) = 481.57, p < .001$ ). One component was extracted which accounted for 75% of the variance in the subscale, and labelled as *job-school congruence*. The component loadings were all above .757 and the communality values of all items exceeded .573, indicating the suitability of retaining all items.

#### ***Social support from supervisor PCA***

PCA was performed on the four items of the social support from supervisor subscale. The KMO measure of .831 was acceptable and Bartlett's Test of Sphericity was significant ( $\chi^2(6) = 829.75, p < .001$ ). One component was extracted which accounted for 77% of the variance, and labelled as *social support from supervisor*. The component loadings all exceeded .838 and the communality values of all items were greater than .703. All items were therefore retained.

#### ***Social support from co-worker PCA***

PCA was performed on the four items of the social support from co-worker subscale. The KMO measure of .853 exceeded the minimum value and Bartlett's Test of Sphericity was significant ( $\chi^2(6) = 996.97, p < .001$ ). Eighty-one percent of the variance in social support from co-workers could be accounted for by one component which was extracted and labelled as *social support from co-workers*. The component loadings all exceeded .853 and communality values of all items were greater than .727, making it appropriate to retain all items.

#### ***Social support at work PCA***

A combined PCA was performed on the eight items of the subscales to establish whether the two components could derive a single composite score for social support at work. A factor rotation was used for this PCA as it involved a combination of two subscales. The KMO measure of .879 was adequate and Bartlett's Test of Sphericity was statistically significant ( $\chi^2(28) = 1988.69, p < .001$ ). Whilst two components had eigenvalues greater than 1.00 (4.905 and 1.428) justifying extraction as two separate components, a decision was made to extract only the first factor which accounted for 61% of the variance in social support at work. As the first eigenvalue was much larger than the second, it was reasoned that the proportion of variance explained by

the first eigenvalue was adequate for understanding the phenomenon of social support at work. Catell's scree plot method was used to justify the extraction of one component and indicated a clear break and change of slope between components one and two. The component loadings were all above .799 and the communality values of all exceeded .697, indicating it suitable to retain all items. The single extracted component was labelled as *social support at work*.

### **Reliability analysis**

A reliability analysis was conducted to assess the internal consistency of the scales (Pallant, 2010). The Cronbach's alpha reliability coefficient ( $\alpha$ ) ranged between .719 and .919 for all eight scales (see Table 9 for all  $\alpha$  values). All Cronbach's alpha coefficients exceeded the standard cut off of .7, with many values exceeding .8, indicating an acceptable to high level of internal consistency (Field, 2013; Pallant, 2010).

It is noted that all scales had a minimum of three items, and as Cronbach's alpha can be sensitive to lower numbers of items in a scale (Burns & Burns, 2008), item-total correlations were checked and all values were confirmed as above the .3 mark as required by Burns and Burns. It was therefore unnecessary to remove any items. See Table 3 below for a summary of the reliability analysis showing the minimum and maximum corrected item-total correlations.

### **Descriptive statistics**

In order to proceed with the statistical analyses, the composite variables were calculated by computing the mean values for each scale. The distribution values for each of these composite scores are presented with the descriptive statistics in Table 4 below. Many of the composite variable scores approximate above the mid-point of three on a five-point Likert type scale, with the majority of scores greater than 3.5.

Data were checked to ensure that general assumptions of normality were met. Although histograms revealed a lack of perfectly normal distribution, this is recognised as a common occurrence for social science research (Bryman & Cramer, 2011). However, larger sample sizes above 200 reduce the risk of skewness and kurtosis (Bryman & Cramer, 2011; Pallant, 2010; Tabachnick & Fidell, 2014). The asymmetry and peakedness of the distribution of the variables was therefore deemed to fall within acceptable parameters and not deviating too far from normality.

Table 3

*Results of Reliability Analysis*

| Scale                          | Number of items considered in each scale | Cronbach's alpha ( $\alpha$ ) value | Min. corrected item-total correlation | Max. corrected item-total correlation |
|--------------------------------|--|-------------------------------------|---------------------------------------|---------------------------------------|
| Work-School Conflict           | 3  | .875                                | .721                                  | .793                                  |
| Work-School Enrichment         | 5  | .719                                | .369                                  | .553                                  |
| Job Demands                    | 6  | .857                                | .605                                  | .693                                  |
| Job Control                    | 3  | .801                                | .601                                  | .668                                  |
| Job-School Congruence          | 3  | .796                                | .541                                  | .738                                  |
| Social Support from Supervisor | 4  | .897                                | .720                                  | .834                                  |
| Social Support from Colleague  | 4  | .919                                | .748                                  | .857                                  |
| Social Support at Work         | 8  | .908                                | .649                                  | .746                                  |

*Note:* Min. is minimum and Max. is maximum; included as some scales include low numbers of items.

Table 4

*Descriptive Statistics and Distribution Values*

| Variable | <i>N</i> | <i>M</i> | <i>SD</i> | SE   | Skewness | Kurtosis |
|----------|----------|----------|-----------|------|----------|----------|
| WSC      | 330      | 3.523    | .943      | .051 | -.438    | -.203    |
| WSE      | 330      | 3.616    | .659      | .036 | -.306    | -.166    |
| JD       | 330      | 3.511    | .733      | .040 | -.148    | -.224    |
| JC       | 330      | 3.354    | .870      | .048 | -.206    | -.463    |
| JSC      | 330      | 3.983    | .888      | .049 | -.889    | .421     |
| SSS      | 330      | 3.658    | .917      | .050 | -.685    | .373     |
| SSC      | 330      | 3.550    | .933      | .051 | -.494    | -.037    |
| SSW      | 330      | 3.603    | .814      | .045 | -.516    | .583     |

*Notes:* Variables in the table are composite variables; *N* = Sample size; *M* = mean; *SD* = standard deviation; SE = standard error of mean; WSC = work-school conflict; WSE = work-school enrichment; JD = job demands; JC = job control; JSC = job-school congruence; SSS = social support from supervisor; SSC = social support from co-workers; SSW = social support at work

### Correlation analysis

A Pearson product-moment correlation analysis was conducted to examine the bivariate relationships between variables, see Table 5 below for the correlation matrix. Prior to conducting the correlation analysis, the relevant assumptions were checked which entailed checking normality, linearity, homoscedascity, and the absence of outliers (Pallant, 2010). A Spearman rank-order correlation analysis was also run to compare the different correlations for parametric and non-parametric analyses. These correlation matrices did not differ substantially from each other so only the Pearson correlation coefficients are reported. The intercorrelations are considered using Cohen's (1988) strength size ranges between small (.1 - .3), moderate (.3 - .5) and .5 and above, considered large (Pallant, 2010).

**Intercorrelation with WSC.** Table 5 indicates that there was a moderately strong positive association between *work-school conflict* and *job demands*, showing a large effect size ( $r = .56, p < .001$ ). A moderate and negative relationship was found between *work-school conflict* and *social support at work* ( $r = -.44, p < .001$ ).

**Intercorrelation with WSE.** Table 5 indicates that there was a moderate and positive relationship between *work-school enrichment* and *job-school congruence* ( $r = .49, p < .001$ ). *Work-school enrichment* showed a positive and moderate relationship with *social support at work* ( $r = .33, p < .001$ ).

### Socio-demographic group differences

T-tests and Analyses of Variance (ANOVA) were conducted prior to proceeding with multivariate analyses, in order to establish potential group differences in participant demographics. The categorical control variables in the subsequent linear regression analyses were informed by the presence of any significant relationships emerging from these comparisons of means between groups. (Bryman & Cramer, 2011; Tabachnick & Fidell, 2014). Before proceeding with the comparisons, the assumptions of normality and equal variances were evaluated. Where these assumptions were violated, adjustments to the test statistics were considered (Field, 2013).

A summary of the analyses is followed by the full results of analyses of group differences, where a statistically significant result was obtained. The non-significant results are included in Appendix C.

Table 5

*Inter-Correlations of Study Variables and Scale Reliabilities*

| Variables | 1. WSC         | 2. WSE        | 3. JD          | 4. JC         | 5. JSC        | 6. SSS        | 7. SSC        | 8. SSW |
|-----------|----------------|---------------|----------------|---------------|---------------|---------------|---------------|--------|
| 1. WSC    | (.875)         |               |                |               |               |               |               |        |
| 2. WSE    | -.103          | (.719)        |                |               |               |               |               |        |
| 3. JD     | <b>.562**</b>  | .074          | (.857)         |               |               |               |               |        |
| 4. JC     | <b>-.136*</b>  | <b>.213**</b> | -.020          | (.801)        |               |               |               |        |
| 5. JSC    | -.051          | <b>.485**</b> | .108           | <b>.262**</b> | (.796)        |               |               |        |
| 6. SSS    | <b>-.423**</b> | <b>.252**</b> | <b>-.296**</b> | <b>.201**</b> | <b>.152*</b>  | (.897)        |               |        |
| 7. SSC    | <b>-.352**</b> | <b>.325**</b> | <b>-.250**</b> | <b>.154*</b>  | <b>.192**</b> | <b>.550**</b> | (.919)        |        |
| 8. SSW    | <b>-.440**</b> | <b>.328**</b> | <b>-.309**</b> | <b>.201**</b> | <b>.196**</b> | <b>.878**</b> | <b>.883**</b> | (.908) |

*Notes:* Values are Pearson correlation coefficients. Scale internal consistencies (Cronbach alpha) are in parentheses on the diagonal;  $N = 330$ ;

\*\*Correlation is significant at the  $p < .001$  level (2-tailed); \*Correlation is significant at the  $p < .05$  level (2-tailed); Bold faced values indicate significant correlations.

WSC = work-school conflict; WSE = work-school enrichment; JD = job demands; JC = job control; JSC = job-school congruence; SSS = social support from supervisor; SSC = social support from co-workers; SSW = social support at work (supervisors + co-workers)

### **Independent sample T-tests**

Independent sample t-tests were conducted to examine whether respondents differed in their experience of *WSC* and *WSE* in terms of their (i) *gender* (male or female); (ii) *primary role saliency* (employee or student) and (iii) *dependent status* (no dependents or one or more dependents). The results of these analyses are presented in Table 6 below where significant and in Appendix C where not significant. They are summarised as (i) no significant difference between male and female in either experience of *WSC* or *WSE*; (ii) a significant difference for respondents who identify primarily as employees experiencing higher *WSC* (no significant difference for role identification and *WSE*); (iii) and a significant difference for respondents who have one or more dependents experiencing higher *WSE* (no significant difference for dependent status and *WSC*).

#### ***T-test for role saliency and WSC***

There was a significant difference in the scores for employees ( $M=3.760$ ,  $SD= .880$ ) and students ( $M=3.180$ ,  $SD= .930$ );  $t(328)= -5.758$ ,  $p < .001$ , with those identifying as employees reporting greater *WSC* on average. This indicates that average *WSC* does differ by *primary role*.

#### ***T-test for dependents and WSE***

The Levene's test revealed that *WSE* scores for participants with dependents and those without dependents had unequal variances, necessitating an interpretation of the t-statistic on the Satterthwaite variance estimator. There was a significant difference in the *WSE* scores for those with one or more dependents ( $M=3.727$ ,  $SD= .559$ ) compared to those without dependents ( $M=3.562$ ,  $SD= .698$ );  $t(261)= -2.312$ ,  $p=.022$ . Those who have one or more *dependents* reported greater *WSE* on average.

### **Analysis of Variance (ANOVA)**

Several one-way ANOVA were conducted to examine whether respondents differed in their experience of *WSC* and *WSE* as a function of their (i) *race* (African, Indian, Coloured or White); (ii) *marital status* (married, not married or living with partner); (iii) *time demands* per week (less than 20 hours, 20-39 hours or 40+ hours) and (iv) *age* group (21-29, 30-39, 40-49 or 50-60). The statistically significant results of these analyses are presented in Table 7 below and the remainder in Appendix C. In summary there were: (i) no significant differences for respondents between race groups in either experience of *WSC* or *WSE*; (ii) a significant difference in *WSC*, with those who are married experiencing more *WSC* compared to other

marital status groups, but no significant differences on WSE; (iii) a significant difference in time demands on WSC, but not for WSE; (iv) a significant difference in age group for WSC, but not for WSE.

Table 6

*Results of the T-tests and Descriptive Statistics of WSC and WSE by Primary Role and Dependent Status*

| Outcome    | Group Differences |      |     |                |      |     | 95% CI for Mean Difference | t       | df  | p      |
|------------|-------------------|------|-----|----------------|------|-----|----------------------------|---------|-----|--------|
|            | Student           |      |     | Employee       |      |     |                            |         |     |        |
|            | M                 | SD   | n   | M              | SD   | n   |                            |         |     |        |
| Role & WSC | 3.18              | 0.93 | 135 | 3.77           | 0.88 | 195 | -0.78, -0.38               | -5.76** | 328 | < .001 |
| Role & WSE | 3.58              | 0.75 | 135 | 3.64           | 0.58 | 195 | -0.20, 0.09                | -.78    | 328 | .455   |
|            | No dependents     |      |     | Has dependents |      |     |                            |         |     |        |
| Deps & WSC | M                 | SD   | n   | M              | SD   | n   | -0.40, 0.03                | -1.66   | 328 | .099   |
| Deps & WSE | 3.46              | 0.96 | 221 | 3.65           | 0.90 | 109 | -0.32, -0.30               | -2.15*  | 328 | .022   |
|            | 3.56              | 0.70 | 221 | 3.72           | 0.05 | 109 |                            |         |     |        |

*Note:* Role = Primary Role, Deps = Dependent Status, M = Mean, SD = Standard Deviation, df = degrees of freedom, \* $p < .05$ , \*\* $p < .001$

#### *ANOVA for marital status and WSC*

There was a statistically significant difference at the  $p < .05$  level in WSC scores for the three marital status categories  $F(2, 327) = 5.617, p = .004$ . Post hoc comparisons using the Tukey HSD test were conducted to inspect group differences. The mean score difference for the married group ( $M=3.725, SD=.844$ ) was statistically significantly different to the not married group ( $M=3.359, SD=.969$ ) at the  $p < .05$  level, with the mean difference = .366,  $p = .004$ . These results suggest that average WSC does differ by *marital status*, with those who are married experiencing more WSC than those who are not married.

#### *ANOVA for time demands and WSC*

There was a statistically significant difference at the  $p < .05$  level in WSC scores for the three working hours categories  $F(2, 327) = 26.973, p < .001$ . Further insight into these differences was obtained through post hoc comparisons using the Tukey HSD test. The mean

score difference for the less than 20 hours group ( $M=2.92$ ,  $SD=.882$ ) was significantly different to the between 20-39 hours group ( $M=3.66$ ,  $SD=.814$ ) at the  $p < .05$  level, with the mean difference =  $-.745$ ,  $p < .001$ . The mean score difference for the less than 20 hours group ( $M=2.92$ ,  $SD=.882$ ) was significantly different to the 40 hours or more group ( $M=3.76$ ,  $SD=.904$ ) at the  $p < .05$  level, with the mean difference =  $-.845$ ,  $p < .001$ . These results suggest that WSC differs significantly between categories of *time demands*. Specifically, the results indicate that those who work less than 20 hours per week experience less WSC than all other respondents who all work more than 20 hours per week.

#### *ANOVA for age and WSC*

There was a statistically significant difference at the  $p < .05$  level in WSC scores for the four age categories  $F(3, 326) = 5.720$ ,  $p = .001$ . Post hoc comparisons using the Tukey HSD test revealed that the mean score difference for the less than 21-29 age category ( $M=3.33$ ,  $SD=1.00$ ) was statistically significantly different to the between 30-39 age category ( $M=3.71$ ,  $SD=.786$ ) at the  $p < .05$  level, with the mean difference =  $-.384$ ,  $p = .005$ . Similar differences were found between 21-29 and the 50-60 age category ( $M=3.93$ ,  $SD=.933$ ) at the  $p < .05$  level, with the mean difference =  $-.598$ ,  $p = .046$ . These results suggest that WSC differs significantly on categories of *age*, with older participants experiencing more WSC.

Table 7

*Results of the ANOVA and Descriptive Statistics of WSC and WSE by Marital Status, Working Hours and Age*

| Demographic    | Variable | Category           |      |     | Category    |      |     | Category         |      |     |
|----------------|----------|--------------------|------|-----|-------------|------|-----|------------------|------|-----|
|                |          | M                  | SD   | n   | M           | SD   | n   | M                | SD   | n   |
| Marital Status | WSC      | 3.72               | .844 | 109 | 3.36        | .968 | 170 | 3.64             | .977 | 51  |
|                | WSE      | 3.65               | .545 | 109 | 3.56        | .708 | 170 | 3.73             | .700 | 51  |
| Working Hours  | WSC      | Less than 20 hours |      |     | 20-39 hours |      |     | 40 or more hours |      |     |
|                | WSE      | 2.92               | .882 | 83  | 3.66        | .814 | 83  | 3.76             | .904 | 164 |
| Age            | WSC      | 21-29              |      |     | 30-39 hours |      |     | 50-60 hours      |      |     |
|                | WSE      | 3.33               | 1.00 | 173 | 3.71        | .786 | 105 | 3.93             | .933 | 18  |
|                |          | 3.59               | .722 | 173 | 3.63        | .596 | 105 | 3.67             | .582 | 18  |

Note: M = Mean, SD = Standard Deviation, df = degrees of freedom, \* $p < .05$ , \*\* $p < .001$

## **Multiple regression analysis**

### **Assumption testing for multiple regression**

SPSS version 25 EXPLORE was used to evaluate the statistical assumptions underlying multiple regression analysis. These are important to test and report, as multiple regression is sensitive to its assumptions being met (Pallant, 2010; Tabachnick & Fidell, 2014).

According to the guidelines provided by Tabachnick and Fidell (2014), the sample size of  $N=330$  far exceeds an adequate sample size based on the number of independent variables in the models.

The data were explored and histograms, residual scatterplots and P-P Plot graphs were generated in order to check the normality, linearity and homoscedasticity assumptions, which were all found to be adequate. The standardised residual values were evaluated as acceptable by confirming the Cook's maximum distance as below one in both the WSC and WSE models (Pallant, 2010; Tabachnick & Fidell, 2014).

Multiple regression analysis is sensitive to outliers. Therefore, the standardised residual plots were checked for thresholds to ensure that no outliers were present. With respect to the WSC analysis, there were no outliers needing to be addressed. However, in the case of the WSE regression analysis, the maximum standardised residual indicated the presence of outliers. Upon inspection, the maximum value of the Mahalanobis distances were exceeded due to the large number of predictors in the model (Pallant, 2010; Tabachnick & Fidell, 2014). Using filters to re-run the model without outliers, the possible effects of outliers was investigated. The model did not appear to be sensitive to the outliers, in that there were no substantial changes to coefficients nor the model interpretations. Therefore, a considered decision was made to retain all cases when fitting the model as the combined effect of predictors more accurately accounts for their effect on the outcome variable (Pallant, 2010).

In order to assess multicollinearity and singularity, the correlation matrices were inspected for acceptable relationships between the predictor and outcome variables (Pallant, 2010). The Tolerance and Variance Inflation Factor (VIF) statistics were also evaluated for potential collinearity concerns. Whilst some of the variables had a slightly higher VIF value, an inspection of the collinearity diagnostics showed some co-variance but no serious violation. In the regression analyses, no Tolerance or VIF values exceeded the recommended amount,

indicating no serious violation of the multicollinearity assumption for either of the models (Pallant, 2010; Tabachnick & Fidell, 2014).

Post hoc analyses were conducted for deeper insights into the effect sizes and unique contributions to the total variance. The standardised beta regression coefficients were considered in order to establish these effect sizes (Field, 2013). Semi-partial correlation (part) measured the unique relationship between a predictor variable and an outcome variable (Field, 2013). These values were squared to better express the unique contribution of the independent variable to the total variance of the dependent variable, as recommended by Tabachnick and Fidell (2014).

### **Work-school conflict antecedent model**

A standard multiple regression was performed between *work-school conflict* as the dependent variable and *job demands*, *job control* and *social support at work*, as the independent variables. The analysis also included *time demands*, *primary role*, *age*, and *marital status* as control variables. Analysis was performed using SPSS version 25 REGRESSION.

Table 8 below displays the unstandardized regression coefficients ( $B$ ) and intercept, the standardised regression coefficients ( $\beta$ ),  $t$  value and  $p$  value for all variables in the model. Overall the model was significant with  $F(10, 319) = 24.606$ ,  $p < .001$ . The  $R^2$  value of .435 (adjusted  $R^2 = .418$ ) indicates that 43.5% of the variability in *WSC* is explained by *job demands*, *job control*, *social support from work*, *time demands*, *primary role*, *age*, *marital status* and *dependent status*.

The following is predicted, while controlling for all other variables in the model: for every one unit increase in *job demands*, an increase of .555 on average in *WSC* is expected; for every one unit increase in *social support at work*, a decrease of .314 on average in *WSC* is expected; and compared to those who work less than 20 hours per week, respondents who work between 20 and 39 hours per week are on average expected to have a higher *WSC* score of .451. Although working more than 40 hours per week was not statistically significant in the model, the  $p$ -value = .064 approaches the significance threshold of .05, indicating a similar trend.

The standardised beta regression coefficients revealed that *job demands* contributed the most towards increasing *WSC* ( $\beta = .431$ ), while *social support from work* ( $\beta = -.271$ ) had the most effect on decreasing *WSC*. Participants working 20 to 39 hours per week are on average expected to have higher *WSC* ( $\beta = .208$ ), compared to participants working 20 or less hours per week. In the *WSC* multiple regression model, the semi-partial correlation statistic indicates that 14% of the

variance in *WSC* is explained by *job demands*, 5% of the variance in *WSC* is explained by *social support from work*, and about 2% of the variance in *WSC* is explained by those who work between 20-39 hours per week, compared to those who work less than 20 hours per week.

Table 8

*Multiple Regression Analysis: Job Characteristics as Predictors of WSC*

|                                 | <i>B</i>     | <i>SE B</i> | $\beta$      | <i>t</i>      | <i>Part</i>  | <i>p</i>         |
|---------------------------------|--------------|-------------|--------------|---------------|--------------|------------------|
| Constant                        | 2.814        | .374        |              | 7.523         |              | p< .001          |
| <b>Job Demands</b>              | <b>.555</b>  | <b>.064</b> | <b>.431</b>  | <b>8.719</b>  | <b>.367</b>  | <b>p&lt;.001</b> |
| Job Control                     | -.076        | .049        | -.070        | -1.569        | -.066        | .118             |
| <b>Social Support at Work</b>   | <b>-.314</b> | <b>.054</b> | <b>-.271</b> | <b>-5.821</b> | <b>-.245</b> | <b>p&lt;.001</b> |
| Age                             | -.006        | .006        | -0.50        | -.858         | -.036        | .392             |
| Employee Primary Role           | .126         | .113        | 0.66         | 1.115         | .047         | .266             |
| Married                         | .040         | .119        | .020         | .341          | .014         | .734             |
| Living with a Partner           | .113         | .117        | .044         | .971          | .041         | .332             |
| Working 40+ Hours p.w.          | .258         | .139        | .137         | 1.857         | .078         | .064             |
| <b>Working 20-39 Hours p.w.</b> | <b>.451</b>  | <b>.123</b> | <b>.208</b>  | <b>3.673</b>  | <b>.154</b>  | <b>p&lt;.001</b> |
| One of More Dependents          | -.083        | .114        | -.042        | -.733         | -.031        | .464             |

*Note:*  $R^2 = .435$ ; Adjusted  $R^2 = .418$ ; *t* significant at  $p < .05$  are in bold; WSC = work-school conflict

**Work-school enrichment antecedent model**

A standard multiple regression was performed between *work-school enrichment* as the dependent variable and *job control*, *job-school congruence*, *social support from work* and *time demands* as the independent variables. The analysis also included *time demands*, *primary role*, *age*, *marital status* and *dependent status* as control variables. The analysis was performed using SPSS version 25 REGRESSION.

Table 9 below displays the unstandardized regression coefficients (*B*) and intercept, the standardised regression coefficients ( $\beta$ ), *t* value and *p* value for all variables in the model. Overall the model was significant with  $F(10, 319) = 14.739$ ,  $p < .001$ . The  $R^2$  value of .316 (adjusted  $R^2 = .295$ ) indicates that approximately 32% of the variability in *WSE* is explained by

*job control, job-school congruence, social support at work, time demands, primary role, age, marital status and dependent status.*

While controlling for all other variables in the model it is predicted that: for every one unit increase in *job-school congruence*, an increase of .301 on average in *WSE* is expected; for every one unit increase in *social support at work*, an increase of .206 on average in *WSE* is expected.

The standardised beta regression revealed that *job-school congruence* contributed the most towards increasing *WSE* ( $\beta = .406$ ), followed by *social support at work* ( $\beta = .255$ ) increasing *WSE*. In the *WSE* multiple regression model, the semi-partial correlation showed that about 14% of the variance in *WSE* is explained by *job-school congruence*, whilst 5% of the variance in *WSE* is explained by *social support at work*.

Table 9

*Multiple Regression Analysis: Job Characteristics as Predictors of WSE*

|                               | <i>B</i>    | <i>SE B</i> | $\beta$     | <i>t</i>     | <i>Part</i> | <i>p</i>          |
|-------------------------------|-------------|-------------|-------------|--------------|-------------|-------------------|
| Constant                      | 1.406       | .241        |             | 5.826        |             | p< .001           |
| Job Control                   | .035        | .038        | .046        | .911         | .042        | .363              |
| <b>Social Support at Work</b> | <b>.206</b> | <b>.041</b> | <b>.255</b> | <b>5.009</b> | <b>.232</b> | <b>p&lt; .001</b> |
| <b>Job-School Congruence</b>  | <b>.301</b> | <b>.037</b> | <b>.406</b> | <b>8.184</b> | <b>.379</b> | <b>p&lt;.001</b>  |
| Age                           | .003        | .005        | .038        | .590         | .027        | .555              |
| Employee Primary Role         | -.074       | .087        | -.055       | -.846        | -.039       | .398              |
| Married                       | -.047       | .091        | -.034       | -.515        | -.024       | .607              |
| Living with a Partner         | .149        | .090        | .082        | 1.659        | .077        | .098              |
| Working 40+ Hours p.w.        | .120        | .103        | .092        | 1.164        | .054        | .245              |
| Working 20-39 Hours p.w.      | -.012       | .094        | -.008       | -.126        | -.006       | .899              |
| One of More Dependents        | .120        | .087        | .086        | 1.372        | .064        | .171              |

*Note:*  $R^2 = .316$ ; Adjusted  $R^2 = .295$ ; *t* significant at  $p < .05$  are in bold; *WSE* = work-school enrichment

### **Moderation analysis**

Moderation analyses were used to assess whether the relationship between two variables depends on the level of a third moderating variable (Tabachnick & Fidell, 2014). The moderation hypotheses were tested by running hierarchical regression analyses using SPSS version 25

REGRESSION. The analysis assessed whether work resources (*social support at work, job control and job-school congruence*) independently buffered the relationships between work demands (*job demands, time demands and employee role saliency*) and WSC. Similarly, the analysis assessed whether work demands (*job demands, time demands and employee role saliency*) independently moderated the relationship between work resources (*social support at work, job control and job-school congruence*) and WSE. While it is possible to consider multiple moderator combinations, the constraints of multiple moderators with their interpretive challenges creates an overly complex interaction model (Hayes, 2018). Taking into account the limited scope of the current research paper, a decision was taken to conduct individual moderation analyses.

The first step in the moderation analyses involved obtaining a mean centred score for the independent and moderator variables by subtracting each mean score from the relevant variable score (Tabachnick & Fidell, 2014). Thereafter, interaction terms were created for each combination of independent variable and moderator variable relevant to WSC and WSE. This resulted in a total of 18 interaction terms, listed in Table 10 below. Each moderator variable was then collapsed into three categories so that any significant interaction relationships could be visually plotted to aid interpretation. These categories were based on the mean less one standard deviation, and the mean plus one standard deviation, and also on the minimum and maximum values of each variable. Finally, a series of hierarchical regression analyses were conducted by individually regressing the independent variables and the moderator variables on the relevant dependent variable to create a first model, and then a second model was created by adding the interaction term to the regression equation. Relevant *socio-demographic* co-variables were included in each of the 18 moderation analyses, along with other relevant work demand and work resource co-variables. This was implemented to control for the potential influence of these variables (Tabachnick & Fidell, 2014).

It was expected that the relationship between work demands and WSC differs for different levels of each work resource, and the relationship between work resources and WSE differs according to the level of each work demand.

### **Work demands and WSC as moderated by work resources**

Of the 9 hypotheses relating to work resources moderating the relationship between the various work demands and WSC, only one moderation hypothesis was supported, namely that

*job demands* and *WSC* is moderated by *social support at work*. The results of the other *WSC* moderation analyses were not significant.

Table 10

*List of Interaction Terms Generated for Moderation Analysis*

| Interaction terms regressed on DV WSC | Interaction terms regressed on DV WSE |
|---------------------------------------|---------------------------------------|
| Job Demands x SSW                     | Social Support at Work x JD           |
| Job Demands x JC                      | Social Support at Work x TD           |
| Job Demands x JSC                     | Social Support at Work x ERS          |
| Time Demands x SSW                    | Job Control x JD                      |
| Time Demands x JC                     | Job Control x TD                      |
| Time Demands x JSC                    | Job Control x ERS                     |
| Employee Role Saliency x SSW          | Job-School Congruence x JD            |
| Employee Role Saliency x JC           | Job-School Congruence x TD            |
| Employee Role Saliency x JSC          | Job-School Congruence x ERS           |

*Note:* DV = dependent variable; WSC = Work-School Conflict; WSE = Work-School Enrichment; JD = Job Demands; TD = Time Demands; ERS = Employee Role Saliency; SSW = Social Support at Work; JC = Job Control; JSC = Job-School Congruence.

As detailed in Table 11 below, both *job demands* and *social support at work* are significant predictors of *WSC*, and are partial and unconditional effects in model 1,  $R^2 = .431$ ,  $F(9, 320) = 26.944$ ,  $p < .001$ . When the interaction term is added in model 2, a further proportion of variance in *WSC* is explained,  $R^2 = .016$ ,  $F(1, 319) = 9.166$ ,  $p = .003$ , which is a conditional effect. Therefore, whilst *job demands* can partially explain 43% of the variance in *WSC*, by including *social support* as a moderating variable, a further 2% of the variance in *WSC* can be explained, making *social support at work* a significant moderator of the relationship between *job demands* and *WSC*. A visual representation of the interaction can be seen in Figure 4 below. The slope on *job demands* increases by a factor of .185 with every one unit increase in *social support at work*. Therefore, for greater *social support at work*, greater *job demands* are associated with greater *WSC*. This suggests that at low levels of *job demands*, *social support at work* acts as a buffer but at higher levels of *job demands*, *social support* has a reverse-buffering effect on *WSC*.

Therefore, for respondents who have high *social support at work*, when their *job demands* increase, their *WSC* also increases.

Table 11

*Hierarchical Regression Analysis for Job Demands and WSC Moderated by Social Support*

| Variable                | Model 1  |             |         | Model 2  |             |         |
|-------------------------|----------|-------------|---------|----------|-------------|---------|
|                         | <i>B</i> | <i>SE B</i> | $\beta$ | <i>B</i> | <i>SE B</i> | $\beta$ |
| Job Demands             | .557**   | .064        | .433    | .562**   | .063        | .436    |
| Social Support at Work  | -.336**  | .052        | -.290   | -.348**  | .052        | -.300   |
| Interaction:            |          |             |         |          |             |         |
| JD x SSW                |          |             |         | .185*    | .061        | .128    |
| R <sup>2</sup>          |          |             | .431    |          |             | .447    |
| Adjusted R <sup>2</sup> |          |             | .415    |          |             | .430    |
| Change R <sup>2</sup>   |          |             |         |          |             | .016*   |

Note: WSC = Work-School Conflict; \*  $p \leq .01$ ; \*\*  $p \leq .00$

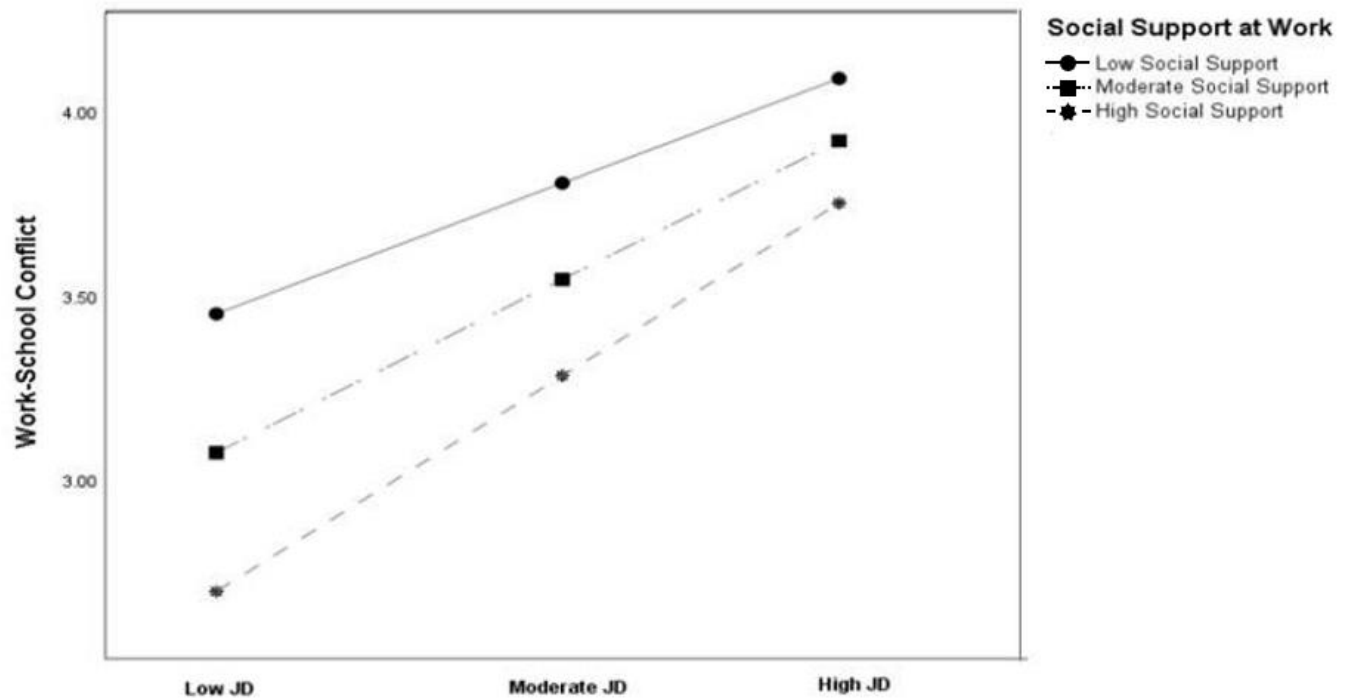


Figure 4. A visual representation of the different levels of social support for each level of job demands

### Work resources and WSE as moderated by work demands

Of the 9 hypotheses relating to work demands moderating the relationship between the various work resources and WSE, only one moderation hypothesis was supported, namely; *job-school congruence* and WSE is moderated by *employee role saliency*. The results of the other WSE moderation analyses were not significant.

As detailed in Table 12, only *job-school congruence* is a significant predictor of WSE, and this is a partial and unconditional effect in model 1,  $R^2 = .310$ ,  $F(8, 321) = 18.042$ ,  $p < .001$ . When the interaction term is added in model 2, a further proportion of variance in WSE is explained  $R^2 = .019$ ,  $F(1, 320) = 9.302$ ,  $p = .002$ , and this is a conditional effect. Therefore, whilst *job-school congruence* can partially explain 41% of the variance in WSE, by including *employee role saliency* as a moderating variable, a further 2% of the variance in WSE can be explained, refer to Figure 5 below. *Employee role saliency* is therefore a significant moderator of the relationship between *job-school congruence* and WSE. The strength of the relationship between *job-school congruence* and WSE therefore depends on *primary role*. The slope of *job-school congruence* differs by a factor of .213 between the employee and student groups, such that this slope decreases by a factor of .213 for participants identifying with the employee role. Therefore, students experience a stronger relationship between *job-school congruence* and WSE, compared to employees who experience a weaker relationship.

Table 12

*Hierarchical Regression Analysis for Job-School Congruence and WSE Moderated by Employee Role Saliency*

| Variable               | Model 1  |             |         | Model 2  |             |         |
|------------------------|----------|-------------|---------|----------|-------------|---------|
|                        | <i>B</i> | <i>SE B</i> | $\beta$ | <i>B</i> | <i>SE B</i> | $\beta$ |
| Job-School Congruence  | .305**   | .037        | .411**  | .425**   | .054        | .573**  |
| Employee Role Saliency | -.008    | .071        | -.006   | -.023    | .070        | -.017   |
| Interaction:           |          |             |         |          |             |         |
| JSC x RI               |          |             |         | -.213*   | .070        | -.216*  |
| $R^2$                  |          |             | .310    |          |             | .330    |
| Adjusted $R^2$         |          |             | .293    |          |             | .311    |
| Change $R^2$           |          |             |         |          |             | .019    |

Note: WSE = Work-School Enrichment; \*  $p \leq .01$ ; \*\*  $p \leq .001$ .

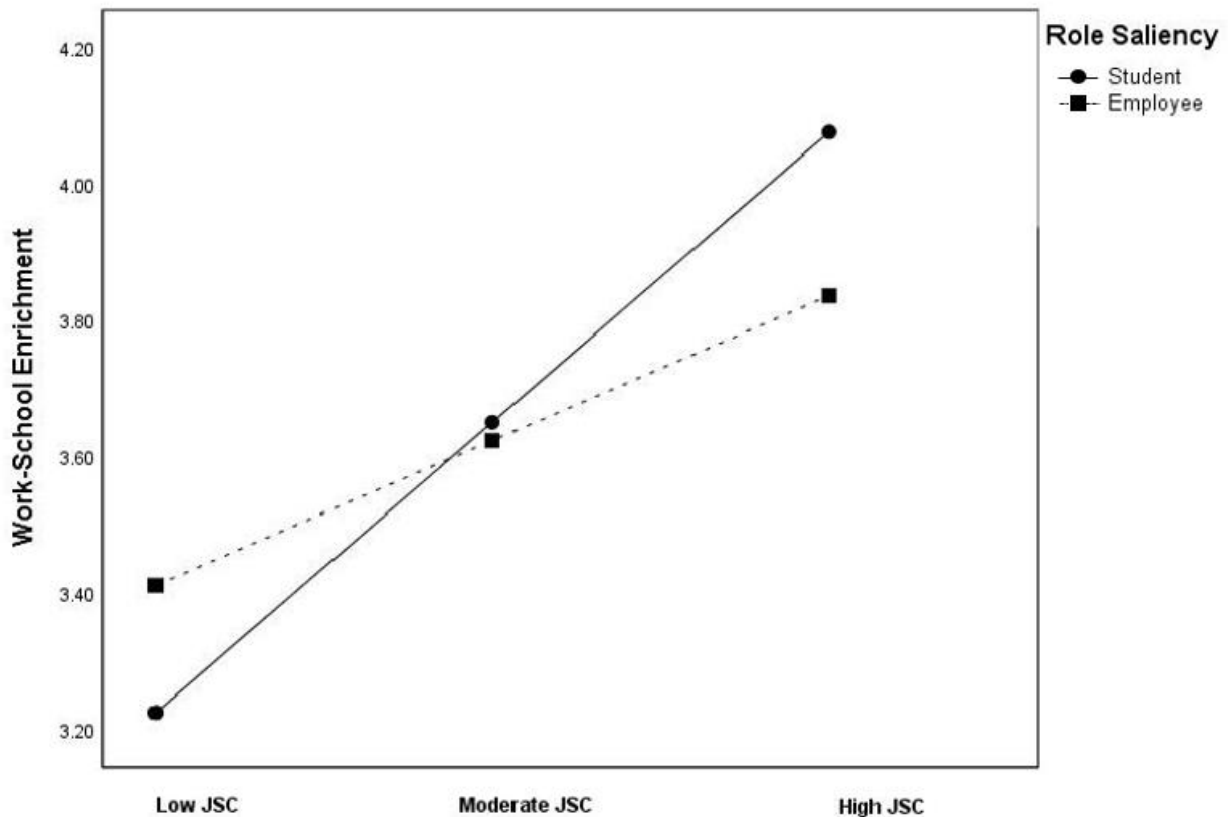


Figure 5. A visual representation of the different primary role identification categories for each level of job-school congruence.

### Considering Type 1 error

As the moderation analyses entailed multiple significance testing of 18 interactions, the probability of Type 1 error was considered. According to Bland and Altman (1995), Type 1 error can arise from multiple significance testing which may lead to chance spurious significant findings. The probability of significant findings occurring by chance is reduced by considering the Bonferroni adjustment, which divides the significance level by the number of analyses to obtain an adjusted  $p$  value. In these moderation analyses, 0.05 divided by 18 provides a new significance level of 0.003. In both interaction analyses which were statistically significant, the significance levels are equal to or below the new adjusted significance level, reducing the likelihood of a Type 1 error. Although the Bonferroni adjustment has been critiqued in various scenarios, it was used as a rudimentary check in this study to guard against spurious significant findings (Bland & Altman, 1995).

## Summary of results

The findings of this study provide support for the additive model that *job demands*, *social support at work* and *time demands* predict *WSC*, and that *job-school congruence* and *social support at work* predict *WSE*. Further, there is also support for the interaction model as *social support at work* moderates the relationship between *job demands* and *WSC*, and *employee role saliency* interacts with *job-school congruence* to influence *WSE*. Refer to Table 13 below for a summary of the study hypotheses and findings.

Table 13  
*Summary of Hypotheses and Findings*

| Hypothesis   | Description                    | Finding          |
|--|--------------------------------|------------------|
| <b><u>Additive hypotheses:</u></b>                         |                                |                  |
| <b>Job Demands are positively related to WSC</b>           | <b>Linear regression</b>       | <b>Supported</b> |
| <b>Job Control is negatively related to WSC</b>            | <b>Correlation</b>             | <b>Supported</b> |
| <b>Social Support at work is negatively related to WSC</b> | <b>Linear regression</b>       | <b>Supported</b> |
| <b>Time Demands are positively related to WSC</b>          | <b>Linear regression</b>       | <b>Supported</b> |
| <b>Job-School Congruence is positively related to WSE</b>  | <b>Linear regression</b>       | <b>Supported</b> |
| <b>Job Control is positively related to WSE</b>            | <b>Correlation</b>             | <b>Supported</b> |
| <b>Social Support at work is positively related to WSE</b> | <b>Linear regression</b>       | <b>Supported</b> |
| Time Demands are negatively related to WSE                 | Linear regression              | Not supported    |
| <b><u>Moderation hypotheses:</u></b>                       |                                |                  |
| Work resources moderate work demands and WSC:              |                                |                  |
| <b>Job Demands x Social Support at Work</b>                | <b>Hierarchical regression</b> | <b>Supported</b> |
| Job Demands x Job Control                                  | Hierarchical regression        | Not supported    |
| Job Demands x Job-School Congruence                        | Hierarchical regression        | Not supported    |
| Time Demands x Social Support at Work                      | Hierarchical regression        | Not supported    |
| Time Demands x Job Control                                 | Hierarchical regression        | Not supported    |
| Time Demands x Job-School Congruence                       | Hierarchical regression        | Not supported    |
| Employee Role Saliency x Social Support at Work            | Hierarchical regression        | Not supported    |
| Employee Role Saliency x Job Control                       | Hierarchical regression        | Not supported    |
| Employee Role Saliency x Job-School Congruence             | Hierarchical regression        | Not supported    |
| Work demands moderate work resources and WSE:              |                                |                  |
| Social Support at Work x Job Demands                       | Hierarchical regression        | Not supported    |
| Social Support at Work x Time Demands                      | Hierarchical regression        | Not supported    |
| Social Support at Work x Employee Role Saliency            | Hierarchical regression        | Not supported    |
| Job Control x Job Demands                                  | Hierarchical regression        | Not supported    |
| Job Control x Time Demands                                 | Hierarchical regression        | Not supported    |
| Job Control x Employee Role Saliency                       | Hierarchical regression        | Not supported    |
| Job-School Congruence x Job Demands                        | Hierarchical regression        | Not supported    |
| Job-School Congruence x Time Demands                       | Hierarchical regression        | Not supported    |
| <b>Job-School Congruence x Employee Role Saliency</b>      | <b>Hierarchical regression</b> | <b>Supported</b> |

## **Discussion**

The primary aim of the current research study was to examine the antecedents of WSC and WSE amongst non-traditional post-graduate students in the local SA context. A secondary aim was to determine whether any moderating relationships exist between work demands and work resources in their respective influences on WSC and WSE. The unidirectional impact of the work role interfacing with the study role was therefore examined from both negative and positive inter-role perspectives. The experiences of WSC and WSE lead to various outcomes for individuals who hold these multiple life roles. If WSC and WSE are not effectively managed, there could be grave consequences across the work, school and personal realms in terms of performance and well-being. Given the worldwide surge in individuals simultaneously working and studying, the antecedents and boundary conditions of the current research yield valuable insights on potential adjustments to job characteristics which could create optimal work-study conditions. This would improve the experiences for individuals who occupy both roles, by helping attenuate their experiences of WSC while capitalising on their experiences of WSE. This, in turn, is more likely to lead to positive outcomes for multiple stakeholders across both the work and school contexts.

This discussion chapter is divided into six sections. The first section presents the contributions of the current study in extending the existing body of knowledge of work-study multiple role occupancy within the SA context. The following section discusses the psychometric properties of the scales to better understand the measures used in the context of the current study sample. The third section presents the findings in terms of the proposed hypotheses, and against the backdrop of the existing work-school literature. Next, the limitations of the current study and suggestions for future research are presented. Thereafter, the theoretical and practical implications of the research are discussed, to provide insights which may contribute to both the academic and organisational realms. In the sixth and concluding section, the research findings are summarised.

### **Contributions of the current study**

This research furthers the existing knowledge of the work-study interface of non-traditional post-graduate students who simultaneously work and study in the SA context. It does so by making the following contributions, each of which are subsequently discussed in more detail:

1. Empirically assessing the psychometric properties of the study scales in the local context.

2. Empirically examining the relationships between job characteristics and WSC.
3. Empirically examining the relationships between job characteristics and WSE.
4. Empirically assessing work demands and work resources as moderators in the relationships between job characteristics, and both WSC and WSE.

In this study the focus was on identifying the work characteristics and boundary conditions that explain WSC and WSE. The hypotheses relating to *time demands*, *job demands* and *social support at work* explaining WSC were supported. However, no statistically significant support was found for the relationships between *job control* and WSC. There was also support for the hypotheses that *job-school congruence* and *social support at work* explain WSE but none for statistically significant relationships between *job control* and WSE, nor for *time demands* and WSE. The results of the moderation analyses revealed that *social support at work* moderated the relationship between *job demands* and WSC; whilst *employee role saliency* moderated the relationship between *job-school congruence* and WSE. No statistically significant support was found for any of the other proposed interaction hypotheses.

### **Portability of the scales**

The subscales used in the current research were originally developed and validated for population samples outside of SA. This study investigated the appropriateness of the use of each sub-scale and found that the quality and performance of these subscales are valid and reliable for use in a SA sample. The EFA confirmed the portability of all scales used in the current research to the research sample and the local SA context. This finding is similar to other findings in international research outside North America which also examined the nature of WSC and WSE in non-American samples such as Israel (Cinamon, 2016), Australia (Creed et al., 2015), Nigeria (Adebayo, 2008) and Portugal (Andrade, 2018).

As was expected, the unique factors which emerged from the EFA confirmed that the items in each subscale loaded onto only one factor. Therefore, *work-school conflict*, *work-school enrichment*, *job demands*, *job control*, and *job-school congruence* each measured the unique constructs as intended. The social support subscales loaded onto two components with eigenvalues greater than 1.00 (4.905 and 1.428), and so could have been extracted as two separate components. However, only the first factor, which accounts for 61% of the variance in *social support at work*, was extracted. This decision was made as the focus of the current study is on social support specifically emanating from the work domain. As the first eigenvalue was

much larger than the second, the proportion of variance explained by the first eigenvalue was sufficient for the purposes of the current research. The EFA also revealed *WSC* and *WSE* as distinct constructs and not merely situated at polar ends of a single continuum, which is similar to findings by other researchers (Butler, 2007; Meeuwisse et al., 2017; Wyland et al., 2016).

The Cronbach's coefficient alpha values observed for the scales in this research ranged from  $\alpha = .72$  to  $\alpha = .92$ , which fall within acceptable levels of reliability (Pallant, 2010). These values are consistent with Butler (2007) and Creed et al. (2015), and so were considered as sufficiently appropriate for use with the current sample.

These findings confirm the portability of the study scales, enabling future researchers to proceed with confidence when using these particular subscales within the SA context.

### **The relationship between work-school conflict and its antecedents**

The phenomenon of *WSC* occurs when an individual occupies both work and study roles, and experiences interference participating in the school role as a result of simultaneous participation in the work role (Butler, 2007). The conflict arises due to time-based, strain-based or behaviour-based demands emanating from the work role, which deplete limited resources and therefore conflict with the study role (Greenhaus & Beutell, 1985). The job characteristics of the current research represent the antecedents to this conflict, and each will be considered in turn.

#### **Time demands and WSC**

In line with past research, the findings from the multiple regression analysis suggest that *time demands*, or the number of hours worked per week, positively explains *WSC*. Similar empirical support has been provided by a number of prior work-school research studies (Butler, 2007; Cinamon, 2016; Creed et al., 2015; Markel & Frone, 1998; Meeuwisse et al., 2017). Time demands emanating from the work role as an antecedent to *WSC* can be explained by role theory (Kahn et al., 1964). Hours worked per week indicate a time-based demand which causes strain and depletes resources, which are then unavailable for use in the academic role. For example, a busy professional who works a 40-hour week has less time available to meet the demands of the study role, due to dedicating a significant portion of their available hours to paid work. In addition to this time-based strain, the number of hours worked also affects an individual's strain-based conflict. Individuals, tired from their work commitments after a long day at their workplace, are likely to have less energy available to complete a task related to their academic responsibilities.

### **Job demands and WCS**

The results of the multiple regression analysis confirmed that *job demands* positively explain a large proportion of the variance in *WSC*. This supports past research findings by Butler (2007), Meeuwisse et al. (2017) and Wyland et al. (2016) who all found that job demands positively predict *WSC*. This study lends credence to job demands being a strong antecedent of *WSC* in the SA context. Markel and Frone (1998) found that workload was positively associated with *WSC*, a construct closely resembling job demands. Role theory (Kahn et al., 1964) can explain how job demands are a form of strain-based conflict which interferes with the ability of an individual to fulfil the requirements of both domains. For example, working students who have heavy job demands as a characteristic of their work roles, will have fewer psychological resources available with which to meet the requirements of the school domain. These job demands could be in the form of a large volume of work or tight deadlines.

### **Social support at work and WCS**

The results of the multiple regression analysis were consistent with other research findings that *social support at work* is a negative predictor of *WSC* (Adebayo, 2006; McNall & Michel, 2017; Wyland et al., 2016). This suggests that perceived interest in the school role from workplace colleagues and supervisors can attenuate the experience of *WSC* in non-traditional students. This can be explained by the JD-R model (Demerouti et al., 2001) which emphasises the necessity of considering the combination of job demands and resources as the predictors for inter-role conflict and enrichment. Social support at work from supervisors and co-workers is a resource emanating from the job role, buffering individuals against the negative effects of their combined job demands (Bakker & Demerouti, 2007), and leading to a reduction of conflict between the work and school roles.

Co-workers and managers can provide a unique type of social support, specifically emanating from the workplace. They are uniquely positioned to offer both instrumental and affective support to individuals who hold both life roles. For example, supervisors and co-workers could provide instrumental work cover for times during which the individual is required to focus on their academic responsibilities. Researchers such as Kossek et al. (2011) have called for distinction between the different sources of social support. Social support emanating from the workplace and which specifically provides support for the school role has been strongly linked to the cross-domain buffering effect on *WSC*, more so than other sources and types of social

support. For example, Cinamon (2016) found that general support from family and friends was not predictive of WSC. However, other researchers who have specifically measured social support from the workplace directed at the school role, found it to be a negative predictor of WSC (Adebayo, 2006; McNall & Michel, 2017). These intricacies relating to social support demonstrate the scope and complexity of this variable within the inter-role literature (Seiger & Wiese, 2009).

### **Job control and WCS**

When examining job control as an antecedent to WSC, the results of the multiple regression analysis revealed that *job control* did not explain a significant portion of the variance in WSC, contrary to the expected result. This differs from past literature where job control has been negatively related to WSC (Barling et al., 1995; Butler, 2007; Meeuwisse et al., 2017). This finding in the current study is similar to Wyland et al. (2016), who also unexpectedly found that job control was not related to WSC. Wyland et al. suggest that the ability to control the intensity and timing of responsibilities in the work domain may not impact on the ability to meet the demands of the school role. It could be similarly speculated that the ability to control one's work responsibilities does not translate to any noticeable impact on the school role for non-traditional students, as academic schedules and deadline are prescribed and do not accommodate work schedules. Nonetheless, this finding is in contrast to work-school research by Butler (2007) and Meeuwisse et al. (2017), who both found job control to be a negative predictor of WSC in university students. Butler's hypothesis was derived from the work-family literature, which has also shown mixed findings relating to job control and its relationship to WSC (Bakker et al., 2011; van der Doef & Maes, 1998). This highlights the applicability of the JD-R model which emphasises a holistic account of the combination of job demands and job resources in the stressor-strain relationship (Bakker et al., 2011).

### **Socio-demographic variables and WSC**

The *socio-demographic* data relating to WSC were analysed for group differences, over and above the proposed additive and interaction relationships. Statistically significant differences existed between groups in their mean experiences of WSC, suggesting that the following groups experience higher levels of WSC: those who identify primarily as an employee, those who are married and those who are older in age. However, although these group differences were noted in the t-test and ANOVA analyses, the results of the linear multiple regression analysis revealed

that none of these socio-demographic variables accounted for a statistically significant portion of variance in WSC when treated as co-variates in the model.

It is speculated that the participants who identify predominantly as employees, who are married and who are of older age carry additional responsibilities as a result of their socio-demographic profile. These additional work and personal responsibilities may impact on their ability to meet the demands of their study roles, which leads to greater WSC. This lends support to the theory of role strain (Good, 1960), where multiple roles compete for limited resources. Together with these group differences, the interplay between the demands of the work, school and home roles, as studied by Olsen (2014), demonstrate that home and personal factors are a relevant consideration for future inter-role research.

The findings of this study, relating to the socio-demographic group differences, are highlighted against the backdrop of recent research interest in better understanding the role individual personality differences play in the work-study interface. For example, McNall and Michel (2011) found that the psychological resource of core self-evaluations (CSEs) was negatively related to WSC, and found further support for the significance of these dispositional variables in a later study where school-specific CSEs negatively predicted WSC (McNall & Michel, 2017). Hecht and McCarthy (2010) similarly found that dispositional variables play a role in an individual's experience of inter-role conflict.

### **The relationship between work-school enrichment and its antecedents**

The phenomenon of WSE occurs when an individual occupies multiple roles across both the work and school domains, and participation in the work role enriches participation in the school role (Butler, 2007). This enrichment occurs when resources transfer from the work role to the school role (Greenhaus & Powell, 2006; Wayne et al., 2007). The job characteristics in the work role represent the antecedents to this enrichment, and each is considered in turn.

#### **Job-school congruence and WSE**

As expected, results from the multiple regression analysis showed that *job-school congruence* explains a significant portion of the variance in *WSE*. These results are similar to Butler's (2007) finding of the positive association of job-school congruence with WSE in a sample of working undergraduate students. This observation can be explained by the expansionist hypothesis of role theory (Kahn et al., 1964) which highlights that participation in a congruent work role generates resources which have a positive cross-domain effect in the study

role. It can also be accounted for by the RGD perspective (Wayne et al., 2007) which explains that an individual seeks out growth and development by building upon available resources in their environment. Working students whose work content is aligned to their field of study experience higher levels of enrichment in their academic roles, precisely by virtue of their participation in the work role. For example, a manager enrolled on a management degree programme has an opportunity to practically apply the curriculum content of their studies to their work role, making the connection between their work and school roles more salient. The resources generated in the work role therefore transfer across for use in the school domain. These findings are consistent with other research focusing on job-school congruence (Butler, 2007; Meeuwisse et al., 2017). There is, therefore, strong support for the positive impact of the job role on study role enhancement when employees are working in fields directly related to their studies.

### **Social support and WSE**

Results from the multiple regression analysis determined that *social support at work* explains a significant proportion in the variance of *WSE*. This is consistent with Cinnamon's (2016; 2018) findings that multiple sources of social support are antecedents to *WSE* in both high school and university students. Similarly, McNall and Michel (2017) and Wyland et al. (2016) found that interpersonal support from the work domain was positively related to *WSE*. Like job-school congruence, these findings can be accounted for by the expansionist hypothesis of role theory (Kahn et al., 1964) and the RGD perspective (Wayne et al., 2007). This research implemented previous suggestions by Kossek et al. (2011) and Michel et al. (2010) to provide a finer grained view of the various sources of social support together with the different roles these play in the enrichment of those occupying multiple roles. The findings imply that workplace specific social support positively explains *WSE*. Supervisors and co-workers enhance successful participation in both domains by extending affective social support by showing interest in their colleagues' studies. This could be demonstrated by asking questions indicating their interest in their colleagues' study roles. This research also supports the strong evidence from work-family studies that social support plays a positive role in *WSE* (Bakker et al, 2011; Byron, 2005).

### **Job control and WSE**

Results from the multiple regression analysis did not show a statistically significant relationship between *job control* and *WSE*. This was contrary to the expected result based on the hypothesis, which proposed that job control would positively explain *WSE*. This is dissimilar to

findings from Butler (2007), Wyland et al. (2016) and Meeuwisse et al. (2017), all of which found job control to be a statistically significant predictor of WSE. The JD-R model proposes that job control is a resource-enhancing job characteristic which can positively influence inter-role enrichment. However, the results of this research study indicate that job control fails to significantly impact on the school role through a transfer of resources from the work domain to the school domain. This means that even if an individual has control over how they go about their job, this has no significant positive impact on their study role. From these findings, it could be speculated that the ability to control the timing, pace and autonomy of one's work does not necessarily have an impact on enhancing the experience of the school role. These results are in line with those of work-family research which found that job control is limited in its ability to transfer significant cross-domain benefits (Bakker et al., 2011; van der Doef & Maes, 1998).

### **Time demands and WSE**

Results from the multiple regression analysis did not support the hypothesis that increased *time demands* are negatively linked to WSE. This contradicts findings by Cinamon (2018), that higher numbers of hours dedicated to paid work by high school students predicted lower levels of work-school facilitation. As the measured variable differed slightly from WSE as operationalised in the current research, perhaps the findings can be attributed to the distinction between facilitation and enrichment. Alternatively, the differences between the study samples could explain this discrepancy in findings. Other research suggests a positive impact of decreased work hours and WSE (Butler, 2007; Cinamon, 2016; Creed et al., 2015). It could be speculated that the mixed findings in the literature is related more to the number of hours being strongly tied to the experience of WSC rather than WSE (Markel & Frone, 1998; Hammer et al., 1998). This finding could be explained by the Goldilocks effect of the ideal number of working hours outside of which negative effects start to develop (Dundes & Marx, 2007). These authors compared the working hours per week and academic performance of a sample of undergraduate students. The findings indicated that those who work at off-campus jobs for between 10-19 hours per week showed the strongest academic performance. The performance of this group was compared to those who did not work, those who worked less than 10 hours per week and those who worked over 20 hours per week. Dundes and Marx proposed that the increased organisational skills of those working 10-19 hours per week enabled these students to increase their study efficiency and effectiveness, as well as enhance their perspectives through off-

campus interaction. There is therefore further scope to investigate the relationship between time demands from work and the positive side of the work-study interface.

### **Socio-demographic variables and WSE**

The data relating to WSE was analysed for *socio-demographic* group differences, over and above the proposed additive and interaction relationships. It was found that those with one or more dependents experienced higher WSE compared to those with no dependents. This could be explained by the notion that for those who have dependents, improving their career progression might help them achieve better opportunities for their families by improving their economic context. Although, the results of the linear multiple regression analysis revealed that dependent status was not a statistically significant co-variate in the model.

It can be speculated that there is scope for more WSE being explained by individual personality differences. The question of why two individuals with similar job characteristics experience varying levels of WSE is an exciting area of study requiring further empirical attention (Hecht & McCarthy, 2010). Considering the WSE model in the current study, there is still room to account for a further two thirds of the predictors of WSE. It could be speculated that individual differences in personality, motivations and experiences may also play a role in predicting WSE. For example, a more optimistic individual who is naturally more amenable to new challenges may experience higher levels of WSE because of their specific personality traits. Future research could explore these personality traits which may explain a large proportion of the variance in WSE. This is aligned to the research of Hecht and McCarthy (2010) who established that dispositional variables play a role in the experience of inter-role enrichment.

The job characteristics under study in the current research are adjustable to suit the requirements of the school role, as it is far easier to change one's work context rather than adapting one's personality traits. McNall and Michel (2011; 2017) have focused on dispositional variables in their research studies and found that both general CSEs, school-specific CSEs and proactive personality were all positively related to WSE. Finally, Creed et al. (2015) found that enabling resources such as skills and psychological rewards such as status and job involvement were all positively associated with WSE.

### **The relationship between the antecedents and moderators of WSC and WSE**

A secondary set of hypotheses was proposed relating to potential moderating relationships between work demands and work resources predicting WSC and WSE. These

hypotheses were predicated on the JD-R model (Demerouti et al., 2001) which maintains that research focusing on the interface of multiple roles should take account of the interaction between job characteristics to explain strain and well-being (Bakker et al., 2011). According to the extended JD-R model (Owen et al., 2018), the final outcomes of the work-study interface are mediated by WSC and WSE. Yet there is an interaction effect in the model which can occur when combinations of job characteristics are considered as predictors of WSC and WSE.

Results from the moderation analyses indicated that *social support at work* moderated the relationship between *job demands* and *WSC*, whilst *employee role saliency* moderated the relationship between *job-school congruence* and *WSE*. No other moderation effects were observed, despite hypothesising with a number of different combinations. These results can be compared to those obtained by Butler (2007), who similarly considered the interaction effects in addition to the proposed additive model. Butler found no significant moderators influencing WSC and WSE, and thus suggested that the additive model is the more parsimonious framework within the work-school context. Despite the non-significant interaction findings by Butler, the current research proceeded to include moderation hypotheses to investigate if results would vary across a different sample, as recommended by Butler (2007). Each of the two significant moderation relationships will be discussed.

#### **Work resources moderating the relationships between work demands and WSC**

*Social support at work* moderated the relationship between *job demands* and *WSC*. This is similar to prior research findings in both the work-family and work-school spheres, which found that social support acts as a powerful moderator of outcomes (Kossek et al., 2011; Michel et al., 2010). Social support has been considered in different configurations within the inter-role literature, namely as antecedent, moderator and mediator. The results of this research suggest that social support has an influence on how job demands are related to WSC. Although a buffering effect was expected, the association between job demands and WSC was stronger for participants experiencing higher social support levels compared to participants experiencing low social support. This unexpected direction of the interaction effect necessitates a consideration of the social support study subscales to understand exactly what constructs were measured in the current study.

The social support scale measured perceived affective support for the school role from supervisors and co-workers at the workplace. The items did not tap into instrumental support

comprised of quantifiable behavioural assistance from colleagues at work. The scales refer to perceptions of support rather than practical assistance. It could be expected that a more tangible type of social support could better buffer the practical demands of the work role for non-traditional students. This is an important distinction which should be addressed in future research.

Another possible explanation for the unexpected reverse buffering effect also relates to the scale items referring specifically to affective support. According to social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), an individual's behaviour and attitudes towards another person may be influenced by the perceived benefits received from the other person. For example, if an incumbent's supervisor displays loyalty and support towards the individual, it creates a positive exchange relationship which in turn creates an obligation for the receiver to reciprocate (Settoon, Bennett & Liden, 1996). In the current study, social support from the workplace would likely be perceived as a benefit by the non-traditional student, which in turn could create an obligation for them to reciprocate and provide similarly high levels of support to their colleagues in order not to disappoint the team. This could potentially account for the unexpected finding that increasing levels of social support are associated with higher levels of WSC when job demands are also high.

### **Work demands moderating the relationships between work resources and WSE**

*Employee role saliency* moderated the relationship between *job-school congruence* and *WSE*. This is similar to findings by Greenhaus and Powell (2006) and Carlson et al. (2006). The results vary from those of Cinamon (2016), who found that work role salience predicted WSE as an additive antecedent. Creed et al. (2015) and Meeuwisse et al. (2017) found that enabling resources including job involvement were positively associated with WSE. The results of this research do not support employee role saliency being significantly associated with WSE in an additive model. This is in line with Lapierre (2018) who considered the role of personal characteristics in the work domain, and found that psychological role involvement was an influential factor. The current research indicates that employee role saliency is only influential when it interacts with job-school congruence. The results show that those who identify as employees experience less WSE as a result of their job-school congruence, compared to those who identify as students. It also indicates that employee role saliency can be viewed as a type of demand which interacts with the job-school congruence resource to decrease WSE. This is

contrasted with some research findings which have identified work role salience as having a beneficial influence on WSE (Cinamon, 2016; Creed et al., 2015; Meeuwisse et al., 2017). A possible explanation for these findings is that those who identify primarily as students have limited work experience and therefore perceive job-school congruence as more of a novelty than those who identify as employees. Those who identify as students could be expected to seek out more opportunities for practical application of their skills, as the nature of their work skills have yet to be ingrained as part of their frame of reference. This could explain why students experience higher levels of WSE as their job-school congruence increases, compared to those who identify as employees. This reasoning is supported by cross-tab analysis results which revealed that those who identify as students are younger and work less hours compared to those who identify as employees.

A further consideration is the conceptualisation of role saliency. As the current research used secondary data, the only available measure of role salience was a single socio-demographic item which asked which of the two roles they considered to be their primary role. This can be considered a crude measure of this construct, as previous research on work role salience has used validated scales relating to job involvement or work role salience to measure this construct (Cinamon, 2016; Creed et al., 2015).

The results of these moderation analyses reveal interesting insights which should be further explored in future research in order to build upon and refine the literature. This will enable increased understanding of the significant interactions and boundary conditions which may be impacting on the WSC and WSE of non-traditional students in SA.

### **Limitations of the current study and suggestions for future research**

It is important to consider the results of the current study in light of the limitations and shortcomings of the research design, data collection and scope of the research project. It is prudent to reflect on these before considering the implications of the current research. An evaluation of these limitations also provides valuable insights which may inform future research, together with other insights gleaned during the research process which could be of value for future research in the work-study field.

### **Study limitations**

The study limitations can be divided into three broad sections: (i) secondary data analysis; (ii) research design; and (iii) the scope of the current research project. Each of these limitations will be presented and discussed.

#### ***Secondary data analysis***

Although the use of secondary data is associated with some advantages, there are limitations which should be considered (Bryman, 2012). These include the quality and validity of the data set, a lack of control over the variables, scales and sampling strategies employed in the primary research, and the time required by the secondary researcher to adequately understand the nature and purpose of the original data set (Bryman, 2012). During the primary data collection phase, Jacobs (2018) collected high-quality data on variables relevant to the present study, enabling the current research to successfully employ the use of secondary data analysis. However, a lack of control over the variables and scales is a limitation of this study. A revision of certain variables and scales could have more accurately captured the relevant constructs, such as work role salience and instrumental social support.

#### ***Research design***

Secondary cross-sectional self-report survey data was used to investigate the antecedents of WSC and WSE amongst non-traditional students. According to Burns and Burns (2008), this type of research design is characterised by inherent limitations. The sampling strategy employed and the self-report method incorporate additional limitations, which will also be discussed.

***Cross-sectional.*** This was a cross-sectional study as the aim was to examine the antecedent variables of WSC and WSE originating in the work domain. Tredoux and Smith (2006) highlight one of the key limitations of using a descriptive cross-sectional research design is that it does not allow for identification of causal relationships between the variables. However, the aim of the current research was to evaluate the relationships between various factors and WSC and WSE and their link with boundary conditions at a certain point in time. Establishing temporal causal relationships was therefore not the focus of this study, as the cross-sectional approach was sufficient in developing an understanding of the relationships between variables.

***Sample and sampling technique.*** Limitations can also arise from the sampling techniques employed in the research (Burns & Burns, 2008; Tredoux & Smith, 2006). In the primary study, a limitation regarding the non-probability sampling technique used to select

participants could affect the generalisability of the findings to other population groups. The findings of the present research were consistent with prior work-school literature, although the generalisability of the findings may be limited due to the inclusion of a single homogenous sample (Pallant, 2010).

***Self-report method.*** Limitations can also arise from the measuring instruments employed in the research (Tredoux & Smith, 2006). A limitation of using self-report instruments completed by participants is that they may not respond accurately. This could potentially lead to inaccurate measurement of the research variables. This common method bias is a possibility when using self-report instruments (Burns & Burns, 2008) and is considered as a research design limitation.

#### ***Scope of the research study***

The time constraints of the current study necessitated a unidirectional approach, whereby the impact of the work role on the school role was investigated. Other researchers have studied a bi-directional approach (Wyland et al., 2016), and also considered factors in the school domain which impact on both roles (Cinamon, 2018). Other researchers have also considered the outcomes of WSC and WSE on school, work and personal outcomes (Olsen, 2014).

#### ***Suggestions for future research***

The suggestions for future research emerge from the shortcomings of the current study, as well as other potentially interesting avenues of investigation identified during the research process. In comparison to better established fields such as the work-family interface, there is limited empirical literature focusing on the work-school domain of multiple role involvement (Owen et al., 2018). Whilst the findings of the current study extend the field of knowledge, it is recognised that there are many other potential research areas requiring empirical attention. Due to the scope of the current study, necessarily limited by time constraints, it was not possible to investigate all potential areas of interest spanning the work-school domain.

Suggestions arising out of this study for future research are summarised as: (a) improving aspects of the research design; (b) extending the sample to increase generalisability; (c) the inclusion and measurement of additional variables of interest; and finally, (d) deeper insight into the positive aspects of the work-school interface.

***Improving aspects of the current study research design.*** The limitations of the cross-sectional survey design were outlined. A longitudinal research design could aim to explore the causal links between job characteristics and other factors involved in WSC and WSE. A

longitudinal design could have its place in the work-school interface arena to determine whether the factors that contribute to WSC and WSE change over time, depending on factors such as an individual's time in their current job context (Pallant, 2010). Another potential methodology to consider including is qualitative research, which could offer a more nuanced understanding of these constructs, thereby guiding future research foci more accurately (Bryman, 2012).

***Extending the sample to increase generalisability.*** The sample of the current study was fairly homogeneously derived (96% = UCT), however there was a good spread in the faculties represented. In order to increase the generalisability of the study results to the population of interest, it would be important to research students from other provinces and universities around SA. It would also be interesting to compare undergraduate working students in SA with similar international studies.

In terms of the sampling procedure, non-probability snowball sampling techniques were used, which often decreases the generalisability of findings (Bryman, 2012). Future research should consider using a probability sampling approach for better validity. It is recommended that future research investigates whether the results of this study generalise to undergraduate studies or participation in other credit-bearing skills programmes, such as workplace training.

***The inclusion and measurement of additional variables of interest.*** There are several inclusions which could add variables of interest for future studies. These can be summarised into three sections: (i) expanding the scope of the study; (ii) dispositional variables; and (iii) a finer grained measurement of some of the study variables.

***Expanding the scope of the study.*** It is suggested for future research that the scope of the study is expanded by considering the bi-directional flow of WSC and WSE. This would entail a consideration of the antecedents emanating from both the work and school roles which have an impact on both roles (Wyland et al., 2016). Some examples are school-based sources of social support such as student counselling services, and school control over the scheduling of study timetables as in the case of blended learning models. Future research could more accurately represent the full extent of the psychological experiences of non-traditional post-graduate students with the inclusion of the outcomes, which are mediated by WSC and WSE. The outcomes have previously been investigated by Jacobs (2018), as well as a number of international researchers (Amstad, Meier, Fasel, Elfering & Semmer, 2011; Creed et al., 2015; Wyland et al., 2016;). Future research with a longer timeframe could consider a mixed methods

approach, incorporating a rich narrative from qualitative data (Bryman, 2012). This would supplement the quantitative findings and provide a finer grained view of WSC and WSE (Braun & Clark, 2013).

*Dispositional variables.* Dispositional variables such as self-efficacy and proactive personality could be included in future research. This could potentially help account for extraneous and moderating variables, as well as for the unexplained variance revealed by the multiple regression analyses. Following on from research trends in the work-family literature, there has been a steady incline in the focus on dispositional variables as antecedents to WSC and WSE. Researchers such as Creed et al. (2015) and Wyland et al. (2016) have begun to investigate individual differences which may account for a proportion of the variance in WSC and WSE, with the role of personality traits in predicting or moderating WSC and WSE being investigated.

*A finer grained measurement of some study variables.* Due to the unique SA context, future research could develop and test conceptual models that include other variables existing in the work-school domains. As suggested, these could be demands and resources from the work, school and personal realms. A more nuanced understanding of the antecedents could assist with a better understanding of the unique demands and resources which impact on WSC and WSE, and help better explain these phenomena (Owen et al., 2018).

The hours variable, measuring time-based demands, was measured as a multi-categorical variable as part of the scales: less than 20 hours per week, 20-39 hours per week, and 40+ hours per week. It is suggested that the number of working hours per week should rather be measured as a continuous variable for a finer grained understanding of how time-based demands impact on the school role.

A more comprehensive measure of role saliency, including an established subscale with several items measuring how involved an individual is in their work and other roles, would provide a more in-depth perspective. This could help illuminate the concept of role saliency and its position within the work-school model.

Future research could also focus on the types of occupations which employed post-graduate students hold. For example, whether there is a significant difference in the antecedents of WSC and WSE by level, type or industry of occupation. For example, comparisons could be made between a professionally employed manager and an academically employed researcher. In

the current study, a rudimentary attempt to categorise occupations was performed during the coding of these string variables, however due to a lack of consistency between responses no meaningful analyses could be made. The addition of structured questions for yielding suitable categorical data for further analysis would be useful in better understanding the job role, especially as the main source of antecedents which impact WSC and WSE are comprised of job characteristics (Owen et al., 2018).

*Deeper insight into the positive aspect of the work-school interface.* Considering that the positive side of the work-school interface has not been as extensively studied as the negative side, it is recommended that research efforts should be more focused on WSE in order to improve outcomes of the work-study interface (Butler, 2007). This could facilitate an enhanced understanding of how we could positively harness social support emanating from the workplace and job-school congruence, to further enhance WSE. The antecedents of WSC include structural elements which may not be amenable to change, such as working long hours in a demanding senior job role. WSE could more easily assist with positive outcomes in the work, school and personal roles, which could potentially counteract some of the negative outcomes of WSC.

### **Implications of the present study**

The implications of the current research are considered from both a theoretical and practical perspective. The results extend the theoretical understanding of various theories and models. Practically, the quality of an individual's student role is of primary concern to the individual, higher education institution and employer organisation. Increasing numbers of non-traditional students, particularly at the post-graduate level, increase the likelihood that more individuals will hold substantial work responsibilities in addition to their academic responsibilities. Thus, a more comprehensive framework with which to better understand the positive and negative aspects of the work-study interface is required, along with practical insights which can be implemented by all three of the mentioned stakeholder groups.

### **Theoretical**

The findings of this study provide empirical support for job characteristics being antecedents of WSC and WSE. The theoretical implications of the current research relate to support for role theory (Kahn et al., 1964), the JD-R model (Demerouti et al., 2001) and the RGD perspective (Wayne et al., 2007). Greater theoretical understanding assists stakeholders with additional insights and a better understanding of this field.

### ***Role theory***

There is support for the scarcity and expansionist hypotheses that characterise role theory and multiple role involvement (Greenhaus & Beutell, 1985; Kahn et al., 1964; Sieber, 1974). Specifically, the job characteristics that comprise work demands and work resources contribute to the theoretical knowledge of WSC and WSE from both a conflict and an enrichment perspective. Aligned to previous research, work demands contribute to WSC and work resources contribute to WSE (Butler, 2007; Creed et al., 2015; Meeuwisse, 2017).

The present research study also contributes to the theoretical understanding of the role that job control plays in both WSC and WSE, by supporting similar findings that indicate that job control does not act as an expected antecedent (Bakker et al., 2011; Byron, 2005), despite other prior research support that job control does play a significant role (Butler, 2007; Meeuwisse, 2017). This study provides an enhanced understanding of the employed post-graduate population, which is distinct from undergraduate samples characterising much of the current work-school literature. As this is the first known study in SA to empirically investigate the relationships between WSC and WSE and their antecedents amongst non-traditional post-graduate students, these findings contribute to our understanding of WSC and WSE within this sample, and support the applicability of role theory in the SA context.

A consideration of the supplementary models to role theory are used to provide a complementary and integrative perspective.

### ***Complementary models***

The JD-R model allows for a more nuanced explanation of the interaction of the various antecedent conditions of WSE and WSC (Bakker et al., 2011). Specifically, with regards to the extended JD-R model proposed by Owen et al. (2018), significant interaction effects were revealed by the moderation analyses. Social support at work moderated the relationship between job demands and WSC, and employee role saliency moderated the relationship between job-school congruence and WSE. As both the additive and moderation findings in this study can be accounted for by the JD-R model, which integrates both the negative and positive aspects of the work-study interface, these interaction effects support this model in a SA context.

The RGD perspective (Wayne et al., 2007) was also supported by the interaction of personal and environmental demands and resources predicting WSE, accounting for the positive aspects of the work-school interface.

### **Practical**

This research adds to the existing knowledge base of the work-study research by examining the antecedents of WSC and WSE amongst employed post-graduate students in the SA context. Additionally, this study extends current work-school research by examining moderating variables in the work context, and makes several practical contributions of interest to various stakeholders. These include that despite the increased role demands and strain created by WSC, results of this study and prior research indicate that there are benefits attached to the simultaneous occupation of employee and student roles. These benefits may mitigate negative aspects of the work-school interface, especially if particular efforts are made by the stakeholders: (i) organisations; (ii) academic institutions; and (iii) individuals. These will be discussed in turn.

### ***Organisation***

The job characteristics influencing WSC and WSE are work demands and work resources, which both represent the antecedents for the positive and negative experiences of the work-school interface. The origins of these work demands and resources are located in the work domain. It is therefore suggested that much of the manipulation of these antecedents can be accomplished by organisations who employ individuals who are simultaneously enrolled in post-graduate programmes (Owen et al., 2018).

Employers of individuals enrolled in academic programmes could either be funding studies through an organisation study-assistance programme, or individuals could be self-funding their studies. There is an advantage to the employer to facilitate a healthy work-study interface in order to retain employees who have accrued the benefits of post-graduate studies in addition to their existing job knowledge and experience. Management should assist their employees who study through either of the funding scenarios, by encouraging conditions that have been shown to both minimise WSC and increase WSE. The consequences of high WSC include high dropout rates and psychological burnout (Wyland et al., 2016) which negatively affect an organisation's competitive advantage.

Organisations should therefore focus their attention on reducing those job characteristics which predict WSC, and improving on the job characteristics which predict WSE. The consequences of these actions by organisations could result in healthier, happier and more successful employees occupying multiple life roles. Management can also optimise the multiple role occupancy of their employees by limiting job demands and time demands on employees,

whilst increasing social support from colleagues and supervisors, and accentuating the congruence between the work and the study roles. This could be achieved through: (a) work-study policies; (b) cultural alignment; (c) social support training, and (d) well-being initiatives.

***Work-study policies.*** There are several types of organisational policies which could be implemented in support of employees who study. These have the potential to promote positive experiences of both the work and study roles. For example, flexible work schedules, with the option to reduce job and time demands could be introduced. This flexibility may help alleviate the strain of occupying these dual roles, by allowing more time for concentration on the academic role. Other Human Resources (HR) policies which could also be work-study friendly include training and development policies which highlight formal education as a key learning strategy. Appropriate recruitment and selection policies could assess the individual needs of the working student, and adapt the job description in such a way as to encourage a healthy work-study interface amongst their employees who are enrolled in higher education programmes.

***Cultural alignment.*** Organisations are required to practically implement their policies. They should ensure that their work-study policies are properly applied within all teams. Although the line managers are the enablers of policies, all levels of leadership should be held accountable for implementing the necessary support for their team members who study. Culture surveys are useful to assess the current attitudes of employees towards the organisation's work-study practices, and the results of these can be used to inform policy improvements. The culture of the organisation must be supportive of the implementation of work-study policies to ensure they completely infiltrate management practice.

***Social support training.*** Considering the strength of the relationship between social support at work and both WSC and WSE, training should be provided to all employees on the importance of demonstrating social support towards those around them to buffer against life stressors, with special reference made to those occupying dual work-study roles. There is strong support in the literature for the importance of social support to an individual's health and well-being (Kossek et al., 2011). Thus, this type of training should be incorporated into company onboarding and regular training practices, so as to have an impact on the supervisors and co-workers of those who study. The results of this research indicate that social support from work is paramount to an employee feeling supported in their work role in order for them to more

optimally fulfil the requirements of the school role. This social support training should focus on the importance of providing both instrumental and affective support to colleagues.

***Well-being initiatives.*** Employee assistance programmes should provide support and counselling to their employees who are enrolled on study programmes. This support could include access to a range of services such as assistance with childcare arrangements or professional counselling for mental health issues. Organisations gain a competitive advantage when they are able to attract and retain employees pursuing further higher education studies, as employee development is a key component of talent retention.

### ***Higher education institutions***

The implications of better insights into the antecedents of WSC and WSE for academic institutions include possible adjustments to their academic policies and programmes. These could optimise the work-study interface for non-traditional students, contributing to lower attrition rates and higher levels of student success, which is particularly important at the post-graduate level.

Academic institutions should partner with employer organisations to communicate the learning content of post-graduate programmes, which could then be incorporated by employers into the job descriptions of their employees who study. Academic institutions could also offer meaningful outlets to students to address their experiences, such as providing support facilities that could assist students to cope with the strain of balancing other life roles.

Given the potential negative outcomes of the work-study interface including high attrition rates, higher education institutions which have employed students enrolled on post-graduate programmes could themselves benefit from aligning with employer organisations and individual students to help facilitate dual role occupancy and to minimise these negative outcomes.

### ***Individual***

A better understanding of the antecedents of WSC and WSE can inform behavioural modifications on an individual level. Those who occupy multiple life roles should attempt to influence known antecedents to better optimise WSC and WSE. For example, an individual who is simultaneously working and studying may opt to reduce their weekly work time demands by taking up a part-time role, or ensuring that their work role is aligned to their study role for optimal job-school congruence. These actions could reduce WSC and increase WSE respectively, which would have a positive effect on the various outcomes of WSC and WSE.

## **Conclusion**

This study extends the limited research on the phenomena of WSC and WSE in the SA context. It focuses on a specific sub-set of the population, namely post-graduate university students. This sample reflects the growing number of individuals simultaneously employed and enrolled in a higher education programme, often referred to as non-traditional students.

WSC and WSE are important concepts which have implications for management to consider where they wish to enhance the productivity, well-being and commitment of their workforce. There is strong support that job characteristics can explain WSC and WSE. Adjustments to these antecedents can therefore influence the experience of conflict and enrichment in both study and work contexts, which in turn mediate the outcomes of WSC and WSE. These outcomes include performance and satisfaction in both the work and school domains, as well as individuals' psychological health and subjective well-being.

The current research findings indicate a wide scope of practices for organisations to introduce in relation to their employees who are also studying. Suggestions include supporting employees by adapting the job characteristics to attenuate WSC and enhance WSE. Academic institutions can also play an important role by adjusting antecedents in the school domain to assist individuals to successfully complete their studies while working, which benefits all stakeholders.

The recent phenomena of WSC and WSE are based on the existing work-family literature. By advancing the knowledge of the work-school interface, this study further contributes to our understanding of inter-role conflict and inter-role enrichment in different contexts. This adds breadth to the theoretical knowledge of multiple role occupancy, including that of carer and community volunteer.

The inexorable growth of individuals enrolled in the higher education system whilst simultaneously engaged in paid work necessitates an increased focus on the work-study interface. Organisations who strive to employ leaders in their respective fields in order to obtain a competitive advantage, must facilitate an environment providing a healthy work-study balance. SA's economic and social development is dependent, in part, on the country increasing its number of higher education graduates. Individuals successfully continuing their higher education studies whilst they are simultaneously employed is therefore integral to this vision of a prosperous South African future.

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## Appendix A: Measures

### 1. Work-School Conflict – *Five-point response scale from 1 (never) to 5 (always)*

1. My job demands and responsibilities interfere with my university work.
2. I spend less time studying and doing homework because of my job.
3. My job takes up time that I'd rather spend at university or on university work.
4. Because of my job, I go to university tired.

### 2. Work School Enrichment– *Five-point response scale from 1 (strongly disagree) to 5 (strongly agree)*

1. The things you do at work help you deal with personal and practical issues at university.
2. The things you do at work make you a more interesting person at university.
3. The skills you use on your job are useful for things you have to do at university.
4. Having a good day at work makes you a better student.
5. Talking to someone at work helps you deal with problems at university.

### 3. Job demands – *Five-point response scale from 1 (never) to 5 (always)*

1. To what extent does your job require your working hard?
2. To what extent does your job require a great deal of work to be done?
3. To what extent is there not enough time for you to do your job?
4. To what extent is there excessive work in your job?
5. To what extent do you feel there is not enough time for you to finish your work?
6. To what extent are you faced with conflicting demands on your job?

**4. Job control** – *Five-point response scale from 1 (never) to 5 (always)*

1. To what extent do you have freedom to decide how to organize your work?
2. To what extent do you have control over what happens on your job?
3. To what extent does your job allow you to make a lot of your own decisions?

**5. Social support** – *Five-point response scale from 1 (strongly disagree) to 5 (strongly agree)*

Social support from supervisors

1. My work supervisor understands my academic demands.
2. My work supervisor listens when I talk about my academic responsibilities.
3. My work supervisor acknowledges that I have academic obligations.
4. I feel comfortable bringing up the issue of my academic responsibilities with my work supervisor.

Social support from co-workers

1. My co-worker/s understand my academic demands.
2. My co-worker/s listen when I talk about my academic responsibilities.
3. My co-worker/s acknowledges that I have academic obligations.
4. I feel comfortable bringing up the issue of my academic responsibilities with my co-worker/s.

**6. Job school congruence** – *Five-point response scale from 1 (strongly disagree) to 5 (strongly agree)*

1. I use knowledge that I gained in university on my job.
2. I use skills that I gained in university on my job.
3. My university studies are not really relevant to what I do at work. (r)

**Appendix B: PCA tables**

Table 1

*Principle Component Analysis for Work-School Conflict scale*

| Item Code                     | Description   | Component Loadings | Communalities |
|-------------------------------|---|--------------------|---------------|
| WSC1                          | My job demands and responsibilities interfere with my university work     | <b>.901</b>        | .812          |
| WSC2                          | I spend less time studying and doing homework because of my job           | <b>.914</b>        | .835          |
| WSC3                          | My job takes up time I'd rather spend at university or on university work | <b>.871</b>        | .759          |
| Eigenvalues                   |   | 2.406              |               |
| Individual Total Variance (%) |   | 80.199             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; WSC = Work-School Conflict

Table 2

*Principle Component Analysis for Work-School Enrichment scale*

| Item Code                     | Description  | Component Loadings | Communalities |
|-------------------------------|--|--------------------|---------------|
| WSE1                          | The things you do at work help you deal with personal and practical issues at university | <b>.735</b>        | .540          |
| WSE2                          | The things you do at work make you a more interesting person at university               | <b>.766</b>        | .587          |
| WSE3                          | The skills you use on your job are useful for things you have to do at university        | <b>.748</b>        | .560          |
| WSE4                          | Having a good day at work makes you a better student                                     | <b>.608</b>        | .370          |
| WSE5                          | Talking to someone at work helps you deal with problems at university                    | <b>.559</b>        | .313          |
| Eigenvalues                   |  | 2.369              |               |
| Individual Total Variance (%) |  | 47.390             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; WSE = Work-School Enrichment

Table 3  
*Principle Component Analysis for Job Demands scale*

| Item Code                     | Description  | Component Loadings | Communalities |
|-------------------------------|--|--------------------|---------------|
| JD1                           | To what extent does your job require your working hard?                          | <b>.765</b>        | .585          |
| JD2                           | To what extent does your job require a great deal of work to be done?            | <b>.814</b>        | .663          |
| JD3                           | To what extent is there not enough time for you to do your job?                  | <b>.728</b>        | .530          |
| JD4                           | To what extent is there excessive work in your job?                              | <b>.802</b>        | .643          |
| JD5                           | To what extent do you feel there is not enough time for you to finish your work? | <b>.763</b>        | .582          |
| JD6                           | To what extent are you faced with conflicting demands on your job?               | <b>.726</b>        | .527          |
| Eigenvalues                   |  | 3.530              |               |
| Individual Total Variance (%) |  | 58.829             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; JD = Job Demands

Table 4  
*Principle Component Analysis for Job Control scale*

| Item Code                     | Description   | Component Loadings | Communalities |
|-------------------------------|---|--------------------|---------------|
| JC1                           | To what extent do you have freedom to decide how to organize your work?     | <b>.815</b>        | .664          |
| JC2                           | To what extent do you have control over what happens on your job?           | <b>.862</b>        | .742          |
| JC3                           | To what extent does your job allow you to make a lot of your own decisions? | <b>.863</b>        | .745          |
| Eigenvalues                   |   | 2.151              |               |
| Individual Total Variance (%) |   | 71.715             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; JC = Job Control

Table 5

*Principle Component Analysis for Job-School Congruence scale*

| Item Code                     | Description   | Component Loadings | Communalities |
|-------------------------------|---|--------------------|---------------|
| JSC1                          | I use knowledge that I gained in university on my job         | <b>.917</b>        | .835          |
| JSC2                          | I use skills that I gained in university on my job            | <b>.914</b>        | .841          |
| JSC3rev                       | My studies are not really relevant to what I do at work (rev) | <b>.757</b>        | .573          |
| Eigenvalues                   |   | 2.249              |               |
| Individual Total Variance (%) |   | 74.963             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; JSC = Job-School Congruence

Table 6

*Principle Component Analysis for Social Support from Supervisor scale*

| Item Code                     | Description  | Component Loadings | Communalities |
|-------------------------------|--|--------------------|---------------|
| SSS1                          | My work supervisor understands my academic demands   | <b>.879</b>        | .773          |
| SSS2                          | My work supervisor listens when I talk about my academic responsibilities                        | <b>.913</b>        | .833          |
| SSS3                          | My work supervisor acknowledges that I have academic obligations                                 | <b>.881</b>        | .776          |
| SSS4                          | I feel comfortable bringing up the issue of my academic responsibilities with my work supervisor | <b>.838</b>        | .703          |
| Eigenvalues                   |  | 3.085              |               |
| Individual Total Variance (%) |  | 77.114             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; SSS = Social Support from Supervisor

Table 7

*Principle Component Analysis for Social Support from Co-worker scale*

| Item Code                     | Description  | Component Loadings | Communalities |
|-------------------------------|--|--------------------|---------------|
| SSC1                          | My co-worker/s understand my academic demands  | <b>.916</b>        | .838          |
| SSC2                          | My co-worker/s listen when I talk about my academic responsibilities                         | <b>.925</b>        | .856          |
| SSC3                          | My co-worker/s acknowledges that I have academic obligations                                 | <b>.903</b>        | .815          |
| SSC4                          | I feel comfortable bringing up the issue of my academic responsibilities with my co-worker/s | <b>.853</b>        | .727          |
| Eigenvalues                   |  | 3.236              |               |
| Individual Total Variance (%) |  | 80.912             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; SSC = Social Support from Co-workers

Table 8  
*Principle Component Analysis for Social Support at Work subscales*

| Item Code                     | Description  | Component Loadings | Communalities |
|-------------------------------|--|--------------------|---------------|
| SSC1                          | My co-worker/s understand my academic demands  | <b>.872</b>        | .837          |
| SSC2                          | My co-worker/s listen when I talk about my academic responsibilities                             | <b>.898</b>        | .858          |
| SSC3                          | My co-worker/s acknowledges that I have academic obligations                                     | <b>.852</b>        | .812          |
| SSC4                          | I feel comfortable bringing up the issue of my academic responsibilities with my co-worker/s     | <b>.823</b>        | .731          |
| SSS1                          | My work supervisor understands my academic demands   | <b>.179</b>        | .790          |
| SSS2                          | My work supervisor listens when I talk about my academic responsibilities                        | <b>.260</b>        | .831          |
| SSS3                          | My work supervisor acknowledges that I have academic obligations                                 | <b>.294</b>        | .777          |
| SSS4                          | I feel comfortable bringing up the issue of my academic responsibilities with my work supervisor | <b>.285</b>        | .697          |
| Eigenvalues                   |  | 4.905              |               |
| Individual Total Variance (%) |  | 61.308             |               |

*Note:* N = 330; Principal Component Analysis; significant loadings are in bold; SSC = Social Support from Co-workers; SSS = Social Support from Supervisor

### Appendix C: Non-significant group differences

**T-tests for Gender and WSC.** An independent sample t-test was conducted to compare WSC in males and females. There was not a significant difference in the scores for males ( $M=3.486$ ,  $SD=.929$ ) and females ( $M=3.553$ ,  $SD=.951$ );  $t(326)=0.633$ ,  $p=.527$ . Specifically, the results suggest that there is no difference between males and females in WSC.

**T-tests for Gender and WSE.** An independent sample t-test was conducted to compare WSE in males and females. There was not a significant difference in the scores for males ( $M=3.590$ ,  $SD=.648$ ) and females ( $M=3.630$ ,  $SD=.670$ );  $t(326)=0.552$ ,  $p=.581$ . Specifically, the results suggest that there is no difference between males and females in WSE. Refer to Table 9 below.

Table 9

*Results of the T-tests and Descriptive Statistics of WSC and WSE by Gender*

| Outcome | Gender |      |     |        |      |     | 95% CI for Mean Difference | t   | df  |
|---------|--------|------|-----|--------|------|-----|----------------------------|-----|-----|
|         | Male   |      |     | Female |      |     |                            |     |     |
|         | M      | SD   | n   | M      | SD   | n   |                            |     |     |
| WSC     | 3.49   | 0.93 | 131 | 3.55   | 0.95 | 197 | -0.14, 0.28                | .63 | 326 |
| WSE     | 3.59   | 3.59 | 131 | 3.63   | 0.67 | 197 | -0.11, 0.19                | .55 | 326 |

*Note:* M = Mean, SD = Standard Deviation, df = degrees of freedom, \* $p<.05$ , \*\* $p<.001$

**T-tests for Primary Role and WSE.** An independent sample t-test was conducted to compare WSE in those who identify as primarily employees and those who identify primarily as students. The results of Levene's test indicate that the assumption of equal variances was violated and therefore equal variances were not assumed and an adjusted test statistics were reported. There was not a significant difference in the scores for employees ( $M=3.640$ ,  $SD=.585$ ) and students ( $M=3.582$ ,  $SD=.754$ );  $t(240)= -0.748$ ,  $p = .455$ . Specifically, the results suggest that there is no difference between primary role identification and WSE. Refer to Table 10 below.

Table 10

*Results of the T-tests and Descriptive Statistics of WSC and WSE by Role Involvement*

| Outcome | Role Involvement |      |     |          |      |     | 95% CI for<br>Mean<br>Difference | t       | df  |
|---------|------------------|------|-----|----------|------|-----|----------------------------------|---------|-----|
|         | Student          |      |     | Employee |      |     |                                  |         |     |
|         | M                | SD   | n   | M        | SD   | n   |                                  |         |     |
| WSC     | 3.18             | 0.93 | 135 | 3.77     | 0.88 | 195 | -0.78, -0.38                     | -5.76** | 328 |
| WSE     | 3.58             | 0.75 | 135 | 3.64     | 0.58 | 195 | -0.20, 0.09                      | -.78    | 328 |

Note: M = Mean, SD = Standard Deviation, df = degrees of freedom, \* $p < .05$ , \*\* $p < .001$

**T-tests for dependents and WSC.** An independent sample t-test was conducted to compare WSC of those who have one or more dependents with those who have no dependents. There was not a significant difference in the scores for those with one or more dependents ( $M=3.645$ ,  $SD=.901$ ) and those with no dependents ( $M=3.463$ ,  $SD=.960$ );  $t(328) = -1.655$ ,  $p=.099$ . Specifically, the results suggest that there is no difference in WSC in those who have dependents compared to those who do not have dependents. Refer to Table 11 below.

Table 11

*Results of the T-tests and Descriptive Statistics of WSC and WSE by Dependent Status*

| Outcome | Dependents |      |     |             |      |     | 95% CI for<br>Mean<br>Difference | t      | df  |
|---------|------------|------|-----|-------------|------|-----|----------------------------------|--------|-----|
|         | None       |      |     | One or more |      |     |                                  |        |     |
|         | M          | SD   | n   | M           | SD   | n   |                                  |        |     |
| WSC     | 3.46       | 0.96 | 221 | 3.65        | 0.90 | 109 | -0.40, 0.03                      | -1.66  | 328 |
| WSE     | 3.56       | 0.70 | 221 | 3.72        | 0.05 | 109 | -0.32, -0.30                     | -2.15* | 328 |

Note: M = Mean, SD = Standard Deviation, df = degrees of freedom, \* $p < .05$ , \*\* $p < .001$

**ANOVA for race and WSC.** One-way ANOVA was conducted to compare WSC of African, Indian, Coloured and White respondents. There was not a significant difference in race groups on WSC at the  $p < .05$  level for the four conditions  $F(4, 325) = 1.335$ ,  $p = .257$ . These results suggest that race group does not have a statistically significant effect on WSC.

**ANOVA for race and WSE.** One-way ANOVA was conducted to compare WSE of African, Indian, Coloured and White respondents. There was not a significant difference in race groups on WSE at the  $p < .05$  level for the four conditions  $F(4, 325) = 1.252$ ,  $p = .289$ . Refer to Table 12 below.

Table 12  
*Summary of ANOVA Race*

| Variables | Source         | Sum of Squares | df  | Mean Square | F     | P value |
|-----------|----------------|----------------|-----|-------------|-------|---------|
| WSC       | Between Groups | 4.732          | 4   | 1.183       | 1.34  | .257    |
|           | Within Groups  | 288.034        | 325 | 0.886       |       |         |
| WSE       | Between Groups | 2.167          | 4   | .542        | 1.252 | .289    |
|           | Within Groups  | 140.665        | 325 | .433        |       |         |

*Note:* df = degrees of freedom, \* $p < .05$

**ANOVA for marital status and WSE.** One-way ANOVA was conducted to compare WSE of respondents who are married, not married and living with a partner. The results of Laverne's test indicate that the assumption of equal variances was violated and therefore equal variances were not assumed and the corresponding Welch robust test of equality of means was analysed. There was not a significant difference in marital status on WSE at the  $p < .05$  level for the three conditions  $F(2, 134) = 1.516, p = .223$ . Refer to Table 13 below.

Table 13  
*Summary of ANOVA Marital Status*

| Variables | Source         | Sum of Squares | df  | Mean Square | F     | P value |
|-----------|----------------|----------------|-----|-------------|-------|---------|
| WSC       | Between Groups | 9.724          | 2   | 4.862       | 5.617 | .004*   |
|           | Within Groups  | 283.042        | 327 | .866        |       |         |
| WSE       | Between Groups | 1.43           | 2   | .716        | 1.656 | .193    |
|           | Within Groups  | 141.400        | 327 | .432        |       |         |

*Note:* df = degrees of freedom, \* $p < .05$

**ANOVA for working hours and WSE.** One-way ANOVA was conducted to compare WSE of respondents and their number of working hours per week across three conditions (less than 20 hours; between 20-39 hours; 40 hours or more).

The results of Levene's test indicate that the assumption of equal variances was violated and therefore equal variances were not assumed and the corresponding Welch robust test of equality of means was interpreted. There was not a significant difference in working hours on

WSE at the  $p < .05$  level for the three conditions  $F(2, 162) = 2.512, p = .084$ . Refer to Table 14 below.

Table 14  
*Summary of ANOVA Hours*

| Variables | Source         | Sum of Squares | df  | Mean Square | F      | P value |
|-----------|----------------|----------------|-----|-------------|--------|---------|
| WSC       | Between Groups | 41.458         | 2   | 20.729      | 26.973 | < .001* |
|           | Within Groups  | 251.308        | 327 | .769        |        |         |
| WSE       | Between Groups | 2.069          | 2   | 1.035       | 2.403  | 0.92    |
|           | Within Groups  | 140.762        | 327 | .430        |        |         |

*Note:* df = degrees of freedom, \* $p < .05$

**ANOVA for age and WSE.** One-way ANOVA was conducted to compare WSE of respondents and their age category across four conditions (21-29, 30-39, 40-49 and 50-60). The results of Levene's test indicate that the assumption of equal variances was violated and therefore equal variances were not assumed and the corresponding Welch robust test of equality of means was interpreted. There was not a significant difference in working hours on WSE at the  $p < .05$  level for the four conditions  $F(3, 63) = .413, p = .744$ . Refer to Table 15 below.

Table 15  
*Summary of ANOVA Age*

| Variables | Source         | Sum of Squares | df  | Mean Square | F     | P value |
|-----------|----------------|----------------|-----|-------------|-------|---------|
| WSC       | Between Groups | 14.640         | 3   | 4.880       | 5.720 | .001*   |
|           | Within Groups  | 278.126        | 326 | .853        |       |         |
| WSE       | Between Groups | .481           | 3   | .160        | .367  | .777    |
|           | Within Groups  | 142.351        | 326 | .437        |       |         |

*Note:* df = degrees of freedom, \* $p < .05$