
# Work-School Conflict and Working Students - The Impact of Type of Employment on Academic Outcomes

**Jessica-Jo Jardim**

**JRDJES004**

A dissertation submitted in partial fulfilment of the requirements for the award of the Degree of Master of Commerce in Organisational Psychology

Faculty of Commerce

University of Cape Town

2020

Supervisor: Associate Professor Suki Goodman



## Compulsory Declaration

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, cited and referenced.

Signed by candidate

Signature: ……..…… Date: 7 February 2020

**Acknowledgements**

Firstly, to my supervisor Associate Professor Suki Goodman, thank you for your guidance, support and inspiration throughout this learning process. I am incredibly appreciative of your encouragement, comprehensive feedback, and belief in my abilities.

Lastly, to my family and friends, thank you for all your love and unwavering support.

Abstract

The sustainable development of working students in tertiary education institutions is important for student retention and institutional success. As the number of working students is on the rise, it is imperative that the needs of working students are well-recognized to ensure academic satisfaction and engagement. As these students encompass the role of both an employee and a student, inter-role conflict is experienced when pressures from the workplace disrupt academic responsibilities and influence academic outcomes. Therefore, the aim of the present study was to examine the impact of type of employment (part-time employment and full-time employment) on university outcomes, namely academic satisfaction and academic engagement of working students. The study proposed that those working students in part-time employment would on average experience less work-school conflict, more academic satisfaction and more academic engagement than those working students in full-time employment. The study implemented a secondary cross-sectional descriptive design, whereby secondary data was used. The study's sample consisted of working students ($n$ = 482). Independent samples $t$-tests and mediation analyses were conducted to analyse the study's hypotheses. A significant difference was found between those working students who participated in part-time and full-time employment, in terms of their work-school conflict and academic satisfaction. However, no significant difference was found for the academic engagement outcome. The analyses revealed that work-school conflict mediated the relationship between type of employment and academic satisfaction, however mediation effects were not found between type of employment and academic engagement. The findings of the study have theoretical contributions and practical implications for university intuitions and researchers. Lastly, research contributions and suggestions for future research are presented.

*Key words*: work-school conflict, academic satisfaction, academic engagement, type of employment, working students.

## Table of Contents

## Introduction

Greater life satisfaction is associated with excelling in various life domains such as education, work and family (Keeney, Boyd, Sinha, Westring, & Ryan, 2013). It is the norm for individuals to encompass multiple roles within these life domains (Wyland, Lester, Ehrhardt, & Standifer, 2016). These roles, to name a few, may include that of a student, an employee and/or a parent. Previously, a large body of research has focused on the work-family interface, more recently increased interest surrounding the work-school interface has emerged (Cinamon, 2016; Farr-Wharton, Charles, Keast, Woolcott, & Chamberlain, 2018; Keeney et al., 2013; Laughman, Boyd, & Rusbasan, 2016; Owen, Kavanagh, & Dollard, 2018; Wyland et al., 2016). One reason for this shift in interests is due to the increase in the number of individuals who are employed and concurrently study at a tertiary education institution (Forbus, Newbold, & Mehta, 2011; Laughman et al., 2016; Park & Sprung, 2013; S. Walters & Koetsier, 2006). To illustrate, Wyatt (2011) reported that 43% of students across tertiary education institutions in the United States of America (USA) are employed. Evidently, in South Africa, there are tertiary education institutions that accommodate students who participate in part-time or full-time work (Subotzky & Prinsloo, 2011). However, working students are exponentially increasing in non-accommodating universities because of the vast growth of academic institutions and changes in socio-economic factors (S. Walters & Koetsier, 2006). Additionally, the escalating costs of tuition fees and the limited availability of bursaries prompt the prevalence of students who work to varying degrees (Lenaghan & Sengupta, 2007; Lingard, 2007; Park & Sprung, 2013; S. Walters & Koetsier, 2006). These individuals, referred to as working students in literature, encompass the dual-role of "employee" and "student", so as to continue their studies and graduate (Wyatt, 2011).

The rise in the enrollment of working students is advantageous for universities because a diverse pool of pre- and post-experienced students are created, each contributing individual talent to the university (Howell & Buck, 2012). Universities encourage working students to enroll partially because of the emphasis on lifelong learning, however there seems to be missing knowledge regarding the needs and circumstances of working students (Farr-Wharton et al., 2018; Gilardi & Guglielmetti, 2011; Lowe & Gayle, 2007; Wyland et al., 2016). Given that working students generally encompass multiple roles, they may experience inter-role conflict when pressures from incompatible roles arise, which can consequently elicit strain (Keeney et al., 2013). As a result, this strain produces ripple effects towards these various life domains. All students face

continuous academic assessments, pressure to achieve sufficient grades and time constraints (Forbus et al., 2011). In addition to this, working students experience stress resulting from competing work and household demands that lead to burnout, as well as lowered academic performance, satisfaction and engagement (Adebayo, 2006; Owen et al., 2018). The dual-role experienced by working students may elicit strain for the individual if these roles conflict with one another. Consequently, these working students may contemplate withdrawing from university because of this strain. Withdrawal from university elicits negative consequences such as facing financial debt (e.g. unable to pay off student loans or losing a scholarship) and reflects as non-completion for the university. Consequences of withdrawal may develop feelings of inadequacy which may persist into later life domains (McGivney, 2004). Contemplation of withdrawal indicates a low level of student satisfaction and engagement (Webb & Cotton, 2018). The potential conflict that arises from this dual-role may create strain in preventing working students from achieving optimal satisfaction and engagement within the academic domain. Webb and Cotton (2018) found that contemplation of withdrawal from university was associated with the perceptions of high assessment load. Working students may have perceptions of high assessment load because of having less time to complete university-related tasks. To illustrate, Forbus et al. (2011) states that the number of hours spent at work diminishes the number of hours available to meet academic responsibilities (e.g. attending lectures and completing assignments).

In terms of work hours, there are two distinct types of employment, namely part-time employment and full-time employment, in which working students participate (Lenaghan & Sengupta, 2007). There are working students who work part-time (i.e. spending time on employment-related activities for less than 20 hours per week) and those who work full-time (i.e. spending time on employment-related activities for 40 hours or more per week). Working students who are employed part-time have more hours available to participate in university-related activities, as opposed to students who work full-time, because they tend to work less hours per week (Dundes & Marx, 2006; Lenaghan & Sengupta, 2007). Wise, Chang, Duffy and Del Valle (2004) suggest that, on average, university programmes require about 30 hours of work per week, equaling to 6 hours per day (excluding weekends). An individual working for more than 40 hours per week spends approximately 9 hours per day (excluding weekends) engaged in work-related activities. Thus, 15 hours of the day is allocated to both employment and university activities, leaving less time to meet other responsibilities and enjoy leisure time. Individuals will potentially

only be able to attend to their academic role during weekday evenings and weekends. Those working part-time would potentially have more time to commit to their academic responsibilities because they would not be required to work for approximately 8-9 hours a day. Therefore working less hours opens up more time to be dedicated to university activities during the week and weekends. Individuals working full-time require a concession from their employers to attend day-time lectures or would need to enroll in institutional institutions that offer lectures after work hours. Although strain may be experienced between meeting demands, these students continue to work for the reason that it produces benefits such as monetary rewards, networking, improving interpersonal skills and gaining work experience (Wang, Kong, Shan, & Vong, 2010).

It should be noted that there are additional types of employment in which working students may participate, such as flexitime and telecommuting (Broadbridge & Swanson, 2005). Hence, there are students who work varying hours dependent on their individual circumstances, for example working between 20 and 39 hours per week. The present study, however, seeks to investigate the academic outcomes of working students participating in solely part-time (less than 20 hours per week) and solely full-time employment (40 hours or more per week). Knowledge of the relationship between work, student satisfaction and engagement is critical for stakeholders such as students, academic advisors and administrative staff, as knowing the extent to which work affects satisfaction and engagement may affect retention and graduation rates (Callender, 2008; Hall, 2010). It may lead to creating academic programmes suitable for working students to achieve academic outcomes related to academic success. As university experiences differ between non-working students and working students (Gilardi & Guglielmetti, 2011), the present study undertakes the notion that differences may exist within students who work varying hours in terms of their work-school conflict (WSC), academic satisfaction (AS) and academic engagement (AE). One may assume that the more hours a working student works, the more conflict that individual will have and thus experience less AS and less AE. The literature is unclear regarding this concept and thus calls for further investigation. Additionally, the present study assumes that the type of employment (i.e. part-time or full-time) of working students may predict AS and AE, through the conflict experienced between competing roles (employee and student) encompassed by a working student.

The following research question is posited: To what extent does the type of employment (i.e. part-time employment and full-time employment) impact WSC and academic outcomes (AS and AE) of working students?

## Literature Review

This literature review begins with a discussion of the term "working students" and the type of employment (i.e. part-time and full-time) in which they participate. Thereafter, the theoretical framework is thoroughly outlined and motivation for the importance of AS and AE is debated in relation to academic success for both universities and students. Literature on the desired variables are discussed in the literature review, whereby age, gender, perceived primary role (i.e. identifying as an employee or student), academic institution and qualification (i.e. studying a postgraduate or an undergraduate degree) are presented as covariates of both AS and AE. Lastly, a diagrammatic representation of the conceptual framework is provided and plausible hypotheses are presented.

### Working Students

Historically, researchers used the term "non-traditional student" in educational research to accentuate the socio-demographic differences between those students that literature regards as "traditional" (e.g. aged between 18 and 21, immediate tertiary enrollment after secondary education, unemployed) to those students that digress from this norm (Chung, Turnbull, & Chur-Hansen, 2014; Wyatt, 2011). Chung et al. (2014) believe that this terminology promotes awareness for researchers to explore issues relevant to the growing number of students of this type. Literature offers supplementary terms for the non-traditional student, including "adult student/learner", "working student" and "working college student" (Howell & Buck, 2012; Lenaghan & Sengupta, 2007; McGivney, 2004; Mounsey, Vandehey, & Diekhoff, 2013). Working students are "unconventional" in that they are defined by their age, (25 and older), background characteristics (employment and dependents), financial status (usually independent) and time of enrollment (typically later in life, e.g. over 25 years) (Bean & Metzner, 1985; Chung et al., 2014; Goncalves & Trunk, 2014; McGivney, 2004). According to Bean and Metzner's (1985) earlier description, these students study part-time and are primarily concerned with academic offerings rather than the social environment of the institution. Adebayo (2006) described these individuals as students who either concurrently work full-time and return to their studies or are full-time students who pursue part-time employment while they study. Similarly, Wyland et al. (2016) reported that working

students are those individuals who are registered at a higher education institution and are concurrently employed. Thus implying that working students engage in either part-time or full-time employment whilst studying. The common characteristic, however, prominent amongst these terms is that of individuals who are concurrently participating in part-time or full-time work whilst studying. In contrast, Chung et al.'s (2014) systematic review demonstrated that researchers have used the term "non-traditional" to describe students with a disadvantaged background or ethnic minority. This poses inconsistencies to the term "non-traditional student" and presents issues to conceptualisation and operationalization of the construct in replicating studies. Therefore, for the purposes of this study, the term working student is used and conceptualized according to Wyland et al.'s (2016) definition. The characteristics relating to age and family will not be used to define working students in this study because of the large number of possible age and family circumstances.

**Working Students and Type of Employment**

Researchers in the work-school interface have investigated various types of employment of working students (Dundes & Marx, 2006; Lenaghan, & Sengupta, 2007; Tessema, Ready, & Astani, 2014; Wang et al., 2010). These include: full-time and part-time employment; casual work, fixed term and contract work; commission and piece-rate employment (Broadbridge & Swanson, 2005; Gakovic & Tetrick, 2003; Parasuraman & Simmers, 2001). For this particular study the focal type of employment is conceptualized according to the number of hours worked and thus is split into two groups; part-time and full-time employment. This is assumed because of the demand work hours has on working students' time available to allocate resources to academic activities. Generally, part-time employment refers to individuals who work an average of 20 hours or less per week, while full-time employment usually refers to working an average of 40 hours or more. The part-time and full-time employment described in the study are based on the extremes of the South African research of S. Walters and Koetsier (2006), however there are individuals who work a certain number of hours that vary between these two extremes (i.e. between 20 and 39 hours). This cohort of work hours was not included given that too many possible alternatives of work hours could be conceptualised. For example, individuals could work an average of 25 hours per week, therefore assigning 5 hours a day to paid employment, however this is equivocal in classifying it into the type of employment investigated in this study.

Working longer hours are likely to adversely affect an individual's work-school balance because the time available to pursue academic responsibilities is shortened (Forbus et al., 2011). Zero-sum time-allocation theory, proposed by Coleman (1961), indicates that time spent at work may lead to reduced time spent on studying. Therefore, it may be expected that excessive amounts of time spent at work would make fulfilling demands from university more difficult or it is plausible that more time spent at work leaves less time for engaging in university services. Studies researched have tested the impact of various categories of work hours on academic outcomes (Callender, 2008; Curtis, 2007; Curtis & Shani, 2002; Dundes & Marx, 2006; Hawkins, Smith, Hawkins, & Grant, 2005; Hunt, Lincoln, & Walker, 2004; Lenaghan & Sengupta, 2007; Lowe & Gayle, 2007; Manthei & Gilmore, 2005; Moreau & Leathwood, 2006; Tessema et al., 2014; Wang et al., 2010). These studies exhibited contradictory results of work hours on academic outcomes whereby some results revealed adverse effects of work hours, while others demonstrated positive influences of working while studying. For instance, a survey undertaken at the Manchester Metropolitan University of a sample of 359 participants demonstrated that working students perceived higher coursework grades, had they not been working while studying (Curtis & Shani, 2002). Curtis (2007) demonstrated that the working students observed more benefits to working while studying than disadvantages. This sample however consisted of solely part-time working students who worked an average of 15 hours per week, thereby possibly overlooking dissimilar views of students working longer hours in full-time employment. Callender (2008) surveyed 1000 students in six universities in the United Kingdom to investigate the impact of paid work on academic marks and degree results, while controlling for hours of work. This study's results indicated that, irrespective of the university they attended, work hours had an adverse effect on working students' academic outcomes, as the more hours worked, the greater the negative effect on academic results. Contrastingly, Wang et al. (2010) found that working part-time enriched working students' experiences at university. However, this was only applicable when jobs were related to their fields of study and provided opportunities for students to develop skills.

Working more hours has also been associated with poorer study skills (Lammers, Onweugbuzie, & Slate, 2001), a longer time to graduate (Canabal, 1998) and lower Grade Point Average (GPA) (Hawkins et al., 2005; Tessema et al. (2014). This suggests that the work role may interfere with academic outcomes and experiences of the student role. Tessema et al. (2014) investigated the effect of work hours on college students' satisfaction and academic performance

levels (i.e. GPA). Students were grouped into five categories; those who worked for 1-10 hours, 11-15 hours, 16-20 hours, 21-30 hours, 31 or more hours and those who were unemployed. Tessema et al. (2014) found that students who worked 10 hours a week had the highest satisfaction and GPA, thereafter, satisfaction and performance began to decline for each category of work, although by a small margin. Thus, Tessema et al. (2014) suggests that working part-time (fewer hours) may not always be detrimental to AS and performance, however as the number of hours spent at work increases, the level of AS and academic performance of the college students decreased. Similarly, Dundes and Marx (2006) demonstrated that the academic performance of students who worked between 10 to 19 hours per week were higher than non-working students and students who worked more than 19 hours per week. This is likely due to the students developing a routine in managing both work and academics, given more time accessible to distribute resources to both roles (Mounsey et al., 2013). Evidently, Dundes and Marx (2006) suggested that this finding was due to working students not working too few or too many hours, to create optimal work-school balance.

In Lowe and Gayle's (2007) study investigating working students in a British university, they established that all working students, experienced the same amount of pressure, regardless of working part-time or full-time, therefore making this particular type of student vulnerable to feeling overwhelmed. The minority of students in this study were living alone or with friends and more than half of the students working part-time were living with a spouse with or without children. These students were also studying Higher National Certificates or Higher National Diplomas. Students who worked part-time spent on average 30 hours per week studying and between 16-20 hours working, while working students in full-time employment worked approximately 40 hours per week and 10 hours were spent studying (Lowe & Gayle, 2007). Consequently, Lowe and Gayle (2007) stated that working students in part-time employment and full-time employment experienced different, yet equivalent, demands on their time and were equally at risk of overload or strain. A reason for this outcome, suggested by Low and Gayle (2007), was that students interpreted opportunities available to them and formulated personal strategies that would result in reasonable participation, dependent on that individual's circumstance, preference and priorities. The literature researched, however, was not conclusive, as a result of the varying populations of working students being studied (e.g. students worked varying hours to that of the present study). Particularly, most of the studies sampled from students who

worked part-time, overlooking the outcomes of students who were employed full-time. Nevertheless, the studies' results contribute to evidence that working while studying may lead to various detrimental effects to academic outcomes related to academic success.

## Theoretical Framework

This study utilizes S. Marks (1977) scarcity approach and the Conservation of Resources (COR) theory (Hobfoll & Wells, 1989) to describe the theoretical framework. Coleman's (1961) theory of zero-sum time allocation, as well as WSC literature, is used as an additional explanation of the study's model.

**The scarcity approach.** The scarcity approach holds that resources available to individuals are limited and may be depleted when encompassing multiple roles (S. Marks, 1977). Role strain is where an individual holds more than one role and experiences tension or pressure when trying to achieve demands and obligations of these multiple roles (Goode, 1960). This results from having scarce resources when multiple engaged roles compete for these resources. Therefore, insufficient resources are available to individuals to use in each role which elicits strain upon the individual as one would need to select which role deserves the allocation of limited resources.

**Conservation of resources theory.** To substantiate the scarcity approach, the theory of COR explains how strain may be experienced when holding multiple roles. Individuals strive for the attainment and maintenance of resources that are valuable to them to combat the demands from varying life domains (Hobfoll & Wells, 1989). Correspondingly, these resources, namely attention span, time and personal energy, are limited (Butler, 2007). However, in stressful circumstances, the demands of one role may deplete these limited resources needed for the execution of the conflicting role. Consequently, the available resources needed to accomplish demands from varying life domains become scarce (Hobfoll & Wells, 1989). As one would need to select only one role to allocate the resources to, it would cause the individual to experience stress because the other role will be left with unfulfilled demands (Goode, 1960). Therefore, a working student would encompass the competing roles of student and employee.

## Work-School Conflict

WSC literature stems from Work-Family Conflict which originated from the scarcity approach of role strain theory and postulates the negative perspective of holding multiple roles

(Greenhaus & Beutell, 1985; Markel & Frone, 1998; S. Marks, 1977). The present study conceptualizes WSC based on Park and Sprung's (2013) definition which identifies implications directed from work to school only, whereby WSC is the extent to which the demands of work interferes with the demands of school. Park and Sprung (2013) revealed that working students experience numerous negative outcomes, because of the conflict that arises from attempting to meet both work and university demands. Role conflict theory explains how WSC occurs. Biddle (1986) states that individuals hold various expectations about their own behaviour and the behaviour of others. Role conflict thus occurs when an individual's expectation of certain behaviours are not met, typically because of incompatible roles that prevent those behaviours from occurring. Therefore, incompatible roles ultimately elicit strain onto the individual (Hammer et al., 1998). To illustrate WSC, the following example is discussed. A working student expects to submit an academic assignment timeously by working on the task in advance. However, the behaviour of working on the academic task in advance conflicts with having to spend long hours at work and carrying out work tasks. This leaves less time for the student to complete the academic assignment. Therefore, the individual's work demands (spending time at work and carrying out work tasks) prevents the individual from meeting university demands (submitting an assignment timeously). Thus, the dual-role of being a student and an employee are incompatible and elicits anxiety in meeting demands from the work and academic domain.

The theory of COR further explains how WSC occurs, in addition to role conflict theory. Hobfoll and Wells (1989) argued that individuals strive for the attainment and maintenance of resources that are valuable to them to combat the demands from varying life domains. Correspondingly, Butler (2007) maintained that individuals have limited resources of attention span, time and personal energy. However, in stressful circumstances, the demands of one role may deplete the resources needed for the execution of the conflicting role. As a result, the available resources needed to accomplish demands from varying life domains are scarce (Hobfoll & Wells, 1989). For example, a working student may have to complete simultaneous work and school tasks (conflicting demands), however not have the time or energy (valuable resources) to complete them both successfully. Individuals may see this as a stressful situation because one may have to either sacrifice studying to complete a work task or sacrifice their job performance to study. Thus, in whichever situation, the individual is psychologically preoccupied with meeting demands. This dual-role is hence incompatible, as it reduces the resources required to meet demands, with which

various outcomes from work and school are associated. Thus, the researcher explored these outcomes to identify the effects of WSC.

**WSC as a mediator.** Markel and Frone (1998) hypothesized that WSC is the primary mediating link between job characteristics (including the number of hours worked) to have an indirect relationship to university outcomes (including AS). The number of work hours (i.e. type of employment) represents a time-based predictor of WSC (Greenhaus & Beutell, 1985). Markel and Frone (1998) demonstrated that WSC mediated the indirect relationship between job characteristics (which included work hours) and school readiness, school performance and AS. However, Lingard (2015) found that the mediation effect of WSC between work hours and AS was not significant. In a study investigating the cognitive development of students, Furr and Elling (2000) found that having a part-time job on campus had a negative impact as students' work hours increased to above 15 hours per week. Similarly, Butler (2007), Cinamon (2016) and Creed, French and Hood (2015) demonstrated that time demands (i.e. work hours) influenced working students experience of WSC and academic outcomes (AS, academic grades and AE respectively).

## Why AS and AE matter

**Benefits of AS.** There is a progressive interest in student-related outcomes, namely AS, because of the increase in global competition, cost of education and student retention within tertiary education institutions (Goncalves & Trunk, 2014; Webb & Cotton, 2018; Wyatt, 2011; Zahoor, 2018). Researchers have argued that academic institutions fall under the service industry (Dolinsky, 1994; Joseph & Joseph, 1997), along with the education sector, where students have been accepted and portrayed as consumers of a service (Pitman, 2000). Thomas and Galambos (2004) claim that students are consumers of higher education because the services (e.g. lectures and tutorials) offered and facilities (e.g. lecture halls and cafeteria) provided by the university are used by students like standard commodities and are paid for in terms of tuition fees. Thus, the assumption is that student satisfaction towards their university is similar to the satisfaction businesses aspire to gain from their customers (Zahoor, 2018). Howell and Buck (2012) claims that improved AS is important for higher education institutions that serve working students, because it has the potential to become a unique advantage in its highly competitive environment. For example, students who are satisfied with their experiences at university are more likely to inform others of their satisfaction which promotes the recruitment of other students. This is

supported by Zahoor (2018), who found that AS contributes to assessing the effectiveness of faculties, whereby satisfaction perceived was extended to the respective university. Hence, high AS is an indicator of competition between institutions for good students and thus institutional success, as it supports the recruitment of prospective students and contributes to high student ratings (Howell & Buck, 2012; Thomas & Galambos, 2004). If tertiary education institutions desire institutional success, it is therefore beneficial for universities to be interested in AS of working students.

**Benefits of AE.** Truta, Parv, & Topala (2018) argued that tertiary education institutions are promoters of sustainable development and thus should take responsibility in creating enticing environments for all students, including working students. Creed et al. (2015) states that AE is critical to the educational experience of working students because it represents student learning, effort and participation in educational activities. AE is also important for receiving enriching academic experiences because AE is associated with student satisfaction, increased motivation to learn and reduces feelings of isolation (Martin & Bolliger, 2018). Some academic scholars have supported the view that AE predicts academic performance, because engaged students exert high levels of effort, energy and devotion to their studies, which increases the likelihood of high academic performance (Schaufeli, Salanova, González-Romá, & Bakker, 2002a; Martin & Bolliger, 2018). High academic performance of students leads to impressive academic statistics for universities, which may improve university rankings and attract desired students to continue the cycle of positive university ratings (Zahoor, 2018). AE is also important for the retention of working students. In Gilardi and Guglielmetti's (2011) study, their findings confirmed that working students, in a non-residential university, placed more energy into contacting lecturers outside of formal teaching situations than non-working students did. Gilardi and Guglielmetti's (2011) went on to state that this behaviour was associated with continuing studying and therefore suggested that engagement and the intention to continue studying are related. In contemporary research conducted by Martin and Bolliger (2018), they found that student engagement, particularly in online learning, is critical for working students because they have less opportunities to be engaged with their tertiary institution. Working students are expected to attend lectures, complete assignments and possibly conduct research, wherein Schaufeli et al. (2002) states that these students gear these activities in achieving goals, such as passing tests, maintaining an above average GPA and to ultimately graduate. Thus, Scaufeli et al. (2002) assumed that students who

are actively engaged will attain their academic goals. Goal-directed behaviour is facilitated when individuals are engaged in their work because they have the energy and motivation to carry out tasks over time and across changing circumstances (Bakker, Schaufeli, Leiter, & Taris, 2008). This engagement however is fostered by an environment that provides for active engagement (Bakker et al, 2008). Therefore, it is indispensable for institutions to create various opportunities for engagement to accommodate working students to inhibit student dropout and encourage positive university ratings.

**Significance of investigating AS and AE.** Paying attention to working students' AS and AE is important to universities because these outcomes may impact student motivation, performance, sense of belonging, retention, recruitment efforts and fundraising (Creed et al., 2015; Goncalves & Trunk, 2014; Tessema et al., 2014; Webb & Cotton, 2018; Wyatt, 2011; Zahoor, 2018). Tessema et al. (2014) argues that academic outcomes are important to ascertain whether universities are fulfilling their mission. Researchers are interested in AS and AE to examine the accountability of reporting and self-improvement purposes across faculties and universities, student retention and attrition. Therefore, investigating the factors that predict AS and AE allows universities to identify what matters most to students to develop strategies or design courses that align with these factors. An institution can distinguish itself from competitors by being familiar with and acting upon the service-related issues that are important to working students. Investigating the associated factors of AS and AE for students who work allows universities to identify what matters most to students to, for example, design programmes that align with these factors with the intention of promoting the retention of working students.

## Academic Satisfaction

Elliot and Healy (2001) described AS as "a short-term attitude resulting from an evaluation of the student's educational experience" (p. 2). Whereas Letcher and Neves (2010) maintained that student satisfaction is thought of as students' favouring subjective evaluations of the numerous outcomes and experiences associated with education. Sears et al. (2017) argues that AS is a complex construct that is multidimensional and includes subjective appraisals. Based on Butler's (2007) definition, the study conceptualizes AS as the degree to which an individual feels positively towards being a student at university and one's academic experience. Numerous studies have investigated the predictors of AS (Flores et al., 2014; Fortune, 2001; Gibson, 2010; Sears et al.,

2017; Thomas & Galambos, 2004). These predictors include the quality of education, college attitudes, campus experience, and the level of academic challenge and likelihood of returning to the same college. Particularly, Thomas and Galambos (2004) found that the "sense of belonging" was the most important predictor of AS. Following this, they found that students' pre-matriculation attitudes and experiences was the second most important predictor of AS.

Partial evidence specifies the association between WSC and AS (Butler, 2007; Lingard, 2007). For the reason that job satisfaction is theorized as a job attitude (Laughman et al., 2016), which is associated with stressors, it is reasonable to assume that AS maintains similar outcomes. Markel & Frone (1998) proposes that WSC is positively related to school dissatisfaction. These scholars found that individuals who experience significantly more WSC correspondingly experience more dissatisfaction with school. This result coincides with the research of Hammer et al. (1998) concerning WSC and AS of university students. The researchers established that when WSC is high, AS is low. Similarly, Lingard (2007) identified similar experiences of students at an Australian university; however, the negative relationship between WSC and AS was weak. Conversely, the relationship between WSC and AS was non-existent in Butler's (2007) study. This finding posited that students who experience WSC are neither satisfied nor dissatisfied with their university. However, Butler's (2007) sample of interest included participants who worked part-time, whereby individual preferences may differ to that of students who participate in full-time employment.

**Academic Engagement**

There is a surfeit of conceptualisations of the construct in the available literature (Appleton, Christenson, & Furlong, 2008; Fredricks, Blumenfeld, & Paris, 2004; Finn, 1989; Jimerson, Campos, & Greif, 2003; H. M. Marks, 2000; Reschly & Christenson, 2006; Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002; Skinner, Kindermann, & Furrer, 2009; Wigfield et al., 2008). Finn (1989) and H. M. Marks (2000) have proposed that AE comprises of two components, namely behaviour (i.e. participation, positive conduct and effort) and emotion (e.g. belonging, interest and value). Contrastingly, other educational scholars advocate for a three-dimensional model of AE that consists of behavioural, emotional and the added cognitive (i.e. self-regulation, learning goals, investment in learning) dimensions (Fredricks et al., 2004; Jimerson et al., 2003; Schaufeli et al., 2002; Wigfield et al., 2008). A taxonomy with four components (academic, behavioural, cognitive

and psychological engagement) has been conceptualized for AE (Appleton et al., 2008; Reschly & Christenson, 2006). These conceptualisations seem to indicate a consensus around AE being a multidimensional construct (Fredricks, Filsecker, & Lawson, 2016; Fredricks & McColskey, 2012).

Skinner et al. (2009) describes AE as "the quality of a student's connection or involvement with the endeavor of schooling and hence with the people, activities, goals, values, and place that compose it" (p. 494). However, working students are less likely to immerse themselves in academic activities, let alone non-academic activities such as joining societies, because working students have less time to spend at university. Evidently, Forbus et al. (2011) indicated that the more hours spent at work, the less time one has to engage with academic related tasks and activities. Therefore the present study conceptualizes AE according to the definition proposed by Schaufeli, Salanova, Gonzalez-Rom and Bakker (2002) definition- "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p.74). This is an appropriate definition given the characteristics of working students. Absorption is when an individual becomes completely focused and deeply engrossed in work, whereby one has difficulty removing oneself from work (Schaufeli et al., 2002). Vigour relates to high levels of energy and willingness to work, as well as persist when difficulties arise, thus establishing resilience. Dedication is having a sense of pride, being enthusiastic and inspired (Schaufeli et al., 2002). Table 1 includes detailed descriptions of each dimension.

Table 1

*Description of the Dimensions of Academic Engagement*

| Dimension | Description |
|---|---|
| Vigour | Vigorous working students experience high levels of energy and mental resilience while studying and are willing to exert effort toward their academic work even when facing challenges. |
| Dedication | Dedicated working students feel a sense of pride, inspiration, enthusiasm and significance regarding their studies. In addition, they have a tendency to perceive their studies as challenging. |
| Absorption | Absorbed working students are known to have full concentration and are immersed in their studies, whereby time passes quickly while studying and usually have trouble withdrawing from their academic work. |

Source. Adapted from "Burnout and Engagement in University Students: A cross-national study" by Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002, *Journal of Cross Cultural Psychology, 33*(5), p. 465. Copyright 2002 by Western Washington University.

Schaufeli et al. (2002) provided empirical support of a three-factor model through their confirmatory factor analysis of AE. They tested the scale in separate samples of Dutch, Portuguese and Spanish undergraduate students. This has also been substantiated amongst Afrikaans and Tswana-speaking students of a South African population of students (Mostert, Pienaar, Gauche, & Jackson, 2007). These studies provided motivation for its applicability in various contexts. However, it may present an opportunity to identify whether the factor-structure holds in the present study's context.

**Covariates of AS and AE**

For the reason that AS and AE are influenced by numerous demographic, economic, educational, social and psychological factors, it would be remiss to claim that the type of employment explains working students' AS and AE (Cassidy, 2012). Therefore, age, gender, perceived primary role and qualification are included as covariates to account for alternative explanations for the working student's AS and AE. These covariates were selected because they have shown to predict AS and AE of working students (Butler, 2007; Creed et al., 2015; Gibson, 2010; Gilardi & Guglielmetti, 2011; Hawkins et al., 2005; Horstmanshof & Zimitat, 2007; Kim,

Sax, Lee, & Hagedorn, 2010; Markel & Frone, 1998; McNall & Michel, 2011; Sears et al., 2017; Tessema et al., 2014; Zacherman & Foubert, 2014). Academic institution was added as a covariate, given that participants in the sample were from different universities from different countries (South Africa and USA) and thus encompass different contexts. Research has provided varying results of AS and AE within different countries such as USA, Australia, Canada, China, Britain and South Africa (Butler, 2007; Lingard, 2007; Lowe & Gayle, 2007; Sears et al., 2017; Tessema et al., 2014; S. Walters & Koetsier, 2006). The inclusion thereof will discern the predictive utility of the type of employment (part-time and full-time) through WSC after controlling for age, gender, perceived primary role, academic institution and qualification.

**Conceptual Framework**

The conceptual framework is an adaption of Butler's (2007), Owen et al.'s (2018) and Creed et al.'s (2015) model of WSC. Working full-time (more hours) depletes the resources (time and energy) needed to study (S. Marks, 1977), producing strain because the ensued anxiety outweighs the benefit of working to, for instance, settle tuition fees. Thus conflict occurs between the work and school domain, reducing AS and AE experienced by working students. Figure 1 depicts the conceptual framework explaining the relationships of interest. Thereafter, the study's hypotheses are presented.

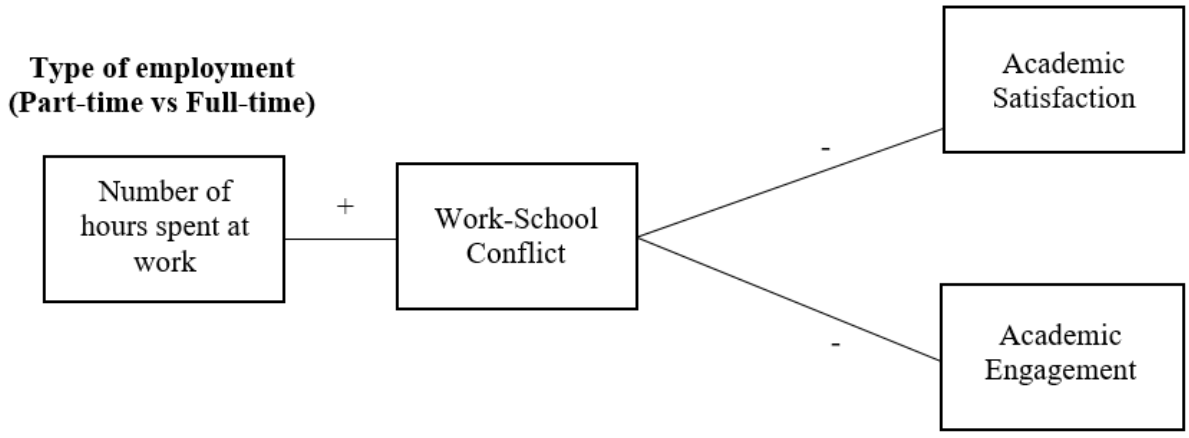



*Figure 1:* Conceptual Framework of the present study

Owing to the interest of the researcher, the following hypotheses were derived for the present study:

*Hypothesis 1a:* Working students in part-time employment (work less than 20 hours per week) experience, on average, less WSC than those working students in full-time employment (40 hours or more per week).

*Hypothesis 1b*: Working students in part-time employment (work less than 20 hours per week) experience, on average, more AS than those working students in full-time employment (40 hours or more per week).

*Hypothesis 1c*: Working students in part-time employment (less than 20 hours per week) experience, on average, more AE than those working students in full-time employment (40 hours or more per week).

*Hypothesis 2a:* WSC mediates the relationship between type of employment and AS of working students.

*Hypothesis 2b:* WSC mediates the relationship between type of employment and AE of working students.

**Final notes**

Research into the work-school interface has developed over the last decade (Butler, 2007; McNall & Michel, 2017; Wyland et al., 2016). However, numerous researchers have suggested further investigation into empirical research within the work-school domains due to the increase in working students in tertiary education institutions (McNall & Michel, 2011; Wyland et al., 2016). The literature review delivered awareness into the theoretical and empirical knowledge surrounding WSC, AS and AE of working students. The definition of working students and the type of employment they participate in was discussed to provide an enhanced understanding of these students. The significance of investigating AS and AE was argued for to ensure a more comprehensive understanding of the reason for the research study. Literature on the desired variables are discussed in the literature review, to extend on the work-school research, whereby a diagrammatic representation of the conceptual framework was provided and plausible hypotheses presented with the intention of answering the study's research question.

In conclusion, the WSC, AS and AE of working students' who work part-time and those who work full-time will be investigated to examine the differences between these two groups and

explain the experiences of working students. Thereafter, the present study will confirm the mediating effects of WSC between type of employment and working students' academic outcomes (AS and AE).

## Method

The purpose of this study is to determine the impact of type of employment (part-time employment or full-time employment) on university outcomes, namely AS and AE of working students. In addition, this study aimed to establish whether WSC mediates the relationship between the independent variable (type of employment) and the dependent variables (AS and AE). This section is divided into sub-sections to outline the method used to conduct the present research. These sub-sections are as follows: research design, secondary data, sampling procedure, research participants, measures, procedure, ethical considerations, methods of statistical analysis and limitations.

### Research Design

The present study encompassed an exploratory and descriptive design whereby secondary, cross-sectional data from two quantitative descriptive studies (Gopalan, Goodman, Hardy, & Jacobs, 2019; Jacobs, 2018) were used. Such a design was appropriate because the present study aimed to investigate and describe the relationships between the variables of the study (Castle, 2003). The aim of the study was not to establish causation, but rather to explore whether differences exist between groups, given the context of these students. The particular dataset was chosen because it contains the variables of interest and consists of a large set of data for investigation. Moreover, using existing data enables the research procedure to be less time consuming and eliminates the cost of data collection (Blanche, Durrheim, & Painter, 2006). It is also helpful in a time-bounded academic programme like a Masters degree. As the dataset chosen was quantitative, quantitative methods were used to analyse the data to add rigor and objectivity to the research process (Johnston, 2014). A quantitative statistical analysis was appropriate given the study's research question and statistical nature of the accompanied hypotheses.

### Secondary Data

The prevalence of technological advances has led to the vast amounts of data that has been collected, compiled and stored for the use of secondary research (Johnston, 2014). Consequently,

it is possible to use data collected previously by another researcher to answer research questions. The datasets used in the present study originated from two separate studies, whereby the researchers, Gopalan et al., (2019) and Jacobs (2018), collected data on working students enrolled in tertiary education institutions in South Africa and the USA. Gopalan et al., (2019) and Jacobs (2018), used an identical survey and thus collected data on the same variables. However, the focus of the studies differed. Gopalan et al., (2019) investigated the influence of job, school and personal characteristics in predicting job and academic satisfaction amongst working students, while Jacobs (2018) investigated the impact of WSC and Work-School Enrichment (WSE) on job satisfaction and academic satisfaction. The datasets were investigated to determine its alignment in meeting the objectives of the present study and is discussed in further detail under the Procedure section. Most of secondary datasets consist of quantitative data where the variables are already coded in a range of possible values (Hox & Boeije, 2005), therefore making the use of existing data for research more prevalent for secondary analyses. There are drawbacks to utilizing secondary data, however the benefits have led to more frequent use of secondary data analyses in empirical research studies (Cheng & Phillips, 2014; Johnston, 2014).

**Advantages.** A benefit of using secondary data is that it usually comprises of a large dataset thereby offering a large sample size to enhance the statistical power of a particular study (Field, 2013). Another advantage of using secondary data is that it avoids the problem of time consumption, costs and the loss of other resources required by primary data collection (Hox & Boeije, 2005). Using secondary data is advantageous to individuals enrolled in academic programmes such as a Masters programme, given the limited resources (e.g. money and time) available to students to conduct research themselves (Cheng & Phillips, 2014). Researchers may then spend more time testing hypotheses and investigating different research approaches instead of spending time on conducting primary research. Johnston (2014) argues that secondary research also permits the use of readily available information from different data sources and can be used to test different statistical methods.

**Constraints.** Field (2013) states that as the sample size increases, the distribution of the sample becomes more normal. An issue with secondary data is the inability to collect more data to add to the sample. Therefore, if the sample itself is already skewed, implications to assumptions of normality will occur because the researcher is unable to collect more data to increase the sample

size. Johnston (2014) states that in social science research it is unusual for all scales to have a perfectly normal distribution therefore, it is unproblematic if the distributions deviates slightly from a perfect normal distribution. Another potential problem stated by Kothari (2004) is that the data was collected by another researcher, different to the researcher conducting the secondary analysis. Therefore, possible study-specific nuances in the data collection process important in the interpretation of the findings is unknown to the researcher conducting the secondary analysis (Cheng Phillips, 2014; Kothari, 2004). Cheng and Phillips (2014) also states that the data may not be collected for all geographic regions of interest or all population subgroups to improve generalizability.

**Ethical considerations of the present study.** The present study does not require ethical clearance because of the nature of a secondary analysis. However, the study explicitly discusses the procedure for ethical approval and the maintenance of ethics in both contexts. Gopalan et al., (2019) received ethical clearance through the Institutional Review Board (IRB) of the University of Redlands. An application was submitted depicting the purpose of the study and included the survey, consent form and debriefing statement. Additionally, a certificate was submitted confirming the completion of the CITI training course. Upon receiving the IRB application, the chair of the IRB committee reviewed and approved the study. Jacobs (2018) obtained ethical clearance from the UCT's Commerce Faculty's Ethics in Research Committee. Additionally, Jacobs (2018) received permission to access students was granted by the UCT Director of Student Affairs.

APA guidelines concerning secondary analyses was carried out in all aspects of the present research study. The original researchers who collated the original study and collected the data was acknowledged throughout the study accordingly (Tripathy, 2013). It is important to distinguish the researcher who collected the data from the researcher who analyses the data to acknowledge the respective authors' work. Written consent for the permission to use the selected datasets was asked for and was included in Appendix A. Voluntary consent from participants is an APA requirement, however, Tripathy (2013) argues that in a secondary analysis consent of the participants may be reasonably presumed, as consent was received from the previous research studies. The data was stored on the personal computer of the researcher of the present study, to which only she has protected access. The respondents were not deceived throughout the original study as the research

purpose was communicated clearly by both Jacobs (2018) and Gopalan et al. (2019) and no deception was conducted within the present study. No harm (physical, psychological, professional and social) was committed to any individual who participated in the original studies and thus were not harmed within the present study (Blanche et al., 2006).

## Sampling Procedure

**Sampling procedure of the present study.** The acquisition of secondary data requires careful scrutiny when selecting the most appropriate dataset, as Donnellan and Lucas (2013) suggests that the data is to be relevant to the study's purpose and the participants' demographics should be aligned to the study's objectives. A non-probability judgment sampling technique was thus used to select the dataset, as participants were deliberately selected based on the objectives of the research study (Kothari, 2004). Thus, the present sample, specifically working students, has been identified and self-selected in by the researcher. This sampling technique limits the ability to generalize to the general population of working students because it does not provide any basis for estimating the probability that each participant has an equal chance of being selected from the population (Kothari, 2004). However, this approach is the most effective given the nature of the research design and the study's time and resource constraints (Blanche et al., 2006).

## Research Participants

The participants selected were from two separate populations, one being from a South African context (Jacobs, 2018) and the other from the USA (Gopalan et al., 2019). The present study, however, does not focus on a cross-cultural analysis, but will test the stated hypotheses. The researcher recorded a total of 719 participants from the combined studies, post data collection of the present study. Upon data cleaning, the researcher removed 31 participants, as these participants did not meet the criteria of concurrently studying and working. The dataset included three groupings of work hours (i.e. less than 20 hours per week, between 20 and 39 hours per week and 40 hours or more per week). Owing to the interest of the present study, a decision was made to investigate exclusively part-time employment and full-time employment. Working between 20 and 39 hours per week did not fall into the study's defined concept of part-time or full-time employment. Therefore, participants who selected working between 20 and 39 hours per week were removed. As a result, 143 participants were removed. In addition to this, 57 participants were removed because they did not qualify for the present study as they did not meet the researcher's

criteria of answering all three scales (WSC, AS and AE). Upon investigating the data for outliers, six extreme outliers were discovered and removed from the dataset. In total, 237 participants were discarded and the final sample for the present study consisted of 482 participants.

The sample indicated a slight overrepresentation of females ($n$ = 263), while the number of males represented in the sample were 219 (45.44%). Participants' ages ranged from 19 to 60 years old ($M$ = 32.67, $SD$ = 8.38). Most respondents classified themselves as White ($n$ = 207, 42.95%), while 15.56% of participants classified themselves as Black ($n$ = 75), 9.96% as Coloured ($n$ = 48) and 3.11% as Indian ($n$ = 15), 15.15% as Hispanic ($n$ = 73) and 6.02% as Asian ($n$ = 29). However, 6.64% of the sample preferred not to disclose their racial background ($n$ = 32). Of the total sample, 200 participants were married (41.49%), 209 were not married (43.36%) and 63 participants (13.07%) were living with a partner. More than half of the participants had been working for 40 hours or more per week ($n$ = 387, 80.29%), with 19.71% working less than 20 hours per week ($n$ = 95). This indicates that approximately more than half of the participants were engaged in full-time employment. 248 participants studied at a tertiary institution in South Africa (51.45%) and 234 participants in the USA (48.55%). More than half of the sample were enrolled in a postgraduate degree ($n$ = 378, 78.42%), while 21.58% were studying an undergraduate degree ($n$ = 104).

## Measures

The following subscales are relevant to this research study. Items on the various subscales were measured on a 5-point Likert type scale and the word "school" was substituted with "university" by Jacobs (2018) and Gopalan et al. (2019) in all scales.

**Work-school conflict.** WSC was assessed with Markel and Frone's (1998) 5-item Work-School Conflict scale. The items were scored on a 5-point Likert scale (1 = *never,* 5 = *always*). An example of an item on this scale is "My job demands and responsibilities interfere with my university work". Jacobs (2018) used four out of the five items from this scale. The item omitted from Markel & Frone's (1998) scale was "When I'm at school, I spend a lot of time thinking about my job". An additional response category (6 = *not applicable*) was added to the item "Because of my job, I go to university tired" and Jacobs (2018) treated this response as a missing value. A likely reason for why Jacobs (2018) removed the item "When I'm at school, I spend a lot of time thinking about my job" and included an additional response category for the item "Because of my

job, I go to university tired" is that some participants were enrolled in an institution that accommodated working students. In other words, some participants were enrolled in institutions that offered online resources for self-study, rather than permitting students to attend lectures on campus. As lectures were offered online, these working students were not required to spend their time at an academic institution. Therefore, it would have been impossible for some participants to answer those questions, as it did not apply to them. Because of this adjustment, 71 cases of missing data for the WSC scale were identified. This accounts for approximately 15% of the data and is thus important to note. As Jacobs (2018) treated this as missing data, and because of the ambiguity surrounding the original responses, the calculation for the scale's composite mean was calculated by using the following formula; MEAN.4(). This formula accounts for the missing data when computing the mean composite value for each participant. This process is explained in detail under Procedure. Markel and Frone (1998) reported a Cronbach's Alpha of .86 and Jacobs (2018) reported a Cronbach's Alpha of .87, which rendered the scale as a reliable measure in both USA and South African contexts.

**Academic satisfaction.** Butler's (2007) School Satisfaction scale was used to measure AS. This scale consisted of six items for measuring the satisfaction students experienced in association with the university, educational experience and being a student (Butler, 2007). The items were scored on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). An example of an item in this scale is "I am satisfied with my education at my university". Butler (2007) reported a Cronbach's alpha coefficient of .95, indicating a high internal consistency used in the USA context. Similarly, Jacobs (2018) reported a high internal consistency ($\alpha$ = .90), thus deeming the scale acceptable for the South African context.

**Academic engagement.** The Utrecht Work Engagement Scale for students (UWES-S) developed by Schaufeli et al. (2002) was used to measure AE. The scale consists of 14 items with three subscales, namely vigour (5), dedication (5) and absorption (4). All subscales include a 5-point Likert scale with responses ranging from 1 (*Never*) to 5 (*Always*). An example of an item of vigour includes, "When I'm studying I feel mentally strong". An example of an item of dedication is, "I am proud of my studies". An example of an item of absorption includes, "Time flies when I am studying". Schaufeli et al. (2002) reported a Cronbach's alpha between .65 and .79 for vigour, between .77 and .86 for dedication and between .65 and .73 for absorption, which illustrates

acceptable internal consistency. Within the South African context, Pienaar and Sieberhagen (2005) reported Cronbach's alpha of .77, .85 and .60 for vigour, dedication and absorption respectively. Mostert et al. (2007) later demonstrated the acceptability of the measurement of vigour ($\alpha = .70$) and dedication ($\alpha = .78$) within a South African sample. The scale was therefore deemed appropriate for the use in both South African and USA contexts.

**Control variables.** To avoid statistical compound, age, gender, perceived primary role, academic institution and qualification were treated as control variables. Age was measured in years, while gender (female and male), perceived primary role (employee and student), academic institution (South Africa and USA) and qualification (postgraduate and undergraduate) were measured by using two categories. These covariates were selected because they partially predicted the outcome variables of interest in previous research findings (Butler, 2007; Creed et al., 2015; Gibson, 2010; Gilardi & Guglielmetti, 2011; Hawkins et al., 2005; Horstmanshof & Zimitat, 2007; Kim et al., 2010; Markel & Frone, 1998; McNall & Michel, 2011; Sears et al., 2017; Tessema et al., 2014; Zacherman & Foubert, 2014). The choice of covariates also relate to the fact that the sample consists of participants from two different countries (Gopalan et al., 2019; Jacobs 2018).

**Demographic variables.** Demographic variables relating to the role of a student (academic institution and qualification), are included. In addition, the demographic variable relating to the role of an employee (type of employment) was included. The remaining demographic variables are gender, age, race, marital status and number of dependents.

## Procedure

A secondary analysis is an empirical process that requires the same basic principles used in primary data analyses. A systematic and procedural method involving evaluative steps is required to maintain scientific rigour in a secondary analysis (Johnston, 2014). The researcher therefore examined supplementary literature to establish a better understanding of the methods and procedures necessary to select secondary data for investigation (Castle, 2003; Cheng & Phillips, 2014; Johnston, 2014; Kothari, 2004). The researcher decided to follow a combination of the suggested methods because each article demonstrated similar insights into how secondary analyses are conducted. Secondary data obtained from Jacobs (2018) and Gopalan et al., (2019) was used to investigate the academic outcomes of working students.

**Step 1.** The researcher conducted an in-depth and exhaustive literature review on examining previous and current research surrounding WSC, AS, AE and its associated covariates of working students. Thereafter, the study's research question was derived. The researcher used various databases, such as Ebscohost, Web of Science and Google Scholar to search for peer-reviewed literature regarding the variables of interest. Benos et al. (2007) argues that using peer-reviewed articles contributes to an in-depth and exhaustive literature review, because it informs the reader that the articles researched has credibility and serves as a scientific "check". Kumar (2009) states that searching for numerous articles that present similar conclusions adds strength to the arguments made, thus making it an in-depth process. As more information was gathered, the more the researcher established a well-thought out research question for the present study.

**Step 2.** Thereafter a relevant and an existing dataset had to be obtained. Castle (2003) suggests that selecting the dataset requires an evaluative approach to establish a high quality, trustworthy and rigorous study. Although time is saved by not collecting primary data, the process of searching for a strongly aligned dataset to the present study may become tedious and lengthy (Castle, 2003). Moreover, it is highly unlikely that any dataset will contain all variables of interest (Johnston, 2014). Fortunately, the researcher had the benefit of two available datasets. These datasets were investigated to determine whether it would be strongly aligned to meeting the objectives of the present study. This involved having a detailed description of the population of interest, the sampling scheme used, the time-frame of data collection, the assessment tools, and response levels in the original dataset. This process assessed the internal and external validity of the study, as well as determined whether the dataset would generate meaningful estimates about the topic of interest (Castle, 2003; Cheng & Phillips, 2014).

***Sampling procedure of Gopalan et al. (2019) and Jacobs (2018).*** The primary data collectors, Gopalan et al. (2019) and Jacobs (2018), used non-probability sampling techniques. Jacobs (2018) first conducted a pilot study and made appropriate adjustments to the survey after considering the feedback obtained. Jacobs (2018) collected data over a 6-week period and used both convenience sampling and snowball sampling. Gopalan et al. (2019) used both electronic and hard copies of the survey collated by Jacobs (2018). Data was collected over 3-month period using convenience sampling. These methods were chosen due to both studies' time and resource constraints. Both datasets were evaluated based on the criteria discussed above and thus chosen to

increase the sample size of the study for generalization purposes and to explore unanticipated differences for future research avenues. The scales used in Jacobs' (2018) and Gopalan et al.'s (2019) studies were acceptable for the operationalization of variables in the present study because it coincided with the definitions identified in the literature review. The researcher found that the data collected by Jacobs (2018) and Gopalan et al. (2019) were relevant to the study's research question as it measured the desired constructs of the study.

**Step 3.** The data was transported to the 24th version of the Software Package for Social Sciences (SPSS). SPSS was used to clean the secondary data and perform relevant statistical analyses for the present study. The researcher cleaned the raw data before any statistical analyses were performed. Data cleaning initially involved proofreading and checking the data file for errors. Ineligible and incomplete cases were removed from the dataset. Cases that were not of the study's interest as well as the participants that did not meet the study's selection criteria were removed. Participants who were unemployed, as well as those participants who worked between 20 and 39 hours per week were removed, along with cases that did not answer all three scales (WSC, AS, AE), as it did not meet the study's selection criteria. The researcher did not anticipate any data-related problems, however the data was screened to ensure that no inconsistencies or data violations were found. Univariate descriptive statistics were computed to check the variables for any data errors. No overly concerning issues were detected.

**Step 4.** The variables of interest were checked for missing data. AS had no missing values, while WSC scale had the highest number of missing values compared to the other variables. WSC had 71 missing cases, accounting for almost 15% of the data, therefore creating some cause for concern. Upon inspection it was identified that these cases were for the item "Because of my job, I go to university tired", whereby Jacobs (2018) included an additional response category of "not applicable". These responses were consequently treated as missing values. Participants would have responded with "not applicable" if they did not attend lectures on campus and rather required online learning. In handling the missing data for composite values, MEAN.4 formula was used to account for the missing data. Therefore, in some analyses the number of participants were lower. The remaining missing cases were classified as missing completely at random.

**Step 5.** The scales and descriptive data provided in the raw data was recoded to suit the nature of the present study. For example, the demographic variable "gender" was recoded as a

categorical variable to include the codes “1-Female”, “2-Male”. Thereafter, the recoded variables were stored in a new dataset and its syntax had been documented in a separate document in the incident where errors occur, to correct for errors (Cheng & Phillips, 2014). Following this, statistical analyses were conducted using the variables relevant to the current research.

**Statistical Analyses**

Statistical analyses were conducted though IBM’s SPSS, version 23. Reliability and validity analyses were first tested for each measurement: WSC, AS and AE. Exploratory Factor Analysis (EFA) was conducted on each scale to determine the validity of each measurement. Following this, the reliability of each measure was evaluated by using both Cronbach’s Alpha for internal consistency and corrected item-total correlations. Descriptive analysis on the data was conducted to examine the distribution of the data as well as determine the descriptives of the variables in the study.

The researcher implemented multiple regression analyses to identify the extent to which the various models would be a good fit in predicting the outcome variables. Independent samples *t*-tests was conducted to identify whether there were differences between those working students who work part-time and those who work full-time in terms of their WSC, AS and AE. Mann-Whitney U tests were conducted along with the independent samples *t*-tests as a cross-check of the results. Both samples will be used jointly to investigate the study’s hypotheses. As the objective was to make a prediction about both AS and AE based on the covariance with WSC, type of employment and covariates, hierarchical multiple regression was decided as an appropriate method for analysis. Prior to this, several assumptions for multiple regression analysis was tested. Thereafter, mediation analysis was conducted to determine whether WSC mediated the relationship between type of employment and AS and then AE.

**Limitations to the Study**

The following subdivision acknowledges limitations to the study based on the methods discussed above and will not be repeated in the discussion section.

The secondary and descriptive cross-sectional nature of the research design prevents causal inferences to be made between type of employment, WSC, AS and AE. Given the researcher’s

intent on identifying the extent to which the various models would be a good fit in predicting the outcome variables, the study was predictive rather than causal. A predictive study may foresee conditions or behaviours in one variable from what is known in another, whereas in a causal study the researcher manipulates a set of independent variables to determine the effect on dependent variables (Kothari, 2004). To illustrate, the researcher is uncertain about whether the more hours worked brings about elevated levels of WSC and lowered AS and AE (Rosnow & Rosenthal, 2013), therefore predictive inferences in the study were made. In addition, the researcher was not able to explore the likelihood of the constructs changing over time (Blanche et al., 2006). For example, participants may have begun as working full-time and later changed to part-time employment whereby WSC, AS and AE may have been recorded at different time periods, to indicate whether the shift in type of employment had an effect on the variables of interest. However, the researcher could not infer causality, as the aim of the research was to demonstrate differences between groups, therefore the current design was appropriate (Cheng & Phillips, 2014). In future, one can employ a longitudinal research design to establish causal relationships between the variables of interest (Blanche et al., 2006). Researchers can then collect primary data from the same sampled population on more than one occasion, to establish causal inferences.

The validity of the dataset is a limitation associated with secondary data. In particular, the researcher has no control over certain design nuances such as the scales used and data collection methods (Donnellan & Lucas, 2013). As secondary data was used in the present study, the researcher could not pilot the scale to limit contextual bias that may unduly influence the construct validity of the AE scale. To illustrate, the data representing type of employment (i.e. work hours) in the dataset was recorded as a categorical variable, rather than a continuous variable, thereby limiting the use of the variable in terms of analyses. A simple linear regression function cannot be used to interpret categorical variables as explanatory variables easily, therefore the variables were recoded into dichotomous variables. A recommendation would be to collect data of type of employment so that it will represent a continuous data set, rather than categorical. This would expand the number of statistical tests available to use for testing assumptions. However, it should be noted that Jacobs (2018) and Gopalan et al. (2019) collected this as a demographic variable to explain the population sampled, therefore it was categorized as a nominal variable. Furthermore, as the middle category of type of employment was removed, the number of participants in the study was reduced, limiting sophisticated statistical procedures. As mentioned earlier, this cohort

of work hours was not included given that too many possible alternatives of work hours could be conceptualised. To illustrate, individuals could work an average of 25 hours per week, therefore allocating 5 hours a day to paid employment, however this is evasive in classifying it into the type of employment investigated in this study.

The researcher selected a dataset that was relevant to the present study's research question. Thus, possible study-specific nuances in the data collection process, that could have been vital in the interpretation of the findings, were unknown to the researcher in the present study (Cheng & Phillips, 2014). For instance, only upon investigation, it was found that the WSC scale had an additional response category for an item in the scale, resulting in 71 missing data. This approach was employed because secondary data was readily available, making the research procedure cost-effective and less time consuming. A suggestion for future researchers is to pursue primary data collection to have full control over the design of the study, such as the decision of what items to include in the survey and what geographic regions to explore (Cheng & Phillips, 2014).

Non-probability judgement sampling technique was used for sampling, which limits the generalizability of the results. Therefore, the sample selected may not have been representative of the population of interest because personal element had a great chance of entering the selected sample (Kothari, 2004). Though, given the nature of the research design and the study's resource constraints, this technique was the most effective. Researchers should either use a computer generator (e.g. Microsoft excel 2013) to randomly select participants or do this process manually to ensure generalizability of the results, given that they have access to a list of working students across universities (Blanche et al., 2006). This produces a random sample, which may therefore provide a more representative sample of the population of interest.

## Results

The purpose of this study was to determine the impact of type of employment (part-time employment and full-time employment) on university outcomes, namely AS and AE of working students. This section presents the findings of the study and is divided up into sub-sections to outline the statistical analyses performed on the data. Firstly, the psychometric properties of each sub-scale are presented, wherein construct validity and reliability of the measurements are described, proceeded by descriptive statistics associated with each scale. Lastly, the results of the

independent samples *t*-tests and mediation analysis are presented for the purpose of engaging with the research question and hypotheses.

**Psychometric Properties of Variables**

Prior to conducting the statistical analyses for the study's hypotheses, the psychometric properties of the scales were examined. This was to ascertain the degree of fit between a construct and its respective indicators and ensure that the scales systematically pointed to the desired construct across repeated measurement opportunities (Field, 2013; Hair, Anderson, Babin, & Black, 2010). Scale validity and reliability of each scale was assessed to determine which items warranted removal for computing composite variables in SPSS. Exploratory Factor Analysis (EFA) was conducted to test the construct validity of each scale, as it was necessary to establish whether each scale measures what they are theoretically supposed to measure (Field, 2013; Hair et al., 2010; Tabachnick & Fidell, 2014). Internal consistency of the study's scales was assessed using the Cronbach alpha reliability coefficient (Tabachnick & Fidell, 2007). The results of the EFA and Reliability analyses are demonstrated below.

**Validity of Measurement Scales**

EFA allowed the researcher to identify how many underlying theoretical constructs were confined in each scale and ascertain the degree to which the identified constructs represented the variables of interest in this study's sample (Henson & Roberts, 2006). Principal Axis Factoring (PAF), rather than a Principal Components Analysis (PCA), was used to extract factors because PAF extracts the maximum variance from each component (Tabachnick & Fidell, 2007). PAF concentrates on the latent factor/s where, contrastingly, a PCA does not, as it condenses the number of items (Henson & Roberts, 2006). Therefore, PAF was the most appropriate method for the current data used in the study. Direct oblimin, an oblique rotation, was chosen to enhance the interpretation of the extracted factors. Oblique rotation was employed in the study, rather than orthogonal rotation, because theoretical evidence was found to demonstrate that the factors within each scale correlated with one another (Butler, 2007; Markel & Frone, 1998; Schaufeli et al., 2002).

Before initiating factor analysis, several conditions need to be met. Hair et al. (2010) posits that a minimum of five data points per item in each subscale should be aimed for, however, aiming

for ten data points per item is more acceptable. The total number of items used in this study is 24, therefore a desirable number of data points, as suggested by Hair et al. (2010) is 240. The present study has 482 participants, which surpasses the desired amount of data points. Therefore this condition was met and a factor analysis was deemed appropriate. In addition, two statistical measures need to be conducted to ensure the suitability of factor analysis i.e. the data should be adequately distributed and the scale items need to be correlated (Pallant, 2013). Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity were conducted respectively. Burns and Burns (2008) suggests that a value of .5 indicates the minimum value that represents sampling adequacy. The test of Bartlett's Test of Sphericity must be significant ($p <$ .05) to determine whether the scale items adequately correlate with each other (Bartlett, 1950; Tabachnick & Fidell, 2014). This statistic calculates the significance of all the inter-correlations between the items investigated (Beavers et al., 2013; Hair et al., 2010). As all above stated conditions were met for each subscale, it was appropriate to continue the factor analysis.

Kaiser's (1960) criterion was used to interpret the factors and determine the number of factors to retain. All factors with eigenvalues greater than the value of 1.0 were considered as significant and thus retained. However, Kaiser's (1960) criterion may result in an overestimation or underestimation of factors (Tabachnick & Fidell, 2014). Therefore, as a visual inspection, Catell's (1966) scree test was used in conjunction with Kaiser's (1960) criterion to determine the number of factors to retain. An item is considered to load significantly if its factor loading was greater than .30 (Field, 2013; Tabachnick & Fidell, 2014). An item that loaded significantly on more than one factor with an absolute loading difference of greater than .25 was retained. Cross-loading occurs when the absolute loading difference is less than .25 and is therefore omitted because it is presents difficulty in discerning which factor the item was most related to (Tabachnick & Fidell, 2014).

**Work-school conflict.** This scale is unidimensional, therefore one factor is expected to be extracted, measuring WSC. EFA with a PAF was conducted on the four items with a sample of 411 participants after pairwise deletion of missing data (KMO = .80; $X_6^2 = 687.05$, $p < .001$). It is important to note that the 71 missing cases were accounted for and are explained in the Methods section. The anti-image matrix additionally demonstrated sampling adequacy, as off-diagonal elements were small. There was no indication of multicollinearity upon inspection of the

correlation matrix and the determinant was greater than 0.0001. One factor was extracted with an Eigenvalue of 2.69 which explained 67.11% of the variance. This solution was supported by a visual inspection of the scree plot based on Catell's (1966) scree test method, as one factor was revealed. No significant cross loadings were detected, whereby the factor loadings ranging between .52 and .85 were attained. The factor was thus labelled as Work-School Conflict. Table 2 below illustrates the full set of factor loadings and communalities for the WSC scale.

Table 2

*Factor Analysis Results for WSC*

| Code | Item description | Factor | Communalities |
|---|---|---|---|
| WSC1 | My job demands and responsibilities interfere with my university work | .81 | .65 |
| WSC2 | I spend less time studying and doing homework because of my job | .85 | .73 |
| WSC3 | My job takes up time that I'd rather spend at university or on university work | .81 | .66 |
| WSC4 | Because of my job, I go to university tired | .52 | .27 |
| Eigenvalue | | 2.69 | |
| % Variance explained | | 67.11 | |

*Note.* Extraction method: Principal Axis Factoring; 1 factor extracted. 7 iterations required. $N = 411$ after pairwise deletion of missing data. WSC = work-school conflict

**Academic satisfaction.** EFA was run with the six-item AS scale on a sample of 482 participants after pairwise deletion of data. EFA was appropriate based on the KMO statistic and Bartlett's test of Sphericity (KMO = .87; $X^2_{15} = 1693.41$, $p < .001$). The anti-image matrix additionally demonstrated sampling adequacy, as off-diagonal elements were small. The determinant value of .03 indicated that multicollinearity was not present. One factor was extracted with an Eigenvalue above one, namely 3.97. This was verified by a visual inspection of the scree plot whereby one factor was revealed. The one factor extracted explained 66.13% of the variance in the subscale. The full set of factor loadings and communality values can be seen from Table 3 below.

Table 3

*Factor Analysis Results for AS*

| Code | Item | Factor | Communalities |
|---|---|---|---|
| AS1 | I enjoy being a student on this campus | .66 | .43 |
| AS2 | My university meets my expectations | .85 | .73 |
| AS3 | I feel comfortable at my university | .69 | .48 |
| AS4 | I am satisfied with my education at my university | .79 | .62 |
| AS5 | I am pleased with the services I receive at my university | .76 | .58 |
| AS6 | Overall, I am satisfied with my experience at my university | .87 | .75 |
| Eigenvalue | | 3.97 | |
| % Variance explained | | 66.13 | |

*Note.* Extraction Method: Principal Axis Factoring. 1 factor extracted. 5 iterations required. $N = 482$ after pairwise deletion of missing data. AS = academic satisfaction

**Academic engagement.** This is a three-dimensional scale with a higher order factor, namely AE (Schaufeli et al., 2002). However, this factor structure was not replicated within the present study. Three rounds of PAF were necessary before a solution was constructed and interpreted. The process of PAF is described below.

***Round 1.*** Upon observation of the KMO statistic and the Bartlett's test of Sphericity, the researcher established that the data warranted EFA (KMO = .89; $X^2_{91} = 2611.16$, $p < .001$). Subsequently, PAF was performed across the 14 items whereby three factors emerged (see Table 4). Item number 5 and 14 extracted communalities statistics below .30, indicating weak communalities. The items 7 and 9 cross loaded on two factors, while item 14 did not load on any factor. The remaining items loaded significantly on one factor (see Appendix B, Table B1 for all factor loadings). Preceding the following round of PAF, item 7 was omitted first because the absolute difference in factor loadings was smaller than that of the other cross-loading items. In the same round, item 14 was omitted from further analysis because it did not load onto any factor.

Table 4

*Unrotated Eigenvalues and Explained Variances for the 14-item Academic Engagement scale*

| Factor | Eigenvalue | Explained Variance |
|---|---|---|
| 1 | 5.84 | 41.70 |
| 2 | 1.61 | 11.50 |
| 3 | 1.29 | 9.20 |

*Note*. Extraction method: Principal Axis Factoring; 9 iterations required

***Round 2.*** In the second round of PAF (KMO = .88; $X^2_{66}$ = 2827.91, $p$ < .001), three factors were retained once again (Table 5). Upon investigation, all extracted communalities indicated a statistic above .30, however initial communalities for Items 5 and 6 were less than .30. All items loaded significantly on one factor, as no cross-loading were detected (see Appendix B, Table B2 for all factor loadings). However, factor 3 included an item from dedication (item 5) and another item from absorption (item 6), which did not make intuitive sense to the researcher, as absorption items and vigour items had already loaded onto factor 1 and dedication items on factor 2. Gorsuch (1997) states that if the factor pattern is not interpretable, this provides a reason to opt for a smaller number of factors that are interpretable. Beavers et al. (2013) adds that a factor needs to have at least 3 items for it to be interpretable. The decision of retaining factors ultimately should be made based on their comprehensibility and interpretability, considering the context of the research (Beavers et al., 2013). Items 5 and 6 produced initial communalities below .30. Therefore, items 5 and 6 were removed as the factor did not emerge. In previous research, there is evidence of a two-factor model (Mills, Culbertson, & Fullagar, 2012; Schaufeli et al., 2002a, b; Shirom, 2003), which contributed to this decision and is explained further in the discussion section. The remaining 10 items were thus included in the next round of PAF.

Table 5

*Unrotated Eigenvalues and Explained Variances for the 12-item Academic Engagement scale*

| Factor | Eigenvalue | Explained Variance |
|---|---|---|
| 1 | 5.34 | 44.50 |
| 2 | 1.59 | 13.27 |
| 3 | 1.18 | 9.85 |

*Note*. Extraction method: Principal Axis Factoring; 6 iterations required

***Round 3.*** The KMO value (.88) and significant Bartlett's test ($X^2_{45}$ = 2608.20, $p$ < .001), indicated that the third round of PAF was warranted across the remaining 10 items. The anti-image matrix additionally demonstrated sampling adequacy, as off-diagonal elements were small. There was no indication of multicollinearity upon inspection of the correlation matrix and the determinant was greater than 0.00001. As indicated in Table 5, two factors emerged. All items loaded significantly on one factor. Factor 1 (see Table 6) includes items belonging to the vigour and absorption subscales and was thus labelled as Vigorous-absorption, whereas the Factor 2 signified items only from the dedication subscale and was labelled as Dedication. This two-factor structure of the AE scale deviates from the original Schaufeli et al.'s (2002) three-dimensional theoretical conceptualization of AE. This difference is discussed in greater detail in the next section. This two-factor structure of the AE scale is used for further analysis within the study.

Table 6

*Factor loadings for the Reduced 10-item Academic Engagement Scale*

| Item Number | Item Description | Factor 1 (Vigorous*-absorption**) | Factor 2 (Dedication) |
|---|---|---|---|
| 12 | When I study, I feel like I am bursting with energy* | .91 | |
| 13 | When studying I feel strong and vigourous* | .84 | |
| 11 | I can continue for a very long time when I am studying* | .73 | |
| 8 | I feel happy when I'm studying intensely** | .65 | |
| 10 | When I'm studying, I feel mentally strong* | .64 | |
| 9 | I can get carried away by my studies** | .55 | |
| 2 | My studies inspire me | | .91 |
| 3 | I am enthusiastic about my studies | | .78 |
| 1 | I find my studies to be full of meaning and purpose | | .77 |
| 4 | I am proud of my studies | | .67 |
| | Eigenvalue | 5.05 | 1.55 |
| | % Variance | 50.52 | 15.45 |
| | % Cumulative Variance | 50.52 | 65.97 |

*Note:* Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 4 iterations.

**EFA of academic satisfaction and academic engagement.** An EFA was run combining the items in the AS scale and AE scale to determine whether the two constructs were distinct. PAF was done with a direct oblimin rotation. As the previous EFA of the AE scale revealed a two-factor solution, a three-factor model was expected for the following analysis because AS was assumed as a separate construct. The discussion below describes the process of how factor analysis differentiated the two constructs. Three rounds of PAF were necessary before a solution was constructed and interpreted because of the process (described above) for the AE scale. However, no cross loadings occurred for the items of AS, indicating that the construct of AS is separate from the dimensions of AE.

***Round 1.*** Upon observation of the KMO statistic and the Bartlett's test of Sphericity, the researcher established that the data warranted EFA (KMO = .90; $X^2_{190}$= 4195.151, $p < .001$). Subsequently, PAF was performed across the 20 items whereby four factors emerged (see Table

7). Similar to the process above, items AE5 and AE14 extracted communalities statistics below .30, indicating weak communalities. The items AE7 and AE9 cross loaded on two factors, while item AE14 did not load on any factor. The remaining items loaded significantly on one factor (see Appendix B, Table B3 for all factor loadings). Preceding the following round of PAF, item AE7 was omitted first because the absolute difference in factor loadings was smaller than that of item AE9. In the same round, item AE14 was omitted from further analysis because it did not load onto any factor.

Table 7

*Unrotated Eigenvalues and Explained Variances for the 20-item scale*

| Factor | Eigenvalue | Explained Variance |
|---|---|---|
| 1 | 7.30 | 36.48 |
| 2 | 2.71 | 13.57 |
| 3 | 1.47 | 7.36 |
| 4 | 1.28 | 6.39 |

*Note*. Extraction method: Principal Axis Factoring; 7 iterations required

***Round 2.*** In the second round of PAF (KMO = .90; $X^2_{153}$= 4714.781, $p < .001$), four factors were retained once again (Table 8). For the same reason as discussed previously, items AE5 and AE6 were removed as the factor did not emerge. The remaining 16 items were thus included in the next round of PAF. See Appendix B, Table B4 for all factor loadings.

Table 8

*Unrotated Eigenvalues and Explained Variances for the 18-item scale*

| Factor | Eigenvalue | Explained Variance |
|---|---|---|
| 1 | 6.89 | 38.25 |
| 2 | 2.60 | 14.47 |
| 3 | 1.47 | 8.16 |
| 4 | 1.18 | 6.54 |

*Note*. Extraction method: Principal Axis Factoring; 7 iterations required

***Round 3.*** The KMO value (.90) and significant Bartlett's test ($X^2_{120}$ = 4484.93, $p < .001$), indicated that the third round of PAF was warranted across the remaining 16 items. The off-diagonal elements were small, thus the anti-image matrix additionally demonstrated sampling

adequacy. As indicated in Table 9, three factors emerged. All items loaded significantly on one factor. Factor 1 includes items belonging to the Vigorous-Absorption subscales and Factor 3 signifies the Dedication subscale of AE. Factor 2 emerged as the AS subscale. This provides evidence that AS and AE are distinct constructs.

Table 9

*Factor loadings for the 16-item Scale*

| Code | Item Description | Factor 1 (Vigorous*-Absorption**) | Factor 3 (AS) | Factor 2 (Dedication) |
|---|---|---|---|---|
| AE12 | When I study, I feel like I am bursting with energy* | .91 | | |
| AE13 | When studying I feel strong and vigourous* | .83 | | |
| AE11 | I can continue for a very long time when I am studying* | .72 | | |
| AE8 | I feel happy when I'm studying intensely** | .66 | | |
| AE10 | When I'm studying, I feel mentally strong* | .63 | | |
| AE9 | I can get carried away by my studies** | .55 | | |
| AE2 | My studies inspire me | | .91 | |
| AE3 | I am enthusiastic about my studies | | .78 | |
| AS6 | Overall, I am satisfied with my experience at my university | | -.90 | |
| AS2 | My university meets my expectations | | -.84 | |
| AS5 | I am pleased with the services I receive at my university | | -.83 | |
| AS4 | I am satisfied with my education at my university | | -.74 | |
| AS3 | I feel comfortable at my university | | -.66 | |
| AS1 | I enjoy being a student on this campus | | -.58 | |
| AE2 | My studies inspire me | | | -.90 |
| AE3 | I am enthusiastic about my studies | | | -.77 |
| AE1 | I find my studies to be full of meaning and purpose | | | -.76 |
| AE4 | I am proud of my studies | | | -.65 |
| | Eigenvalue | 6.64 | 2.56 | 1.41 |
| | % Variance | 41.50 | 15.99 | 8.82 |
| | % Cumulative Variance | 41.50 | 57.49 | 66.31 |

*Note:* Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 6 iterations. AS = academic satisfaction, AE = academic engagement

## Reliability of Measurement Scales

Internal consistency of each measurement was assessed by using Cronbach's alpha ($\alpha$). Nunnally's (1978) guidelines for interpreting Cronbach's alpha was adopted, whereby $\alpha < .50$ = unacceptable internal consistency, $.50 > \alpha > .60$ = questionable internal consistency, $.60 > \alpha > .70$ = acceptable internal consistency, $.70 > \alpha > .80$ = good internal consistency, $\alpha > .90$ = excellent internal consistency. Additionally, corrected item-total correlations were analysed to determine the extent to which each item correlated with the total score. The study retained corrected item-total correlations greater than .30, in keeping with Field's (2013) recommendations. From Table 10, it can be seen that all scales demonstrated acceptable internal consistency and all items had adequate corrected item-total statistics. Therefore, all scales were deemed reliable. All item-total statistics for the WSC scale, AS scale and reduced 10-item AE scale are represented in Tables C1-C3, Appendix C.

Table 10

*Pertinent Item-total Statistics*

| Scale | α | *n* | Corrected Item-Total Correlations | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|
| Work-school conflict | .82 | 411 | $.49 < r < .73$ | $.74 < r < .86$ |
| Academic satisfaction | .90 | 482 | $.62 < r < .81$ | $.86 < r < .89$ |
| Academic engagement | .89 | 481 | $.50 < r < .72$ | $.87 < r < .89$ |
| Vigourous-absorption | .87 | 481 | $.55 < r < .78$ | $.83 < r < .87$ |
| Dedication | .87 | 482 | $.62 < r < .80$ | $.80 < r < .87$ |

## Descriptive Statistics

A summary of the descriptive statistics and distribution scores for each variable are presented in Table 11 below. Composite variables were created by computing the means of each item on the scale. Each measurement scale's mean score was examined in relation to the scale's respective midpoint. The WSC, AS and reduced 10-item AE scale had a midpoint of 3 respectively. Therefore, a mean score greater than the midpoint (i.e. 3) indicates higher levels of the variable of interest, while a mean score less than the midpoint indicates lower levels of the variable of interest. Skewness (i.e. distribution symmetry) and kurtosis (i.e. height of the distribution) values were used

to assess the distributions of the data (Field, 2013; Hair et al., 2010; Tabachnick & Fidell, 2014). Values that lie above or below zero indicate a deviation from normality (Field, 2013; Hair et al., 2010). Although several statistical techniques assume normally distributed data, it ought to be noted that the detrimental effect of violations in normality should be negligible for sample sizes of 200 or more (Hair et al., 2010; Pallant, 2013). However, Pallant (2013) argues that SPSS statistical techniques are adequately vigorous to account for data that are not normally distributed.

Table 11

*Descriptive Statistics for the WSC, AS and Reduced 10-item AE Scales*

| | | | | | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|
| | *M* | *SD* | Min | Max | Statistic | SE | Statistic | SE |
| Work-school conflict | 3.27 | .85 | 1.00 | 5.00 | -.19 | .12 | -.28 | .24 |
| Academic satisfaction | 4.02 | .64 | 2.00 | 5.00 | -.50 | .11 | .46 | .22 |
| Academic engagement | 3.45 | .63 | 1.70 | 5.00 | -.05 | .11 | -.19 | .22 |
| Vigorous-absorption | 3.08 | .72 | 1.17 | 5.00 | .05 | .11 | .05 | .22 |
| Dedication | 4.01 | .71 | 2.00 | 5.00 | -.32 | .11 | -.56 | .22 |

*Note*. $N = 482$; *M* = mean; *SD* = standard deviation; Min = minimum; Max = maximum; SE = standard error

It is apparent from Table 11 above that the mean score for AS is above the scale's midpoint. This demonstrates that participants generally experience high levels of AS. On average, participants experienced moderate levels of WSC and AE, as the mean scores were slightly above the midpoint of the respective scales. The participants additionally reported relatively higher levels of Dedication than Vigourous-absorption. Field (2013) states that there are two main ways in which distributions can deviate from a normal distribution, namely skew and kurtosis. A value above or below 0 either skew or kurtosis value indicates a deviation from normal. In terms of normality, the distribution scores for WSC is slightly negatively skewed and the height of the distribution deviates slightly from the norm as it is platykurtic. The distribution of the AS scale is negatively skewed, which indicates that there were frequent high scores in the distribution. In other words, participants mostly selected a response that was above the mean for AS. However, it is slightly leptokurtic in its shape, indicating that it is a heavy-tailed distribution. The distribution of the AE scale indicates a minor negatively skewed distribution, however is more symmetrical that the other distributions, with a slight platykurtic kurtosis. The Dedication dimension of AE is

negatively skewed and platykurtic while the Vigourous-absorption dimension is slightly positively skewed and has a kurtosis close to that of a normal distribution.

The researcher created descriptive statistics for participants who worked part-time and full-time (i.e. less than 20 hours and 40 hours or more per week) to determine the mean statistics between each group (see Table 12). This was done because of the central interest of the study with regards to investigating differences between students who study and simultaneously work part-time or full-time. These descriptive statistics could provide substantial evidence for results found in the analyses testing the hypotheses. The full-set of descriptives can be found in Table D1, Appendix D. On average, participants who worked less than 20 hours per week experienced low levels of WSC, as the mean score was slightly below the midpoint. Those participants who worked for 40 hours or more per week experience moderate levels of WSC. Participants from both groups generally experience moderate to high levels of AS, while all participants experience moderate levels of AE. Interestingly, all participants from both groups (part-time and full-time employment) reported a level of Dedication higher than Vigourous-absorption (see table D1, Appendix D).

Table 12

*Descriptive Statistics for the WSC, AS and Reduced 10-item AE Scales for Type of Employment*

| Type of Employment | | *N* | *M* | *SD* | Min | Max |
|---|---|---|---|---|---|---|
| Part-time employment (Less than 20 Hours) | WSC | 85 | 2.84 | .77 | 1.00 | 4.75 |
| | AS | 95 | 3.88 | .59 | 2.17 | 5.00 |
| | AE | 95 | 3.50 | .65 | 1.90 | 5.00 |
| Full-time Employment (40 Hours or more) | WSC | 326 | 3.38 | .83 | 1.00 | 5.00 |
| | AS | 387 | 4.06 | .65 | 2.00 | 5.00 |
| | AE | 387 | 3.44 | .63 | 1.70 | 5.00 |

*Note*. *M* = mean; *SD* = standard deviation; Min = minimum; Max = maximum; SE = standard error; WSC = work-school conflict; AS = academic satisfaction; AE = academic engagement

**Independent samples *t*-test**

To determine significant differences found in the descriptive analysis and examine hypotheses 1a-c, independent samples *t*-tests were conducted. This particular test is used to assess whether significant differences exist on a dependent variable (i.e. WSC, AS and AE) by a

dichotomous independent variable (i.e. part-time vs full-time employment). The assumptions include testing for independent means, normality and homogeneity of variance. The *t*-tests are one-tailed with a *p* value set at .05. This ensures a 95% certainty that the difference detected did not occur by chance (Field, 2013). The assumptions are discussed below, thereafter the results of the independent samples *t*-tests are presented. In addition, the non-parametric Mann-Whitney U test was used to confirm the results of the independent samples *t*-tests and is discussed in conjunction with the results of independent samples *t*-tests.

**Assumptions of the *t*-test.** The following assumptions were considered prior to the analysis.

***Independent means.*** Field (2013) states that tests comparing two or more independent means, the observations in the different groups should be independent. The independent variable in this study was type of employment and was made up of two groups (i.e. part-time versus full-time work). Participants who selected the option of "less than 20 hours" worked falls under part-time employment, while those participants who chose the option of working "40 hours or more" were categorized under full-time employment. The two groups from the type of employment variable were independent because those working less than 20 hours per week cannot be working more than 40 hours per week too. Therefore, both groups were independent from one another and the assumption was upheld.

***Normality.*** This assumption requires the sampling distributions to be normally distributed and were tested visually by conducting histograms (see Appendix E). Figures E1-E3 depict the distributions of WSC, AS and AE of students working part-time and full-time respectively. In Figure E1, the distribution of students working part-time is relatively normal, however the distribution of students working full-time deviates slightly from a normal distribution. The distributions in Figure E2 differ in shape and size, however both indicate a negatively skewed distribution. Figure E3 indicates a distribution that deviates slightly from the normal. In addition, Skew and Kurtosis statistics were consulted and attested the visual check for normality. Although the distributions did not indicate serious deviations from normality, the assumption was violated. The non-parametric test of Mann-Whitney U was applied to test for the mean ranks as a cross-check for the results of the independent samples *t*-tests. An advantage of using the Mann-Whitney U test is that there is no assumption of normality, therefore this test was justified in being used.

Field (2013) states that this test identifies the differences in the ranked positions of scores in the two groups of the independent variable (e.g. part-time employment and full-time employment). The distributions are not the same in shape and size but are more or less symmetrical, therefore the results from the independent samples *t*-tests were justified (discussed in detail below).

***Homogeneity of variance.*** When comparing independent groups, the variances of the different groups should be similar. Levene's Test for the Equality of Error Variances was used to assess this assumption. Field (2013) states that if the Levene's test is not significant ($p > .05$), then the assumption has been met. However, if it is significant ($p < .05$) then group variances are significantly different and the assumption has been violated. The assumption of homogeneity of variance was satisfied for all tests, as all tests were not significant. Therefore suggesting that the variances between groups are similar. Levene's test statistics can be found in Table 13. However, it should be noted that a large sample size may influence the Levene's statistic.

Table 13

*Levene's Test Statistics for Homogeneity of Variance*

| | Levene Statistic | Significance value |
|---|---|---|
| Work-school conflict | 1.08 | .30 |
| Academic satisfaction | 3.14 | .08 |
| Academic engagement | .14 | .71 |

Note. $p = .05$.

## Comparing means of Type of Employment

**Work-school conflict.** An independent samples *t*-test was performed comparing the mean WSC scores of students who worked part-time (less than 20 hours per week) and full-time (40 hours or more per week). As predicted, those students who worked part-time ($M = 2.84$, $SD = .77$, $N = 85$) experienced less WSC than students who worked full-time ($M = 3.38$, $SD = .83$, $N = 326$), $t(409) = -5.47$, $p < .001$, two-tailed. As discussed earlier, the Mann-Whitney U test was performed (see Table F1, Appendix F) to verify the result above wherein the test echoed the findings of the independent samples *t*-test performed. The result was significant ($z = 5.38$, $p < .001$), whereby the mean rank (222.05) of those students working full-time was still greater than the mean rank (144.46) those students who worked part-time. Therefore, despite weaknesses present in the data,

the tests indicate that on average, students in full-time employment experience more WSC than those students in part-time employment. The effect size was calculated by using Cohen's d for each *t*-test whereby a value of .10 indicates a small effect size, .30 represents a medium effect size and .50 or greater indicates a large effect size (Cohen, 1988). The difference of .54 scale units indicated a large effect, ($d$ = .67), and the 95% CI [-.74, -.35] around the difference between group means was relatively precise. Therefore hypothesis 1a was supported.

**Academic satisfaction.** An independent samples *t*-test was performed comparing the mean AS scores of students who worked part-time (less than 20 hours per week) and full-time (40 hours or more per week). On average, students in part-time employment ($M$ = 3.88, $SD$ = .59, $N$ = 95) experienced less AS than students in full-time employment ($M$ = 4.06, $SD$ = .65, $N$ = 387). The difference of .18 scale units, 95% CI [-.33, -.04], was significant $t(480) = -2.49$, $p < .05$ and indicated a small to medium-sized effect, ($d$ = .30). Similarly, for AS, the results of the independent samples *t*-test was verified in that there was a significant difference in the mean-rank between working students in part-time employment and those working students in full-time employment. The non-parametric test results are found in Table F1, Appendix F. The mean rank (205.27) of those working students in part-time employment is less than the mean rank (250.39) of those students who work full-time. Therefore, the result did not provide support for hypothesis 1b.

**Academic engagement.** The mean AE scores of working students who worked part-time (less than 20 hours per week) and full-time (40 hours or more per week) were compared by using an independent samples *t*-test. On average, working students who worked part-time had slightly more AE ($M$ = 3.50, $SD$ = .65, $N$ = 95), than those working students who worked full-time ($M$ = 3.44, $SD$ = .63, $N$ = 387). This difference, .06, 95% CI [-.08, .20], was not significant $t(480) = .87$, $p$ = .388, and represented a small effect size ($d$ =.09). Therefore, the results concluded that there was no significant difference between the mean AE scores of working students in part-time employment and those in full-time employment. Thus, hypotheses 1c was rejected. Once again, the results of the Mann-Whitney U test (see Table F1, Appendix F) corroborated with the result of the independent samples *t*-test, whereby the mean rank (250.12) for students working part-time was slightly higher than the mean rank (239.38) of those working students who partook in full-time employment. However the result was not significant ($p$ = .50), therefore hypothesis 1c was not supported.

## Mediation Analyses

Regression analysis was used to investigate the hypothesis that WSC mediates the effect of type of employment on AS and AE of working students. This was to determine whether WSC was mandatory for the influence of type of employment on working students' AS and AE. Baron and Kenny's (1986) conditions for a mediation analysis was consulted initially. These conditions are that in the first model, the predictor must significantly predict the outcome variable; in the second model, the predictor must significantly predict the mediator; in the third model, the mediator must significantly predict the outcome variable and lastly, the predictor variable must predict the outcome variable less strongly in the third model than in the first model. Field (2013) states that this approach is limited in its fourth condition as it raises the question of how much less strength is necessary to infer mediation. As there is no particular bound for this condition, a more robust method of testing the indirect effect was implemented. The researcher used a percentile bootstrap estimation approach with 10000 samples (Shrout & Bolger, 2002), with the PROCESS macro Version 3 for IBM SPSS developed by Hayes (2017). One can distinguish the direct effect of type of employment on AS and AE, which is the relationship between these variables, controlling for WSC, and the indirect effect of type of employment on AS and AE through WSC.

To assess the diagnostics and model fit for the mediation analysis, multiple regression was performed, controlling for age, gender, perceived primary role, academic institution and qualification for each outcome variable (AS and AE). Four, two-step multiple hierarchical regression analyses were conducted, whereby each model included the five covariates, at least one independent variable (type of employment and WSC) and one dependent variable (AS and AE). The covariates were entered in step one, while the independent variables were entered in step two (see Tables 14 and 15).

Table 14

*Predictor Variables in Each Multiple Regression Model*

| Model | Predictor Variables[a] |
|---|---|
| 1 | Age, gender, perceived primary role, academic institution and qualification |
| 2 | Age, gender, perceived primary role, academic institution, qualification, type of employment and work-school conflict |

Criterion variable: [a]Academic satisfaction

Table 15

*Predictor Variables in Each Multiple Regression Model*

| Model | Predictor Variables[b] |
|---|---|
| 3 | Age, gender, perceived primary role, academic institution and qualification |
| 4 | Age, gender, perceived primary role, academic institution, qualification, type of employment and work-school conflict |

Criterion variable: [b]Academic engagement

**Assumptions of multiple regression analysis.** These assumptions were assessed to determine the model fit of the data and to ascertain whether it was suitable for mediation.

***Level of measurement.*** Field (2013) affirms that the outcome variable should be measured on an interval or ratio scale and predictor variables should be measured on categorical or interval scales. Type of employment, along with the covariates (gender, perceived primary role, academic institution and qualification) were measured on categorical scales, while WSC, AS and AE, along with the covariate age were measured on interval scales, thereby satisfying this assumption.

***Adequate sample size.*** The following formula indicates an adequate sample size for regression analyses: $N > 50 + 8m$, where "m" signifies the number of independent variables. For each model, only one independent variable is used. The total sample size is 482 which far exceeds the adequate sample size for regression analyses, even after adding predictors to the model, therefore the assumption was met.

***Model bias.*** Bias is assessed by determining the presence of any outliers and influential cases in the data. Tabachnick and Fidell's (2014) recommendation to identify outliers was used whereby cases with standard residual values greater than 3.30 or less than -3.30 may be problematic. For all regression analyses, the standardised residuals were within this recommended bound. Stevens (2002) argues that one should first evaluate whether influential cases are present by using Cook's distance, before removing any outliers. A case presents undue influence if its Cook's distance is greater than 1 (Cook & Weisberg, 1982). The residuals statistics were examined for extreme cases for all regression analyses. Cook's distances (see Table 16 below) for each model were below one indicating that influential cases were unlikely on any of the models (Field, 2013). Table 16 indicates the maximum Mahalanobis Distance and Centered Leverage values which

demonstrate that there is no cause of concern about whether the regression models were influenced by the data. Hence, the models were deemed accurate.

Table 16

*Maximum Mahalanobis Distance, Cook's Distance, Centered Leverage and Standard Residuals*

| Outcome Variable[a] | Max Mahalanobis Distance | Max Cook's Distance | Centered Leverage | | Std. Residual | |
|---|---|---|---|---|---|---|
| | | | Min | Max | Min | Max |
| AS | 25.87 | .04 | .01 | .07 | -3.23 | 2.02 |
| AE | 25.87 | .05 | .01 | .07 | -2.60 | 2.78 |

*Note.* Predictor Variables[a]: Age, gender, perceived primary role, academic institution, qualification, type of employment and work-school conflict. $N = 482$. WSC = work-school conflict. AS = academic satisfaction. AE = academic engagement. Std. = standardised, Min = minimum, Max = maximum

***Linearity.*** This assumption was tested by plotting each dependent variable against the independent variable in a scatterplot, which then should formulate a straight-line pattern for the assumption to be held (Pallant, 2013). A scatter matrix was constructed and can be found in Appendix G. The data points in all scatterplots followed a straight line pattern, thereby fulfilling the assumption. However, it should be noted that the relationship between type of employment and AE was weak. Additivity was thus assumed for each model (Field, 2013).

***Independent residuals.*** In keeping with Field (2013) and Pallant (2013), residuals represent the differences between the observed data and the predictions of the model. These residuals should be uncorrelated and are checked by using the Durbin-Watson statistic. Field (2013) states that a Durbin-Watson test statistic can vary between 0 and 4, with a value of 2 indicating that the residuals are uncorrelated. Therefore, Field (2013) suggests that a Durbin-Watson statistic close to 2 is unproblematic. Table 17 demonstrates the Durbin-Watson statistic for each multiple regression output. As each Durbin-Watson statistic was close to 2, errors were not found to be related to one another, therefore the assumption was met.

Table 17

*Durbin-Watson Statistic for Each Regression Output*

| Model | Outcome Variables | Durbin-Watson Statistic |
|---|---|---|
| 1 | Academic satisfaction | 2.02 |
| 2 | Academic engagement | 2.07 |

Predictors: Age, gender, perceived primary role, academic institution, qualification, type of employment and work-school conflict

***Normality.*** Histograms of the standardised residuals were generated and assessed to test the assumption of normality. The histogram in Figure H1 in Appendix H is negatively skewed, therefore indicating a deviation from normality. However, Figure H2 approximated a bell-shaped curve. In addition, the Normal Probability Plot (P-P) of regression standard residuals was generated to observe whether the observed data points fell close to the diagonal line (Pallant, 2013). The Normal P-P plot of regression standardised residuals can be found in Appendix I. The P-P plot for the AE outcome variable indicated observed data points that fell on the diagonal line, therefore meeting the assumption of normality. The P-P plot for the AS outcome variable indicated that the observed data points deviated slightly from the diagonal line. Thus, it was determined that the standard residuals were not perfectly normally distributed for the regression analysis conducted (see Figure I2, Appendix I). The analysis was therefore rerun using bootstrapping to attain more confidence in the results found. Bootstrapping allows numerous random samples from the original sample to be generated to create robust intercept and confidence intervals based on the original sample data (Filed, 2013). The default option was used from the SPSS programme, whereby 1000 samples for bootstrapping at a 95% confidence interval was selected to conduct the analysis. Thus, the assumption of normality was subsequently upheld.

***Homoscedasticity.*** This assumption implies that the residuals need to have the same variance across all values of the independent variables (Field, 2013). To assess this assumption, standardised predicted residuals were plotted against standardised observed residuals in scatterplots for each model. Tabachnick and Fidell (2014) state that the assumption is violated if the data points form a cone-shaped pattern (i.e. indicates heteroscedasticity). Figures J1-J12 in Appendix J illustrate that the data points were relatively the same for all figures, indicating homoscedasticity.

***Multicollinearity.*** Pallant (2013) posits that evidence for multicollinearity in the data is represented by strongly related ($r > .90$) independent variables. The average Variance Inflation Factor (VIF) for each independent variable was evaluated to ascertain the presence of multicollinearity. The regression may be biased and thus indicative of multicollinearity if the average VIF is substantially greater than 1 (Bowerman & O' Connell, 1990). The average VIF was not substantially greater than 1 for each outcome variable, therefore this assumption was met.

Table 18

*Multicollinearity Diagnostic for Each Multiple Regression Model*

| Model | Outcome Variables | Average VIF | |
|---|---|---|---|
| | | Step one | Step two |
| 1 | Academic satisfaction | [a]1.18 | [b]1.4 |
| 2 | Academic engagement | [a]1.18 | [b]1.4 |

Predictor variables: [a]Age, gender, perceived primary role, academic institution, qualification. [b]Age, gender, perceived primary role, academic institution, qualification, type of employment and work-school conflict

***Non-zero variance.*** This assumption is upheld if the variances of all independent variables and dependent variables take on non-zero values. The standard deviations of the variables type of employment, WSC, AS and AE can be found in Table D1 in Appendix D. The standard deviations are non-zero values, therefore this assumption was fulfilled.

## Multiple Regression Results

**Multiple regression with AS outcome variable.** In step one of the analysis of the AS outcome variable, the control variables accounted for 6.6% of the variance in AS ($R^2 = .066$). The overall model was statistically significant ($F_{5,\ 396} = 5.58$, $p < .001$). Academic institution and qualification were also statistically significant predictors in the model, as shown in Table 19. On average, those working students who were registered at a university in the USA had a higher score of AS ($b = .15$, $p < .05$) than those working students who were enrolled in a South African university. While holding other variables in the model constant, those working students enrolled in an undergraduate programme had a higher score of AS ($b = .27$, $p < .01$) than those working students who were studying a postgraduate degree.

Table 19

*Standard Multiple Regression Results with AS (dependent variable) and Age, Gender, Perceived Primary role, Academic Institution and Qualification as independent variables*

| | | | | | 95% CI | |
|---|---|---|---|---|---|---|
| | *b* | *SE B* | *β* | *t* | LL | UL |
| Intercept | 3.79 | .15 | | 25.43*** | 3.50 | 4.09 |
| Age | .00 | .00 | .02 | .35 | -.01 | .01 |
| Gender | .07 | .06 | .05 | 1.11 | -.05 | .19 |
| Perceived primary role | .07 | .07 | .05 | .89 | -.08 | .21 |
| Academic institution | .15 | .07 | .12 | 2.18* | .02 | .29 |
| Qualification | .27 | .08 | .17 | 3.18** | .10 | .43 |

*Note.* AS = academic satisfaction*; b* = unstandardised beta coefficient; *SE B* = standard error of the unstandardised beta coefficient; *β* = standardised beta coefficient; CI = confidence interval for unstandardised beta coefficient; LL = lower limit; UL = upper limit.

*n* = 482 after pairwise deletion of missing data.

*$p < .05$, **$p < .01$, ***$p < .001$

Step two of the analysis included the type of employment and WSC. The multiple regression analysis revealed that, when taken together, age, gender, perceived primary role, academic institution, qualification, type of employment and WSC explained 8.6% of the variance in AS of working students ($R^2$ = .086). The incremental change in explained variance was significantly higher after type of employment and WSC was entered into the model ($\Delta R^2$ = .02, $p < .05$). The adjusted $R^2$ (.069*)* indicated that the model would account for 1.7% less variance in AS, if it were derived from the population rather than from the current sample. This small difference suggests a strong generalizability for the model. The model was statistically significant ($F_{7, 394} = 5.27$, $p < .001$).

**Multiple regression with AE outcome variable.** In step one of the analysis of the AE outcome variable, the control variables accounted for 4.8% of the variance in AE ($R^2$ = .048). The overall model was statistically significant ($F_{5, 396} = 3.97$, $p < .05$). The only statistically significant predictors of the final model were age, perceived primary role and academic institution (see Table 20). As age increases by one unit (in years), AE increases by .01 units. While holding all other variables constant, those working students who were registered at a university in the USA had a

lower score of AE ($b$ = -.18, $p$ < .05) than those working students who were enrolled in a South African university. On average, those working students who perceived their primary role to be a student, had a higher score of AE ($b$ = .20, $p$ < .01) than those working students who perceived their primary role to be an employee.

Table 20

*Standard Multiple Regression Results with AE (dependent variable) and Age, Gender, Perceived Primary role, Academic Institution and Qualification as independent variables*

| | | | | | 95% CI | |
|---|---|---|---|---|---|---|
| | *b* | *SE B* | *β* | *t* | LL | UL |
| Intercept | 3.01 | .15 | | 20.38*** | 2.72 | 3.30 |
| Age | .01 | .00 | .17 | 3.11** | .01 | .02 |
| Gender | .06 | .06 | .05 | .97 | -.06 | .18 |
| Perceived primary role | .20 | .07 | .15 | 2.74** | .06 | .35 |
| Academic institution | -.18 | .07 | -.14 | -2.52* | -.31 | -.04 |
| Qualification | .13 | .08 | .09 | 1.59 | -.03 | .30 |

*Note.* AE = academic engagement; *b* = unstandardised beta coefficient; *SE B* = standard error of the unstandardised beta coefficient; *β* = standardised beta coefficient; CI = confidence interval for unstandardised beta coefficient; LL = lower limit; UL = upper limit.

$n$ = 482 after pairwise deletion of missing data.

*$p$ < .05, **$p$ < .01, ***$p$ < .001

Step two of the analysis included the type of employment and WSC. The multiple regression analysis revealed that, when taken together, age, gender, perceived primary role, academic institution, qualification, type of employment and WSC explained 5.5% of the variance in AS of working students ($R^2$ = .055). The incremental change in explained variance was lower after type of employment and WSC was entered into the model, however was not significant ($\Delta R^2$ = .01, $p$ = .22). The overall model was statistically significant ($F_{7, 394}$ = 3.28, $p$ < .05).

**Mediation Effects of WSC**

Hayes' (2017) PROCESS macro Version 3 for IBM SPSS terminology was used on the following results. Covariates were added to the models to identify whether partial influence was demonstrated on the relationships of interest. This was previously verified by the multiple

regression analysis to deem model fit. Only qualification (i.e. postgraduate versus undergraduate) indicated partial influence over the mediation model of WSC between type of employment and AS (see Table 21). Age, perceived primary role (i.e. the participants' identification of their preferred role of "employee" or "student") and academic institution indicated significant partial influence over the mediation model of WSC between type of employment and AE. This therefore prompted further investigation and explanation in addition to the suggested hypotheses.

Using the proportion effect size in a mediation analysis is arguably the most simple but also problematic when the direct effect and indirect effect are of opposite signs (Miočević, O'Rourke, MacKinnon & Brown, 2018). The signs of the study's observed direct effects and indirect effects were undeniably opposite (see Figures K1-K2 in Appendix K), therefore the proportion effect size calculation was not used. In addition, the ratio method to calculate the effect size produces inconsistent results if the sample size is less than 500 (Miočević et al., 2018). Fairchild, MacKinnon, Taborga, and Taylor (2009) posits that the weaknesses of the proportion-mediated effect size measure and limitations of the component effect size measure from the regression analysis renders these measures impractical. Therefore Fairchild et al.'s (2009) and G. D. Walters' (2018) suggestion of using the partially standardised indirect effect size to interpret practical significance was consulted. The results of the mediation analyses are found in Tables 21 ad 22.

**Type of employment, WSC and AS.** There was a significant indirect effect of type of employment on AS through WSC, $b$ = -.05, Ba CI [-.11, -.01], while holding age, gender, perceived primary role, academic institution and qualification constant. Therefore, WSC was found to mediate the relationship between type of employment and AS and thus providing support for hypothesis 2a. Figure K1 in Appendix K demonstrates the mediation model. Type of employment was found to explain 8% of the variance in AS through WSC ($R^2$ = .08), with a partially standardised indirect effect of .09. Therefore, indicating low practical significance.

Table 21

*Mediation Results with dependent variable (AS) and independent variable (type of employment) and mediator (WSC)*

| | | | | | 95% CI | |
|---|---|---|---|---|---|---|
| | *b* | *SE B* | *β* | *t* | LL | UL |
| Constant | 4.01 | .20 | | 20.18*** | 3.62 | 4.40 |
| Type of employment | .28 | .11 | .44 | 2.63** | .07 | .49 |
| WSC | -.10 | .04 | -.13 | -2.60** | -.18 | -.02 |
| Age | -.00 | .00 | -.01 | -.25 | -.01 | .01 |
| Gender | .06 | .06 | .04 | .93 | -.06 | .18 |
| Perceived primary role | .13 | .09 | .09 | 1.47 | -.04 | .30 |
| Academic institution | .09 | .08 | .07 | 1.14 | -.06 | .23 |
| Qualification | .25 | .08 | .17 | 3.17** | .10 | .41 |

*Note.* $b$ = unstandardised beta coefficient; *SE B* = standard error of the unstandardised beta coefficient; $\beta$ = standardised beta coefficient; CI = confidence interval for unstandardised beta coefficient; LL = lower limit; UL = upper limit; AS = academic satisfaction; WSC = work-school conflict

$n$ = 402. *$p$ < .05, **$p$ < .01, ***$p$ < .001

**Type of employment, WSC and AE.** WSC did not mediate the relationship between type of employment and AE. The indirect effect of type of employment on AE through WSC was not significant, $b$ = -.04, Ba CI [-.09, .01], while holding perceived primary role, gender, age, marital status, academic institution and degree constant. Type of employment was found to explain 3.86% of the variance in AE through WSC ($R^2$ = .0386.), with a partially standardised indirect effect size of -.06. However, it did not meet the conditions of a mediation analysis as neither WSC nor type of employment were found to predict the AE of working students, while holding the control variables constant. Therefore, hypothesis 2b was rejected.

Table 22

*Mediation Results with dependent variable (AE) and independent variable (Type of employment) and mediator (WSC)*

| | | | | | 95% CI | |
|---|---|---|---|---|---|---|
| | *b* | *SE B* | *β* | *t* | LL | UL |
| Constant | 3.27 | .20 | | 16.21*** | 2.87 | 3.67 |
| Type of employment | .13 | .11 | .21 | 1.20 | -.08 | .34 |
| WSC | -.07 | .04 | -.10 | -1.87 | -.15 | .00 |
| Age | .01 | .00 | -.13 | 2.38* | .00 | .02 |
| Gender | .03 | .06 | .03 | .51 | -.09 | .16 |
| Perceived primary role | .20 | .09 | .15 | 2.31* | .03 | .38 |
| Academic institution | -.21 | .08 | -.16 | -2.73** | -.36 | -.06 |
| Qualification | .09 | .08 | .06 | 1.17 | -.06 | .25 |

*Note.* $b$ = unstandardised beta coefficient; *SE B* = standard error of the unstandardised beta coefficient; $\beta$ = standardised beta coefficient; CI = confidence interval for unstandardised beta coefficient; LL = lower limit; UL = upper limit; AE = academic engagement; WSC = work-school conflict

$n$ = 402. *$p$ < .05, **$p$ < .01, ***$p$ < .001.

**Summary of Results**

The results of the research indicate that differences do exist between working students who work varying hours. Participants who worked part-time, on average, experienced less WSC, less AS and more AE than those participants who were employed full-time. However, only hypothesis 1a was supported, while hypotheses 1b and 1c were rejected. The first step of the multiple regression analyses revealed that academic institution (i.e. South Africa and USA) and qualification (postgraduate degree and undergraduate degree) predicted AS, while age, perceived primary role (employee and student) and academic institution were significant predictors of AE. It was established that working students who attended a university in the USA experienced more AS than their peers who attended a South African university. However, those working students who were registered at a university in the USA had less AE than those working students who were enrolled in a South African university. While holding other variables constant, those working students enrolled in an undergraduate programme had more AS than those working students who were studying a postgraduate degree. On average, those working students who perceived their

primary role to be a student, experienced higher AE than those working students who perceived their primary role as an employee. Similarly, in the mediation analysis, academic institution was consistently shown to predict academic outcomes (AS and AE) of working students. Mediation analyses were conducted to determine whether WSC was the underlying mechanism that influenced AS and AE of working students. WSC was found to mediate the relationship between type of employment and AS, however was not supported in mediating the relationship between type of employment and AE. Thereby supporting hypothesis 2a and rejecting hypothesis 2b. Table 23 summarizes the findings.

Table 23

*Summary of Hypotheses and Findings*

| Hypothesis | | Data Analytic procedure | Support |
|---|---|---|---|
| 1a. | Working students in part-time employment (work less than 20 hours per week) experience, on average, less WSC than those working students in full-time employment (40 hours or more per week). | Independent samples *t*-test | Yes |
| 1b. | Working students in part-time employment (work less than 20 hours per week) experience, on average, more AS than those working students in full-time employment (40 hours or more per week). | Independent samples *t*-test | No |
| 1c. | Working students in part-time employment (less than 20 hours per week) experience, on average, more AE than those working students in full-time employment (40 hours or more per week). | Independent samples *t*-test | No |
| 2a. | WSC mediates the relationship between type of employment and AS of working students. | Regression | Yes |
| 2b. | WSC mediates the relationship between type of employment and AE of working students. | Regression | No |

The study's findings demonstrated inconsistent results to that of literature researched. Possible explanations for the study's findings are discussed further in the next section.

## Discussion

This study aimed to explore the impact of type of employment (part-time or full-time) on working students' WSC and academic outcomes of AS and AE, while holding various covariates constant. The results of the research indicate that there are differences between working students' experiences of AS and AE, as well as the type of employment they participate in. WSC was also found to mediate the relationship between type of employment and AS, however was not supported in mediating the relationship between type of employment and AE. Research in the work-school interface has focused on the impact of part-time work of working students, thereby excluding an important type of employment (i.e. full-time work) that is very much prevalent in the contemporary world of work-school. These individuals are able to be employed and study because of various configurations of study programmes available to accommodate full-time employees, such as blended learning, online courses and after hour programmes (Castles, 2004; Korr, Derwin, Greene, & Sokoloff, 2012; Ruey, 2010; Tainsh, 2016). To a certain degree, flexible work arrangements also allow working students to be present on campus to participate in academic activities necessary for engagement and formulate attitudes about the university (Korr et al., 2012; Tainsh, 2016). The covariates included in this study were selected because of the context of the study's sample and past studies demonstrated partial prediction of the outcome variables. In addition to the primary research question the researcher investigated the mediation effect of WSC between type of employment and the academic outcomes. The study produced conflicting results in that some of the researcher's assumptions (based on the results of previous research) were not supported, while some of the results found were directly in line with previous research findings. Preceding the discussion and interpretation of the results the psychometric properties of the scales are discussed. The section concludes with the theoretical and practical implications of this study and recommendations for future research.

### Psychometric Properties of the Scales

It is vital to reflect on the validity and reliability of the WSC, AS and AE scales within the current context of this study. Given that two separate data sets were used with participants from different countries (i.e. South Africa and USA), the researcher needed to ensure that contextual factors did not bias the response patterns. Internal consistency for the subscales (WSC, AS and AE) on the present study displayed evidence of the reliability of the sample used, because

Cronbach's alpha for each scale reflected as above .80. As expected, the EFA conducted on the WSC and AS subscale loaded onto one factor, therefore these subscales were considered to measure the intended constructs. However, the expectation of a three-dimensional subscale did not emerge as suspected in the AE scale and thus required further investigation as to why the expectation was not met. Some explanations are discussed below.

**Reduced 10-item AE scale.** In the current study, a two-factor structure emerged after EFA, contradicting Schaufeli et al.'s (2002) three-factor structure of AE. Items for vigour and absorption hung together as a single factor and was thus relabeled as "Vigourous-absorption", while Dedication emerged as one factor. Working students with high levels of Vigourous-absorption were characterized by total immersion in their studies (absorption) as well as having high levels of mental resilience and energy (vigour) while studying and being willing to exert an effort towards their studies. The two-factor engagement scale revealed in the present study is inconsistent with the European (Schaufeli et al., 2002) and South African (Pienaar & Sieberhagen, 2005) studies researched, as three factors emerged in both studies. Some plausible explanations are suggested.

In an attempt to understand this result, the researcher engaged with the work engagement scale (UWES-S), from which the AE scale was adapted. The AE scale draws on the concept of work engagement. In a work setting, dedication and vigour are the central dimensions of engagement. However, absorption is considered to play a less conspicuous role in work engagement (González-Romá, Schaufeli, Bakker, & Lloret, 2006; Schaufeli, 2005; Schaufeli, & Bakker, 2001). Absorption has been argued as an optimal state of experience characterized as effortless focus, a clear and harmonious mind and body, unaware of time and lack of self-consciousness (Csikszentmihalyi, 1990). Therefore, as the notion of AE is derived from work engagement (Schaufeli et al., 2002), absorption may have not been able to be expressed as its own factor in the study's sample because it is not a central dimension of AE. Evidence of the two-factor solution exists, whereby Shirom (2003) suggested that the vigour and absorption dimensions displayed a certain amount of redundancy due to high intercorrelations exceeding .65. The two-factor dimensionality was explored by Schaufeli et al. (2002a, b) by collapsing vigour and absorption into a single dimension. Schaufeli et al. (2002a, b) found that the two-factor solution was statistically significant, although small, goodness-of-fit statistic in comparison to the three-factor scale. The finding supports the present study's two-factor AE scale, consisting of

Vigourous-absorption and Dedication. This notion presents an opportunity for further investigation into the distinction of the absorption dimension of AE. One possible area of explanation could be the characteristics of the sample included in this study were different to that of the sample of Schaufeli et al.'s (2002) study, who adapted the AE scale. For instance, Schaufeli et al.'s (2002) study did not include participants who worked and studied simultaneously, rather, the students were undergraduate students enrolled in various academic programmes in Europe. These traditional students have different characteristics to that of working students, which may explain the scale validity of Schaufeli et al.'s (2002) study. Given these finding the AE scale used in this study may then not be the most suitable for investigating the AE of working students because of the various demographics associated with working students. These demographics include dependents, status of employment, age and time of enrollment (i.e. straight after secondary school or later in life).

The current sample may have been unfamiliar with some of the item phraseology compared to those participants in Schaufeli et al.'s (2002) study. Misinterpretation between cultures and languages is not uncommon when scales are applied over multiple contexts (Foxcroft & Roodt, 2006; van de Vijver & Leung, 2001). For example, the item "Time flies when I'm studying" contains a phrase that may be misinterpreted in varying contexts because "time flies" may not be known as "time passing by very quickly". To illustrate evidence of misinterpretation, Mostert et al.'s (2007) three-factor structure amongst South African students, noted that the item "When I'm studying, I feel mentally strong" was problematic in the Setswana language group. The researchers investigated the construct validity and reliability of the UWES-S, and the differences in engagement for different demographical groups (Afrikaans and Setswana speaking students). The translation of items containing uncommon words is said to possibly affect the responses of participants (Salanova, Schaufeli, Martínez, & Bresó, 2010). Therefore, Mostert et al. (2007) speculated that the item may have not been relevant to the Setswana-speaking participants to think of an individual person as mentally 'strong' or 'weak'.

It is worth noting that, although the AE scale differed from theoretical expectations, the reduced item AE scale and its sub-scales demonstrated acceptable internal consistency of AE and was thus appropriate for retaining and including in this analysis in a tertiary education context.

## WSC and Type of Employment

As hypothesized and expected, those working students who were employed part-time experienced less WSC than working students who were employed full-time. The proposed explanation for this is supported by Coleman's (1961) zero-sum time allocation theory, wherein the less time is available to exert effort onto academic related activities because most of a full-time working student's time is allocated to work activities. The significant difference in the experience of WSC depending on the type of employment, corroborates with time-based conflict which fall part of inter-role conflict (Creed et al., 2015; Greenhaus & Beutell, 1985). This particular type of conflict occurs when more than one role opposes limited disposable time (Creed et al., 2015). In this case, both the student role and work role would be in competition for the limited resource of time. The valuable resource of time becomes scarce, for the working student in full-time employment, because it is allocated more to work-related responsibilities and less to university-related responsibilities. Individuals thus experience conflict between the two roles because of having less time to accomplish tasks in both life domains. Working students who are employed part-time, work less hours, and thus have more hours available to participate in academic-related tasks and thus may not feel as if their work interferes with their academic role. The large effect size ($d$ = .67) indicates practical significance, and this makes intuitive sense for working students working full-time to experience higher interference of work to school conflict. This finding is aligned to that of other studies that found number of work hours to predict WSC (Butler, 2007; Markel & Frone, 1998). Although this finding is intuitive, the study revealed thought-provoking results concerning the academic outcomes (AS and AE) of working students.

## AS and Type of Employment

**Differences between part-time and full-time employment.** Contrary to what was expected, working students who were employed part-time experienced less AS than working students who were employed full-time. This is counter-intuitive, because it was assumed that working more hours would lead to less AS due to more time spent at work, preventing working students to spend the expected amount of time meeting university demands or engaging with university services. Engaging with the university allows individuals to formulate perceptions of the university and thus an attitude towards their university (Butler, 2007). Spending less time on university-related activities (e.g. working on assignments, attending lectures, joining societies)

therefore compromises the opportunity to form positive attitudes regarding individuals' academic role. Literature has previously indicated this (Butler, 2007; Tessema et al., 2014).

Although the mean difference of AS between working students employed part-time and full-time was small, the difference was significant. Therefore indicating that working students participating in full-time work (i.e. working longer hours) display higher AS than their part-time working peers. AS is evaluated on the multidimensional opinion that an individual has on one's academic institution, including the campus, services and quality of education received (Butler, 2007; Mark, 2013; McNall & Michel, 2011; Strahan & Credé, 2015). This finding contradicts those of Tessema et al.'s (2014) study who found that students who worked 10 hours a week had the highest AS relative to those students who worked for more than 11 hours a week. Their study found that satisfaction began to decline as the number of hours of work increased, i.e. the difference in AS between groups (those who were unemployed, who worked between 1-10 hours, 11-15 hours, 16-20 hours, 21-30 hours, and 31 hours or more) was significantly lower, as each category of number of hours increased.

A possible reason why working students working full-time are more satisfied with their university might be that they take their studies less for granted because it is more difficult for them to achieve academic success by working full-time (Butler, 2007). Lowe and Gayle (2007) found that particularly mature students were highly motivated to achieve success in their academic role regardless of their family or work obligations. These students may also align their studies to their current work, therefore these individuals are attaining material from their studies that may be useful in their work setting. Campbell (1990) coined this as job-school congruence, whereby job requirements and university learning are complementary in that the work role requires the skills and knowledge acquired through university education. It may be that those working students in part-time employment are not involved in paid work that is associated with their current degrees. For example, some students work as waiters, bartenders and sale assistants as part-time employment, therefore finding no congruence between their work and studies. Butler (2007) argued that job-school congruence may provide students with opportunities to apply concepts studied at varsity at work, increasing their conceptual understanding and thus appreciation for the value of tertiary education. This therefore may be the case of the current study, as it is assumed that those individuals working full-time are working in jobs that correspond with their studies and

thus appreciate the opportunity to study further. The reverse may also be true, given that working students share relative experiences in their academic programmes undertaken at university. To illustrate, a working student, due to experiences in a working environment, may provide real-world examples or ideas to university assignments that may contribute to higher grades. This may increase academic satisfaction because of the knowledge learnt from the work setting to the school setting (Butler, 2007).

**Mediation between type of employment and AS.** As expected and corroborated with existing literature (Butler, 2007; Hammer et al., 1998; Markel & Frone, 1998), WSC is the underlying mechanism that mediates the relationship between the type of employment (e.g. number of hours worked) and AS of working students. A reason that the type of employment predicts AS of working students, through WSC, is because working students experience role conflict between that of their work and academic life. To illustrate, working students may feel stressed from not having the resources (e.g. time) to complete academic-related tasks because work-related demands have depleted those resources (e.g. time spent at work leaves less time available to attend to academic activities). Therefore, the expectation that working students' type of employment would be indirectly be related to AS was justified. This result supports the finding of the difference in AS experienced between working students who are employed part-time and those employed full-time.

### AE and Type of Employment

**Differences between part-time and full-time employment.** The findings indicated that, within this sample, working students employed part-time experienced slightly more AE than those working students who were employed full-time. This finding corroborated with Forbus et al.'s (2011) study who suggested that the more hours spent at work, the less time students had to engage with academic related tasks and activities. Spending longer hours at work is associated with fatigue, burnout, impaired health and lowered happiness (Christian & Ellis, 2011; Ganster, Rosen, & Fisher, 2018; Greenhaus & Beutell, 1985), thereby affecting the energy levels, concentration and metal resilience (i.e. Vigourous-absorption) required for engaging in academic-related tasks and functions. Resources such as energy, time and attention span are depleted when the work role conflicts with the student role (Hobfoll & Wells, 1989). Therefore, there are less resources available for use in the competing role (student role), which influences the extent of engagement

possible with one's academics. However, the difference of AE experienced between working students who worked part-time and those who worked full-time in the present study was insignificant.

In the traditional approach to reporting statistical results in dissertations, in many of the Social Sciences, non-significant results are not engaged with in the discussion. In this case, however, there may be some value in a discussion of some of the non-significant findings as opportunities for further studies. The findings of this study may suggest that irrespective of students working part-time or full-time, working students are equally engaged because of personal characteristics or factors. This outcome may be explained by the individual dimensions of the AE construct. For instance, the Dedication dimension includes having a sense of enthusiasm and inspiration regarding one's studies, and a perception that one's studies are challenging. Vigorous-absorption may be that students experience high levels of energy, concentration and resilience, regardless of challenges. Therefore, when conflict arises, individuals' Vigorous-absorption may not be affected because of the resilience that they have in meeting demands from both the work and academic domain. It may be that efforts to being engaged stems from within, because one is inspired to engage with academic activities, regardless of how much time is allocated to meeting academic tasks. Working students therefore feel a sense of enthusiasm and significance towards their studies, making them dedicated to their studies, regardless of the type of employment they participate in. This warrants further enquiry into the individual subscales of AE.

It may also be that time or the amount of hours spent at work (type of employment) is not a predictor of AE, rather, it is predicted by the personality (personal characteristics) of the individual who works and studies coherently. For example, one may spend less hours engaged in academic work and be fully engrossed in one's academic role, whereby one may allocate more hours to academic work and essentially not engage completely. A study conducted by Kahu and Nelson (2018) looked at student engagement in understanding the mechanism of student success. The researchers suggest that AE is influenced by the interactions that occur between institutional (e.g. university policies and culture) and student factors (e.g. personality and motivation). Thus, proposing that it is not about how much time one has to be engaged in academic activities, but rather the engagement itself.

**Mediation between type of employment and AE.** In contrast to the findings of Creed et al. (2015) and Forbus et al. (2011), no evidence of mediation of the WSC variable and AE was detected in the present study. The finding of the mediation analysis supports the discussion above, as WSC did not mediate the relationship between the type of employment and AE of working students. It may be that the studies researched were not applicable in the present study's sample, given the bias that may occur with varying contexts presented in the current study.

***AE as a mediator.*** The present study revealed that WSC did not mediate the relationship between type of employment and AE. This finding was not that unforeseen, given the literature available, as some research studies have shown that WSC is unrelated to AE (Creed et al., 2015). Research has also indicated that AE acts as a mediator between variables. To illustrate, Chen (2005) found that AE mediated the relationship between support and academic achievement, while Salanova et al. (2010) demonstrated that engagement mediated the relationship between performance obstacles and education facilitators. Positive emotions and autonomy were found to predict academic performance and AE, whereby Oriol-Granado, Mendoza-Lira, Covarrubias-Apablaza, and Molina-López (2017) indicated that self-efficacy predicted higher levels of AE, thereby improving academic performance, demonstrating a mediating effect. In a study investigating the influences of student satisfaction, Bolliger (2004) found that students, from Southeastern universities in the USA, who were more engaged in academic-related tasks were also more satisfied with their academic institution. Therefore suggesting that AE is a predictor of student satisfaction. This finding may lead to future research endeavours in investigating the outcomes of AE in relation to students who work part-time and full-time.

## The Importance of Covariates

In determining model fit for the mediation analysis, multiple regression was performed to identify whether covariates had an undue influence on the outcome variables of the study. Despite excluding covariates from the present study's research question, the researcher out of personal interest decided that it would be interesting to discuss these findings, given that the researcher was a working student. Perceived primary role, qualification and academic institution emerged as covariates predicting academic outcomes (AS and AE). While holding all other variables constant, the academic institution (South Africa or USA) along with the programme of study (undergraduate or postgraduate) predicted AS. Perceived primary role (employee or student) and academic

institution were found to predict AE, while holding all other variables constant. The findings are discussed below.

**Academic institution.** The study demonstrated that, on average, working students enrolled in a tertiary education institution in the USA experienced more AS but less AE than those students who attended a South African university. Raisman (2002) postulates that working students may benefit from improved services offered by universities such providing additional online resources for working students, tutorials, free parking on campus and concessions to complete assignments. Therefore implying that the more resources available at the disposal of working students, the more likely they will be engaged and satisfied with their academic institution. It may be that students are more satisfied and engaged due to the services provided. It is possible that the resources granted by the tertiary institutions may be more useful or valuable to those working students, which therefore has influencing effects on attitudes toward tertiary education institutions. However, numerous influencing factors may emanate from the contextual differences between the universities, for instance, the values expressed by diverse people (Hofstede, 2011). Therefore, contextual differences may also explain the variance of AS and AE experienced by working students from the different universities.

**Qualification.** While holding other variables constant, the study found that those working students enrolled in an undergraduate programme had more AS than those working students who were studying a postgraduate degree. Typically, Saleh, Khan and Rahman (2016) suggest that postgraduates and academic staff members have a closer relationship and are more comfortable interacting with staff, and might have high expectations for their needs to be met. They argue that post-graduate students in their study had higher satisfaction of the service quality of a Bangladeshi university for the reason that postgraduate students are more mature and understanding of academic circumstances owing to their professional and personal experiences. The rather contradictory result of the present study, relative to Saleh et al.'s (2016), may be attributed to the resources available for working students offered in different academic programmes. It may be that more opportunities for more learning (tutorials provided in addition to lectures) and revision is provided within the undergraduate degrees, as opposed to post-graduate degrees because undergraduate degrees service more students than post-graduate degrees. A reason for this is that

not all students continue their studies with a post-graduate degree, therefore the pool of students is smaller for postgraduate programmes (Saleh et al., 2016).

**Perceived primary role.** The current study demonstrated that, on average, working students who perceive their primary role to be a student are more engaged than those working students who perceive their primary role to be an employee. This suggests that individual perceptions may have an influence over academic attitudes and engagement. Kim et al. (2010) reported on self-perceptions of college students in terms of their roles as students, employees and parents to offer an alternative distinguishing characteristic to working students. Kim et al. (2010) states that the more one perceives value in a specific role, the more priority that individual will allocate to that role when roles conflict or time demands strain the management of several roles. This accords to the earlier observation of Winn and Stevenson (1997) who noted that students working part-time perceived their academic role to be more of a priority than their role as an employee. Similarly, Lowe and Gayle (2007) found that between 37% and 43% of students rated their job and academic work as equally important. Indicating that more than half of the sample perceived one role more important than the other. This assumption suggests that individuals in the study who identify as students may be more engaged than those individuals who perceive their primary role to be an employee because of the importance or preference placed on the student role, therefore allocating more time to be engaged in academic-related activities. However, more research on this topic needs to be undertaken before the association between perceived social identity and academic outcomes of working students is more clearly understood.

These findings demonstrate some importance to the influence of covariates in academic outcomes of working students. Of the covariates selected in the present study, academic institution predicted the academic outcomes of working students' AS and AE. This suggests that the choice of university should therefore take some preference in working students' decision on university selection. Working students should consider the offerings of tertiary education institutions to optimize their learning experience while being able to meet work demands. Tertiary education institutions alternatively should consider the needs of working students to ensure that all students are satisfied and actively engaging in the available resources and services offered by the institution.

**Research Contributions and Suggestions for Future Research**

The present study has only focused on a portion of possible research areas within the work-school domain but may offer valuable insight for further investigation in this research area. Drawing on the findings of this study, research contributions and suggestions for future research studies are presented.

This study may aid secondary researchers with improving secondary analyses by identifying the limitations and advantages of the present study. For instance, researchers can review the method section for possible insight in conducting individual secondary analyses to reduce bias and inconsistency. The study may create a desire for further explanation, prediction and control of the work-school interface. This study focused on the negative aspect of the interplay between the employee and student roles. However, working while studying has been shown to provide numerous benefits (e.g. networking, work-school congruence and monetary rewards) and thus has a positive perspective that can be researched in more depth. This dominant perspective falls in the positive psychology paradigm wherein the work role facilitates the role undertaken by the student (Greenhaus & Powell, 2006; S. Marks, 1977). Type of employment is only one factor from the work role that may influence academic outcomes. Therefore, researchers should consider investigating work-school enrichment and academic outcomes. The work-school interface is an understudied area of research whereby the present study has explored only a portion of possible research areas because of the limited scope of the study. The present study focuses on one direction of conflict, which is the conflict of work to school. However, the student role may also impact the work role in the form of school-work conflict (McNall & Michel, 2011; Wyland et al., 2016). This therefore is another avenue of research for scholars to explore and make predictions of working students' academic and work outcomes.

The research study provides tertiary education institutions with insight to what extent type of employment is related to AS and AE of working students to ensure that these students' needs are being met. Other types of employment include and are not limited to flexi-time, remote work, self-employment, internships (Broadbridge & Swanson, 2005; Gakovic & Tetrick, 2003; Parasuraman & Simmers, 2001). Therefore, it may be in the interest of researchers in the work school domain to expand on the type of employment that may influence WSC, AS and AE of working students. Research in the academic sphere may lead to designing and developing

evaluation systems for academic institutions to determine whether they are providing a quality service to working students who have specific needs. Given that the study suggests that student success is not reliant on student engagement itself, it may be beneficial for researchers to investigate interactions between faculty and working students in terms of the quality of the professionalism, communication, encouragement, feedback, preparation, teaching methods, content, and accessibility. Researchers, tertiary education administrators and policy makers may benefit from research that investigates the working student population's diverse needs. Satisfying these needs promotes student success and retention. The study also creates awareness to what entices working students to continue their education and prevent student drop out. The study's analyses indicated some contrast between the different samples (South African and USA) in terms of academic institution for the sample population. Therefore, researchers may want to investigate contextual differences to further define working students across different contexts.

## Conclusion

Given that the number of hours spent at work diminishes the number of hours available to meet academic responsibilities, working students may be less focused on university-related activities (e.g. attending lectures and completing assignments), thereby influencing their satisfaction and engagement levels. AS and AE are critical in ensuring institutional success, recruitment and retention of students, improved student motivation, academic performance and student rankings. Subsequently, the researcher sought to investigate the extent to which working students' WSC, AS and AE differentiates in terms of the type of employment (part-time employment and full-time employment) in which these students participate. The mediating relationship of WSC on type of employment and academic outcomes (AS and AE) were additionally explored. Regardless of certain limitations, together the findings provide insight in understanding working students' experiences. It seems that, if working students are employed part-time, they experience less WSC and less AS than working students who are employed on a full-time basis. Tertiary education institutions should potentially consider developing or providing resources that will accommodate these working students to ensure optimal satisfaction and engagement. In so doing, tertiary education institutions would not only maximize the time and resources available for the working student's development, but also possibly improve retention rates in the long-run. The study also demonstrated that working students who work part-time and full-time experience about the same level of AE, possibly because of personal characteristics of

the sample or nuances within the measurement scale. Therefore, further investigation into AE is warranted across different contexts, including seeking a measurement scale that would accurately represent the AE of working students.

References

Adebayo, D. O. (2006). Workload, social support, and work-school conflict among Nigerian nontraditional students. *Journal of Career Development*, *33*(2), 125-141. doi: 10.1177/0894845306289674

Appleton, J. J., Christenson, S. L., & Furlong, M. J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in the Schools, 45*(5), 369-386. doi: 10.1002/pits.20303

Baron, M., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Mathematical and Statistical Psychology, 3*(2), 77-85. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1111/j.2044-8317.1950.tb00285.x

Beavers, A. S., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. *Practical Assessment, Research & Evaluation, 18*(6), 1-13.

Benos, D. J., Bashari, E., Chaves, J. M., Gaggar, A., Kapoor, N., LaFrance, M., … Zotov, A. (2007). The ups and downs of peer review. *Advances in Physiology Education*, *31*(2), 145-152. doi: 10.1152/advan.00104.2006.

Biddle, B. J. (1986). Recent developments in role theory. *Annual Review of Sociology*, *12*(1), 67-92.

Blanche, M. T., Durrheim, K., & Painter, D. (2006). *Research in practice: Applied methods for the social sciences (2nd ed.).* Cape Town, South Africa: University of Cape Town Press

Bowerman, B., & O'Connell, R. (1990). *Linear statistical models: An applied approach* (*2nd ed*.). Belmont, CA: Duxbury.

Broadbridge, A., & Swanson, V. (2005). Earning and learning: How term-time employment impacts on students' adjustment to university life. *Journal of Education and Work*, *18*(2), 235-249. doi: 10.1080/13639080500086008

Burns, R. B., & Burns, R. A. (2008). *Business research methods and statistics using SPSS*. London: Sage Publications Ltd.

Butler, A. B. (2007). Job characteristics and college performance and attitudes: A model of work-school conflict and facilitation. *Journal of Applied Psychology*, *92*(2), 500-510. doi: 10.1037/0021-9010.92.2.500

Callender, C. (2008). The impact of term-time employment on higher education students' academic attainment and achievement. *Journal of Education Policy*, *23*(4), 359-377.

Campbell, J. P. (1990). Modeling the performance prediction problem in industrial and organizational psychology. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp. 687–732). Palo Alto, CA: Consulting Psychologists Press.

Canabal, M. E. (1998). College student degree of participation in the labor force: Determinants and relationship to school performance. *College Student Journal*, *32*(4), 597–605.

Cassidy, S. (2012). Exploring individual differences as determining factors in student academic achievement in higher education. *Studies in Higher Education, 37*(7), 793-810.

Castle, J. E. (2003). Maximizing research opportunities: Secondary data analysis. *Journal of Neuroscience Nursing*, *35*(5), 287-290.

Castles, J. (2004). Persistence and the adult learner: Factors affecting persistence in open university students. *Active Learning in Higher Education*, *5*(2), 166-179. doi: 10.1177/1469787404043813

Catell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioural Research*, *1*, 245-276.

Chen, J. J. L. (2005). Relation of academic support from parents, teachers, and peers to Hong Kong adolescents' academic achievement: The mediating role of academic engagement. *Genetic, Social, and General Psychology Monographs*, *131*(2), 77-127.

Christian, M. S., & Ellis, A. P. (2011). Examining the effects of sleep deprivation on workplace deviance: A self-regulatory perspective. *Academy of Management Journal, 54*(5), 913-934.

Chung, E., Turnbull, D., & Chur-Hansen, A. (2014). Who are non-traditional students? A systematic review of published definitions in research on mental health of tertiary students. *Educational Research and Reviews*, *9*(22), 1224-1238. doi: 10.5897/ERR2014.1944

Cinamon, R. G. (2016). Integrating work and study among young adults: Testing an empirical model. *Journal of Career Assessment*, *24*(3), 527-542. doi: 10.1177/1069072715599404

Coleman, J. S. (1961). *The adolescent society: Academic achievement and the structure of competition*. New York: Free Press of Glencoe.

Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman and Hall.

Creed, P. A., French, J., & Hood, M. (2015). Working while studying at university: The relationship between work benefits and demands and engagement and well-being. *Journal of Vocational Behavior*, *86*, 48-57.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper.

Curtis, S. (2007). Students' perceptions of the effects of term-time paid employment. *Education and Training*, *49*(5), 380-390.

Curtis, S., & Shani, N. (2002). The effect of taking paid employment during term-time on students' academic studies. *Journal of Further and Higher Education*, *26*(2), 129-138.

Dolinsky, A. L. (1994). A consumer complaint framework with resulting strategies: An application to higher education. *Journal of Services Marketing*, *8*(3), 27-39. Retrieved from https://doi-org.ezproxy.uct.ac.za/10.1108/08876049410065598

Donnellan, M. B & Lucas, R. E (2013). Secondary data analysis. In T. D Little & P. E Nathan (Eds.), *The Oxford Handbook of Quantitative Methods Vol. 2* (pp. 665-677). New York, NY: Oxford University Press.

Dundes, L., & Marx, J. (2006). Balancing work and academics in college: Why do students working 10 to 19 hours per week excel? *Journal of College Student Retention: Research, Theory & Practice*, *8*(1), 107-120.

Fairchild, A. J., MacKinnon, D. P., Taborga, M. P., & Taylor, A. B. (2009). $R^2$ effect-size measures for mediation analysis. *Behavior Research Methods*, *41*(2), 486-498. doi: 10.3758/BRM.41.2.486

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

Field, A. (2013). *Discovering statistics using IBM SPSS statistics (4th ed.).* London, England: Sage Publications.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117-142. doi: 10.2307/1170412

Flores, L. Y., Navarro, R. L., Lee, H. S., Addae, D. A., Gonzalez, R., Luna, L. L., … Mitchell, M. (2014). Academic satisfaction among Latino/a and white men and women engineering students. *Journal of Counseling Psychology, 61*(1), 81-92. doi: 10.1037/a0034577

Forbus, P., Newbold, J. J., & Mehta, S. S. (2011). A study of non-traditional and traditional students in terms of their time management behaviors, stress factors, and coping strategies. *Academy of Educational Leadership Journal*, *15*, 109-125.

Fortune, A. E. (2001). Initial impressions and performance in field practica: Predictors of skill attainment and satisfaction among graduate social work students. *The Clinical Supervisor, 20*(2), 43-54. doi: 10.1300/J001v20n02_04

Foxcroft, C., & Roodt, G. (2006). *An introduction to psychological assessment in the South African context.* Cape Town, South Africa: Oxford University Press.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.

Fredricks, J. A., Filsecker, M., & Lawson, M. A. (2016). Student engagement, context, and adjustment: Addressing definitional, measurement, and methodological issues. *Learning and Instruction, 43,* 1-4. doi: 10.1016/j.learninstruc.2016.02.002

Fredricks, J. A., & McColskey, W. (2012). The measurement of student engagement: A comparative analysis of various methods and student self-report instruments. In S. L. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 763-782). New York, NY: Springer Science & Business Media.

Furr, S., & Elling, T. (2000). The influence of work on college structure development. *NASPA Journal*, *37*(2), 54-70. doi: 10.2202/1949-6605.1108

Gakovic, A., & Tetrick, L. E. (2003). Perceived organizational support and work status: A comparison of the employment relationships of part-time and full-time employees attending university classes. *Journal of Organizational Behavior*, *24*(5), 649-666. doi: 10.1002/job.206

Ganster, D. C., Rosen, C. C., & Fisher, G. G. (2018). Long working hours and well-being: What we know, what we do not know, and what we need to know. *Journal of Business and Psychology*, *33*(1), 25-39. doi: 10.1007/s10869-016-9478-1

Gibson, A. (2010). Measuring business student satisfaction: A review and summary of the major predictors. *Journal of Higher Education Policy & Management, 32*(3), 251-259. doi: 10.1080/13600801003743349

Gilardi, S., & Guglielmetti, C. (2011). University life of non-traditional students: Engagement styles and impact on attrition. *The Journal of Higher Education*, *82*(1), 33-53. doi: 10.1353/jhe.2011.0005

Goncalves, S. A., & Trunk, D. (2014). Obstacles to success for the nontraditional student in higher education. *Psi Chi Journal of Psychological Research, 19*(4), 164-172. doi: 10.24839/2164-8204.JN19.4.164

González-Romá, V., Schaufeli, W. B., Bakker, A. B., & Lloret, S. (2006). Burnout and work engagement: Independent factors or opposite poles? *Journal of Vocational Behavior, 68*(1), 165-174.

Goode, W. J. (1960). A theory of role strain. *American Sociological Review*, *25*(4), 483-496.

Gopalan, N., Goodman, S., Hardy, A., & Jacobs, C. (2019). A fine balance: Understanding the influence of job, school and personal characteristics in predicting academic and job satisfaction amongst non-traditional students. *Journal of Education and Work*, *32*(6-7), 570-585.

Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment*, *68*(3), 532-560.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*(1), 76-88.

Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *Academy of Management Review, 31*(1), 72-92.

Hair, J., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective*. Upper Saddle River, NJ: Pearson Education.

Hall, R. (2010). The work-study relationship: Experiences of full-time university students undertaking part-time employment. *Journal of Education and Work*, *23*(5), 439-449.

Hammer, L. B., Grigsby, T. D., & Woods, S. (1998). The conflicting demands of work, family, and school among students at an urban university. *The Journal of Psychology*, *132*(2), 220-226.

Hawkins, C. A., Smith, M. L., Hawkins, II, R. C., & Grant, D. (2005). The relationships among hours employed, perceived work interference, and grades as reported by undergraduate social work students. *Journal of Social Work Education*, *41*(1), 13-27. doi: 10.5175/JSWE.2005.200202122

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Publications.

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement, 66*(3), 393-416.

Hobfoll, S. E., & Wells, J. D. (1989). *Conservation of resources, stress, and aging*. Boston, MA: Springer.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture, 2*(1), 1-26. doi: 10.9707/2307-0919.1014

Horstmanshof, L., & Zimitat, C. (2007). Future time orientation predicts academic engagement among first-year university students. *British Journal of Educational Psychology*, *77*(3), 703-718.

Howell, G., & Buck, J. (2012). The adult student and course satisfaction: What matters most? *Innovative Higher Education, 37*(3), 215-226. doi: 10.1007/s10755-011-9201-0

Hox, J. J., & Boeije, H. R. (2005). Data collection, primary versus secondary. *Encyclopedia of Social Measurement, 1,* 593-599.

Hunt, A., Lincoln, I., & Walker, A. (2004). Term-time employment and academic attainment: evidence from a large-scale survey of undergraduates at Northumbria University. *Journal of Further and Higher Education*, *28*(1), 3-18.

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist, 8*(1), 7-27.

Johnston, M. P. (2014). Secondary data analysis: A method of which the time has come. *Qualitative and Quantitative Methods in Libraries*, *3*(3), 619-626.

Joseph, M., & Joseph, B. (1997). Employers' perceptions of service quality in higher education. *Journal of Marketing for Higher Education*, *8*(2), 1-13.

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development*, *37*(1), 58-71.

Keeney, J., Boyd, E. M., Sinha, R., Westring, A. F., & Ryan, A. M. (2013). From "work–family" to "work–life": Broadening our conceptualization and measurement. *Journal of Vocational Behavior*, *82*(3), 221-237. Retrieved from https://www-sciencedirect-com.ezproxy.uct.ac.za/science/article/pii/S0001879113000274

Kim, K. A., Sax, L. J., Lee, J. J., & Hagedorn, L. S. (2010). Redefining nontraditional students: Exploring the self-perceptions of community college students. *Community College Journal of Research and Practice*, *34*(5), 402-422.

Korr, J., Derwin, E. B., Greene, K., & Sokoloff, W. (2012). Transitioning an adult-serving university to a blended learning model. *The Journal of Continuing Higher Education*, *60*(1), 2-11.

Kothari, C. R. (2004). *Research methodology: Methods and techniques (2nd ed.).* Jaipur, India: New Age International Publishers

Kumar, M. J. (2009). Evaluating Scientists: Citations, impact factor, h-index, online page hits and what else? *IETE Technical Review*, *26*(3), 165–168. doi: 10.4103/0256-4602.50699

Lammers, W. J., Onweugbuzie, A. J., & Slate, J. R. (2001). Academic success as a function of gender, class, age, study habits, and employment of college students. *Research in the Schools, 8*(2), 71–81.

Laughman, C., Boyd, E. M., & Rusbasan, D. (2016). Burnout as a mediator between work-school conflict and work outcomes. *Journal of Career Development*, *43*(5), 413-425. doi: 10.1177/0894845316633523

Lenaghan, J. A., & Sengupta, K. (2007). Role conflict, role balance and affect: A model of well-being of the working student. *Journal of Behavioral and Applied Management*, *9*(1), 88.

Letcher, D. W., & Neves, J. S. (2010). Determinants of undergraduate business student satisfaction. *Research in Higher Education Journal*, *6*, 1–26.

Lingard, H. (2007). Conflict between paid work and study: Does it impact upon students' burnout and satisfaction with university life? *Journal for Education in the Built Environment*, *2*(1), 90-109. doi: 10.11120/jebe.2007.02010090

Lowe, J., & Gayle, V. (2007). Exploring the work/life/study balance: The experience of higher education students in a Scottish further education college. *Journal of Further and Higher Education*, *31*(3), 225-238. doi: 10.1080/03098770701424942

Manthei, R. J., & Gilmore, A. (2005). The effect of paid employment on university students' lives. *Education and Training*, *47*(3), 202-215.

Markel, K. S., & Frone, M. R. (1998). Job characteristics, work-school conflict, and school outcomes among adolescents: Testing a structural model. *Journal of Applied Psychology*, *83*(2), 277.

Marks, S. (1977). Multiple roles and role strain some notes on human energy, time and commitment. *American Sociological Review, 42*(6), 921-936.

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in the elementary, middle, and high school years. *American Educational Research Journal, 37*(1), 153-184.

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, *22*(1), 205-222. doi: 10.24059/olj.v22i1.1092

McGivney, V. (2004). Understanding persistence in adult learning. *Open Learning, 19*(1), 33-46. doi: 10.1080/0268051042000177836

McNall, L. A., & Michel, J. S. (2011). A dispositional approach to work-school conflict and enrichment. *Journal of Business and Psychology*, *26*(3), 397-411.

Mills, M. J., Culbertson, S. S., & Fullagar, C. J. (2012). Conceptualizing and measuring engagement: An analysis of the Utrecht Work Engagement Scale. *Journal of Happiness Studies*, *13*(3), 519-545.

Miočević, M., O'Rourke, H. P., MacKinnon, D. P., & Brown, H. C. (2018). Statistical properties of four effect-size measures for mediation models. *Behavior Research Methods*, *50*(1), 285-301. doi: 10.3758/s13428-017-0870-1

Moreau, M. P., & Leathwood, C. (2006). Balancing paid work and studies: Working (-class) students in higher education. *Studies in Higher Education*, *31*(1), 23-42. doi: 10.1080/03075070500340135

Mostert, K., Pienaar, J., Gauche, C., & Jackson, L. (2007). Burnout and engagement in university students: A psychometric analysis of the MBI-SS and UWES-S. *South African Journal of Higher Education, 21*(1), 147-162.

Mounsey, R., Vandehey, M., & Diekhoff, G. (2013). Working and non-working university students: Anxiety, depression, and grade point average. *College Student Journal*, *47*(2), 379-389.

Oriol-Granado, X., Mendoza-Lira, M., Covarrubias-Apablaza, C. G., & Molina-López, V. M. (2017). Positive emotions, autonomy support and academic performance of university students: The mediating role of academic engagement and self-efficacy. *Revista de Psicodidáctica (English ed.)*, *22*(1), 45-53.

Owen, M. S., Kavanagh, P. S., & Dollard, M. F. (2018). An integrated model of work–study conflict and work–study facilitation. *Journal of Career Development*, *45*(5), 504-517. doi: 10.1177/0894845317720071

Pallant, J. (2013). *SPSS Survival Manual* (4th *ed*.). Sydney, Australia: Allen and Unwin.

Parasuraman, S., & Simmers, C. A. (2001). Type of employment, work-family conflict and well-being: A comparative study. *Journal of Organizational Behavior*, *22*(5), 551-568. doi: 10.1002/job.102

Park, Y., & Sprung, J. M. (2013). Work-school conflict and health outcomes: Beneficial resources for working college students. *Journal of Occupational Health Psychology*, *18*(4), 384-394. doi: 10.1037/a0033614

Pienaar, J., & Sieberhagen, C. (2005). Burnout and engagement of student leaders in a higher education institution. *South African Journal of Higher Education, 19*(1), 155-166.

Pitman, T. (2000). Perceptions of academics and students as customers: A survey of administrative staff in higher education. *Journal of Higher Education Policy and Management*, *22*(2), 165-175.

Raisman, N. (2002). *Embrace the oxymoron: Customer service in higher education.* Horsham, PA: LRP Publications.

Reschly, A., & Christenson, S. (2006). Research leading to a predictive model of dropout and completion among students with mild disabilities and the role of student engagement. *Remedial and Special Education, 27*(5), 276-292.

Rosnow, R. L., & Rosenthal, R. (2013). *Beginning behavioural research: A conceptual primer* (*7th ed*.). Essex: Pearson Education Limited.

Ruey, S. (2010). A case study of constructivist instructional strategies for adult online learning. *British Journal of Educational Technology*, *41*(5), 706-720.

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

Saleh, M. A., Khan, M. I., & Rahman, Z. (2016). Service quality gap analysis: Measuring students' satisfaction in the tertiary education sector of Bangladesh. *Organisational Studies and Innovation Review*, *2*(4), 16-23.

Schaufeli, W. B. (2005). *Energy and identification as basic dimensions of burnout and engagement.* Paper presented at the 12th European Congress on Work and Organizational Psychology, Istanbul, Turkey.

Schaufeli, W. B., & Bakker, A. B. (2001). Werk en welbevinden: Naar een positieve benadering in de Arbeids-en Gezondheidspsychologie [Work and well-being: Towards a positive approach in occupational health psychology]. *Gedrag & Organisatie, 14,* 229-253.

Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students a cross-national study. *Journal of Cross-cultural Psychology, 33*(5), 464-481.

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002a). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*(1), 71-92. doi: 10.1023/A:1015630930326

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002b). The measurement of engagement and burnout: A confirmative analytic approach. *Journal of Happiness Studies, 3,* 71–92. doi: 10.1023/A:1015630930326

Sears, C. R., Boyce, M. A., Boon, S. D., Goghari, V. M., Irwin, K., & Boyes, M. (2017). Predictors of student satisfaction in a large psychology undergraduate program. *Canadian Psychology. 58*(2), 148-160. doi: 10.1037/cap0000082

Shirom, A. (2003). Feeling vigorous at work? The construct of vigor and the study of positive affect in organizations. In D. Ganster & P. L. Perrewe (Eds.), *Research in organizational stress and well-being* (pp. 135–165). Greenwich, USA: JAI Press.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, *7*(4), 422-446.

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational & Psychological Measurement, 69*(3), 493-525. doi: 10.1177/0013164408323233

Stevens, J. (2002). *Applied multivariate statistics for the social sciences*. Hillsdale, NJ: Erlbaum.

Strahan, S., & Credé, M. (2015). Satisfaction with college: Re-examining its structure and its relationships with the intent to remain in college and academic performance. *Journal of College Student Retention: Research, Theory & Practice*, *16*(4), 537-561.

Subotzky, G., & Prinsloo, P. (2011). Turning the tide: A socio-critical model and framework for improving student success in open distance learning at the University of South Africa. *Distance Education*, *32*(2), 177-193. doi: 10.1080/01587919.2011.584846

Tabachnick, B. G., & Fidell, L. S. (2014). *Using Multivariate Statistics* (*6th ed*.). Essex, England: Pearson Education Limited.

Tainsh, R. (2016). Thoughtfully designed online courses as effective adult learning tools. *Journal of Adult Education*, *45*(1), 7-9. Retrieved from https://search-proquest-com.ezproxy.uct.ac.za/docview/1786240807?accountid=14500

Tessema, M. T., Ready, K. J., & Astani, M. (2014). Does part-time job affect college students' satisfaction and academic performance (GPA)? The case of a mid-sized public university. *International Journal of Business Administration*, *5*(2), 50-60. doi: 10.5430/ijba.v5n2p50

Thomas, E. H., & Galambos, N. (2004). What satisfies students? Mining student-opinion data with regression and decision tree analysis. *Research in Higher Education, 45*(3), 251-269. doi: 10.1023/B:RIHE.0000019589.79439.6e

Truta, C., Parv, L., & Topala, I. (2018). Academic engagement and intention to drop out: Levers for sustainability in higher education. *Sustainability*, *10*(12), 4637-4648. Retrieved from http://dx.doi.org/10.3390/su10124637

van de Vijver, F., & Leung, K. (2001). Personality in cultural context: Methodological issues. *Journal of Personality, 69*(6), 1007-1031.

Walters, G. D. (2018). $P_M$ effect size estimation for mediation analysis: A cautionary note, alternate strategy, and real data illustration. *International Journal of Social Research Methodology*, *21*(1), 25-33. doi: 10.1080/13645579.2017.1305710

Walters, S., & Koetsier, J. (2006). Working adults learning in South African higher education. *Perspectives in Education*, *24*(3), 97-108. Retrieved from https://journals-co-za.ezproxy.uct.ac.za/content/persed/24/3/EJC87387

Webb, O. J., & Cotton, D. R. E. (2018). Early withdrawal from higher education: A focus on academic experiences. *Teaching in Higher Education, 23*(7), 835-852. doi: 10.1080/13562517.2018.1437130

Wigfield, A., Guthrie, J. T., Perencevich, K. C., Taboada, A., Klauda, S. L., McRae, A., & Barbosa, P. (2008). Role of reading engagement in mediating effects of reading comprehension instruction on reading outcomes. *Psychology in the Schools, 45*(5), 432445.

Winn, S., & Stevenson, R. (1997). Student loans: Are the policy objectives being achieved? *Higher Education Quarterly*, *51*(2), 144-163.

Wise, A., Chang, J., Duffy, T., & Del Valle, R. (2004). The effects of teacher social presence on student satisfaction, engagement, and learning. *Journal of Educational Computing Research*, *31*(3), 247-271.

Wyatt, L. G. (2011). Nontraditional student engagement: Increasing adult student success and retention. *The Journal of Continuing Higher Education, 59*(1), 10-20.

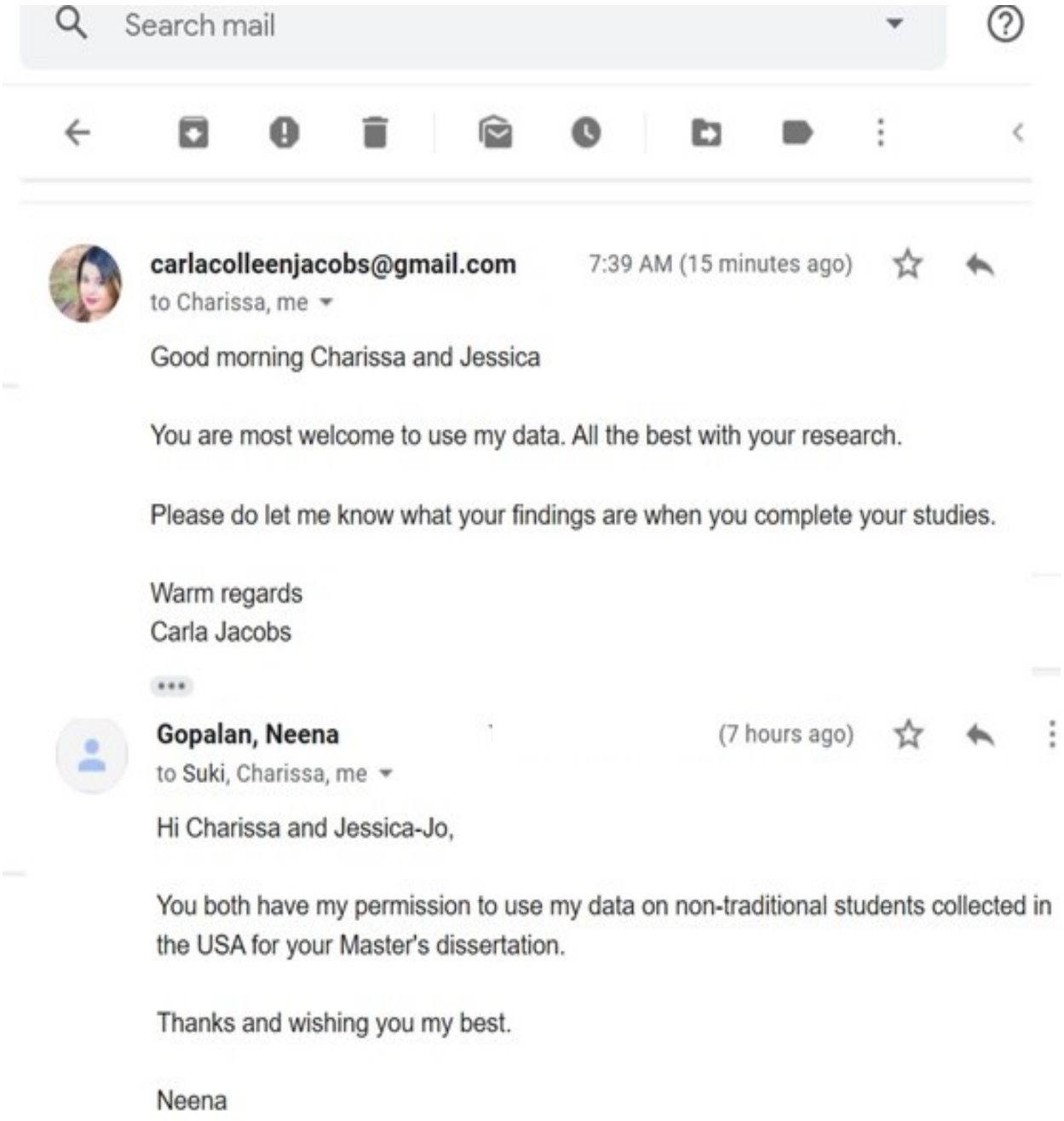
Wyland, R., Lester, S. W., Ehrhardt, K., & Standifer, R. (2016). An examination of the relationship between the work-school interface, job satisfaction, and job performance. *Journal of Business and Psychology*, *31*(2), 187-203. doi: 10.1007/s10869-015-9415-8

Zacherman, A., & Foubert, J. (2014). The relationship between engagement in co-curricular activities and academic performance: Exploring gender differences. *Journal of Student Affairs Research and Practice*, *51*(2), 157-169.

Zahoor, A. (2018). Teacher proactivity influencing student satisfaction and loyalty role of job crafting and work engagement. *Vikalpa: The Journal for Decision Makers, 43*(3), 125-138. doi: 10.1177/0256090918785046

Appendix A

Permission from Primary data Collectors to use Secondary data for the present study



# Appendix B

## Academic Engagement Scale construct validity

Table B1

*Factor Loadings for the 14-item AE scale Following Principal Axis Factoring*

| Item number | Item Description | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|---|
| 12 | When I study, I feel like I am bursting with energy. | .86 | | |
| 13 | When studying I feel strong and vigourous | .78 | | |
| 11 | I can continue for a very long time when I am studying | .72 | | |
| 10 | When I'm studying, I feel mentally strong | .68 | | |
| 8 | I feel happy when I am studying intensely | .57 | | |
| 9 | I can get carried away by my studies | .47 | | .39 |
| 14 | When I get up in the morning, I feel like going to class | | | |
| 2 | My studies inspire me | | .89 | |
| 3 | I am enthusiastic about my studies | | .78 | |
| 1 | I find my studies to be full of meaning and purpose | | .76 | |
| 4 | I am proud of my studies | | .67 | |
| 5 | I find my studies challenging | | | .53 |
| 6 | Time flies when I'm studying | | | .49 |
| 7 | When I am studying, I forget everything else around me | .37 | | .46 |

*Note*. Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 8 iterations.

Table B2

*Factor Loadings for the 12-item AE scale Following Principal Axis Factoring*

| Item number | Item Description | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|---|
| 12 | When I study, I feel like I am bursting with energy. | .88 | | |
| 13 | When studying I feel strong and vigourous | .80 | | |
| 11 | I can continue for a very long time when I am studying | .72 | | |
| 10 | When I'm studying, I feel mentally strong | .65 | | |
| 8 | I feel happy when I am studying intensely | .63 | | |
| 9 | I can get carried away by my studies | .53 | | |
| 2 | My studies inspire me | | .92 | |
| 3 | I am enthusiastic about my studies | | .78 | |
| 1 | I find my studies to be full of meaning and purpose | | .77 | |
| 4 | I am proud of my studies | | .66 | |
| 5 | I find my studies challenging | | | .61 |
| 6 | Time flies by when I'm studying | | | .41 |

*Note*. Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 6 iterations.

Table B3

*Factor Loadings for the 20-item AS and AE scale Following Principal Axis Factoring*

| Code | Item Description | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---|---|---|---|---|---|
| AE12 | When I study, I feel like I am bursting with energy. | .86 | | | |
| AE13 | When studying I feel strong and vigourous | .77 | | | |
| AE11 | I can continue for a very long time when I am studying | .71 | | | |
| AE10 | When I'm studying, I feel mentally strong | .67 | | | |
| AE8 | I feel happy when I am studying intensely | .57 | | | |
| AE9 | I can get carried away by my studies | .47 | | | .38 |
| AE14 | When I get up in the morning, I feel like going to class | | | | |
| AS6 | Overall, I am satisfied with my experience at my university | | -.91 | | |
| AS2 | My university meets my expectations | | -.85 | | |
| AS5 | I am pleased with the services I receive at my university | | -.83 | | |
| AS4 | I am satisfied with my education at my university | | -.74 | | |
| AS3 | I feel comfortable at my university | | -.66 | | |
| AS1 | I enjoy being a student on this campus | | -.57 | | |
| AE2 | My studies inspire me | | | -.88 | |
| AE3 | I am enthusiastic about my studies | | | -.77 | |
| AE1 | I find my studies to be full of meaning and purpose | | | -.75 | |
| AE4 | I am proud of my studies | | | -.65 | |
| AE5 | I find my studies challenging | | | | .53 |
| AE6 | Time flies when I'm studying | | | | .47 |
| AE7 | When I am studying, I forget everything else around me | .37 | | | .44 |

*Note*. Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 8 iterations. AE = academic engagement, AS = academic satisfaction

Table B4

*Factor Loadings for the 20-item AS and AE scale Following Principal Axis Factoring*

| Code | Item Description | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---|---|---|---|---|---|
| AE12 | When I study, I feel like I am bursting with energy. | .88 | | | |
| AE13 | When studying I feel strong and vigourous | .79 | | | |
| AE11 | I can continue for a very long time when I am studying | .71 | | | |
| AE10 | When I'm studying, I feel mentally strong | .64 | | | |
| AE8 | I feel happy when I am studying intensely | .63 | | | |
| AE9 | I can get carried away by my studies | .53 | | | |
| AS6 | Overall, I am satisfied with my experience at my university | | -.90 | | |
| AS2 | My university meets my expectations | | -.85 | | |
| AS5 | I am pleased with the services I receive at my university | | -.83 | | |
| AS4 | I am satisfied with my education at my university | | -.74 | | |
| AS3 | I feel comfortable at my university | | -.65 | | |
| AS1 | I enjoy being a student on this campus | | -.57 | | |
| AE2 | My studies inspire me | | | -.90 | |
| AE3 | I am enthusiastic about my studies | | | -.77 | |
| AE1 | I find my studies to be full of meaning and purpose | | | -.76 | |
| AE4 | I am proud of my studies | | | -.64 | |
| AE5 | I find my studies challenging | | | | .60 |
| AE6 | Time flies when I'm studying | | | | .41 |

*Note*. Rotation Method: Direct Oblimin with Kaiser Normalisation; Rotation converged in 7 iterations.

AE = academic engagement, AS = academic satisfaction

# Appendix C

## Item-total statistics for the measurement scales

Table C1

*Item-total Statistics for the Work-School Conflict Scale*

| *Item Number* | *Item Description* | *Corrected Item-Total Correlation* | *Cronbach's Alpha if Item Deleted* |
|---|---|---|---|
| 1 | My job demands and responsibilities interfere with my university work | .70 | .76 |
| 2 | I spend less time studying and doing homework because of my job | .73 | .74 |
| 3 | My job takes up time that I'd rather spend at university or on university work | .71 | .75 |
| 4 | Because of my job, I go to university tired | .49 | .86 |

Table C2

*Item-total Statistics for the Academic Satisfaction Scale*

| *Item Number* | *Item Description* | *Corrected Item-Total Correlation* | *Cronbach's Alpha if Item Deleted* |
|---|---|---|---|
| 1 | I enjoy being a student on this campus | .62 | .89 |
| 2 | My university meets my expectations | .80 | .86 |
| 3 | I feel comfortable at my university | .66 | .89 |
| 4 | I am satisfied with my education at my university | .74 | .87 |
| 5 | I am pleased with the services I receive at my university | .71 | .88 |
| 6 | Overall, I am satisfied with my experience at my university | .81 | .86 |

Table C3

*Item-total Statistics for the Reduced 10-item Academic Engagement scale*

| *Item Number* | *Item Description* | *Corrected Item-Total Correlation* | *Cronbach's Alpha if Item Deleted* |
|---|---|---|---|
| 1 | I find my studies to be full of meaning and purpose | .59 | .88 |
| 2 | My studies inspire me | .64 | .88 |
| 3 | I am enthusiastic about my studies | .71 | .87 |
| 4 | I am proud of my studies | .50 | .89 |
| 8 | I feel happy when I'm studying intensely | .66 | .89 |
| 9 | I can get carried away by my studies | .53 | .89 |
| 10 | When I'm studying, I feel mentally strong | .66 | .88 |
| 11 | I can continue for a very long time when I am studying | .57 | .88 |
| 12 | When I study, I feel like I am bursting with energy | .72 | .87 |
| 13 | When studying I feel strong and vigourous | .69 | .87 |

Table C4

*Item-total Statistics for the Vigourous-absorption Subscale of the Reduced 10-item AE scale*

| *Item Number* | *Item Description* | *Corrected Item-Total Correlation* | *Cronbach's Alpha if Item Deleted* |
|---|---|---|---|
| 8 | I feel happy when I'm studying intensely | .67 | .85 |
| 9 | I can get carried away by my studies | .55 | .87 |
| 10 | When I'm studying, I feel mentally strong | .65 | .85 |
| 11 | I can continue for a very long time when I am studying | .63 | .85 |
| 12 | When I study, I feel like I am bursting with energy | .78 | .83 |
| 13 | When studying I feel strong and vigourous | .74 | .83 |

Table C5

*Item-total Statistics for the Dedication Subscale of the Reduced 10-item AE scale*

| *Item Number* | *Item Description* | *Corrected Item-Total Correlation* | *Cronbach's Alpha if Item Deleted* |
|---|---|---|---|
| 1 | I find my studies to be full of meaning and purpose | .71 | .84 |
| 2 | My studies inspire me | .80 | .80 |
| 3 | I am enthusiastic about my studies | .77 | .81 |
| 4 | I am proud of my studies | .62 | .87 |

# Appendix D

## Descriptives statistics of Working Students grouped into Type of Employment

Table D1

*Descriptive Statistics for the WSC, AS and Reduced 10-item AE Scales*

| Type of employment | | *M* | *SD* | Min | Max | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Statistic | SE | Statistic | SE |
| Part-time (Less than 20 Hours) ($N = 95$) | WSC | 2.84 | .77 | 1.00 | 4.75 | -.05 | .26 | .06 | .52 |
| | AS | 3.87 | .59 | 2.17 | 5.00 | -.70 | .25 | 1.41 | .49 |
| | AE | 3.50 | .65 | 1.90 | 5.00 | .09 | .25 | -.32 | .49 |
| | Vigourous-absorption | 3.12 | .75 | 1.17 | 5.00 | .09 | .25 | .34 | .49 |
| | Dedication | 4.07 | .70 | 2.50 | 5.00 | -.18 | .25 | -.93 | .49 |
| Full-time (40 hours or more) ($N = 387$) | WSC | 3.38 | .83 | 1.00 | 5.00 | -.28 | .14 | -.22 | .27 |
| | AS | 4.06 | .65 | 2.00 | 5.00 | -.51 | .12 | .32 | .25 |
| | AE | 3.44 | .63 | 1.70 | 5.00 | -.09 | .12 | -.16 | .25 |
| | Vigourous-absorption | 3.07 | .72 | 1.17 | 5.00 | .04 | .12 | -.03 | .25 |
| | Dedication | 4.00 | .71 | 2.00 | 5.00 | -.35 | .12 | -.49 | .25 |

*Note*. WSC = work-school conflict, AS = academic satisfaction, AE = academic engagement, *M* = mean; *SD* = standard deviation; Min = minimum; Max = maximum; SE = standard error

Appendix E

Assumptions of Independent Samples *t*-test

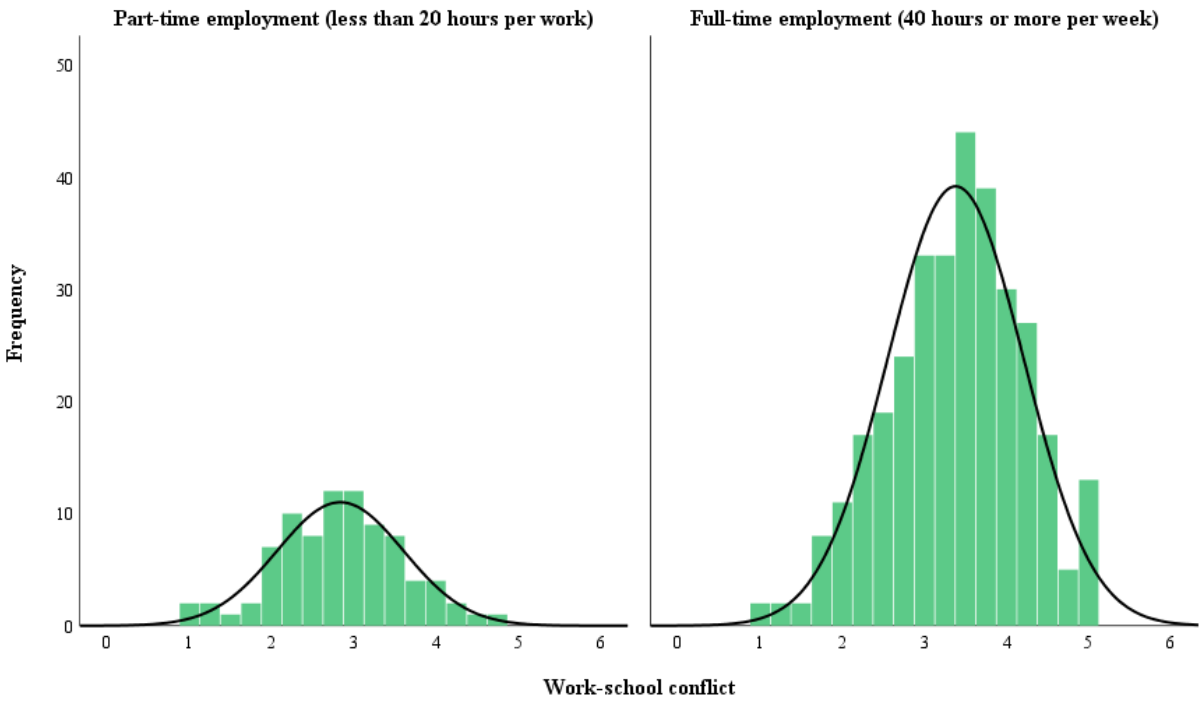



*Figure E1*. Histograms of WSC in terms of Working Students' Type of Employment

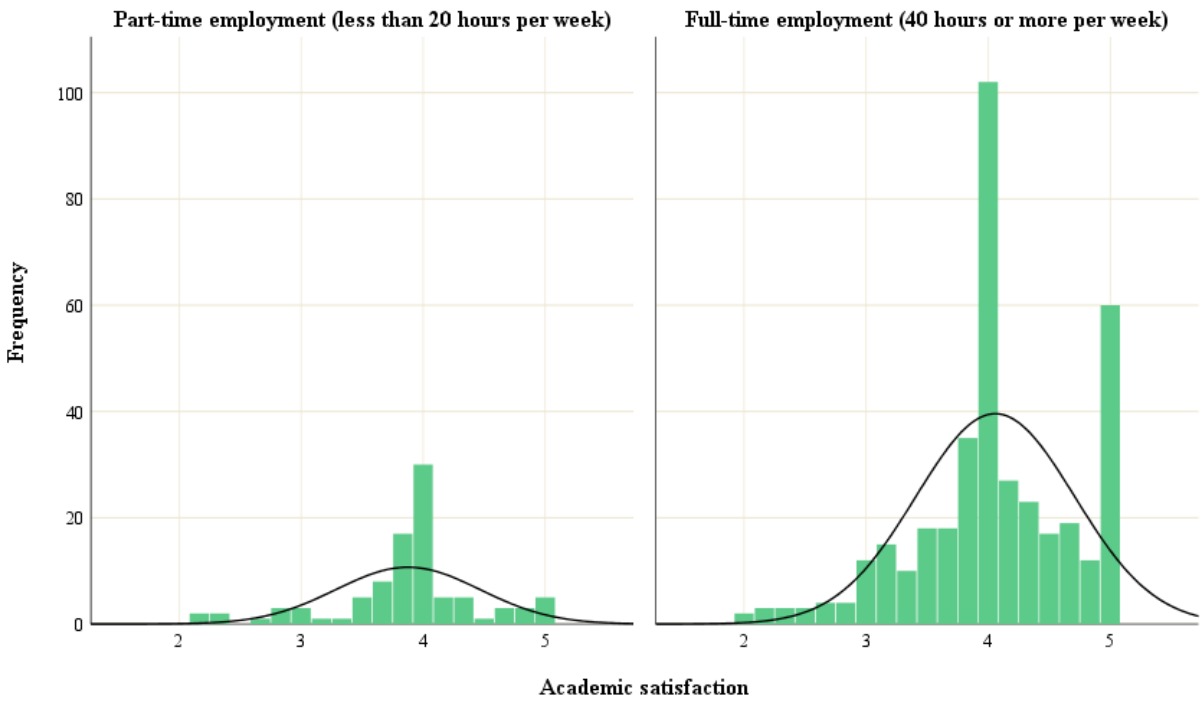



*Figure E2.* Histogram of AS in terms of Working Students' Type of Employment

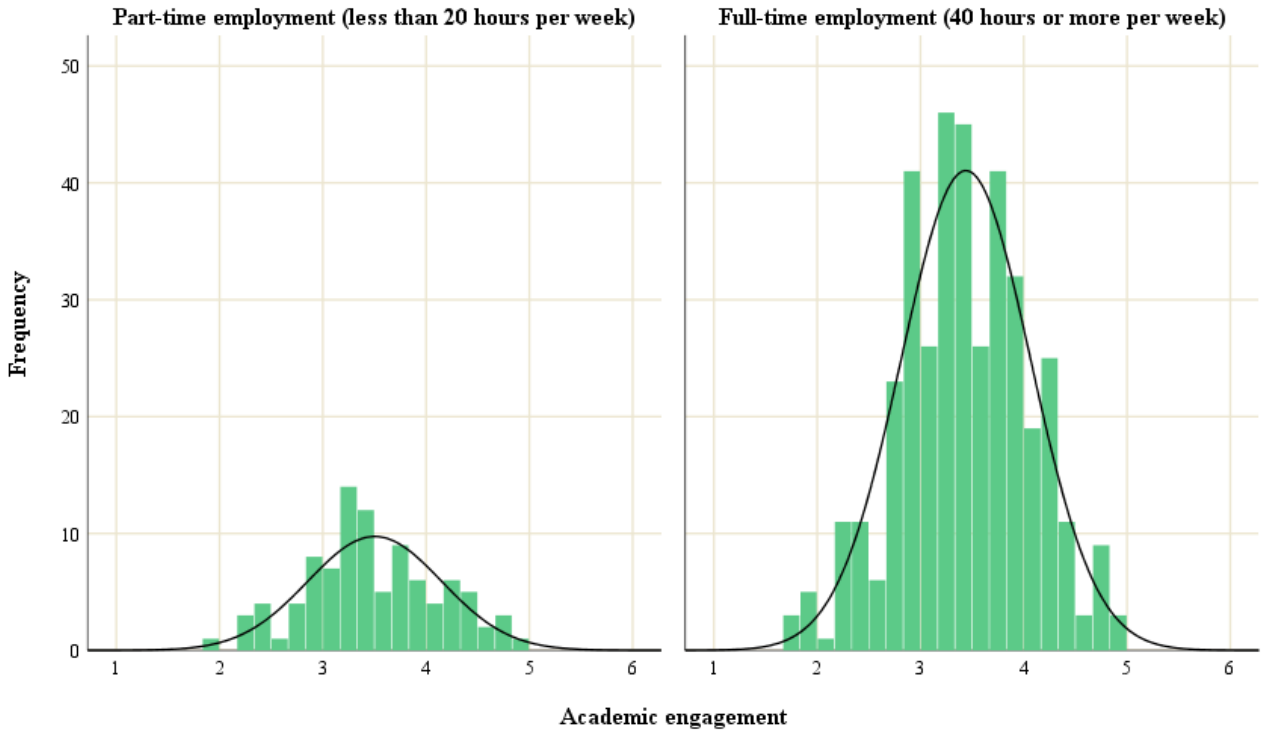



*Figure E3.* Histogram of AE in terms of Working Students Type of Employment

# Appendix F

Table F1

*Non-parametric Test Statistics*

| Outcome variable | n | Mann-Whitney U | SE | *z* | *p* |
|---|---|---|---|---|---|
| Work-school conflict | 411 | 19 086 | 971.52 | 5.38 | < .001 |
| Academic satisfaction | 482 | 21 824 | 1201.00 | 2.87 | .004 |
| Academic engagement | 482 | 17 564 | 1214.96 | -.67 | .50 |

Note: n = sample size, SE = standard error, *z* = standardised tests statistic

Appendix G

Assumptions of Mediation analysis

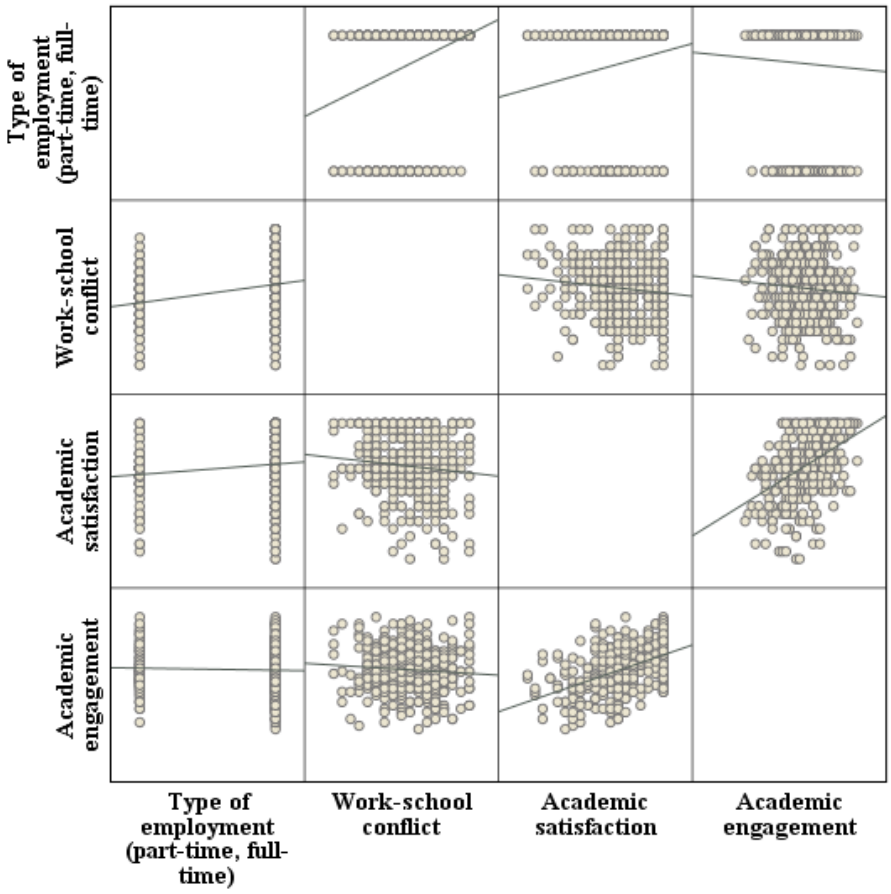



*Figure G1*. Linear Relationships of the variables of interest

Appendix H

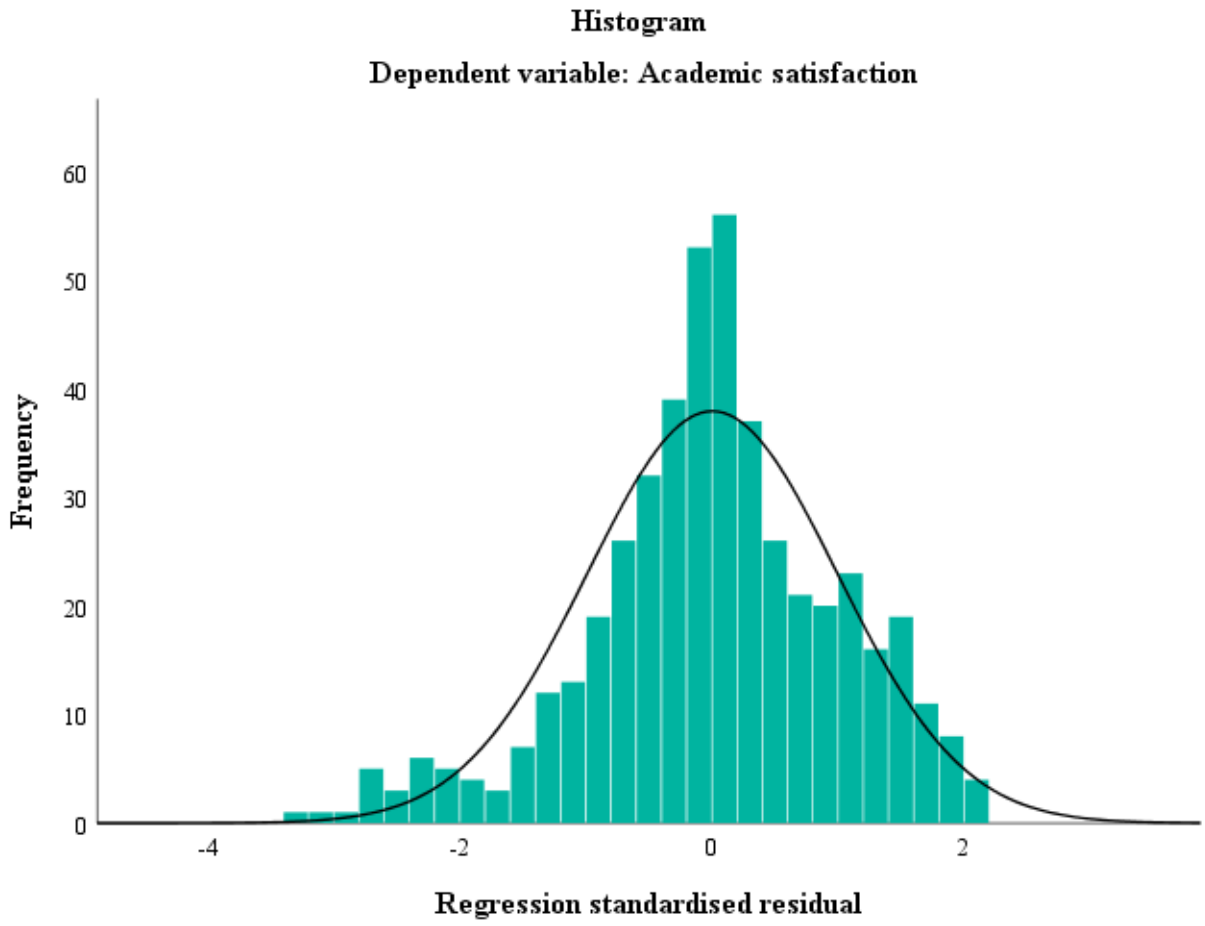



*Figure H1.* Histogram of the Standardised Residuals of AS

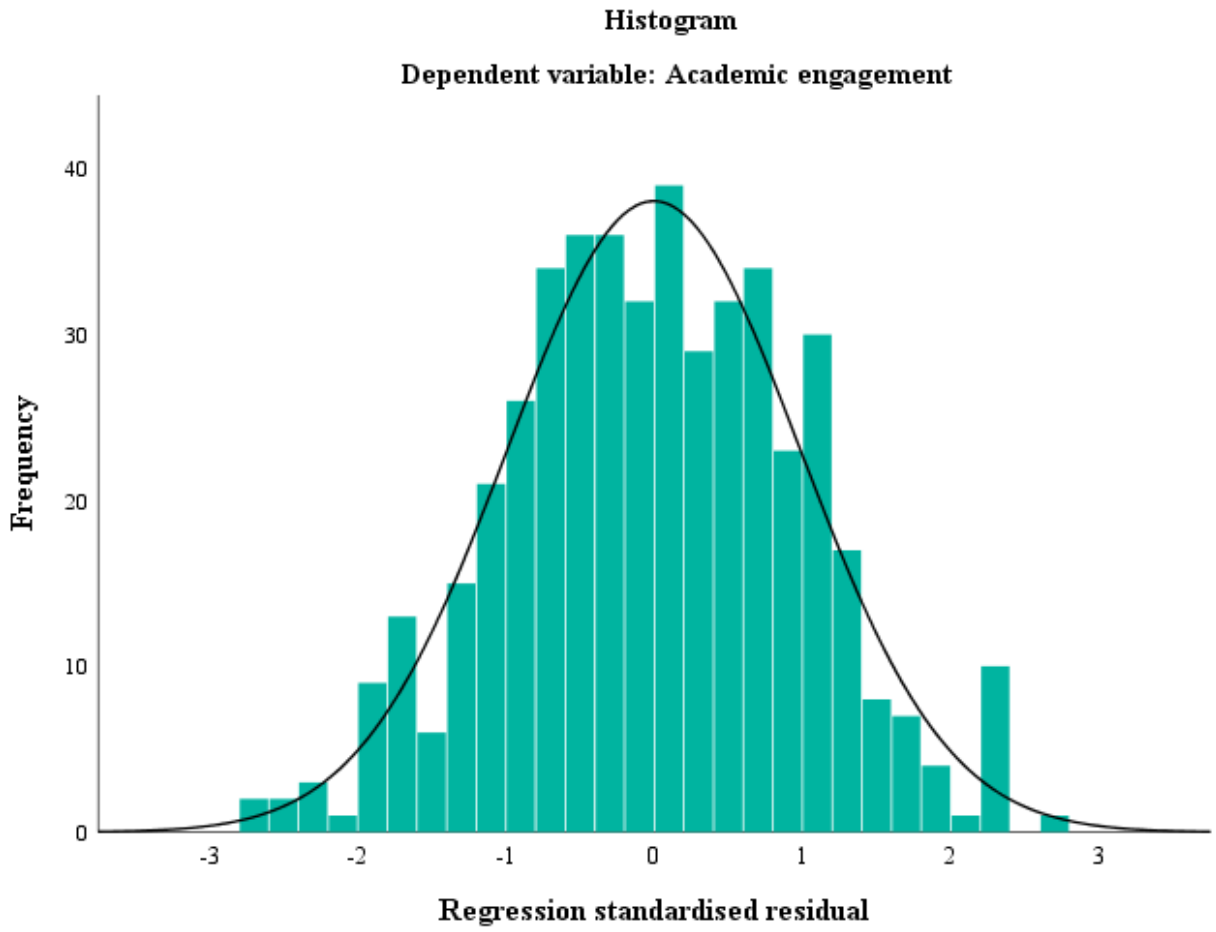



*Figure H2.* Histogram of the Standardised Residuals of AE

Appendix I

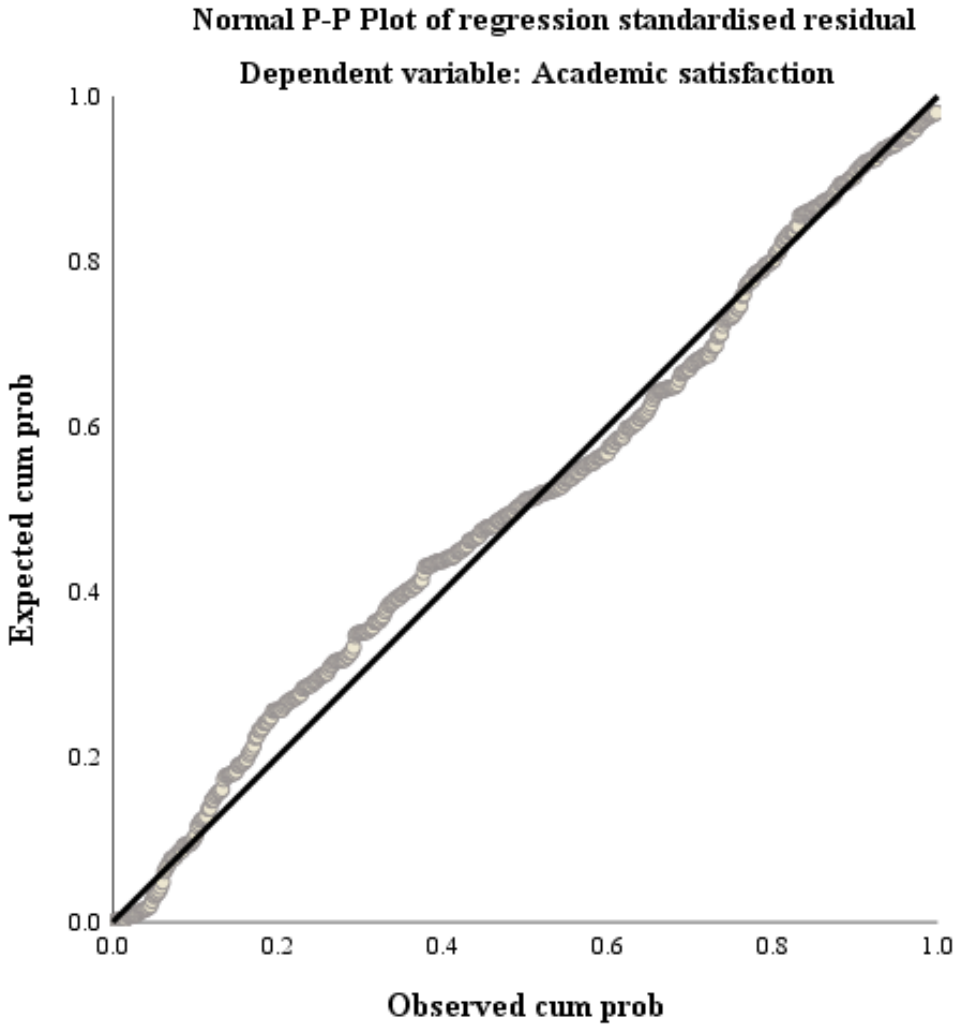



*Figure I1.* Normal P-P Plot of Regression Standardised Residuals for AS

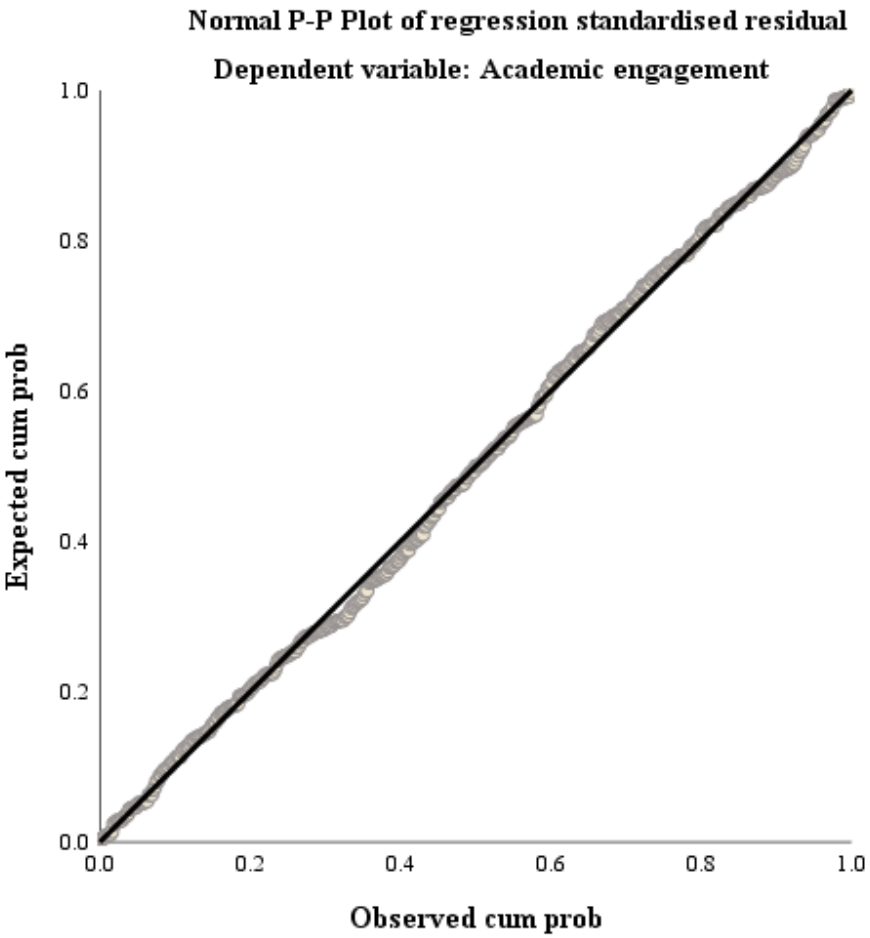



*Figure I2.* Normal P-P Plot of Regression Standardised Residuals for AE

Appendix J

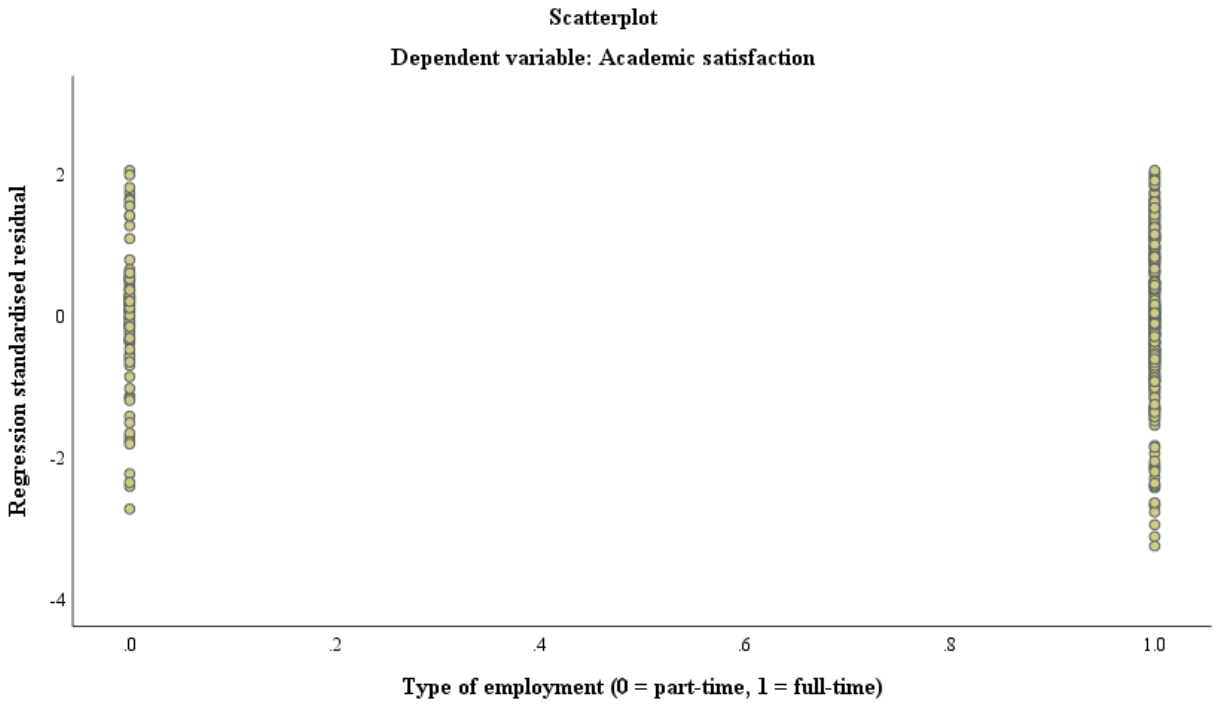



*Figure J1.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

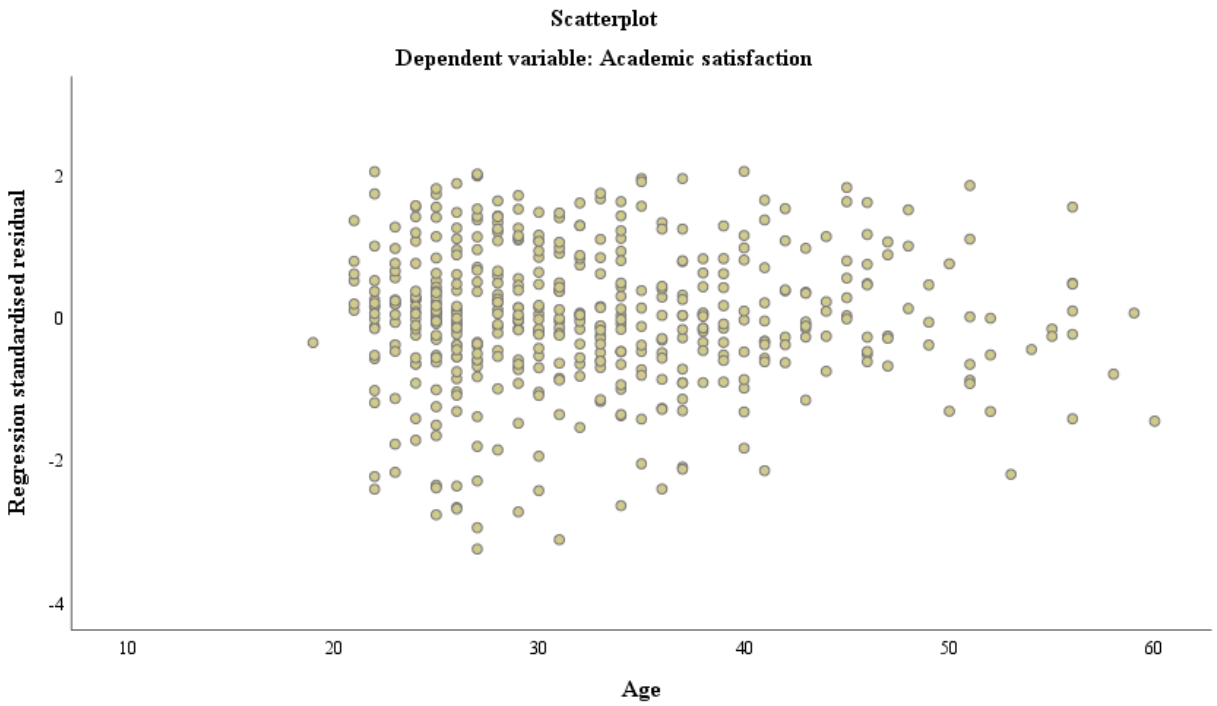



*Figure J2.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

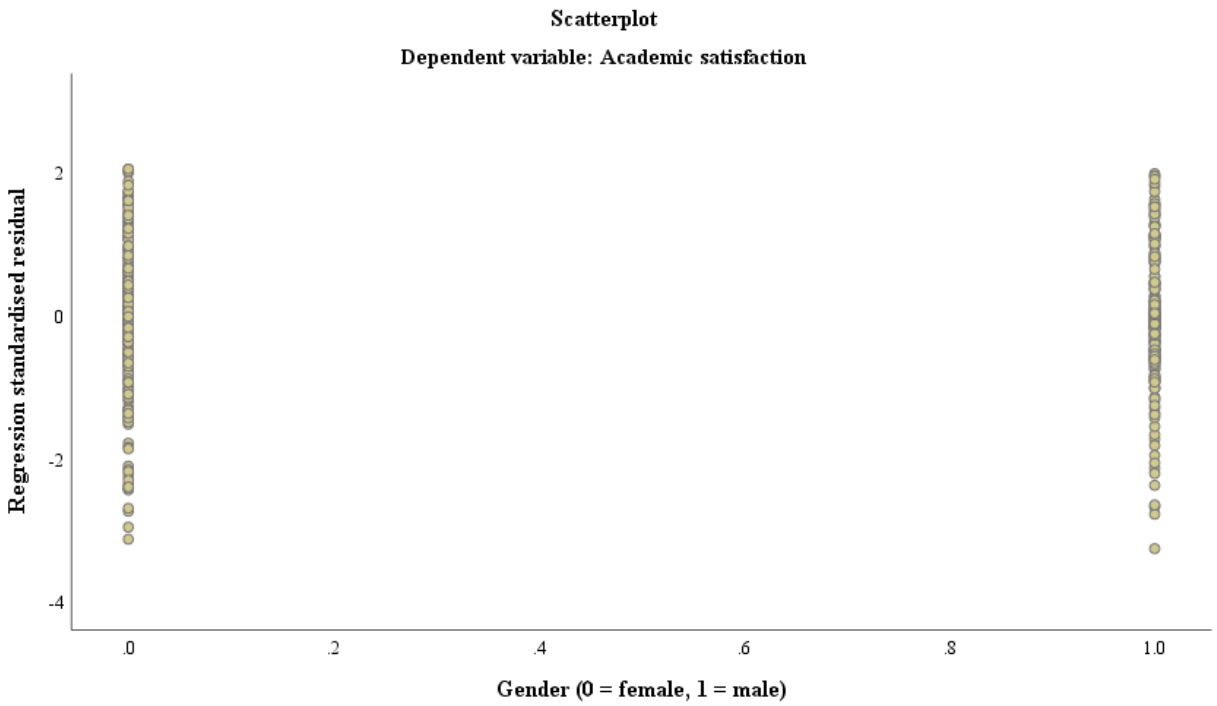



*Figure J3.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

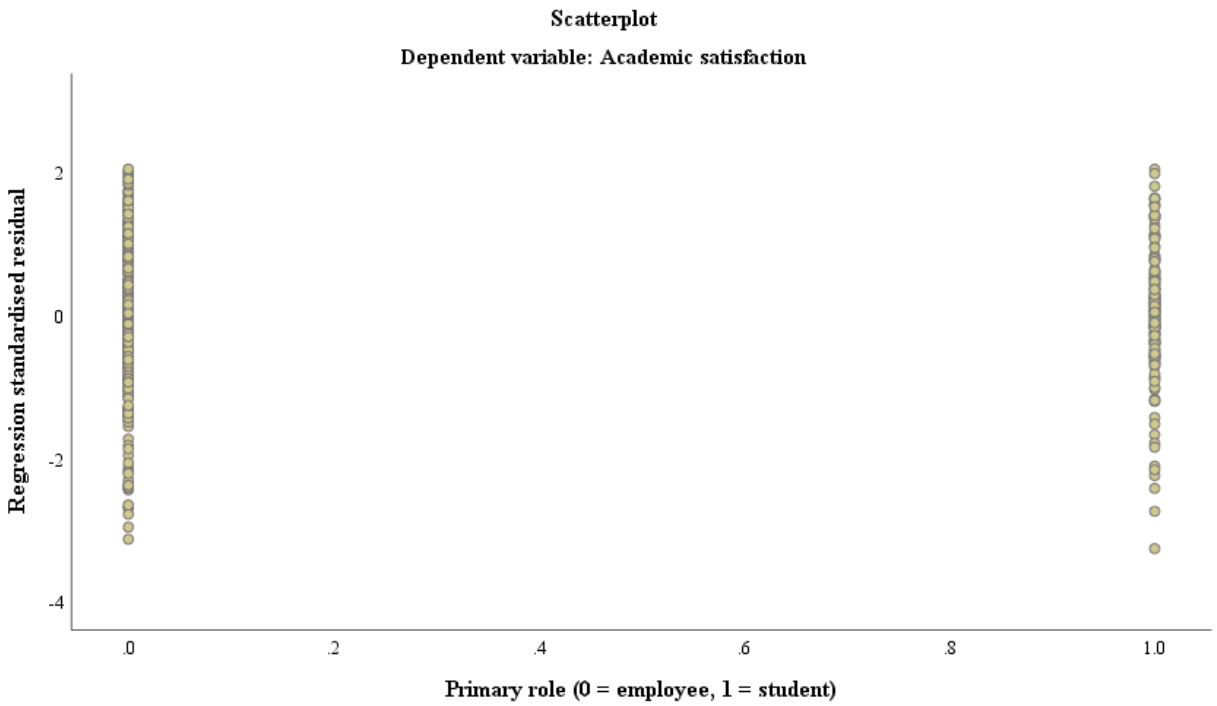



*Figure J4.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

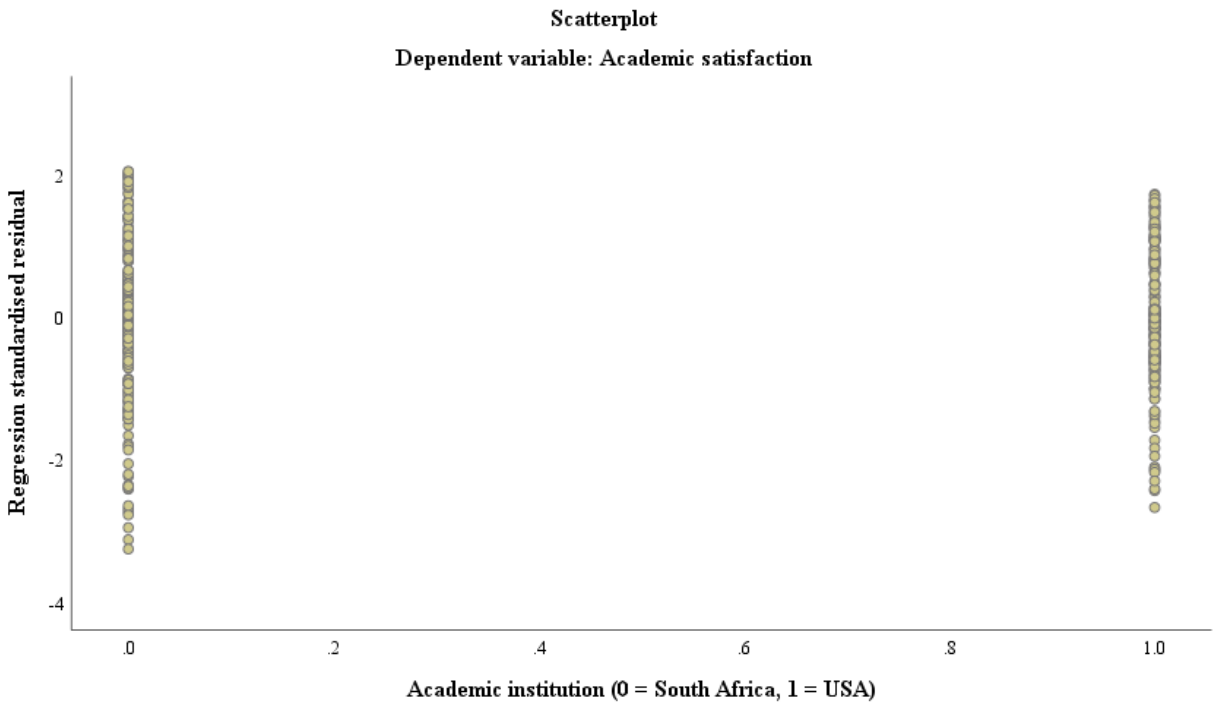



*Figure J5.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

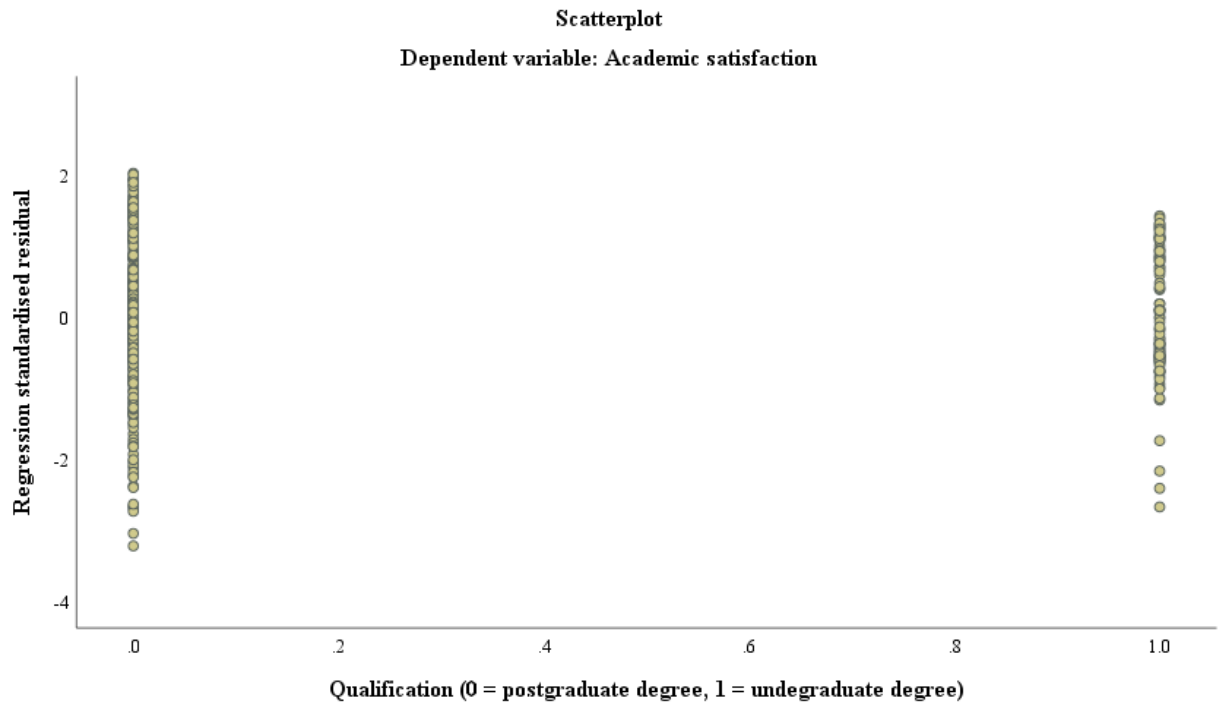



*Figure J6.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

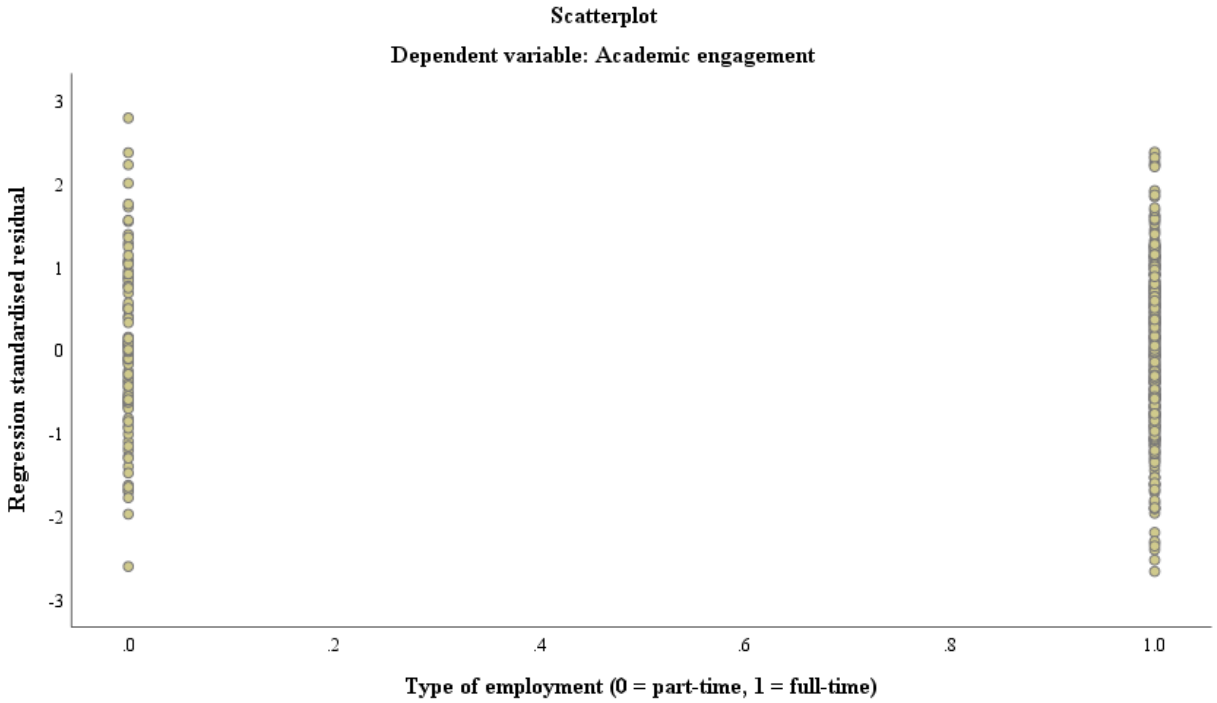



*Figure J7.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

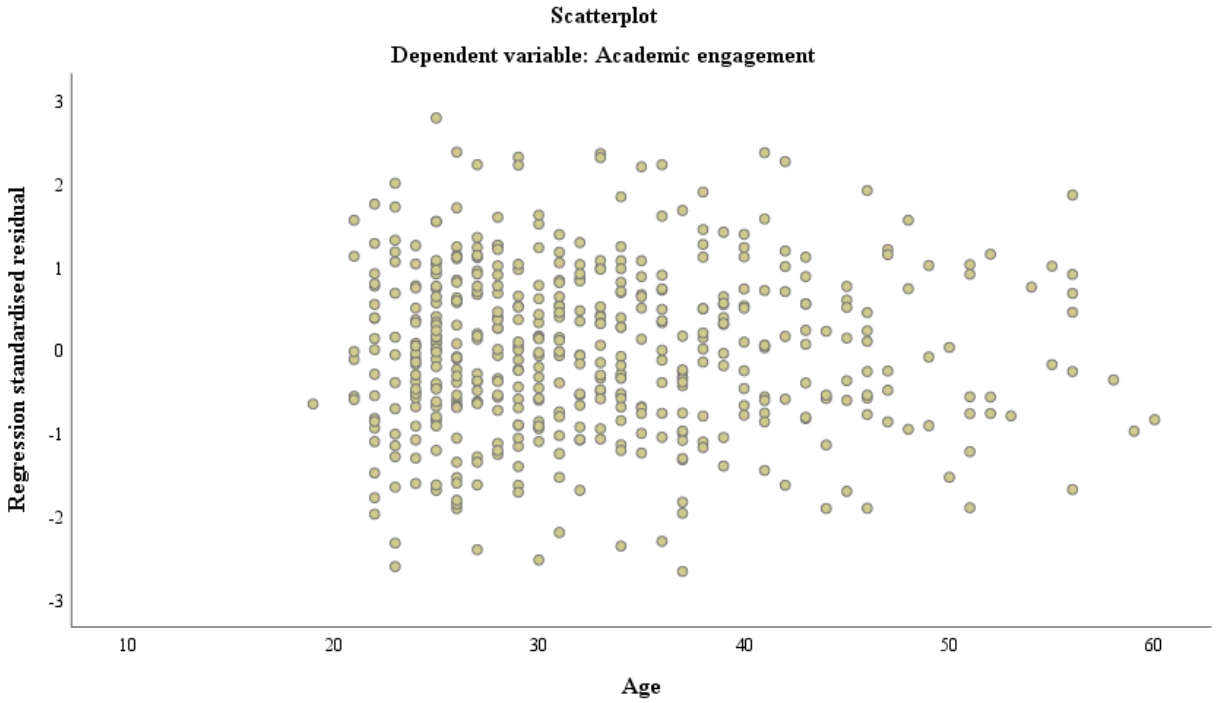



*Figure J8.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

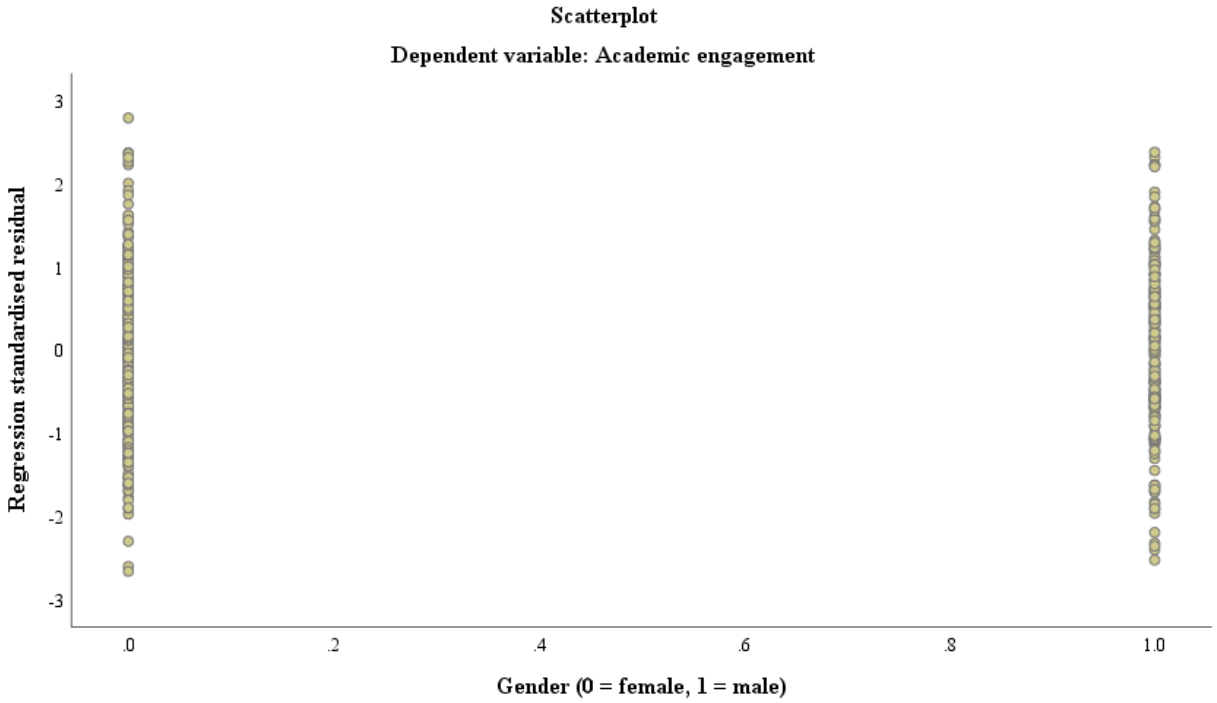



*Figure J9.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals


*Figure J10.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

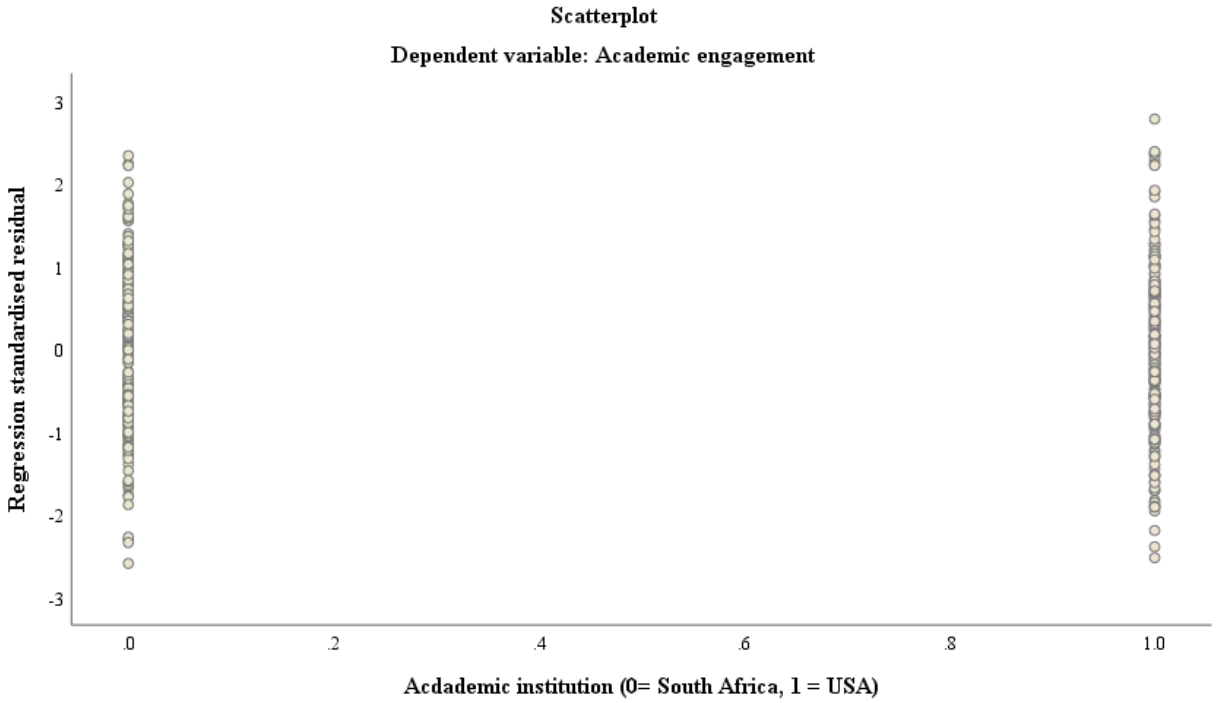



*Figure J11.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

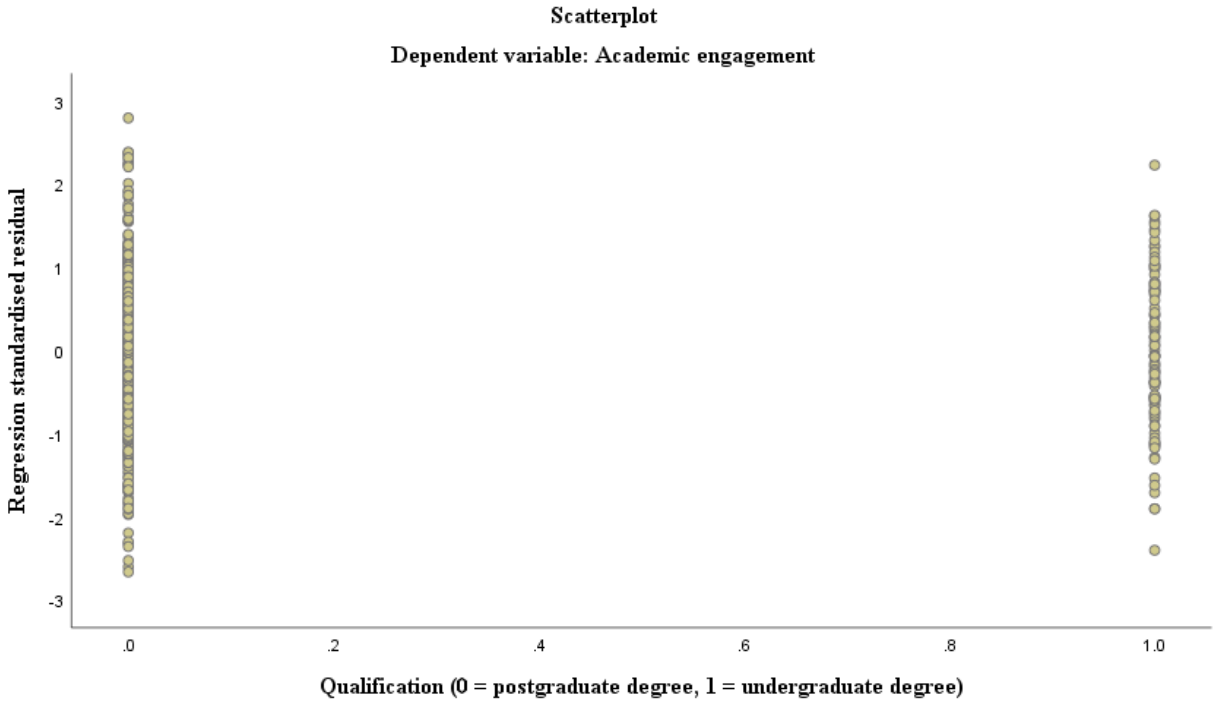



*Figure J12.* Scatterplot of Standardised Observed Residuals and Standardised Predicted Residuals

Appendix K

Mediation Models

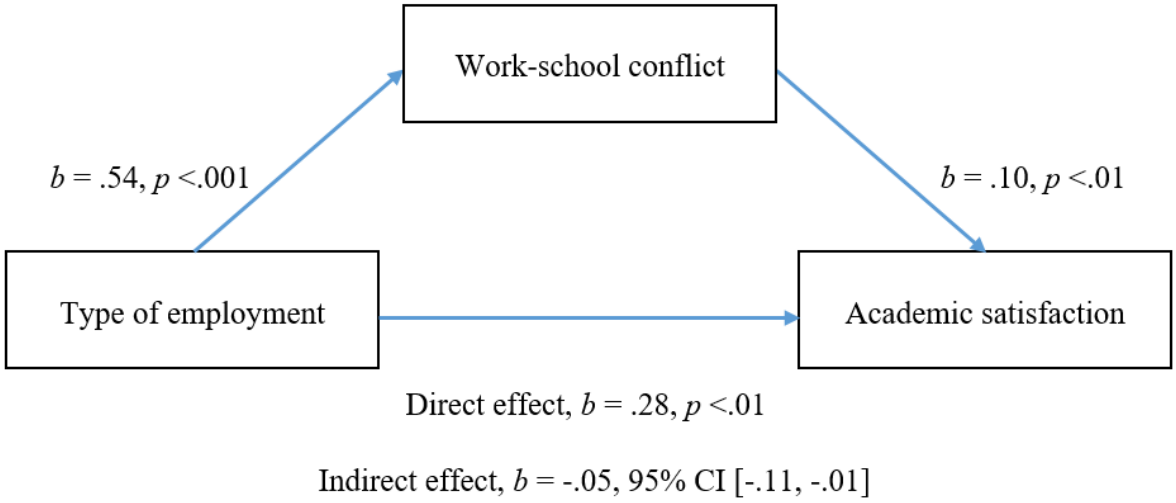



*Figure K1.* Mediation Model of the effect of Type of Employment on AS through WSC

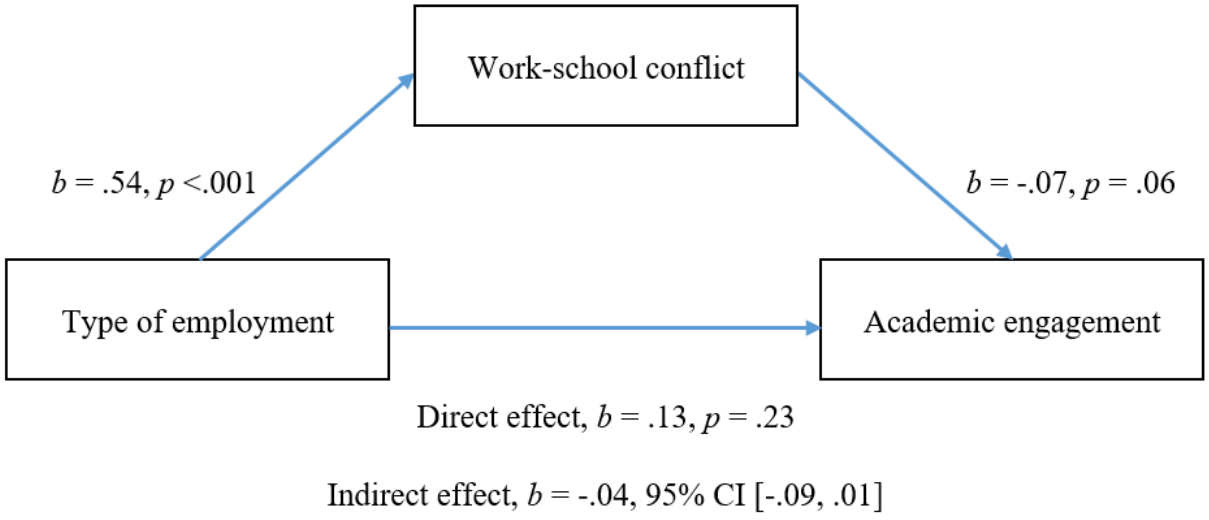



*Figure K2.* Mediation Model of the effect of Type of Employment on AE through WSC