SA Journal of Human Resource Management
ISSN: (Online) 2071-078X, (Print) 1683-7584

The relationship of university student's proactive behaviour with demands, resources and outcomes

Authors:
Charlize du Toit[1]
Karina Mostert[1]

Affiliations:
[1]Department of Management Cybernetics, Faculty of Economic and Management Sciences, North-West University, Potchefstroom, South Africa

Corresponding author:
Karina Mostert,
karina.mostert@nwu.ac.za

Dates:
Received: 31 Mar. 2023
Accepted: 28 Sept. 2023
Published: 22 Nov. 2023

How to cite this article:
Du Toit, C., & Mostert, K. (2023). The relationship of university student's proactive behaviour with demands, resources and outcomes. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur*, *21*(0), a2296. https://doi.org/10.4102/sajhrm.v21i0.2296

Orientation: This study investigated the presence and significance of the relationships between proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and study demands, study resources and important student outcomes.

Research purpose: To determine how students' PBSU and PBDI relate to study demands, study resources, and student outcomes.

Motivation for the study: This study aims to provide universities with insights into how study demands and resources affect students' proactive behaviour to use their strengths and deficits, as well as the impact of these behaviours on student outcomes.

Research approach/design and method: This study used a cross-sectional quantitative research approach with 511 participants from three campuses in a South African university. Correlation coefficients were calculated, and structural equation modelling was used to examine regression weights in the structural model.

Main findings: PBSU and PBDI showed significant relationships with most study-related demands, resources, and outcomes. Overall, strengths use was stronger related to *pace and amount of work, cognitive demands and family support,* whereas deficit improvement had a stronger relationship with *lecturer support, life satisfaction, satisfaction with studies* and *intention to drop out*.

Practical/managerial implications: Knowledge of the relationship between PBSU and PBDI and important student variables may aid HEIs in incorporating these behaviours into student support initiatives as a strategic imperative to enhance student success and graduate employability.

Contribution/value-add: This study contributes to limited research on PBSU and PBDI among first-year students in South African universities and the Human Resource Management field in general.

Keywords: proactive behaviour; strengths use; deficit improvement; study demands; study resources; higher education; university students.

Introduction

Quality higher education is paramount in South Africa (Tewari & Ilesanmi, 2020). The effectiveness of the higher education sector plays a crucial role in the South African economy, especially by equipping graduates and future employees to overcome the skills shortage gap, increase workforce productivity and ultimately enhance the innovative capacity of the South African economy (Fisher & Scott, 2011; Tewari & Ilesanmi, 2020). While universities have developed a variety of initiatives to support student success, such as induction and orientation programmes (Combrink & Oosthuizen, 2020), and non-academic services, such as health services, student counselling and development, and career guidance (Nyar, 2019), the goal of such initiatives is often aimed at attaining academic success (Nyar & Meyers, 2018).

Higher education institutions (HEIs), however, should also equip students with the necessary skills to overcome challenges in the university setting and meet the demands of the labour market (Mtawa et al., 2021). Indeed, Le Roux (2018) recently emphasised the significance of implementing coaching among working postgraduate students to navigate conflicting roles and achieve student

success. They further emphasised the importance of fostering self-reflection and problem-solving skills among students to manage work and study roles and increase well-being. To further support student success and increase students' employability, HEIs may include the development of proactive behaviours in students as part of such initiatives.

Proactivity is regarded as a significant predictor of success (Geertshuis et al., 2014) and has evolved into a critical employability characteristic that graduates and future employees must possess (Lin et al., 2014). Proactive behaviour is the 'extent to which individuals engage in self-starting, future-oriented behaviour to change their work situations, their work roles, or themselves' (Griffin et al., 2007, p. 332). It is a form of extra-role behaviour that is motivated, anticipatory and change-oriented (Den Hartog & Belschak, 2012).

In line with the positive psychology and strengths-based movement, there was an overwhelming shift in the literature to primarily focus on strengths, neglecting the value of a balanced approach to enhance the well-being and functioning of individuals through both encouraging strengths use *and* facilitation of deficit improvement (Linley et al., 2006; Wong & Roy, 2018). To address this imbalance, Van Woerkom et al. (2016b) developed two individual types of proactive behaviour as part of a broader taxonomy – proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI), thereby viewing strengths use and deficit improvement as equally important constructs. Proactive behaviour towards strengths use refers to employees' self-starting behaviours to utilise their strengths in the workplace, while PBDI relates to employees taking the initiative to develop their weaknesses and/or deficits at work (Van Woerkom et al., 2016b). However, it is unclear in the literature if there is a difference in the relationships between PBSU and PBDI with antecedents and outcomes – i.e. there is no specific evidence that PBSU will have a stronger and more positive relationship with important antecedents and outcomes compared to PBDI in the student context.

Only a few studies that researched the constructs of PBSU and PBDI could be found in the literature. For example, Van Woerkom et al. (2016b) showed that PBSU is related to work performance, while PBDI is not. Both PBSU and PBDI were positively related to work engagement, job satisfaction and learning in a study by Els et al. (2018). Els et al. (2018) also show that employees' perceived organisational support and work engagement are related to both strengths use and deficit improvement at work. In the student context, Stander et al. (2015) found only PBSU to be significantly associated with life satisfaction, while both PBSU and PBDI were associated with students' levels of hope and efficacy. Mostert et al. (2017) found that both PBSU and PBDI are significantly related to student engagement, burnout and life satisfaction.

Based on the existing literature, it is evident that PBSU and PBDI are significantly related to essential antecedents and outcomes, but that they could have distinct relationships with various antecedents and outcomes, with varying degrees of influence. As a result, it is critical to investigate how strengths and deficit improvement relate to important antecedents and outcomes in the student context, and to examine if and how these relationships differ.

To investigate the relationships of PBSU and PBDI with different antecedents and outcomes, this study will use the job demands-resources (JD-R) model as theoretical framework. The JD-R model has proven effective and comprehensive for exploring and explaining the relationships between work-related well-being and its antecedents and outcomes (for a review, see Bakker et al., 2023). The flexibility and underlying assumptions of JD-R theory can also be applied to the student and university context (Lesener et al., 2020; Salanova et al., 2010) and be useful in explaining the relationships between PBSU and PBDI.

As proposed by JD-R theory, antecedents of well-being are composed of two separate constructs: job demands and job resources (for review, see Bakker et al., 2023). Job demands and resources are regarded as antecedents that influence employees' work-related well-being and, as a result, employee outcomes, such as performance, job satisfaction and intention to leave. In addition, Bakker et al. (2023) highlight that proactive behaviour can directly influence the stress-provoking and motivational processes outlined in JD-R theory by enabling employees to optimise their job demands and resources.

In the present study, study demands will include pace and amount of work and cognitive demands, both of which are well-established indicators of academic stress influencing important student outcomes. Indeed, pace and amount of work and cognitive demands have been shown to decrease student engagement (Cilliers et al., 2018). A recent study by Jagodics and Szabó (2022) also found that workload strongly relates to burnout among students. The relationship of these demands has been widely studied and is known to significantly influence students' well-being, academic motivation and intention to drop out, among other essential student outcomes (Atalay et al., 2016; Bowyer, 2012).

In terms of resources, the current study includes lecturer, family and friend support because these variables represent distinct sources of social support that students commonly rely on during their academic journeys (Mostert & Pienaar, 2020; Motsabi et al., 2020). Support received from lecturers, family and friends influences students' ability to deal with the challenges of university life and reduces the stress they experience (Mackinnon, 2012). Indeed, social support has been shown to play an essential role in academic student success in higher education (Mishra, 2020) and moderates certain relationships between burnout, intention to drop out and study satisfaction (Mostert & Pienaar, 2020).

Finally, this study includes life satisfaction, satisfaction with studies and intention to drop out as outcome variables. These variables represent key aspects of students' well-being and

academic success (Antaramian, 2017). Life satisfaction serves as a holistic measure of overall well-being (Diener et al., 1985), while satisfaction with studies directly assesses students' contentment with their educational experiences (Duque, 2014). Indeed, satisfaction with studies has been shown to positively predict students' intention to persist with their study course (Van Rooij et al., 2017). Intention to drop out is an important outcome reflecting students' persistence and motivation to complete their degree (Brubacher & Silinda, 2019). However, it has emerged as one of the most pressing concerns for HEIs worldwide, as intention to drop out is strongly associated and predictive of actual dropout rates (Bernardo et al., 2022; Morelli et al., 2022). As a result, HEIs must understand the factors influencing intention to drop out, to identify students who intend to drop out and intervene proactively before students actually leave the university.

This study aims to investigate how PBSU and PBDI relate to study demands (pace and amount of work and cognitive demands), resources (lecturer, family and friend support) and outcomes (life satisfaction, satisfaction with studies and intention to drop out) in the student and university context. Such findings could provide HEIs and other relevant stakeholders with valuable insights into factors enabling, improving or influencing PBSU and PBDI in a student context. These findings may also help universities better support student success and lead to targeted skill development, allowing qualified graduates to enter the labour market.

Literature review

Proactive behaviour towards strengths use and deficit improvement

Originally, a taxonomy of strengths and deficits was developed to measure these constructs in the organisational context (Van Woerkom et al., 2016b). However, the constructs of PBSU and PBDI are valuable to apply in the university context. Students must be able to identify, use and understand how to develop their strengths and deficits as a proactive strategy to overcome challenges during their first year (Clark, 2005), attain academic success and prepare for the world of work.

Strengths-based interventions, in particular, have been shown to increase well-being, optimism and resilience (Seligman et al., 2005), which may help students remain optimistic about their studies and persevere despite setbacks. Strengths-based development has also improved performance in higher education (Mason, 2019). Moreover, students who use their strengths may be able to improve their overall well-being, develop problem-solving skills and strengthen their social engagement (Nyar & Meyers, 2018; Scott, 2018), which may result in increased student success. Therefore, in the student context, strengths use can be defined as the initiative students may take to use their strengths in their study environment (Mostert et al., 2017). This can encompass a diverse range of behaviours and actions, including harnessing one's social intelligence to collaborate better with peers on group projects or tapping into their innate strengths of hope and perseverance to overcome academic challenges (Wagner & Ruch, 2022).

While strengths can help students navigate the university environment, Linley and Harrington (2006) argue that students may naturally desire to develop their abilities and become their best version. As a result, some students may be more inclined to participate in opportunities to improve their areas of weakness, especially those with a mastery goal orientation (Kaplan & Maehr, 2007). Furthermore, Clark (2005) found that to succeed academically, students developed proactive strategies to overcome obstacles, particularly personal deficiencies. As a result, students may seek ways to improve their weaknesses in critical areas that affect their ability to succeed (Clark, 2005). Therefore, deficit improvement among students can be defined as actively seeking opportunities to improve one's developmental areas or deficits related to one's study environment (Mostert et al., 2017). This may entail behaviours such as refining one's time management skills or deliberately seeking additional support and resources from lecturers or peers to assist in understanding a complex subject matter. Based on the preceding discussion, it could be argued that initiatives aimed at deficit improvement are just as important in assisting students in navigating the university environment and achieving academic success.

The job demands-resources model

The JD-R model proposes that regardless of an individual's occupational context, job-related characteristics can be classified into two broad categories: job demands and job resources (Bakker et al., 2023). These two constructs serve as antecedents influencing employees' work-related well-being and, as a result, employee outcomes, such as performance. *Job demands* are associated with specific physical and psychological costs as they refer to certain physical, social, psychological or organisational aspects of a job that require individuals to exert sustained physical or cognitive effort, often *de-energising* employees (Bakker & Demerouti, 2017). On the other hand, *job resources* refer to a job's physical, psychological and organisational aspects that enable individuals to accomplish their work goals, reduce job demands and promote growth across individual and corporate spectrums (Xanthopoulou et al., 2009). Job resources stimulate a *motivational process* in employees (Bakker & Demerouti, 2017), resulting in positive outcomes such as work engagement, well-being and performance (Hakanen et al., 2008).

Equivalently, it can be valuable to classify aspects related to the student and university context into two similar categories: study demands and study resources. Studying can be viewed as a form of work not only from a psychological perspective (Salanova et al., 2010) but also from a practical perspective. Cilliers et al. (2018) reaffirm this by pointing out that students engage in structured, mandatory activities similar to those of employees, including punctual attendance in class and the timely submission of assignments. Whether academic or non-academic, demands such as pace and amount of work

and cognitive demands have been shown to deplete students' energy levels, decrease student engagement (Cilliers et al., 2018) and increase stress – impacting student well-being and life satisfaction (Lesener et al., 2020; Mokgele & Rothmann, 2014). Study resources, on the other hand, may facilitate the motivational process in students (Bakker & Demerouti, 2017). Study resources such as lecturer and peer support have been shown to improve first-year students' well-being, life satisfaction and engagement, which leads to increased graduate throughput and academic success (Mokgele & Rothmann, 2014).

According to Bakker et al. (2023), proactive behaviour may enable employees to optimise *job demands* and *resources.* Proactive behaviour has been shown to directly influence stress-provoking and motivational processes, as postulated in the JD-R model, by influencing important employee outcomes. Parker et al. (2019) contend that job demands can motivate employees to be proactive. Indeed, Tims et al. (2013) confirm that proactive behaviour increases job resources over time, predicting increased work engagement and job satisfaction. Proactive behaviour towards strengths use, in particular, has been shown to reduce employee stress (Proctor et al., 2011) and, as a result, burnout. Proactive behaviour towards strengths use and PBDI have been shown to increase employee engagement (Botha & Mostert, 2014) – a vital outcome of the JD-R model's motivational process.

Similarly, students can engage in PBSU and PBDI to directly influence and self-regulate the stress-provoking and motivational process in the university context. Indeed, Bakker et al. (2015) confirm the usefulness of the motivational process in the academic context.

The relationship of proactive behaviour towards strengths use and proactive behaviour towards deficit improvement with study demands and resources

Numerous studies have demonstrated that study demands (e.g. pace and amount of work, cognitive demands [Cilliers et al., 2018]) are inevitable for all students in a higher education setting (Jagodics & Szabò, 2022). In line with Bakker and Demerouti's (2017, 2018) argument, these unavoidable demands may allow students to proactively develop their deficits and use their strengths to optimise or constructively cope with them. Moreover, students must access proper study resources to cope with and potentially optimise study demands.

Mudhovozi (2011) affirms that students are inclined to view demands as a positive challenge rather than a hindrance when they perceive their study resources as adequate. Study resources can help students deal with demands and include support from lecturers, family, friends and developmental opportunities (Cilliers et al., 2018). According to Bowers and Lopez (2010), strengths can help students better navigate and utilise available resources to cope with university demands. Adequate resources may, in turn, increase motivation (Mokgele & Rothmann, 2014) and positively affect students' experience (Bowers & Lopez, 2010). Furthermore, study resources have been shown to improve student engagement (Mostert et al., 2017), which may increase students' orientation to engage in PBSU and PBDI, supporting Bakker and Demerouti's (2018) argument that engaged employees are more likely to act proactively. As a result, it is argued that adequate study resources may enhance students' PBSU and PBDI when confronted with challenging study demands.

The following hypotheses were developed in terms of study demands and resources and PBSU and PBDI:

> **$H1_a$:** A negative relationship exists between students' study demands and proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).
>
> **$H1_b$:** A positive relationship exists between students' study resources and proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).

The relationship of proactive behaviour towards strengths use and proactive behaviour towards deficit improvement with student outcomes

Literature shows that strengths use leads to critical organisational outcomes, including job satisfaction (Heintz & Ruch, 2020), reduced absenteeism and intention to leave (Mahomed & Rothmann, 2019; Van Woerkom et al., 2016a). Moreover, actively employing one's strengths at work provides meaning for individuals, leading to increased career and life satisfaction (Littman-Ovadia & Steger, 2010). Commitment to deficit improvement has been linked to various organisational outcomes such as reduced intention to leave (Mahomed & Rothmann, 2019), increased retention of employees (Lee & Bruvold, 2003) and increased organisational commitment (Tansky & Cohen, 2001).

In addition to work-related outcomes, strengths use and deficit improvement have influenced various individual outcomes. Research indicates that students' level of satisfaction with their studies is significantly linked to student success – as high levels of satisfaction can support student adjustment, lead to academic achievement (Allan et al., 2021), student retention, and stimulate students to make changes in their learning environment by identifying their weaknesses and strengths (Wiers-Jenssen et al., 2002). Therefore, PBSU and PBDI can assist students in making changes in their educational environment and adjusting to achieve study satisfaction and academic success. A critical factor in the development of study satisfaction is using one's strengths (Louis & Lopez, 2014), which has recently been shown to increase students' satisfaction with their studies (Allan et al., 2021).

Proactive behaviour towards strengths use and PBDI were also positively associated with students' life satisfaction

(Mostert et al., 2017). Recent studies have shown that higher levels of life satisfaction are linked with greater study resilience, while academic satisfaction (e.g. satisfaction with studies) is associated with higher academic self-efficacy (Casali et al., 2023). These findings suggest that providing students with opportunities to use their strengths and improve their deficits can increase their life satisfaction and satisfaction with studies and promote the development of resilience and academic self-efficacy, which may reduce their intention to drop out.

The following hypotheses were developed in terms of PBSU and PBDI and student outcomes:

$H2_a$: A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and life satisfaction.

$H2_b$: A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and satisfaction with studies.

$H2_c$: A negative relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and intention to drop out.

Relationship between antecedents and outcomes

Various scholars have extensively explored and proved the relationships between study demands and resources, and a range of outcomes including life satisfaction, satisfaction with studies and intention to drop out. Notably, Mokgele and Rothmann (2014) found that the availability of sufficient study resources is positively correlated with students' well-being and life satisfaction, while the absence of resources in conjunction with high demands often leads to student burnout and psychological distress. Furthermore, having access to resources can significantly contribute to student academic achievement, subsequently enhancing university students' overall success rates (Mokgele & Rothmann, 2014). Additionally, Mostert et al. (2017) demonstrate the moderating role of social support, including parental support, in influencing the relationships between burnout, intention to drop out and satisfaction with studies. Because this study focuses on the specific relationships between PBSU and PBDI with study demands and study resources, the present study will report in the results section on the relationships between antecedents and outcomes but will not discuss these relationships in depth.

Research design

Research participants

The target population for the present study was first-year university students enrolled across three campuses at a South African HEI. The sample consisted of 511 research participants, of which 32 (6%) were 18 years of age, 296 (53%) were 19 years of age, 105 (21%) were 20 years of age, and 86 (17%) were between 21 and 23 years of age. Regarding race, most (59%) were black students, followed by 192 (38%) white students. Fifty-one percent of the students in the sample were enrolled at campus 2, followed by 31% at campus 1, while campus 3 accounted for the remaining 18%. Regarding gender, most participants were female (58%), while 202 (38%) were male.

Measuring instruments

In addition to a biographical questionnaire, the present study made use of the following measuring instruments:

Study demands

An adapted version of the Questionnaire on the Experience and Evaluation of Work (QEEW), also known as Vragenlijst Beleving en Beoordeling van de Arbeid (VBBA) (Van Veldhoven et al., 1997) was utilised to measure study demands in this study. The questionnaire included five items for *pace* and *amount of work* (e.g. 'How often do you have to work extra hard to complete something?'). Six items were included for *cognitive demands* (e.g. 'How often do you feel that you have to remember too many things in your studies?'). Participants' responses were measured using a 4-point Likert scale ranging from 0 (almost never) to 3 (almost always). Luruli et al. (2020) confirmed the measure's internal consistency, obtaining Cronbach's alpha coefficients above 0.80.

Study resources

Scales based on the adapted version of the *questionnaire on the Experience and Assessment of Work* (VBBA) (Van Veldhoven et al., 1997) were used to measure study resources. Study resources measured included:

Lecturer support: To measure whether lecturers provided sufficient support to students three items were used (e.g. 'I receive help from my lecturers when difficulties in my course arise').

Family support: This item refers to students' family support systems when they encountered difficulties in their lives and studies and was measured with three items (e.g. 'If necessary, can you ask your family for help?').

Friend support: Friend support refers to the support students receive from their friends during their studies. This was measured with five items (e.g. 'Do your friends support you?').

Item responses were measured on a 4-point Likert scale ranging from 0 (almost never) to 3 (almost always).

Cronbach's alpha coefficients on this instrument have shown reliable internal consistencies in a student context ($\alpha > 0.80$) (Luruli et al., 2020).

Strengths use and deficit improvement

The PBSU scale and the PBDI scale of the Strengths Use and Deficit Correction (SUDCO) questionnaire (Van Woerkom et al., 2016b) were used to measure PBSU and PBDI in the student context. Five items from each sub-scale that best represented the student context were chosen. The proactive strengths use behaviour sub-scale included items such as 'In my studies, I use my strengths proactively', whereas the deficit correction sub-scale included items such as 'In my studies, I make an effort to improve my areas of development'. Responses were scored on a 7-point Likert-type scale ranging from 0 (never) to 6 (always). Mostert et al. (2017) found these scales to be reliable in a student context, with Cronbach's alpha coefficients of 0.84 for strengths use and 0.84 for deficit improvement.

Life satisfaction

The *Satisfaction with Life Scale* (SWLS) developed by Diener et al. (1985) was utilised to measure life satisfaction. The instrument for this study included five items reflecting on students' life satisfaction (e.g. 'So far, I have gotten the important things I want in life'). A 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to score all items. The SWLS has shown reliability in the student context, with a Cronbach's alpha coefficient of 0.83 (Van Rensburg & Mostert, 2023).

Satisfaction with studies

Based on the work-related scales developed by Hellgren et al. (1997), students' satisfaction with their studies was measured through adapted self-developed items to fit the student context. The scale included four items to measure satisfaction with studies (e.g. 'I am satisfied with my studies'). All items were scored on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Mostert et al. (2023) have found this measure to be reliable in the student context, with a Cronbach's coefficient of 0.85.

Intention to drop out

Based on the original work-related Turnover Intention Scale (TIS) developed by Sjöberg and Sverke (2000), an adapted questionnaire was developed to measure students' intention to drop out in the student context. Mostert et al. (2023) recently validated the use of this instrument in the student context. Three items were used to measure students' intention to drop out (e.g. 'I want to quit my studies'). A 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to score items. In terms of reliability, this measure has a Cronbach's alpha score of 0.90 (Mostert et al., 2023).

Ethical considerations

Permission was granted to collect data from first-year students through a web-based survey conducted as part of a larger research project by the Ethics Committee of the Faculty of Economic and Management Sciences (EC-EMS); reference number NWU–HS–2014–0165-A4. Before data collection, formal permission was obtained from the university to conduct research across three campuses. A web-based survey was distributed via email and the university's electronic information system, with information about the study's objectives and purpose. It was also emphasised that participation in the study is strictly voluntary and that participants' confidentiality and anonymity will always be respected. Participants were reminded to complete the survey two weeks after initial access.

Statistical analysis

The measurement model in this study was examined using the statistical modelling programme Mplus 8.6 (Muthén & Muthén, 2021). The maximum likelihood (ML) estimator using the covariance matrix as input was employed to assess the model's goodness of fit (Muthén & Muthén, 2021). The following fit indices were used: χ^2 statistic, comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR). A good model fit is indicated by CFI and TLI values greater than 0.90 (Byrne, 2010) and a well-fitting model by values greater than 0.95 (Hu & Bentler, 1999). A value of 0.05 or less for RMSEA indicated a close and/or good fit, whereas values between 0.05 and 0.08 suggested a good model fit (Byrne, 2010). The cutoff point for SRMR in the present study was set at 0.05 (Hu & Bentler, 1999). Notably, these cutoff values should be regarded as mere guidelines because scholars have little consensus on values for adequate fit (Lance et al., 2006).

The study further assessed the reliability of variables using Cronbach's alpha coefficients. Values above 0.70 indicated acceptable internal consistency (Bryman, 2012). Pearson's product-moment correlation was employed to examine the strength and direction of relationships between variables. Statistical significance was set at the 95% confidence interval ($p \leq 0.05$), with a practical significance of correlation coefficients at $r \geq 0.30$ (medium effect) and $r \geq 0.50$ (large effect) (Cohen, 1988). Finally, a structural model was tested, including study demands (*pace and amount of work, cognitive demands*), study resources (*lecturer, family* and *friend support*), PBSU and PBDI, and outcomes (*life satisfaction, satisfaction with studies* and *intention to drop out*). Figure 1 depicts the model that was tested.

Results

Descriptive statistics and product-moment correlations

Table 1 presents the descriptive statistics, Cronbach's alpha coefficients and correlations between the latent variables, while the structural model's regression results are reported in Table 2.

It is evident from the results that the majority of antecedents and outcomes were statistically significant and correlated

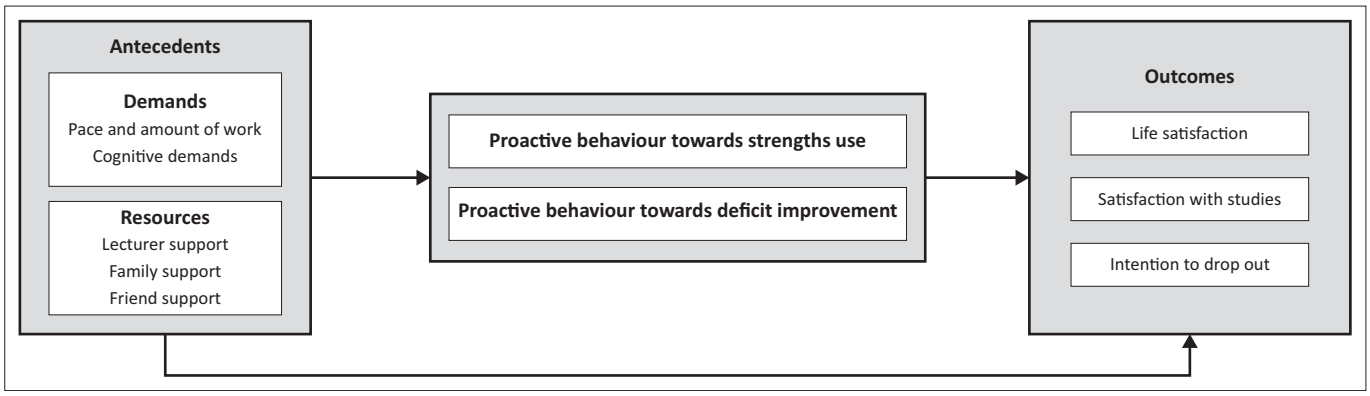

FIGURE 1: Antecedents and outcomes of proactive behaviour towards strengths use and deficit improvement for Study 2 (N = 511).

TABLE 1: Descriptive statistics, Cronbach's alpha coefficients and correlation matrix for the latent variables.

Latent variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Pace and amount of work	2.67	0.54	(0.72*)	-	-	-	-	-	-	-	-	-
2. Cognitive demands	2.35	0.54	0.65*	(0.77*)	-	-	-	-	-	-	-	-
3. Lecturer support	2.67	0.90	-0.17*	-0.38*	(0.86*)	-	-	-	-	-	-	-
4. Family support	3.24	0.81	-0.22*	-0.15*	0.23*	(0.79*)	-	-	-	-	-	-
5. Friend support	2.93	0.76	-0.26*	-0.21*	0.27*	0.28*	(0.87*)	-	-	-	-	-
6. Strengths use	4.15	0.59	0.00	-0.21*	0.24*	0.16*	0.06	(0.81*)	-	-	-	-
7. Deficit improvement	4.00	0.66	0.06	-0.04*	0.26*	0.10*	0.07	0.67*	(0.84*)	-	-	-
8. Life satisfaction	3.80	0.82	-0.28*	-0.31*	0.33*	0.49*	0.46*	0.30*	0.29*	(0.82*)	-	-
9. Satisfaction with studies	4.05	0.78	-0.32*	-0.42*	0.36*	0.25*	0.20*	0.42*	0.39*	0.57*	(0.81*)	-
10. Intention to drop out	1.70	0.90	0.22*	0.37*	-0.27*	-0.22*	-0.15*	-0.14*	-0.19*	-0.23*	-0.55*	(0.84*)

Note: $p \leq 0.05$ for all values ≥ 0.08; Cronbach's alpha reliability coefficients in brackets on the diagonal.
*, Statistically significant.

TABLE 2: Regression results for the structural model.

Regression path	β	SE	*p*
Relationship between antecedents and outcomes			
Pace and amount of work → Life satisfaction	-0.04	0.07	0.58
Cognitive demands → Life satisfaction	-0.13	0.08	0.12
Lecturer support → Life satisfaction	0.06	0.06	0.32
Family support → Life satisfaction	**0.34***	0.06	**0.00**
Friend support → Life satisfaction	0.30*	0.06	**0.00**
Pace and amount of work → Satisfaction with studies	-0.16	0.08	0.06
Cognitive demands → Satisfaction with studies	**-0.20***	0.09	**0.03**
Lecturer support → Satisfaction with studies	**0.12***	0.06	**0.04**
Family support → Satisfaction with studies	0.09	0.05	0.09
Friend support → Satisfaction with studies	0.03	0.05	0.51
Pace and amount of work → Intention to drop out	-0.06	0.09	0.47
Cognitive demands → Intention to drop out	**0.37***	0.09	**0.00**
Lecturer support → Intention to drop out	-0.07	0.06	0.23
Family support → Intention to drop out	**-0.16***	0.06	**0.01**
Friend support → Intention to drop out	-0.01	0.06	0.81
Effect of study demands and resources on strengths use and deficit improvement			
Pace and amount of work → Strengths use	**0.24***	0.10	**0.01**
Pace and amount of work → Deficit improvement	0.13	0.09	0.15
Cognitive demands → Strengths use	**-0.29***	0.10	**0.00**
Cognitive demands → Deficit improvement	-0.01	0.09	0.88
Lecturer support → Strengths use	**0.15***	0.06	**0.01**
Lecturer support → Deficit improvement	**0.26***	0.06	**0.00**
Family support → Strengths use	**0.14***	0.06	**0.03**
Family support → Deficit improvement	0.06	0.07	0.37
Friend support → Strengths use	-0.02	0.06	0.82
Friend support → Deficit improvement	0.02	0.06	0.76

Table 2 Continued on next column →

TABLE 2 (Continues...): Regression results for the structural model.

Regression path	β	SE	*p*
Effect of strengths use and deficit improvement on student outcomes			
Strengths use → Life satisfaction	0.07	0.08	0.37
Deficit improvement → Life satisfaction	**0.17***	0.08	**0.04**
Strengths use → Satisfaction with studies	**0.19***	0.08	**0.03**
Deficit improvement → Satisfaction with studies	**0.22***	0.09	**0.01**
Strengths use → Intention to drop out	0.13	0.09	0.15
Deficit improvement → Intention to drop out	**-0.22***	0.09	**0.01**

Note: $p \leq 0.05$; β, beta coefficient; SE, standard error; p, two-tailed statistical significance.
*, Statistically significant relationship.

with strengths use and deficit improvement. In terms of study demands, it seems that the strongest relationship was between strengths use and *cognitive demands* (r = -0.21). However, in terms of study resources, the strongest relationship was between deficit improvement and *lecturer support* (r = 0.26). With regards to outcomes, the strongest relationship was between strengths use and satisfaction with studies (r = 0.42). Furthermore, Table 1 indicates that the measuring instruments were reliable, with all scales' Cronbach's alpha coefficients greater than 0.70.

Structural equation model

The fit of the structural model was found to be satisfactory (CFI = 0.90; TLI = 0.89; RMSEA = 0.04; SRMR = 0.06). Most relationships between PBSU and PBDI, antecedents and outcomes were statistically significant, as seen in Table 2. However, the following relationships were insignificant: *pace*

and amount of work, *cognitive demands* and *family support* were not associated with deficit improvement, while *friend support* had no significant relationship with either strengths use or deficit improvement. Furthermore, strengths use has no significant relationship with *life satisfaction* or *intention to drop out*. Overall, strengths use was much stronger related to *pace and amount of work*, *cognitive demands* and *family support*, with the strongest relationship being between cognitive demands and strengths use (r = -0.29). In contrast, deficit improvement was stronger related to *lecturer support*, *life satisfaction*, *satisfaction with studies* and *intention to drop out*, with the strongest relationship being tied between deficit improvement and satisfaction with studies (r = 0.22) and deficit improvement intention to drop out (r = -0.22).

Discussion

This study aimed to investigate how PBSU and PBDI relate to study demands (pace and amount of work and cognitive demands), resources (lecturer, family and friend support) and outcomes (life satisfaction, satisfaction with studies and intention to drop out) in the student and university context. In essence, the findings of this study showed that study demands and resources had a stronger relationship with PBSU than PBDI, except for one resource, lecturer support, which was significantly associated with PBDI. On the other hand, the results showed that PBDI has a more substantial relationship with essential student outcomes compared to PBSU, providing evidence for the variation in the strength of relationships between these variables.

Regarding *strengths use* and *study demands*, the findings indicate that students' study demands are significantly associated with PBSU. Specifically, it was found that *cognitive demands* have a negative relationship with strengths use. Based on these findings, it can be argued that *cognitive demands* may inhibit students' proclivity to use their strengths in their study environment. These findings align with Wu and Parker (2013), who found that specific job characteristics (e.g. cognitive demands) are situational factors that can inhibit an individual's proactivity. However, one study demand in particular – *pace and amount* of work – had a positive relationship with PBSU. The pace and amount students are exposed to seems to be a challenging demand rather than a hindrance, increasing students' proclivity to use their strengths. Indeed, research has found that specific job demands or job stressors, such as time constraints, can promote proactive behaviour (Bakker & Demerouti, 2017, 2018; Parker et al., 2019). It can also be argued that students can experience specific demands as challenging rather than hindering, in this case, when they can use their strengths to overcome these challenges (Mudhovozi, 2011).

Contrary to expectations, no significant relationship was found between *deficit improvement* and *study demands*. However, the energetic process (Bakker & Demerouti, 2017) could be used to explain this finding, as it highlights the impact of increased demands in the absence of adequate resources, which can lead to exhaustion. Indeed, Mokgele and Rothmann (2014) emphasise that when exhaustion is combined with increased demands, students must exert extra effort to maintain their academic performance, resulting in a 'loss spiral' (Hobfoll, 1989), hindering students' ability to recover from the negative effects of demands. Furthermore, such loss spirals frequently result in investment failure, and students may reduce their intentional efforts to conserve energy and cope with stress (Hobfoll, 1989). As a result, students may be less likely to engage in extracurricular activities, such as opportunities for personal development such as engaging in proactive behaviour to develop their deficits.

Regarding *strengths use and resources*, it was found that *lecturer support* and *family support* positively affected PBSU. Based on the results, it is argued that adequate resources, such as strong family and lecturer support, may improve students' inclination to use their strengths proactively. These findings align with the Conservation of Resources Theory (COR), which states that individuals are inherently driven to acquire resources and more motivated to do so when demands are low (Hobfoll, 1989). Consequently, when students perceive support from their lecturers and peers, they become more motivated to harness their personal strengths, viewing them as valuable resources to enrich their overall resource pool. This process is consistent with the concept of 'gain spirals' described by Hobfoll (1989). These findings are further consistent with those of Bowers and Lopez (2010), who found that students better utilise available resources and cope with university demands when using their strengths. In turn, adequate resources may increase the motivation students experience (Bowers & Lopez, 2010), increasing their proclivity to engage in PBSU. These findings can be attributed to the fact that students with social support show higher levels of self-esteem and are, therefore, able to excel academically (Li et al., 2018).

Regarding *deficit improvement* and *study resources*, it was found that *lecturer support* has a positive relationship with PBDI. These results are consistent with those of Els et al. (2018), who found organisational support to predict deficit improvement in the organisational context. Similarly, Kuh (2009) demonstrates that support from academic staff, in the form of guidance and feedback, can assist students in identifying and addressing academic deficits. Lecturer support has also been shown to increase students' levels of motivation (Mokgele & Rothmann, 2014) and positive emotions (e.g. hope [Lei et al., 2018]), which may increase their proclivity to engage in developmental opportunities.

With regards to the relationship between PBSU and PBDI with outcomes, the findings further showed that *strengths use* was not significantly related to most *outcomes* included in this study, except for the positive relationship with *satisfaction with studies*. This result is consistent with the findings of Allan et al. (2021), who found that using strengths increases study satisfaction. Louis and Lopez (2014) also contend that strengths use is key to developing study satisfaction. Furthermore,

Linley and Harrington (2006) assert that enabling employees to utilise their strengths at work stimulates positive states for employees, consequently increasing their feelings of self-competence and motivation and may lead to employees feeling more enthusiastic and satisfied with their job. In line with the basic assumptions of positive emotions in the broaden-and-build theory (Fredrickson, 2001), these positive states may encourage employees to engage in and exhibit innovative work behaviours, benefiting the organisation.

However, contrary to expectations, no significant relationship was found between strengths use and *life satisfaction* or *intention to drop out.* While some studies have indeed shown a positive relationship between strengths use and life satisfaction (McTiernan et al., 2020), scholars emphasise the importance of both the positive (e.g. strengths) and negative (e.g. deficits) as integral components of living fulfilling life (Wong & Roy, 2018). As a result, strengths as a singular variable may not be associated with life satisfaction, as hypothesised in this study. In addition, research indicates that additional factors, such as self-esteem (Douglass & Duffy, 2015) and self-image (Yoo & Lee, 2022), influence the relationship between strengths use and life satisfaction, especially within the unique context of students.

On the other hand, it appears that *deficit improvement* had a strong relationship of important student *outcomes*. Proactive behaviour towards deficit improvement was found to be significantly associated with *life satisfaction* and *satisfaction with studies*. As a result, it can be argued that PBDI can help students adapt to their environments to increase their satisfaction with their studies and attain academic success. These findings contradict those of Stander et al. (2015), who recently showed that only PBSU, not PBDI, was a significant predictor of student life satisfaction. In this study, however, no meaningful relationship was found between the use of strengths and life satisfaction. Therefore, it can be argued that providing students with opportunities to develop their deficits may increase their levels of life satisfaction rather than focusing solely on their strengths. Furthermore, commitment to deficit improvement has also been linked to job satisfaction in the organisational context (Lee & Bruvold, 2003). Similarly, the findings show that deficit improvement has a positive relationship with students' satisfaction with their studies. As a result, it is argued that when students are able to improve their deficits and see progress in their academic performance, they may feel a sense of accomplishment and satisfaction, which can improve their overall satisfaction with their studies.

In addition, PBDI had a negative relationship with students' *intention to drop out.* The findings of this study are supported by those of Stander et al. (2015), who found PBDI to predict first-year students' levels of self-efficacy and feelings of hope that may significantly impact students' perceptions of their ability to succeed academically. As a result, it is argued that increased feelings of hope and self-efficacy may decrease students' intention to drop out.

While the strength of relationships varies across variables, it is evident that both PBSU and PBDI are significantly related to important student antecedents and outcomes. Therefore, it is recommended that HEIs adopt a balanced approach when designing student initiatives, where both PBSU and PBDI are equally integrated. This approach may assist students to better cope with demands, leverage resources and promote their well-being in the university setting while also equipping them with essential skills for their future careers.

Limitations and recommendations

The present study is not without limitations. As a result of using a cross-sectional research design, the study could not investigate causal statements concerning the hypothesised relationships between antecedents, PBSU, PBDI and meaningful student outcomes. Future researchers should use a longitudinal research design to reach more refined conclusions about the relationship between PBSU and PBDI, antecedents and essential student outcomes (Govindji & Linley, 2007). Furthermore, while it is true that our paper alludes to the possibility of mediation, our main objective was to determine how students' proactive behaviour relates to study demands, study resources and student outcomes. The authors recommend that future studies explore mediation effects to gain a deeper understanding of the underlying mechanisms at play. In addition, it should be noted that the structural model tested included only a subset of study demands, study resources and student outcomes. As recently proposed by Bakker et al. (2023), this limited set of variables may not fully capture the complexity of demands and resources that individuals may face. Therefore, future researchers should consider broadening the study's scope to include a more representative range of student variables to understand better and validate the importance of PBSU and PBDI in the context of student well-being and success.

Furthermore, the study included participants from only one South African public HEI. Replicating and expanding the study to various tertiary institutions across the country could contribute to the literature on strengths use and deficit improvement in a student context. The present study focused solely on first-year university students at a South African HEI. Therefore, it is recommended that future researchers expand the study to include a more diverse range of participants to generalise the findings. A self-report online questionnaire was used, requiring participants to complete the questionnaire independently. Future researchers may, however, incorporate additional data collection methods to overcome social desirability and response bias (Demetriou et al., 2015).

Practical implications

Student support initiatives play a crucial role in the development of PBSU and PBDI, as universities must encourage and enable students to cultivate proactive

behaviour. Without providing opportunities for students to learn and enhance these skills, they may remain underutilised (Tymon & Batistic, 2016). The present study offers valuable insights into how PBSU and PBDI relate to various outcomes, which can, in turn, reduce dropout and increase academic success, ensuring more competent graduates enter the labour market. Additionally, the findings highlight how particular study demands and resources can influence students' efforts to utilise their strengths and develop their deficits proactively. Based on these findings, universities can implement evidence-based strategies to optimise study demands and strengthen study resources to improve student well-being and productivity. Furthermore, integrating the development of PBSU and PBDI into student initiatives can prepare students with essential soft skills needed for the labour market (Majid et al., 2019).

Conclusion

In conclusion, strengths use was much stronger related to *pace and amount of work, cognitive demands* and *family support.* In contrast, deficit improvement had a stronger relationship with *lecturer support, life satisfaction, satisfaction with studies* and *intention to drop out.* No significant associations were found between PBSU, PBDI and *friend support.*

Students' ability to engage in continuous, proactive self-development (e.g. strengths use and deficit improvement) has become critical for success in a turbulent university and career environment (Meyers et al., 2015). The findings of this study highlight the importance of including developmental opportunities aimed at PBSU and PBDI in student development initiatives. The findings provide empirical evidence that both PBSU and PBDI significantly impact various important student variables. By incorporating proactive behaviour into development initiatives, HEIs can play a pivotal role in increasing student success and producing competent graduates, which is crucial for South Africa's growth and development.

Acknowledgements

Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

C.d.T. wrote the original draft based on K.M.'s presented idea for the research study. K.M. verified the analytical methods. C.d.T. and K.M. collaboratively assisted with the interpretation of the results. K.M. supervised the study while reviewing and editing the manuscript and provided necessary resources and acquired the funding for the project. C.d.T and K.M. discussed the results and contributed to the final manuscript.

Funding information

The material described in this article is based on work supported by the office of the Deputy Vice-Chancellor: Teaching and Learning at the North-West University.

Data availability

The data that support the findings of this study are available from the corresponding author, K.M., upon reasonable request.

Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. It does not necessarily reflect the official policy or position of any affiliated institution, funder, agency, or that of the publisher. The authors are responsible for this article's results, findings, and content.

References

Allan, B.A., Owens, R.L., Kim, K., Douglass, R.P., & Hintz, J. (2021). Strengths and satisfaction in first year undergraduate students: A longitudinal study. *The Journal of Positive Psychology, 16*(1), 94–104. https://doi.org/10.1080/17439760.2019.1676458

Antaramian, S.P. (2017). The importance of very high life satisfaction for students' academic success. *Cogent Education, 4*(1), 1307622. https://doi.org/10.1080/2331186x.2017.1307622

Atalay, K.D., Can, G.F., Erdem, S.R., & Müderrisoglu, I.H. (2016). Assessment of mental workload and academic motivation in medical students. *Journal of the Pakistan Medical Association, 66*(5), 574–578.

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

Bakker, A.B., & Demerouti, E. (2018). Multiple levels in job demands–resources theory: Implications for employee well-being and performance. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being* (pp. 1–13). DEF Publishers.

Bakker, A.B., Demerouti, E., & Sanz-Vergel, A. (2023). Job demands–resources theory: Ten years later. *Annual Review of Organizational Psychology and Organizational Behaviour, 10*(1), 25–53. https://doi.org/10.1146/annurev-orgpsych-120920-053933

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

Bernardo, A., Galve-González, C., Núñez, J.C., & Almeida, L.S. (2022). A path model of university dropout predictors: The role of satisfaction, the use of self-regulation learning strategies and students' engagement. *Sustainability, 14*(3), 1057. https://doi.org/10.3390/su14031057

Botha, C., & Mostert, K. (2014). A structural model of job resources, organisational and individual strengths use and work engagement. *SA Journal of Industrial Psychology, 40*(1), a1135, 11. https://doi.org/10.4102/sajip.v40i1.1135

Bowers, K.M., & Lopez, S.J. (2010). Capitalizing on personal strengths in college. *Journal of College and Character, 11*(1), 1–11. https://doi.org/10.2202/1940-1639.1011

Bowyer, K. (2012). A model of student workload. *Journal of Higher Education Policy and Management, 34*(3), 239–258. https://doi.org/10.1080/1360080X.2012.678729

Brubacher, M.R., & Silinda, F.T. (2019). Enjoyment and not competence predicts academic persistence for distance education students. *The International Review of Research in Open and Distributed Learning, 20*(3), 166–179. https://doi.org/10.19173/irrodl.v20i4.4325

Bryman, A. (2012). *Social research methods* (4th ed.). Oxford University Press.

Byrne, B.M. (2010). *Structural equation modelling with AMOS* (2nd ed.). Taylor & Francis Group.

Casali, N., Meneghetti, C., Tinti, C., Re, A.M., Sini, B., Passolunghi, M.C., Valenti, A., Montesano, L., Pellegrino, G., & Carretti, B. (2023). Academic achievement and satisfaction among university students with specific learning disabilities: The roles of soft skills and study-related factors. *Journal of Learning Disabilities, 0*(0). https://doi.org/10.1177/00222194221150786

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

Clark, M.R. (2005). Negotiating the freshman year: Challenges and strategies among first-year college students. *Journal of College Student Development, 46*(3), 296–316. https://doi.org/10.1353/csd.2005.0022

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

Combrink, H.M.V.E., & Oosthuizen, L.L. (2020). First-year student transition at the University of the Free State during COVID-19: Challenges and insights. *Journal of Student Affairs in Africa, 8*(2), 31–44. https://doi.org/10.24085/jsaa.v8i2.4446

Demetriou, C., Özer, B. U., & Essau, C. A. (2015). Self-Report questionnaires. In R. Cautin, & S. Lilienfeld (Eds.), *The Encyclopedia of Clinical Psychology*. John Wiley & Sons.

Den Hartog, D.N., & Belschak, F.D. (2012). When does transformational leadership enhance employee proactive behavior? The role of autonomy and role breadth self-efficacy. *Journal of Applied Psychology, 97*(1), 194–202. https://doi.org/10.1037/a0024903

Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Douglass, R.P., & Duffy, R.D. (2015). Strengths use and life satisfaction: A moderated mediation approach. *Journal of Happiness Studies, 16*(3), 619–632. https://doi.org/10.1007/s10902-014-9525-4

Duque, L.C. (2014). A framework for analysing higher education performance: Students' satisfaction, perceived learning outcomes, and dropout intentions. *Total Quality Management & Business Excellence, 25*(1–2), 1–21. https://doi.org/10.1080/14783363.2013.807677

Els, C., Mostert, K., & Van Woerkom, M. (2018). Investigating the impact of a combined approach of perceived organisational support for strengths use and deficit correction on employee outcomes. *SA Journal of Human Resource Management, 16*, a882. https://doi.org/10.4102/sajhrm.v16i0.882

Fisher, G., & Scott, I. (2011). *Closing the skills and technology gap in South Africa. Background paper 3: The role of higher education in closing the skills gap in South Africa* (pp. 1–56). The World Bank Human Development Group. Retrieved from https://www.academia.edu/8996426/The_role_of_higher_education_in_closing_the_skills_gap_in_South_Africa

Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Geertshuis, S., Jung, M., & Cooper-Thomas, H. (2014). Preparing students for higher education: The role of proactivity. *International Journal of Teaching and Learning in Higher Education, 26*(2), 157–169.

Govindji, R., & Linley, P. (2007). Strengths use, self-concordance and well-being: Implications for strengths coaching and coaching psychologists. *Coaching Psychology Review, 2*(2), 143–153. https://doi.org/10.53841/bpsicpr.2007.2.2.143

Griffin, M.A., Neal, A., & Parker, S.K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), 327–347. https://doi.org/10.5465/amj.2007.24634438

Hakanen, J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative and work-unit innovativeness. *Journal of Vocational Behavior, 73*(1), 78–91. https://doi.org/10.1016/j.jvb.2008.01.003

Heintz, S., & Ruch, W. (2020). Character strengths and job satisfaction: Differential relationships across occupational groups and adulthood. *Applied Research Quality Life, 15*(2), 503–527. https://doi.org/10.1007/s11482-018-9691-3

Hellgren, J., Sjöberg, A., & Sverke, M. (1997). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41*(3), 247–252. https://doi.org/10.1111/1467-9450.00194

Hobfoll, S.E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513–524. https://doi.org/10.1037/0003-066X.44.3.513

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

Jagodics, B., & Szabó, É. (2022). Student burnout in higher education: A demand-resource model approach. *Trends in Psychology, 30*(4), 1–20. https://doi.org/10.1007/s43076-021-00137-4

Kaplan, A., & Maehr, M.L. (2007). The contributions and prospects of goal orientation theory. *Educational Psychology Review, 19*(2), 141–184. https://doi.org/10.1007/s10648-006-9012-5

Kuh, G.D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research, 2009*(141), 5–20. https://doi.org/10.1002/ir.283

Lance, C.E., Butts, M.M., & Michels, L.C. (2006). The sources of four commonly reported cut-off criteria: What did they really say? *Organizational Research Methods, 9*(2), 202–220. https://doi.org/10.1177/1094428105284919

Le Roux, I. (2018). Coaching as support for postgraduate students: A case study. *SA Journal of Human Resource Management, 16*, a939. https://doi.org/10.4102/sajhrm.v16i0.939

Lee, C.H., & Bruvold, N.T. (2003). Creating value for employees: Investment in employee development. *International Journal of Human Resource Management, 14*(6), 981–1000. https://doi.org/10.1080/0958519032000106173

Lei, H., Cui, Y., & Chiu, M.M. (2018). The relationship between teacher support and students' academic emotions: A meta-analysis. *Frontiers in Psychology, 8*, 2288. https://doi.org/10.3389/fpsyg.2017.02288

Lesener, T., Pleiss, L.S., Gusy, B., & Wolter, C. (2020). The study demands-resources framework: An empirical introduction. *International Journal of Environmental Research and Public Health, 17*(14), 5183. https://doi.org/10.3390/ijerph17145183

Li, J., Han, X., Wang, W., Sun, G., & Cheng, Z. (2018). How social support influences university students' academic achievement and emotional exhaustion: The mediating role of self-esteem. *Learning and Individual Differences, 61*(5), 120–126. https://doi.org/10.1016/j.lindif.2017.11.016

Lin, S.H., Lu, W.C., Chen, M.Y., & Chen, L.H. (2014). Association between proactive personality and academic self–efficacy. *Current Psychology, 33*(4), 600–609. https://doi.org/10.1007/s12144-014-9231-8

Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology, 1*(1), 3–16. https://doi.org/10.1080/17439760500372796

Linley, P.A., & Harrington, S.M. (2006). Strengths coaching: A potential-guided approach to coaching psychology. *International Coaching Psychology Review, 1*(1), 37–46. https://doi.org/10.53841/bpsicpr.2006.1.1.37

Littman-Ovadia, H., & Steger, M. (2010). Character strengths and well-being among volunteers and employees: Toward an integrative model. *The Journal of Positive Psychology, 5*(6), 419–430. https://doi.org/10.1080/17439760.2010.516765

Louis, M.C., & Lopez, S.J. (2014). Strengths interventions: Current progress and future directions. In A.C. Parks & S.M. Schueller (Eds.), *The Wiley Blackwell handbook of positive psychological interventions* (pp. 66–89). John Wiley & Sons.

Luruli, K., Mostert, K., & Jacobs, M. (2020). Testing a structural model for study demands and resources, study engagement, and well-being of first-year university students. *Journal of Psychology in Africa, 30*(3), 179–186. https://doi.org/10.1080/14330237.2020.1767925

Mackinnon, S.P. (2012). Perceived social support and academic achievement: Cross-lagged panel and bivariate growth curve analyses. *Journal of Youth and Adolescence, 41*(4), 474–485. https://doi.org/10.1007/s10964-011-9691-1

Mahomed, F.E., & Rothmann, S. (2019). Strengths use, deficit correction, thriving, and performance of academics at universities of technology. *SA Journal of Industrial Psychology, 45*(1), a1577. https://doi.org/10.4102/sajip.v45i0.1577

Majid, S., Eapen, C.M. Aung, E.M., & Oo, K.T. (2019). The importance of soft skills for employability and career development: Students and employers' perspectives. *The UIP Journal of Soft Skills, 13*(4), 7–39.

Mason, H.D. (2019). The best that I can be: A case for a strengths-based approach during the first-year experience. *Journal for Student Affairs in Africa, 7*(2), 89–108. https://doi.org/10.24085/jsaa.v7i2.3827

McTiernan, K., Gullon-Scott, F., & Dudley, R. (2020). An exploration of strength use and its relationship with life satisfaction, positive self-beliefs and paranoid ideation. *International Journal of Wellbeing, 10*(2), 53–70. https://doi.org/10.5502/ijw.v10i2.883

Meyers, M. C., van Woerkom, M., de Reuver, R. S. M., Bakk, Z., & Oberski, D. L. (2015). Enhancing psychological capital and personal growth initiative: Working on strengths or deficiencies. *Journal of Counseling Psychology, 62*(1), 50–62. https://doi.org/10.1037/cou0000050

Mishra, S. (2020). Social networks, social capital, social support and academic success in higher education: A systematic review with a special focus on 'underrepresented' students. *Educational Research Review, 29*, 100307. https://doi.org/10.1016/j.edurev.2019.100307

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

Morelli, M., Chirumbolo, A., Baiocco, R., & Cattelino, E. (2022). Self-regulated learning self-efficacy, motivation, and intention to drop-out: The moderating role of friendships at university. *Current Psychology, 42*(18), 15589–15599. https://doi.org/10.1007/s12144-022-02834-4

Mostert, K., & Pienaar, J. (2020). The moderating effect of social support on the relationship between burnout, intention to drop out, and satisfaction with studies of first-year university students. *Journal of Psychology in Africa, 30*(3), 197–202. https://doi.org/10.1080/14330237.2020.1767928

Mostert, K., Theron, B., & De Beer, L.T. (2017). Validating strengths use and deficit correction behaviour scales for South African first-year students. *SA Journal of Industrial Psychology, 43*, a1395. https://doi.org/10.4102/sajip.v43.1395

Mostert, K., van Rensburg, C., & Machaba, R. (2023). Intention to dropout and study satisfaction: Testing item bias and structural invariance of measures for South African first-year university students. *Journal of Applied Research in Higher Education, Vol. ahead-of-print (No. ahead-of-print)*. https://doi-org.nwulib.idm.oclc.org/10.1108/JARHE-04-2022-0126

Motsabi, S.C., Diale, B.M., & Van Zyl, A. (2020). The role of social support in the persistence of first-year first-generation African students in a higher education institution in South Africa. *South African Journal of Higher Education, 34*(4), 189–210. https://doi.org/10.20853/34-4-3486

Mtawa, N., Fongwa, S., & Wilson-Strydom, M. (2021). Enhancing graduate employability attributes and capabilities formation: A service-learning approach. *Teaching in Higher Education*, 26(5), 679–695. https://doi.org/10.1080/13562517.2019.1672150

Mudhovozi, P. (2011). Analysis of perceived stress, coping resources and life satisfaction among students at a newly established institution of higher learning. *South African Journal of Higher Education, 25*(3), 510–522. https://doi.org/10.10520/EJC37694

Muthén, L.K., & Muthén, B.O. (2021). *Mplus user's guide* (8th ed.). Muthén & Muthén.

Nyar, A. (2019). The first-year experience (FYE) in South Africa: A national perspective. *SANRC FYE Thought Series, 2*, 1–34.

Nyar, A., & Meyers, C. (2018). Interview with André van Zyl: Understanding the UJ Institutional Student Success Initiative (ISSI). *Journal of Student Affairs in Africa, 6*(1), 99–103. https://doi.org/10.24085/jsaa.v6i1.3069

Parker, S.K., Wang, Y., & Liao, J. (2019). When is proactivity wise? A review of factors that influence the individual outcomes of proactive behaviour. *Annual Review of Organizational Psychology and Organizational Behaviour, 6*(1), 221–248. https://doi.org/10.1146/annurev-orgpsych-012218-015302

Proctor, C., Maltby, J., & Linley, P.A. (2011). Strengths use as a predictor of wellbeing and health-related quality of life. *Journal of Happiness Studies, 12*(1), 153–169. https://doi.org/10.1007/s10902-009-9181-2

Salanova, M., Schaufeli, W., Martinez, I., & Bresò, E. (2010). How obstacles and facilitators predict academic performance: The mediating role of study student burnout and student engagement. *Anxiety, Stress & Coping: An International Journal, 23*(1), 53–70. https://doi.org/10.1080/10615800802609965

Scott, I. (2018). Designing the South African higher education system for student success. *Journal of Student Affairs in Africa, 6*(1), 1–17. https://doi.org/10.24085/jsaa.v6i1.3062

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

Sjöberg, A., & Sverke, M. (2000). The interactive effect of job involvement and organizational commitment on job turnover revisited: A note on the mediating role of turnover intention. *Scandinavian Journal of Psychology, 41*(3), 247–252. https://doi.org/10.1111/1467-9450.00194

Stander, F.W., Diedericks, E., Mostert, K., & De Beer, L.T. (2015). Proactive behaviour towards strength use and deficit improvement, hope and efficacy as predictors of life satisfaction amongst first-year university students. *SA Journal of Industrial Psychology, 41*(1), 10. https://doi.org/10.4102/sajip.v41i1.1248

Tansky, J.W., & Cohen, D.J. (2001). The relationship between organizational support, employee development, and organizational commitment: An empirical study. *Human Resource Development Quarterly, 12*(3), 285–300. https://doi.org/10.1002/hrdq.15

Tewari, D.D., & Ilesanmi, K.D. (2020). Teaching and learning interaction in South Africa's higher education: Some weak links. *Cogent Social Sciences, 6*(1), 1740519, 1–16. https://doi.org/10.1080/23311886.2020.1740519

Tims, M., Bakker, A.B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology, 18*(2), 230–240. https://doi.org/10.1037/a0032141

Tymon, A., & Batistic, S. (2016). Improved academic performance and enhanced employability? The potential double benefit of proactivity for business graduates. *Teaching in Higher Education, 21*(8), 915–932. https://doi.org/10.1080/13562517.2016.1198761

Van Rensburg, C., & Mostert, K. (2023). Can life satisfaction be measured fairly for different groups of South African first-year university students? Testing differential item functioning and invariance of the satisfaction with life scale. *Journal of Student Affairs in Africa, 11*(1), 109–128. https://doi.org/10.24085/jsaa.v11i1.4327

Van Rooij, E., Jansen, E., & Van De Grift, W. (2017). First-year university students' academic success: The importance of academic adjustment. *European Journal of Psychology of Education, 33*(4), 749–767. https://doi.org/10.1007/s10212-017-0347-8

Van Veldhoven, M.J.P.M., Broersen, J.P.J., & Fortuin, R. (1997). *Handleiding VBBA: onderzoek naar de Beleving van Psychosociale Arbeidsbelasting en Werkstress met behulp van de Vragenlijst Beleving en en Beoordeling van de Arbeid*. Stichting Kwaliteitsbevordering Bedrijfsgezondheid (SKB).

Van Woerkom, M., Bakker, A.B., & Nishii, L.H. (2016a). Accumulative job demands and support for strength use: Fine-tuning the job demands-resources model using conservation of resources theory. *Journal of Applied Psychology, 101*(1), 141–150. https://doi.org/10.1037/apl0000033

Van Woerkom, M., Mostert, K., Els, C., Bakker, A.B., De Beer, L.T., & Rothmann, S. (2016b). Strengths use and deficit correction in organizations: Development and validation of a questionnaire. *European Journal of Work and Organizational Psychology, 25*(6), 960–975. https://doi.org/10.1080/1359432x.2016.1193010

Wagner, L., & Ruch, W. (2022). Displaying character strengths in behavior is related to well-being and achievement at school: Evidence from between- and within-person analyses. *The Journal of Positive Psychology, 18*(3), 460–480. https://doi.org/10.1080/17439760.2022.2109196

Wiers-Jenssen, J., Stensaker, B., & Grøgaard, J.B. (2002). Student satisfaction: Towards an empirical deconstruction of the concept. *Quality in Higher Education, 8*(2), 183–195. https://doi.org/10.1080/1353832022000004377

Wong, P.T.P., & Roy, S. (2018). Critique of positive psychology and positive interventions. In N.J.L. Brown, T. Lomas, & F.J. Eiroa-Orosa (Eds.), *The Routledge international handbook of critical positive psychology* (pp. 142–160). Routledge, Taylor & Francis Group.

Wu, C.H., & Parker, S. (2013). Thinking and acting in anticipation: A review of research on proactive behavior. *Advances in Psychological Science, 21*(4), 679–700. https://doi.org/10.3724/SP.J.1042.2013.00679

Xanthopoulou, D., Bakker, A.B., Demerouti, E., & Schaufeli, W.B. (2009). Reciprocal relationship between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*(3), 253–244. https://doi.org/10.1016/j.jvb.2008.11.003

Yoo, J., & Lee, S.E. (2022). Factors influencing life satisfaction: Role of physical fitness, body satisfaction, and shopping. *Family and Consumer Sciences Research Journal, 51*(2), 90–102. https://doi.org/10.1111/fcsr.12461

Zangirolami-Raimundo, J., Echeimberg, J.O., & Leone, C. (2018). Research methodology topics: Cross-sectional studies. *Journal of Human Growth and Development, 28*(3), 356–360. https://doi.org/10.7322/jhgd.152198