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Strengths use and deficit improvement of first-year university students: A structural model for social support and student outcomes

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This study aimed to examine first-year students' proactive behaviour towards strengths use (PBSU) and deficit improvement (PBDI), their relationship with students' social support and essential student outcomes (student burnout, student engagement, life satisfaction, satisfaction with studies, study–course fit and intention to drop out). A sample of first-year students ($N = 776$; 19–20 years = 67%; female = 62%; black = 58%) from a large South African university completed the Strengths Use and Deficit Correction (SUDCO) questionnaire; the Maslach Burnout Inventory–Student Survey (MBI–SS); as well as measures of present social support, engagement, satisfaction with life, person–study–course fit and intention to drop out. Structural equation modelling was used to test the relationships among the variables in the structural model using Mplus 8.6. Overall, this study's findings show that PBSU and PBDI are significantly related, with the exception that support from parents did not predict deficit improvement and PBDI did not predict intention to drop out. The results further show that PBSU was much more strongly related to support from parents, cynicism, life satisfaction, satisfaction with studies, study–course fit and intention to drop out. In contrast, PBDI was much more strongly related to support from significant others, exhaustion and engagement. The results confirm that engaging in proactive behaviour towards strengths use and deficit improvement may result in positive student outcomes. The findings of this study suggest a need for university institutions to implement initiatives to promote social support programmes for students to leverage their strengths, creating learning environments conducive to student success.

Keywords: social support, proactive behaviour, strengths use, deficit improvement, student outcomes, first-year university students

Introduction

Students are most vulnerable to school drop-out during their first year of study (Jama, 2018; Young, 2016). However, their ability to stay in school may depend on how they act proactively to become more engaged in their educational and social environments (Kirby & Kirby, 2006; Geertshuis et al., 2014; Wang et al., 2013). For instance, they may be more successful in their studies by engaging in proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI), both of which have been identified among proactive behaviours that influence student success (Smith & Tytherleigh, 2022). The term *proactive behaviour* refers to “taking the initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions” (Crant, 2000, p. 436).

Mostert et al. (2017) define PBSU as students' initiative to leverage their strengths within study environments. PBDI, on the other hand, entails actively seeking opportunities to address and improve one's deficits in study environments. The context of the university system plays a significant role in determining the level of student thriving during their first year, which is when they may be most vulnerable managing multiple transitional (Mkonto, 2018), interpersonal (Kotzé & Niemann, 2013), academic (Naong et al., 2009) and financial challenges (Pretorius & Blaauw, 2020; Van Zyl et al., 2020). We aimed to investigate proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and their correlates in a South African university setting.

The South African university setting

Despite positive comments concerning increased access for all South African citizens to tertiary education and higher enrolment numbers at South African Higher Education Institutions (HEIs) (DHET, 2021; StatsSA, 2019), actual graduation rates are alarmingly low (Tewari & Ilesanmi, 2020; Van Zyl et al., 2020). For instance, data released by Statistics South Africa (StatsSA, 2019) and the Department of Higher Education and Training (DHET, 2019) indicate that only 46.5% of graduates enrolled in public universities in 2016 completed their degree within the required timeframe. Many undergraduate students either dropped out or took longer than double the allocated time to complete their studies (DHET, 2019; StatsSA, 2019). As it stands, South Africa's higher education system is failing to produce an adequate number of competent graduates, which the country desperately needs, and is impeding its progress toward several significant economic and social goals (Scott, 2018).

In response to the unique challenges of first-year students in South Africa, many universities introduced First-Year Experience (FYE) initiatives to assist student retention through the provision of psychological and academic support (Combrink & Oosthuizen, 2020; Mkonto, 2018; Nyar, 2018). However, HEI initiatives on their own cannot result in student success. Students themselves should also actively address the challenges and stressors faced during their first year by devising proactive strategies (Clark, 2005). Students can increase their strengths and address their deficits to achieve academic success by actively utilising their social support.

PBSU and PBDI among students

Only a few studies that specifically researched the constructs of PBSU and PBDI amongst students. A study conducted by Stander et al. (2015) tested a structural model of students' PBSU and PBDI, determining whether these constructs predict students' life satisfaction, hope and efficacy. In addition, they examined whether hope and efficacy mediate the relationship between PBSU and PBDI and life satisfaction. The main findings of this study indicated that only PBSU was a significant predictor of life satisfaction. However, both PBSU and PBDI were significant predictors of hope and efficacy. It was also found that hope mediated the relationship between PBSU, PBDI and life satisfaction, whereas efficacy mediated the relationship between PBSU and life satisfaction (Standar et al., 2015).

In another study conducted by Van Niekerk et al. (2016), students' PBDI and engagement in developmental activities improved their strengths. The results also showed that students' perceptions of their study-course fit mediated the relationship between students' strengths use and deficit improvement with engagement. Furthermore, Mostert et al. (2017) showed that both PBSU and PBDI significantly predict student engagement, burnout, and life satisfaction. Smith and Tytherleigh (2022) recently confirmed these findings, demonstrating that both PBSU and PBDI positively predict engagement among university students. Only using strengths independently predicted burnout, whereas deficit improvement did not. However, combining PBSU and PBDI predicts burnout, indicating the importance of both constructs in the university context.

Although these studies show promising results, there is a need to investigate PBSU and PBDI in the context of higher education further. Empirical evidence of the relationship between PBSU and PBDI with antecedents and outcomes will contribute to the body of research on strengths use and deficit development in the student and university context. Determining these relationships can produce valuable knowledge that may be used to inform effective and appropriate first-year support initiatives to foster strengths and develop deficits among students.

PBSU and PBDI correlates in student populations

Correlates of PBSU and PBDI in student populations include social support, student burnout, student engagement, life satisfaction, satisfaction with studies, study-course fit and intention to drop out. Social support refers to the network of social resources perceived by individuals, offering mutual assistance, guidance, and informational and emotional support (Zhou, 2014). Social support included *support from parents* and *support from significant others*. Support from parents is one of the most critical resources that can help students better navigate university life as it is associated with a variety of important student outcomes, such as student learning motivation (Widayati et al., 2022), academic aspirations, self-efficacy (Gerard & Booth, 2015) and self-regulated learning (Saada, 2022).

The first outcome considered an important correlate with PBSU and PBDI was *student burnout* due to its

increasing prevalence (Portoghese et al., 2018) and its direct impact on students' *intention to drop out* (Alves et al., 2022). According to Schaufeli et al. (2002b), student burnout is characterised by cynicism, academic exhaustion and diminished professional effectiveness regarding academic demands. This study examined two specific constructs associated with burnout: *exhaustion and cynicism*. Previous research has found that both PBSU and PBDI predict student burnout, although with varying strengths of the relationships for strengths use and deficit correction behaviour (Mostert et al., 2017).

Additionally, *student engagement* plays a significant role in student success (Bowden et al., 2021). Student engagement refers to the active participation and commitment of students within their learning community (Bond et al., 2020) and consists of two core dimensions: *vigour and dedication*. *Vigour* pertains to the energy and mental resilience students invest in their learning experiences (Teuber et al., 2021), while *dedication* denotes a positive attitude towards learning. Not only is student engagement linked to students' transformative learning and self-efficacy (Bowden et al., 2021), but it mediates the relationship between burnout and students' *intention to drop out* (Alves et al., 2022). Prior studies have demonstrated a positive correlation between both PBSU and PBDI, predicting higher levels of engagement (Van Niekerk et al., 2016; Van Woerkom et al., 2016). Furthermore, Mostert et al. (2017) found a positive relationship between PBSU and PBDI and student engagement, as well as *life satisfaction*, which have predictive value for academic performance and student success (Rashid & Asghar, 2016; Salanova & Schaufeli, 2008). Salanova et al. (2010) further suggest that student engagement may be influenced by their perceived fit with their study course, whereas both PBSU and PBDI have been shown to impact students' perceptions of *study-course fit* positively (Van Niekerk et al., 2016). Moreover, Wiers-Jenssen et al. (2002) argue that students' *satisfaction with their studies* can motivate them to change their learning environment by identifying their strengths and weaknesses. Prospectively, providing students with opportunities to develop their PBSU and PBDI could significantly influence essential student outcomes (e.g. student burnout, student engagement, life satisfaction, satisfaction with studies, study-course fit and intention to drop out) that influence student success).

Goals of the study

The present study aims to test a structural model to investigate the relationship of PBSU and PBDI with social support (including support from parents and significant others) and essential outcomes (including burnout, engagement, life satisfaction, satisfaction with studies, study-course fit and intention to drop out). The proposed model is depicted in Figure 1.

Our study hypotheses were as follows:

Hypothesis 1. A positive relationship exists between students' social support and proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI).

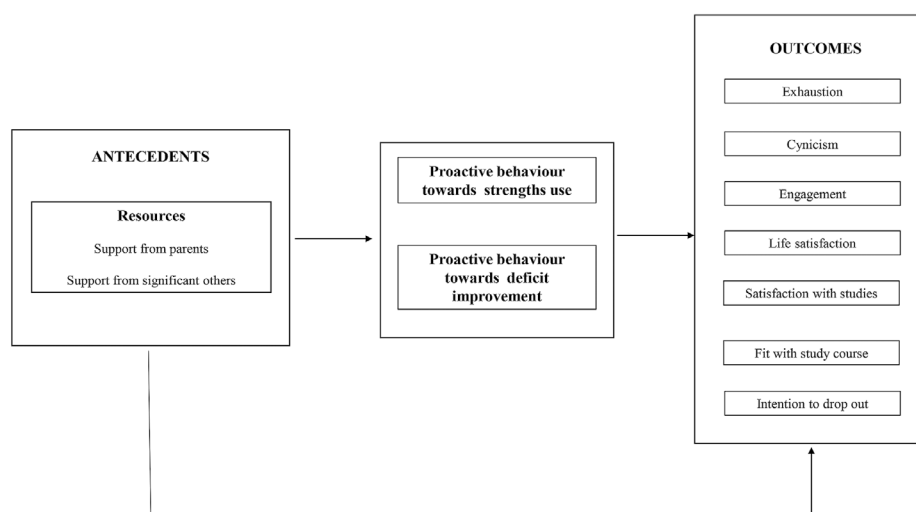


Figure 1. Antecedents and outcomes of proactive behaviours towards strengths use and deficit improvement ($N = 776$).

Hypothesis 2. A negative relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and student burnout.

Hypothesis 3. A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and student engagement.

Hypothesis 4. A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and life satisfaction.

Hypothesis 5. A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and satisfaction with studies.

Hypothesis 6. A positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and study-course fit.

Hypothesis 7. A negative relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and intention to drop out.

Method

The sample consisted of 776 first-year students, of whom the majority were between 19 and 20 years of age (67%). Most students (58%) were Black, followed by 38% White students. Most participants were female ($n = 479$, 62%), followed by male participants ($n = 297$, 38%). The university has three campuses. Most participants in the sample were enrolled at campus 2 (51%), while 38% of participants were enrolled at campus 1, and the remaining 11% of participants at campus 3.

Measures

In addition to a biographical questionnaire, participants completed the following measuring instruments:

Strengths Use and Deficit Correction (SUDCO) questionnaire (Van Woerkom et al., 2016); an adapted version of existing social support measures developed by Caplan et al. (1975) and modified by Näswall et al. (2006); the Maslach Burnout Inventory-Student Survey (MBI-SS) and Utrecht Work Engagement Scale Student Survey (UWES-S) (Schaufeli et al., 2002a); the Satisfaction with Life Scale (SWLS) (Diener et al., 1985); an adapted work-related scale to measure study satisfaction developed by Hellgren et al. (1997); an adapted version of the Person-Job Fit Perceptions Questionnaire (PJFPQ) (Saks & Ashforth, 1997) to measure study-course fit; and self-developed items based on the original work-related Turnover Intention Scale (TIS) (Sjöberg & Sverke, 2000) to measure intention to drop out. We describe these measures below.

Strengths use and deficit improvement

PBSU and PBDI were measured using two individual sub-scales of the SUDCO questionnaire developed by Van Woerkom et al. (2016) and adapted by Mostert et al. (2017) to fit the student context. All the items were measured on a 7-point Likert-type scale, requiring a response ranging from 0 (never) to 6 (almost always). Five items measured proactive *strengths use* behaviour (e.g. "In my studies, I use my strengths proactively") and five items *deficit correction* behaviour (e.g. "In my studies, I make an effort to improve my areas of development"). The reliability of scores from the SUDCO was 0.84 for both strengths use and deficit improvement in the present study.

Social support

Support from parents and significant others was measured using an adapted version of existing social support measures developed by Caplan et al. (1975) and modified by Näswall et al. (2006). All items in the adapted questionnaire were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Support from parents was measured with three items (e.g. “I always receive help from my parents or guardians when difficulties in my studies arise”), whereas *support from significant others* was measured with four items (e.g. “When things are difficult and confusing, I have someone who supports me”). The social support measures instrument has shown strong internal reliability, with Cronbach’s alpha coefficients of 0.89 for support from significant others and 0.91 for support from parents.

Student burnout

Student burnout was measured using the *Maslach Burnout Inventory-Student Survey* (MBI-SS) (Schaufeli et al., 2002). Items in this instrument were scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (every day) (Schaufeli et al., 2002). *Exhaustion* (e.g. “Studying or attending a class is really a strain for me”) and *cynicism* (e.g. “I have become less enthusiastic about my studies”) were measured with four items, respectively. In the present study, the reliability of scores from the MBI-SS was 0.69 for exhaustion and 0.82 for cynicism.

Student engagement

Two sub-scales of the Utrecht Work Engagement Scale Student Survey (UWES-S) (Schaufeli et al., 2002a) were utilised to measure students’ engagement levels. All items are scored by respondents on a 7-point Likert-type scale ranging from 0 (never) to 6 (every day) (Schaufeli et al., 2002a). These two sub-scales include the following core engagement dimensions: *vigour* (measured with five items, e.g. “When I study, I feel like I am bursting with energy”) and *dedication* (measured with five items, e.g. “I am enthusiastic about my studies”). The UWES-S has shown reliability in the student context, with a Cronbach’s alpha coefficient of 0.88 for the present study.

Life satisfaction

Life satisfaction was measured using the *Satisfaction with Life Scale* (SWLS) developed by Diener et al. (1985). Five items reflecting on students’ life satisfaction were used (e.g. “So far I have gotten the important things I want in life”). All items were scored on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). In terms of reliability, the SWLS had a Cronbach’s alpha score of 0.82 in the present study.

Satisfaction with studies

Students’ satisfaction with their studies was measured through adapted self-developed items based on the work-related scales developed by Hellgren et al. (1997). To fit the student context, items were adapted by the researcher, and satisfaction with studies was measured with four items (e.g. “I am satisfied with my studies”). Respondents were required to score all items on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The self-developed items used to measure satisfaction with studies have demonstrated internal reliability with a Cronbach’s alpha coefficient of 0.90.

Study-course fit

An adapted version of the *Person-Job Fit Perceptions Questionnaire* (PJFPQ) (Saks & Ashforth, 1997) was used to measure students’ perceptions of their study-course fit. All items were scored on a 5-point Likert-type scale ranging from 1 (to a very little extent) to 5 (to a very large extent). Five items were included (e.g. “To what extent do your knowledge, skills, and abilities match the requirements of your study course?”). The reliability of scores from the PJFPQ was 0.90 in the present study.

Intention to drop out

Students’ *intention to drop out* was measured through adapted self-developed items based on the original work-related Turnover Intention Scale (TIS) developed by Sjöberg and Sverke (2000). Respondents were required to score all items on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Three items were adapted to fit the student context (e.g. “I want to quit my studies”). The measure demonstrated reliability in the present study, with a Cronbach’s alpha coefficient of 0.75.

Procedure

The present study was approved by the Ethics Committee of North-West University (NWU-HS-2014-0165). The students individually consented to the study. In addition, it was emphasised that participation in the study is strictly voluntary and that participants’ confidentiality and anonymity will be respected at all times. The students completed the surveys online. Links to the electronic questionnaire were e-mailed to students.

Statistical analysis

Structural equation modelling was used, using the statistical modelling program Mplus 8.6 (Muthén & Muthén, 2021) to test the structural model (Gallagher & Brown, 2013). The maximum likelihood (ML) estimator was used with the covariance matrix as input (Muthén & Muthén, 2021). The following fit indices were considered to assess goodness-of-fit of the model: the traditional chi-square (χ^2) statistic, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardised Root Mean Square Residual (SRMR) (Brown, 2006; Hu & Bentler, 1999; Lance et al., 2006). Model fit was considered satisfactory with CFI and TLI values larger than 0.90 (Byrne, 2010) and well-fitting when larger than 0.95 (Hu & Bentler, 1999). Furthermore, a value of 0.05 or less for RMSEA indicates a close/good fit, whereas values between 0.05 and 0.08 reflect an acceptable model fit (Browne & Cudeck, 1992; Byrne, 2010). For SRMR, the cut-off point was set at 0.05 (Hu & Bentler, 1999).

Using Cronbach’s alpha coefficients, the reliability of the variables was determined, with values larger than 0.70 indicating satisfactory internal consistency (Bryman, 2012). Furthermore, Pearson’s product-moment correlation was used to examine the strength and direction of relationships between variables. Cut-off points for statistical significance were set at the 95% confidence interval ($p \leq 0.05$) and practical significance of correlation coefficients at $r \geq 0.30$.

(medium effect) and $r \geq 0.50$ (large effect) (Cohen, 1988). The structural model was tested, including social support (support from parents and support from significant others), PBSU and PBDI, and outcomes (burnout, engagement, life satisfaction, satisfaction with studies, study-course fit, and intention to drop out) (see Figure 1).

Results

We present the descriptive statistics, Cronbach's alpha coefficients and correlations between the latent variables (as shown in Table 1). Next, we present the structural model's results (as shown in Table 2).

Descriptive statistics and reliability

The results reported in Table 1 show that all antecedents and outcomes were statistically significantly correlated with strengths use and deficit improvement. All scales' Cronbach alpha coefficients were equal to or greater than 0.70, indicating that the measuring instruments were reliable.

Structural equation model

The structural model of this study was tested by creating latent variables, including social support, PBSU, PBDI and essential student outcomes. The proposed model proved to fit the data well (CFI = 0.93; TLI = 0.93; RMSEA = 0.04; SRMR = 0.07). The regression coefficients between the variables are given in Table 3.

Correlates of social support and proactive behaviour towards strengths use and deficit improvement

In the present study, the first set of hypotheses focused on the relationship between students' social support and their proactive behaviour towards strengths use (PBSU) and deficit improvement (PBDI). Hypothesis 1 proposed a positive association between social support and PBSU, as well as PBDI, and the regression analysis results presented in Table 3 provide supporting evidence for this hypothesis. Both *support from parents* and *support from significant others* were significant predictors of PBSU. While *support from parents* did not predict deficit improvement, it was found that *support from significant others* showed the strongest relationship with deficit improvement as opposed to strengths use. Thus, Hypothesis 1 is partially confirmed.

Correlates between proactive behaviour towards strengths use and deficit improvement and student outcomes

The second set of research hypotheses (Hypotheses 2–7) explored the relationships between students' PBSU and PBDI and essential student outcomes, including *student burnout*, *student engagement*, *life satisfaction*, *satisfaction with studies*, *study-course fit*, and *intention to drop out*. The regression analysis results, as reported in Table 3, provided supporting evidence for Hypotheses 2–6. However, it was found that deficit improvement did not predict students' *intention to drop out*, providing partial support for Hypothesis 7.

PBSU, PBDI and student burnout

Hypothesis 2 proposed that a negative relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and student burnout. Indeed, the findings show a negative relationship between strengths use and deficit improvement and both indicators of student burnout: exhaustion and cynicism (MBI-SS; Schaufeli et al., 2002a), providing supporting evidence for Hypothesis 2. Strengths use had the strongest relationship with cynicism ($r = -0.22$), whereas deficit improvement was more strongly related to exhaustion ($r = -0.22$). As such, Hypothesis 2 is accepted.

PBSU, PBDI and student engagement

Hypothesis 3 states that a positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and *student engagement*. The results support Hypothesis 3, indicating a positive relationship between both strengths use and deficit improvement and student engagement ($r = 0.22$ for PBSU; $r = 0.38$ for PBDI). Moreover, the present study's findings indicate that PBDI has a stronger relationship with student engagement than the use of strengths in the student context. As a result, Hypothesis 3 is accepted.

PBSU, PBD, and life satisfaction

Hypothesis 4 stated that a positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI), and *life satisfaction*. The results indicate that strengths use and deficit improvement positively correlated with life satisfaction ($r = 0.23$ for PBSU; $r = 0.14$ for PBDI), supporting Hypothesis 4. Moreover, the strongest correlate was found between strengths use and life satisfaction. Based on these findings, Hypothesis 4 is accepted.

PBSU, PBDI and satisfaction with studies

Hypothesis 5 proposed that a positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI), and *satisfaction with studies*. Indeed, the findings support Hypothesis 5, demonstrating a positive relationship between both PBSU and PBDI and study satisfaction ($r = 0.25$ for PBSU; $r = 0.16$ for PBDI). Furthermore, strengths use had a stronger correlation with *satisfaction with studies* than deficit improvement. Hypothesis 5 is accepted.

PBSU, PBDI and study-course fit

Hypothesis 6 stated that a positive relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and *study-course fit*. The results provide supporting evidence for Hypothesis 6, indicating that both strengths use and deficit improvement positively correlated with students' perceived *study-course fit*. PBSU was found to have a strong relationship with fit with study course ($r = 0.22$), whereas PBDI had a positive relationship ($r = 0.15$). As a result, Hypothesis 6 is accepted.

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

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1 Support from parents	3.72	1.12	(0.91)										
2 Support from significant others	3.84	1.03	0.60	(0.89)									
3 Strengths use	4.60	0.96	0.26	0.31	(0.84)								
4 Deficit improvement	4.23	1.11	0.20	0.33	0.10	(0.84)							
5 Exhaustion	2.68	1.58	-0.12	-0.25	-0.23	-0.28	(0.69)						
6 Cynicism	1.93	1.72	-0.08	-0.22	-0.26	-0.18	0.89	(0.82)					
7 Engagement	4.68	1.11	0.24	0.33	0.31	0.44	-0.56	-0.50	(0.88)				
8 Life satisfaction	5.05	1.26	0.40	0.44	0.36	0.27	-0.33	-0.27	0.48	(0.82)			
9 Satisfaction with studies	4.00	0.82	0.32	0.43	0.37	0.28	-0.51	-0.55	0.70	0.52	(0.90)		
10 Study-course fit	4.03	0.82	0.22	0.31	0.29	0.23	-0.38	-0.41	0.56	0.36	0.75	(0.90)	
11 Intention to drop out	1.78	0.93	-0.10	-0.18	-0.19	-0.12	0.50	0.61	-0.39	-0.23	-0.50	-0.37	(0.75)

Note. $p \leq 0.05$ for all values; Cronbach's alpha reliability coefficients in brackets on the diagonal.

Table 2. Regression results for the structural model.

Regression Path	β	SE	<i>p</i>
Relationship between antecedents and outcomes			
Support from parents → Exhaustion	0.07	0.05	0.17
Support from significant others → Exhaustion	-0.17*	0.06	0.00
Support from parents → Cynicism	0.10*	0.05	0.04
Support from significant others → Cynicism	-0.17*	0.06	0.00
Support from parents → Engagement	0.04	0.05	0.41
Support from significant others → Engagement	0.11*	0.06	0.05
Support from parents → Life satisfaction	0.19*	0.06	0.00
Support from significant others → Life satisfaction	0.22*	0.06	0.00
Support from parents → Satisfaction with studies	0.07	0.05	0.15
Support from significant others → Satisfaction with studies	0.26*	0.05	0.00
Support from parents → Study-course fit	0.02	0.05	0.65
Support from significant others → Study-course fit	0.18*	0.06	0.00
Support from parents → Intention to drop out	0.04	0.05	0.50
Support from significant others → Intention to drop out	-0.13*	0.06	0.04
Effect of antecedents on strengths use and deficit improvement			
Support from parents → Strengths use	0.12*	0.06	0.05
Support from parents → Deficit improvement	0.00	0.06	1.00
Support from significant others → Strengths use	0.23*	0.06	0.00
Support from significant others → Deficit improvement	0.33*	0.06	0.00
Effect of strengths use and deficit improvement on student outcomes			
Strengths use → Exhaustion	-0.17*	0.05	0.00
Deficit improvement → Exhaustion	-0.22*	0.05	0.00
Strengths use → Cynicism	-0.22*	0.05	0.00
Deficit improvement → Cynicism	-0.13*	0.05	0.02
Strengths use → Engagement	0.22*	0.05	0.00
Deficit improvement → Engagement	0.38*	0.05	0.00
Strengths use → Life satisfaction	0.23*	0.05	0.00
Deficit improvement → Life satisfaction	0.14*	0.05	0.00
Strengths use → Satisfaction with studies	0.25*	0.05	0.00
Deficit improvement → Satisfaction with studies	0.16*	0.05	0.00
Strengths use → Study-course fit	0.22*	0.05	0.00
Deficit improvement → Study-course fit	0.15*	0.05	0.01
Strengths use → Intention to drop out	-0.15*	0.05	0.00
Deficit improvement → Intention to drop out	-0.07	0.05	0.22

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

PBSU, PBDI and intention to drop out

Lastly, Hypothesis 7 proposed that a negative relationship exists between students' proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) and *intention to drop out*. The findings indicate that strengths use had a negative relationship with the *intention to drop out* ($r = -0.15$), whereas PBDI had no significant relationship with students' *intention to drop out*. Therefore, Hypothesis 7 is only partially supported.

Discussion

This study aimed to test a structural model to investigate the relationship of proactive behaviour towards strengths use (PBSU) and proactive behaviour towards deficit improvement (PBDI) with social support (including support from parents and significant others) and essential outcomes (including burnout, engagement, life satisfaction, satisfaction with studies, study-course fit, and intention to drop out) among first-year university students.

In terms of *strengths use*, we found that support from parents and significant others positively affects

students' inclination to use their strengths. These findings are consistent with those of Khan and Husain (2010), who found a positive relationship between strengths use and various forms of social support. Therefore, when parents and significant others provide positive support and encouragement for using personal strengths, students are more likely to recognise and apply their strengths in various circumstances. Moreover, parental support towards strengths use increases student well-being (Jach et al., 2018). Therefore, social support is regarded as a valuable resource that may increase students' proclivity to use their strengths and enable students to facilitate a motivational process (Bakker et al., 2023) in their study environment, potentially leading to improved student outcomes.

PBSU was significantly associated with the majority of outcomes. PBSU was negatively associated with student burnout, demonstrating a negative relationship with both *exhaustion* and *cynicism* (indicators of student burnout; Schaufeli et al., 2002a). These findings are consistent with Mostert et al. (2017), who recently found that PBSU correlates negatively to burnout in the student context. Furthermore, the results indicated a positive relationship between PBSU, engagement, life satisfaction, study satisfaction, and perceived study-course fit.

These findings align with Mostert et al. (2017) and Van Niekerk et al. (2016), who demonstrate a positive relationship between strengths use and engagement. Furthermore, Hodges and Clifton (2004) argue that strengths-based development has been shown to reduce student absenteeism. These findings suggest that when students participate in activities that allow them to use their strengths, they are more likely to experience increased energy levels and, as a result, engagement in their study environment. These results are further consistent with the research of Allan et al. (2021), demonstrating that strengths use increases study satisfaction. Indeed, Louis and Lopez (2014) contend that strengths use is critical in developing study satisfaction. Additionally, strengths use was found to be negatively related to the intention to drop out. These findings are consistent with the results of Hodges and Clifton (2004), who argued that strengths-based interventions elicit hope and confidence in students, allowing them to be more optimistic about their studies.

In terms of *deficit improvement*, a positive relationship was found between PBDI and support from significant others. However, it was found that support from parents did not significantly predict PBDI. While numerous studies indicate that parental support may be important for student well-being and development (Đurišić & Bunijevac, 2017; Hoferichter et al., 2021), it is argued that support from significant others may be more effective in developing one's weaknesses. Not only is support from parents often perceived as pressure-filled (Kulakow et al., 2021), but excessive parental involvement may hinder students' ability to engage in development opportunities (Taub, 2008). However, the personalised and voluntary nature of support from significant others and the mutual reciprocity that often characterises these relationships can make this type of support more effective (Cutrona & Russell, 1990).

Regarding the relationship between PBDI and outcomes, the results showed that PBDI negatively correlates with both indicators of student burnout: exhaustion and cynicism. The work of Otto et al. (2019) confirms these findings, demonstrating that proactive work behaviour reduces employee burnout levels. These findings are also consistent with Van Woerkom et al. (2016), who found that PBDI negatively predicts cynicism at work. Considering the relationship between PBSU, PBDI and student burnout, when students participate in opportunities to use their strengths and improve their weaknesses, they are less likely to experience academic burnout.

Moreover, the present study's findings indicate that PBDI has a stronger relationship with student engagement compared with PBSU in the student context. These findings are in line with studies by Mostert et al. (2017) and Van Niekerk et al. (2016), who also found that PBDI has a stronger relationship with engagement, supporting the assumptions of the goal orientation theory (Ames, 1992). Deficit improvement may provide these students with a sense of mastery or goal achievement, increasing their motivation and, as a result, engagement.

Furthermore, deficit improvement positively correlated with life satisfaction, satisfaction with studies, and study-course fit. These findings differ from those of Stander et al. (2015), who found only PBSU to be a significant predictor of student life satisfaction. However, this study's findings align with those of Mostert et al. (2017), who demonstrate a positive relationship between strengths use, deficit improvement and life satisfaction in the student context. This study's findings are further consistent with a recent study conducted in the student context by Sivrikova et al. (2022), showing that proactivity significantly affects students' satisfaction with studies. The literature suggests that student satisfaction may increase student retention, enable academic achievement and assist students in adjusting to university life (Allan et al., 2021; Wach et al., 2016). As a result, it can be argued that both PBSU and PBDI can help students adapt to their environments to increase their satisfaction with their studies and attain academic success. Moreover, the findings of this study align with a recent study by Van Niekerk et al. (2016), which found both PBSU and PBDI to predict students' perceptions of study-course fit positively.

Overall, this study's findings show that PBSU and PBDI are significantly related to most of the antecedents and outcomes included in this study, with the exception that support from parents did not predict deficit improvement and PBDI did not predict intention to drop out.

Finally, the examined regression weights revealed significant differences in the importance and strength of relationships between PBSU and PBDI and the various variables included in this study. For example, PBSU was much stronger and related to support from parents, cynicism, life satisfaction, satisfaction with studies, study-course fit, and intention to drop out. In contrast, PBDI was much more strongly related to support from significant others, exhaustion, and engagement.

Implications for student development and support practices

The existing literature presents a compelling case for implementing strengths-based development among students, emphasising its positive impact on student performance in higher education (Mason, 2019a). Moreover, recent research by Terblanche et al. (2021) highlights the importance of cultivating a growth mindset among students, including recognising and addressing one's weaknesses (Dweck, 2006). Mason (2019b) further reiterates the critical role of promoting proactive intention toward change and growth among students to increase student well-being. Indeed, the present study's findings highlight the importance of adopting a balanced approach when designing student development initiatives, as both strengths use and deficit improvement have shown strong correlations with students' social support and essential outcomes.

Based on these findings, it is argued that HEIs should prioritise, emphasise and leverage students' social support while also investing in their proactive behaviour towards both strengths use and deficit improvement. By implementing this strategic approach, HEIs can significantly impact student success rates and contribute to the institution's overall success.

Limitations and future directions

This study's cross-sectional research design does not allow for causality between variables. Future researchers should consider longitudinal research to investigate the causality of the hypothesised relationships between PBSU, PBDI, antecedents and student outcomes (Govindji & Linley, 2007). Moreover, the study's findings are limited to first-year students at one South African institution, and caution should be applied to other institutions or international students. Future researchers should broaden the study to include participants from different academic years, age groups and universities to validate the findings. The online survey for the study had some limitations, such as participants completing it independently, without control or assistance from the researcher. The self-report measures could also have resulted in response biases or socially desirable answers. Future research may consider including other data collection methods to validate findings.

Conclusion

This study provides valuable insights into the relationship between social support, PBSU and PBDI, and various important student outcomes, particularly those influencing student success. The results indicate that both PBSU and PBDI are significantly related to most of the variables included, with some exceptions. While support from parents did not predict deficit improvement, and PBDI did not predict intention to drop out, the overall findings demonstrate the importance of a balanced approach to strengths use and deficit improvement in relation to social support and essential outcomes. Indeed, the results highlight the multifaceted nature of student experiences and the varying impacts of different variables and factors.

These findings hold significant implications for universities seeking to improve student outcomes and overall success. It is evident that a strategic focus on both

PBSU and PBDI and social support is crucial. HEIs should prioritise and leverage students' social support while also investing in encouraging and developing students' engagement in proactive behaviour. By promoting a balanced developmental approach to strengths use and deficit improvement, universities may enhance the first-year experience effectively and, as a result, student success rates.

Authors' note

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Data availability

Raw data were generated at the North-West University. Derived data supporting the findings of this study are available from the corresponding author (Author 1) on request.

Ethical declaration

Ethical clearance and permission to conduct the research were obtained by the North-West University (Ethics number: NWU-HS-2014-0165).

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