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RESEARCH IN PROGRESS

Investigating the Relationship between Well-Being, Engagement and Learning Experiences among South African Publicly Funded Students in Higher Education

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Abstract Student engagement and positive learning experiences are important determinants of academic performance in higher education. While the role of well-being is also acknowledged, it is not comprehensively addressed as an antecedent for both engagement and learning experience. In fact, interventions to improve academic performance in higher education tend to ignore well-being support. A further problem relates to the dominance of literature from the Global North predicated on relationships between well-being, engagement and learning experience among students with much higher levels of socio-economic status. This stands as a severe limitation in identifying the right kinds of interventions towards ensuring better learning outcomes for African higher education students. Using structural equation modelling, we explored the relationship between psychological and social well-being with student engagement and learning experiences among a sample of 6877 South African higher education students (females = 54.7%; mean age = 23.83; SD = 4.89). Our findings showed that both facets of well-being were positively related to student engagement and learning experiences highlighting psychological and social well-being promotion as a clear responsibility of higher education systems.

Keywords Engagement · Learning experiences · Psychological well-being · Social well-being · Disadvantaged students · South Africa

Abbreviations

PWB	Psychological well-being
SWB	Social well-being
SE	Student engagement
SLE	Student learning experiences
MHC	Mental health continuum
OLIS	Original learning indicators scale
UWES-9S	Utrecht work engagement scale for students

Introduction

This paper explores the relationship between student well-being, student engagement and student learning experience, focusing on a particularly vulnerable cohort of the South African higher education system, colloquially referred to as NSFAS[1]-funded students. The particular focus seeks to, firstly, contribute to research acknowledging the impact of well-being on student engagement (SE), student learning experiences (SLE) and academic

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[1] NSFAS refers to the National Student Financial Aid Scheme which administers the South African Department of Higher Education and Training's (DHET) bursary scheme for University and TVET College students in South Africa. The bursary is considered quite progressive internationally as it covers not only tuition but allowances for food, learning devices, accommodation, personal care and travel (NSFAS, 2017, 2020). It is aimed specifically at students from poor households in an effort to address intergenerational poverty, inequality and unemployment in the country.

outcomes in higher education (Arslan & Asıcı, 2021; Geertshuis, 2019), from the South African context, where these relationships are less researched (Boulton et al., 2019; Kotera et al., 2021; Wilson Fadiji et al., 2022).

Secondly, the cohort of students present important opportunities to contribute to understanding the link between psychological and social well-being (as conceptualised by Keyes, 2003) as due to their socio-economic status, lower levels of well-being and academic outcomes are expected. NSFAS-funded students are first-generation students, faced with severe socio-economic challenges, making them especially vulnerable to low levels of well-being, given the context of poverty they come from (De Villiers, 2017; Mngomezulu et al., 2017; NSFAS, 2017). This is often unresolved or exacerbated throughout their higher education experience leading many to assert that these students are also particularly vulnerable to poor academic outcomes (Khoza & Bangani, 2020; Mngomezulu et al., 2017).

In addition, the South African context is one of the most unequal African societies, where levels of well-being and access to quality education are significantly different across socio-economic status groups. Being confounded by race, gender and other markers of inequality (Miller, 2020), these tend to result in lower levels of engagement (D'Mello et al., 2012) and negative learning experiences which impact on trajectories through the post-schooling system (Wildschut & Kruss, 2015) and even into the labour market (Wildschut et al., 2020; Adi Badiozaman et al., 2020; Jeno et al., 2018).

However, rather than focusing on the implications for well-being that emerge from negative learning experience or lack of student engagement, this paper argues that it is important to continue exploring and documenting well-being and testing relationships between these factors across different groups. We particularly choose to explore well-being as an antecedent to student engagement and learning experiences because theories such as the broaden and build theory (Fredrickson, 2004) as well as self-determination theory (Deci & Ryan, 2014) have shown that well-being experiences have the potential to serve as resources for promoting other positive outcomes such as productivity, engagement and academic performance. This approach provides room for arguing for the need for well-being interventions in places of learning, and not simply focusing on academic outcomes. Drawing on these gaps, the impetus for this study was thus the need to establish the relationships of the psychological and social dimensions of well-being with student engagement and student learning experiences in this group of disadvantaged students within the South African higher education context.

Psychological (PWB) and Social Well-Being (SWB)

Keyes (2002) suggests that there are three components of positive mental health, namely psychological well-being, social well-being and emotional well-being. These components of positive mental health are related to the hedonic (positive affect) and eudaimonic components (relating to optimal functioning) of well-being (Botha et al., 2019; Galderisi et al., 2015; Keyes, 2006), respectively. Psychological well-being includes conceptions of positive functioning, positive relationships with others, self-acceptance, personal growth, environmental mastery, purpose in life and autonomy (Keyes, 2002; Westerhof & Keyes, 2010), and are intrapersonal in nature, representing one's inner, private and personal functioning. Keyes (1998) proposed five dimensions of social well-being, namely social actualisation, social coherence, social acceptance, social contribution and social integration that epitomises the interpersonal, public and social functioning of one's life. According to Keyes (2002, 2004), individuals function well when they see society as meaningful and understandable while providing a platform for them to grow and contribute to the society as well as giving them a sense of belonging in the community.

Education research has also emphasised the importance of student well-being, investigating it either as an outcome (Neubauer et al., 2017) or predictor (Vijayalakshmi & Selvarani, 2020) of academic outcomes. Increasingly educators are encouraged to not only be concerned about academic performance, but also to be cognisant of the multifaceted nature of well-being (quality of life, inner satisfaction, personal experience, social relationships, student affect and traits) of students within the academic environment (Pekrun & Linnenbrink-Garcia, 2012; Phan et al., 2016; Robinson et al., 2017). The notion of well-being within an educational environment increasingly acknowledges and encompasses multiple academic and non-academic activities which may contribute to students' attitude towards engagement and attendance thereby enriching learning (Belfi et al., 2012; Van Damme et al., 2002). It is recognised that students' personal well-being may influence academic engagement and sequentially learning experiences (Phan & Ngu, 2015; Robinson et al., 2017). Within the higher education context, the conceptualisation of student well-being differs slightly, referring to the extent to which the student can function effectively in response to academic demands and whether the school can accommodate the student's needs optimally (Bücker et al., 2018; Caspersen et al., 2017). It is, hence, a question of balance between the student's functioning and support from the school to navigate challenges for a healthy development (Hewitt et al., 2019). While the examination of student well-being in the education context emphasises more the aspect of emotional well-being and the responsibility of the academic environment and educators to foster

well-being, in the higher education context, the responsibility of the student alongside the role of institutions to provide support, is emphasised when it relates to discussing student well-being. In relation to the broader exploration of well-being literature, the understanding and approach to student well-being in this study thus focuses more on psychological functioning and social well-being, and how these impact on academic experiences (Caspersen et al., 2017).

Student Engagement (SE) and Student Learning Experience (SLE)

Student engagement is a complex and multifaceted construct which entails behavioural, emotional, cognitive and agentic components of engagement (Boekaerts, 2016; Sakurai & Pyhältö, 2018; Sinatra et al., 2015). Strydom et al. (2010) conceptualised student engagement in terms of the amount of time and energy that students spend on academic activities and as the actions that contribute to student success, experiences and outcomes. Similarly, Bond et al. (2020) conceptualised student engagement as the energy and efforts that students invest in their learning environment, as indicated by academic and behavioural conducts.

Learning, on the other hand, is the relative change in potential behaviour because of instructional activities or environmental consistencies and experiences (De Houwer et al., 2013; Qvortrup et al., 2016). Frymier et al. (1996) attempted to address some of the problematic methodological issues of the traditional measures by creating a learning indicators measure. The main attributes of the learning indicators measure are the time and progress devoted towards understanding and accomplishing task content and changes in behaviour and activities that positively correlate with affective learning, motivation, learning empowerment and ultimately positive learning experiences. The indicator is based on activities students usually engage in that indicate learning as a hallmark for optimal academic experience (Bae & Han, 2019; Kim et al., 2019; Sakurai & Pyhältö, 2018).

An important distinction between student learning experience and student engagement is that student engagement involves psychological energy (vigour, dedication and absorption) that students apply to their academic experiences, while learning is about behavioural change because of the acquisition of knowledge (Kotzé & Kleynhans, 2013; Salanova et al., 2010). We conceptualise student engagement to relate more directly with the holistic participation of students with their institutional context, whereas student learning experiences focuses more on activities directly related to the learning context (in classroom or online).

Most research on the importance of psychological and social well-being for student engagement and student learning experiences (Dodd et al., 2021; Paloș et al., 2019; Salanova et al., 2010; Xerri et al., 2018) has been conducted in WEIRD (Western, Educated, Industrialised, Rich and Democratic) samples (Henrich et al., 2010), with little research done in the South African context. Furthermore, the small body of work that has been done within the South African context is more focused on ill-being than optimal functioning and on the general student population as opposed to vulnerable groups such as NSFAS-funded students (Bantjes et al., 2016; Bojuwoye, 2002; Van der Walt et al., 2020).

Psychological Well-Being, Student Engagement and Learning Experiences

Research has supported the relationship between student engagement and student well-being (Kotzé & Kleynhans, 2013; Maricuțoiu & Sulea, 2019; Upadyaya & Salmela-Aro, 2021). Corresponding with results from D'Mello et al. (2012) and Pardos et al. (2014), Boulton et al. (2019) postulate that it is easier for students with greater levels of well-being to engage with learning. Positive psychological functioning particularly has been recognised as an important resource for students during the transition and adaptation period from a basic education to a higher education environment (Bowman, 2010; Harding et al., 2019). Experiencing psychological well-being allows students to successfully engage in positive, meaningful relationships with others, find meaning and purpose in their life and make life career choices, and to also navigate their environment successfully (Morales-Rodríguez et al., 2020; Rüppel et al., 2015).

Few studies in higher education literature have indicated how positive psychological functioning strengthens students' ability to be more focused, learn and retain content through engagement (Boulton et al., 2019; Datu & Valdez, 2016; Jules et al., 2020). Datu and Valdez (2016) illustrated that psychological capital, characterised by hope, optimism, resilience and self-efficacy, positively predicted study engagement among students in the Philippines. These indicators of psychological well-being predicted academic engagement because student's confidence was boosted, and they felt good and motivated to engage in class activities. Similarly, Boulton et al. (2019) suggested the existence of a feedback loop where engagement in several academic activities increased student's performance which, in turn, increased their well-being. Increased well-being would then motivate and encourage students to actively engage more in their learning.

According to Molinari and Mameli (2017), experiences of psychological well-being foster student engagement because it intrinsically motivates students and enables them to be committed to studies. In other higher education settings, the implementation of psychological wellness programmes has resulted in increased student participation in academic activities, further highlighting the link between psychological

well-being and engagement (Shek et al., 2012). Research on the influence of psychological well-being on student engagement in higher education systems is, however, scant particularly in the African context.

On the relationship between psychological well-being and learning experiences, Dodd and colleagues (2021) investigating the psychological well-being of students at an Australian university found that low psychological well-being and high levels of anxiety were significantly associated with negative learning experiences. Brooker and Vu (2020) in a survey of 696 university students similarly found that most students who reported higher psychological well-being had more positive than negative learning experiences.

Social Well-Being, Student Engagement and Learning Experiences

Previous research has demonstrated the relationship between student engagement and social well-being (Bowden et al., 2021; Lawson & Lawson, 2013; Mendoza & King, 2020; Zepke, 2013). For instance, Xerri et al. (2018) investigated the influence of student connectedness (relationships with peers and teachers) on student engagement in academic activities among first year students in Australia. They found that students, who reported strong teacher–student relationships, had higher levels of engagement in academic activities compared to students who had a weaker relationship with their instructors. These results also align with previous research that indicated that teacher–student relationship positively influenced student engagement (McGrath & Noble, 2010; Nyadanu et al., 2015).

Research further supports the importance of understanding the role of social well-being for positive learning experiences (Opić, 2016; Stanton et al., 2016). For example, social well-being, as a quality of interpersonal relationships, can influence learning experiences (Mainhard et al., 2018; Opić, 2016) because in academic environments, the relationship between teacher and student usually leaves a lasting imprint on the student. Supporting Opić (2016), Stanton and colleagues (2016) described how a strong sense of cohesion, support and connectedness enhanced student's learning experience and engagement in Canadian undergraduate students. The ability to engage and connect with peers helped to boost these students' confidence allowing for more positive learning experiences. They further emphasised how flexible relationships with their teachers helped them to feel supported and that they matter, thereby creating positive learning experiences for these students (Stanton et al., 2016). Similar to psychological well-being, there is a dearth of evidence on the impact of social well-being on student's learning experience, particularly in the higher education context, as the few available studies have mainly focused on primary and secondary school settings (Mainhard et al., 2018; Opić, 2016).

The Present Study

The aims of this study are, therefore, to investigate (a) whether there is a relationship between psychological and social well-being, and student engagement among NSFAS-funded students; and (b) whether there is a relationship between social and psychological well-being and learning experiences among NSFAS students. Our findings hold the potential for providing the much-needed insight into the importance of psychological and social well-being for the overall higher education experience in South Africa. The findings also importantly add empirical results from a cohort of students within the system that is seldomly explored but is increasingly forming a substantial proportion (over 60% of university and over 80% of TVET college students) of higher education students in the country.

Method

Research Design and Participants

A quantitative cross-sectional research design was used. Data were collected through convenience sampling. Specifically, NSFAS students in both universities and TVET colleges who indicated interest to participate in the study were recruited. The targeted response rate was 1500 responses, but a response rate of 6877 was realised. A summary of the demographic characteristics is presented in Table 1. The participants' ages ranged between 16 and 62 years of age (mean = 23.83, $SD = 4.89$). Of these, most participants were between 21 and 30 years of age. There were more females than males. The majority of participants were from African descent. Most participants studied at universities and were in their 1 st year of study. Participants mostly studied in Science, Engineering and Technology related fields. This aligns with the distributional profile of NSFAS-funded students in that the population is predominantly African, female, and studying at universities (NSFAS Vital Statistics, 2020).

Measuring Instruments

Socio-Demographic Questionnaire

This instrument was used to collect data on race, gender, age, year of study, type of institution (TVET College or University), field of study and the province where the participant lives.

Table 1 Socio-demographic profile of participants

Socio-demographic factor	Sample %
($M_{age,}$ SD_{age})	22.83 (4.88)
Age	
16–20 years	38.7%
21–30 years	53.9%
31–62 years	7.2%
Gender	
Male	44.9%
Female	54.8%
Not provided	0.3%
Race	
Black	83.8%
White	2.8%
Coloured	8.5%
Indian	2.1%
Not provided	2.8%
Type of institution	
TVET	32.5%
University	67.5%
Year of study	
First	58.6%
Second	16.5%
Third	10.5%
Fourth	4.1%
Other	10.3%
Field of study	
Humanities	20.2%
Education	18.9%
Science, Engineering and Technology	31.5%
Business and Commerce	29.5%

The Mental Health Continuum-Short Form (MHC-SF; Keyes, 2005)

The MHC-SF is a brief 14-item scale measuring positive mental health in terms of three subscales, namely emotional well-being (3 items), SWB (5 items) and PWB (6 items). The scale requires participants to indicate how often they have experienced a set of feelings in the past month, ranging from 0 (*never*) to 5 (*every day*). Only the PWB and SWB subscales were used in this study. A sample of the questions is as follows: "During the past month, how often did you feel…" "that you liked most parts of your personality" (PWB) and "that you had something to contribute to society" (SWB). The MHC-SF is a widely used measure and has been validated in the general population (De Carvalho et al., 2016; Hides et al., 2016; Joshanloo, 2016; Joshanloo et al., 2013), including South Africa (Keyes et al., 2008). Cronbach's alpha of 0.75 and 0.74 was reported for psychological and social well-being, respectively.

Utrecht Work Engagement Scale for Students (UWES-9S; Schaufeli et al., 2006)

This 9-item self-report scale comprises three subscales, namely Vigour (VI), Dedication (DE) and Absorption (AB), consisting of three items each (see Table 1). The UWES-S is the student version of the Utrecht Work Engagement Scale which is used to assess work engagement (UWES; Schaufeli et al., 2002). Originally, the UWES included 17 items and three subscales. Later, for pragmatic reasons, the UWES was reduced, resulting in a 9-item version (UWES-9) that showed adequate psychometric properties (Schaufeli et al., 2006). Items are scored on a 7-point scale ranging from 0 (*never*) to 6 (*always*). Examples of the questions are: "When I'm doing my work as a student I, feel bursting with energy" (Vigour), "I am enthusiastic about my studies" (Dedication) and "I am immersed in my studies" (Absorption). The internal consistencies of the subscales and the total scales were greater than $\alpha = 0.86$ (Gusy et al., 2019) and in the present study 0.91.

Original Learning Indicators Scale (OLIS; Frymier & Houser, 1999)

The original learning indicators scale (OLIS), developed by Frymier and Houser (1999), is a 9-item scale that measures behavioural changes directed towards learning on a 5-point interval scale anchored with (0) *never* and (4) *Very Often*. Frymier and Houser (1999) reported a Cronbach's alpha value of 0.85. Examples of scale items are "I actively participate in online class discussions" and "I explain course content to other students". In the present study, internal consistency was 0.88.

Procedure and Ethical Considerations

The survey was fielded between 12 October and 22 November 2021. All NSFAS-funded students are required to have a profile on the My NSFAS portal. The survey was developed on the Survey Monkey platform and took the form of an online link in the student portal. Students were asked to complete the survey but could choose not to participate in the study. Informed consent was dealt with as follows:

- Two circulars went out to institutions to inform Principals and Vice-Chancellors and provided them with information on the survey and that while they could support students or provide them with information on the survey, students have to provide consent and the conditions that accompany this.

• A circular was also sent out to students explaining the purpose of the survey and the implications of consent in an easily accessible format.

• On clicking on the link to complete the survey, after a short summary of the rationale of the study, the students were asked for their consent and referred to the avenues for gaining more information on the study while emphasising that their non-participation will not affect their funding in any way. Permission to embark on the study was granted by the Human Sciences Research Council, Research Ethics Committee (REC 3/23/09/20).

Data Analysis

The data were analysed using the Statistical Package for the Social Sciences (IBM SPSS) and Mplus 8.3 (Muthén & Muthén, 1998–2019).

Measurement Models

Mplus was used to create measurement models for student engagement (SE), student learning experiences (SLE) and the social well-being (SWB) and psychological well-being (PWB) facets of the mental health continuum by allowing the indicators that represent each of these latent variables to load on the respective factors. Confirmatory factor analysis (CFA) was applied to the data. The robust maximum likelihood (MLR) estimator was used, and full information likelihood estimation was applied to handle missing data. We evaluated model fit by considering the χ^2-statistic, the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), root-mean-square error of approximation (RMSEA) and the standardised root–mean-squared residual (SRMR). The χ^2-statistic is sensitive to sample size; therefore, decisions regarding model fit were mainly based on consideration of the CFI, TLI, RMSEA and SRMR. For the CFI and TLI, reasonable model fit is indicated by values larger than 0.90 and good model fit by values larger than 0.95. For the RMSEA and SRMR, reasonable model fit is indicated values smaller than 0.08 and good model fit by values smaller than 0.05 (Byrne, 2013; Hu & Bentler, 1999). Model modifications were based on statistical and substantive considerations. Specifically, high modifications indices (MIs), factor loadings, R^2-values and the residual variances were considered for model modification. Before model modifications were made, we first considered whether the changes made were substantively justified.

Statistical Model

We then tested the statistical model using Mplus 8.3 (Muthén & Muthén, 1998–2019). Specifically, a regression model was tested where SE and SLE represented the dependent variables that were regressed on the SWB and PWB facets of mental health, respectively, as the independent variables. The MLR estimator was used.

Results

Inter-factor Correlations, Descriptive Statistics and Reliability

The inter-factor correlations, descriptive statistics and reliability scores are presented in Table 2. All inter-factor correlations were statistically significant and ranged between 0.385 and 0.571, indicating that structural equation modelling can be performed. All latent variables showed sufficient reliability, with Cronbach's alpha values ranging between 0.852 (SWB) and 0.906 (SE).

Model Fit

Measurement Models

The fit indices for the measurement models are presented in Table 3. The SE and PWB factors displayed adequate model fit. Fit indices for the SLE factor displayed less than adequate fit and needed modification to obtain models with good fit. A high MI (864.437) indicated a high correlation between the residual terms of items 7 ("I volunteer my opinion in class") and 8 ("I see improvement in my

Table 2 Inter-factor correlations, descriptive statistics and reliability of the SE, SLE, SWB and PWB

	Inter-factor correlations				Descriptive statistics		Reliability
Variable	SE	SLE	SWB	PWB	Mean	SD	α
SE	1				34.152	7.559	.906
SLE	.571**	1			31.525	8.124	.880
SWB	.428**	.385**	1		14.238	4.909	.852
PWB	.525**	.386**	.546**	1	22.052	5.827	.891

SE student engagement; *SLE* student learning experiences, *SWB* social well-being, *PWB* psychological well-being and α = Cronbach's alpha

**$p < 0.01$ (two-tailed)

Table 3 Fit indices of the measurement and statistical models

Latent model	χ^2	*df*	*P*	CFI	TLI	RMSEA	90% CI	SRMR
SE	1408.479	27	< 0.01	.932	. 909	0.088	(0.084; 0.092)	0.036
SLE Model 1	2588.448	27	< 0.01	.866	.822	0.120	(0.116; 0.124)	0.056
SLE Model 2[a]	1528.596	20	< 0.01	.905	.867	0.107	(0.103; 0.112)	0.046
SLE Model 3[b]	769.741	14	< 0.01	.943	.914	0.091	(0.085; 0.096)	0.033
SWB Model 1	532.138	5	< 0.01	.931	.862	0.128	(0.119; 0.137)	0.038
SWB Model 2[c]	111.713	4	< 0.01	.986	.965	0.064	(0.054; 0.075)	0.019
PWB	361.558	9	< 0.01	.966	.943	0.078	(0.071; 0.085)	0.028
Statistical model	11,080.358	317	< 0.01	.854	.839	0.072	(0.071; 0.073)	0.077

SE student engagement, *SLE* student learning experiences, *SWB* social well-being, *PWB* psychological well-being; χ^2 = Chi-square; *df* = degrees of freedom; *p* = probability value; *CFI* comparative fit index, *TLI* Tucker–Lewis Index; *RMSEA* root-mean-square error of approximation; 90% CI = 90% confidence interval of the RMSEA and *SRMR* standardised root-mean-squared residual

[a]Item 7 removed

[b]Item 7, item 8 removed

[c]The residual terms of items 7 and 8 were allowed to correlate

performance on assignments in this class"). A substantive justification for the high correlation between the residual terms of items 7 and 8 was not immediately apparent. When the residual terms were allowed to correlate, there was no significant improvement in model fit, even after the residual terms of more item pairs were allowed to correlate. Instead, we decided to remove item 7 as this item has a lower factor loading (0.673) than item 8 (0.707), explained less of the variance ($R^2 = 0.453$) than item 8 ($R^2 = 0.499$) and had a higher error variance (0.547) than item 8 (0.501). However, model fit remained insufficient. Next, a high MI (576.648) indicated a high correlation between the residual terms of item 8 and item 9 ("I think about the course content outside of class)". There was not an apparent substantive justification for the correlation between the residual terms of these items. We then decided to remove item 8. Item 8 had a smaller factor loading (0.654) than item 9 (0.706), explained less of the variance ($R^2 = 0.428$) than item 9 ($R^2 = 0.498$) and had a higher residual variance (0.572) than item 9 (0.498). Also, on closer inspection of item 8, this item is the only item that refers to academic performance as a facet of student learning. All other scale items refer to making connections between course content, participating in class, or sharing course content with others. This modification produced a model with acceptable fit.

For SWB, a high MI (454.953) indicated a high correlation between the residual terms of item 7 ("That people are basically good") and item 8 ("That the way our society works makes sense to you"). Since both items relate to the notion of social coherence, the residual terms of these items were allowed to correlate which produced a model with good fit. Similar adjustment was made in Wilson Fadiji and Khumalo (2021) using a sample of Ghanaian students.

Statistical Model

The statistical model displayed less than adequate fit (Table 3) with CFI and TLI values below the cut-off values for reasonable model fit. The RMSEA and SRMR values indicated reasonable model fit. A high modification index (2122.540) indicated that item 1 ("When I'm doing my work as a student, I feel bursting with energy") of the SE scale should be allowed to load on the PWB factor. Although model fit improved when this item was allowed to load on the PWB factor, model fit remained insufficient and further modifications resulted in a model that did not converge. Also, none of the modifications could be justified substantively; therefore, no modifications were made to the statistical model.

Regression Analyses

The results for the regression analyses are presented in Table 4 and depicted in Fig. 1. The independent variables together (SWB and PWB) accounted for 43% ($R^2 = 0.430$)

Table 4 Regression results for SWB and PWB as predictors of SE and SLE

	Est.	SE	Est./SE	Two-tailed *p*-value
SE on SWB	0.105	0.020	5.207	< 0.01
SE on PWB	0.577	0.020	28.536	< 0.01
R^2-value (SE)	0.430	0.015	28.885	< 0.01
SLE on SWB	0.315	0.024	13.310	< 0.01
SLE on PWB	0.176	0.024	7.248	< 0.01
R^2-value (SLE)	0.210	0.013	16.600	< 0.01

SE student engagement, *SLE* student learning experiences, *SWB* social well-being, *PWB* psychological well-being, Est estimate and *SE* standard error

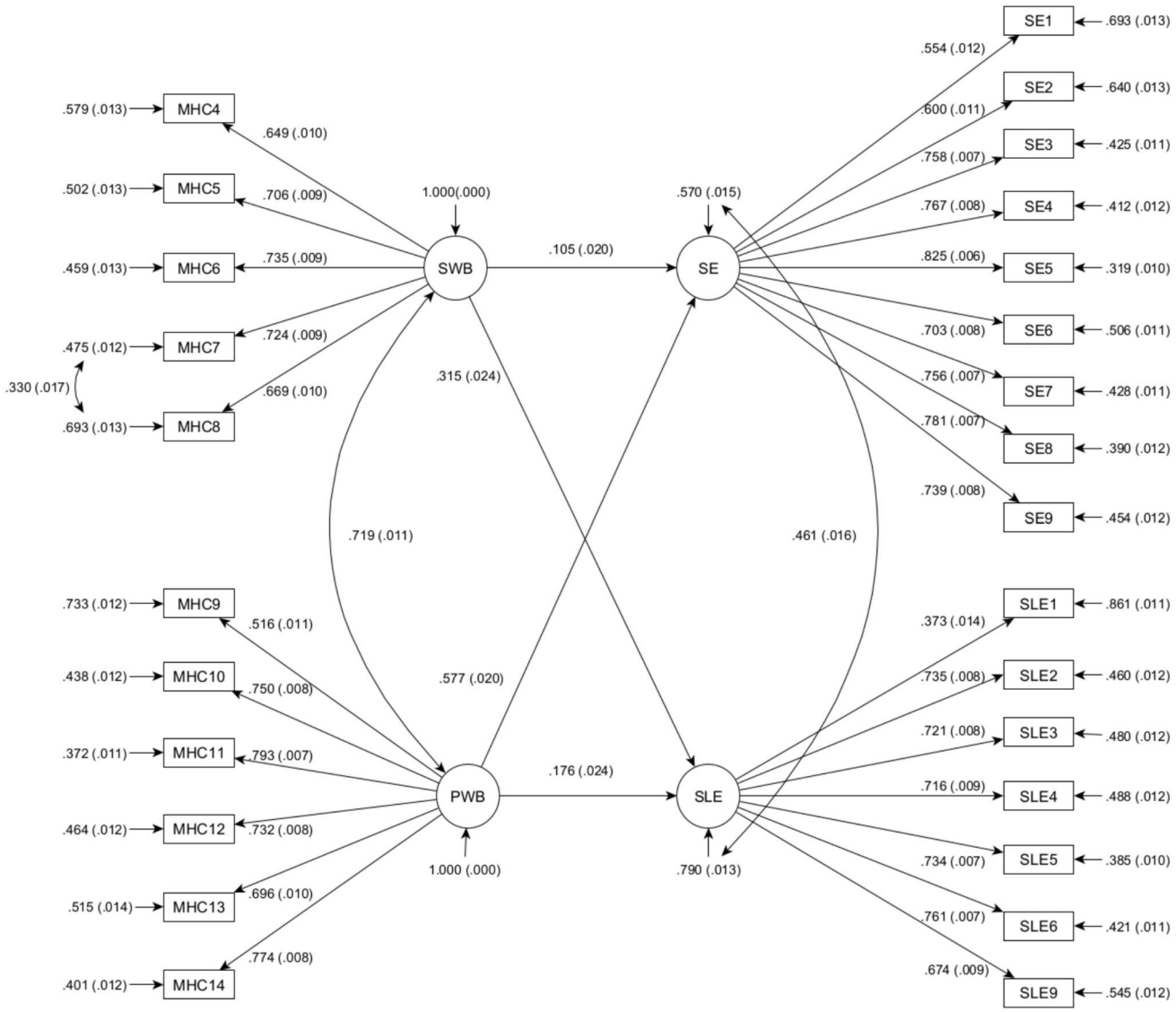

Fig. 1 Regression model with SWB and PWB as predictors of SE and SLE

of the variance in SE and for 21% ($R^2 = 0.210$) of the variance in SLE. Student well-being was, therefore, a stronger predictor of student engagement than of student learning experiences.

Psychological Well-Being, Student Engagement and Student Learning Experiences

PWB was positively associated with SE ($\beta = 0.577$, $p \leq 0.01$, 95% CI = 0.572; 0.698) and SLE ($\beta = 0.176$, $p \leq 0.01$, 95% CI = 0.090; 0.165). PWB predicted SE more strongly than SLE and accounted for 57.7% and 17.6% of the variance in SE and SLE, respectively.

Social Well-Being, Student Engagement and Student Learning Experiences

SWB was positively associated with SE ($\beta = 0.105$, $p \leq 0.01$, 95% CI = 0.054; 0.120) and SLE ($\beta = 0.315$, $p \leq 0.01$, 95% CI = 0.144; 0.203). SWB was a stronger predictor of SLE than SE and accounted for 10.5% of the variance in SE and 31.5% of the variance in SLE. Overall, SWB was a stronger predictor of SLE than SE, whereas PWB was a stronger predictor of SE than SLE, implying that SLE are more strongly influenced by SWB than PWB, and SE is more strongly influenced by PWB than SWB.

Discussion

The aim of the present study was to explore the nature of the relationship between psychological and social well-being (as facets of mental health), student engagement and student learning experiences. The model fit indices showed a reasonable fit as determined by the RMSEA and SRMR and less than reasonable fit as shown by CFI and TLI. Regarding the structural relationships, there was a significant positive relationship between psychological well-being and both student engagement and learning experiences. Similarly, increased social well-being predicted greater student engagement and better student learning experiences. We discuss these findings further considering relevant literature.

Psychological Well-Being, Student Engagement and Student Learning Experiences

In tandem with previous research arguing that when students are well and functioning, they are more likely to invest the necessary time and psychological resources in their studies (Kotera et al., 2021), we found that functioning well among NSFAS-funded students was related to being able to engage with academic activities. It is possible that when students experience well-being in terms of having meaning, purpose in life and mastery of their environment, that they are more likely to feel they have the resources for learning and are willing to invest such in their studies, measured as dedication, absorption and vigour.

Among students who have the double burden of financial distress and coping with schoolwork, engagement might be difficult without the necessary psychological resources. If more support is directed to ensuring that such students are functioning well, this could reduce the anxiety linked to the financial burden of caring for themselves and their families (Baik et al., 2015; Boulton et al., 2019), while attempting to fit into their new educational environment. Again, positive psychological experiences might encourage them to engage more with their studies as opposed to a preoccupation with negative feelings that might be detrimental to their academic pursuits.

We also found that psychological well-being predicts student learning experiences. This would imply that the experience of well-being encourages students to engage in activities or to make the necessary changes to their behaviour in a manner that leads to learning. From the previous studies, it is evident that there exists a relationship between a sense of identity (a component of psychological well-being) and academic endeavours or learning experiences (Datu, 2018; Samad et al., 2019). In our sample of NSFAS students, it is possible that when there is constant experience of positive psychological functioning, we can expect that there will also be changes in their behaviour and participation in activities necessary to promote learning because students believe that they can do so. The fact that this result emanates from socio-economically disadvantaged students highlights the importance of investing not only in the financial well-being of these funded students, but that interventions into improving their psychological well-being will have positive implications for their learning experiences.

Social Well-Being, Student Engagement and Student Learning Experiences

Our model also tested the relationship between social well-being, student engagement and student learning experiences. Social well-being underscored in positive interactions and relational embeddedness can produce the needed inner strength and emotional resources for academic pursuits and engagement. Reflecting also on social well-being in terms of a sense of belonging, the findings from this study are consistent with previous research in suggesting that a sense of connection with school may be instrumental in enabling students to maintain academic motivation that is necessary for engagement (Gillen-O'Neel & Fuligni 2013; Murphy & Zirkel, 2015; Strayhorn, 2018). On the other hand, it has been found that when financial and family demands make it challenging to engage in extra-curricular activities, first-generation college students tend to report feeling isolated on campus (Jehangir, 2010), leading to poor engagement and lagging behind their continuing-generation peers (Pascarella et al., 2004). This insight is of relevance to the population of students who formed the focus of this study, as NSFAS-funded students are most likely first-generation students who face particular challenges (such as alienation because of their background) that have implications for their sense of belonging (Seider et al., 2015; Stephens et al., 2015) and, in turn, engagement in their studies. Indeed, first-generation students often (but not always) might experience lower levels of connectedness than their continuing-generation peers (Spiegler & Bednarek, 2013). However, when first-generation students experience social well-being, they are especially likely to benefit even more (Pascarella et al., 2004). It has been argued that, although social well-being may be associated with positive outcomes for all students, these associations may be stronger among first-generation students (Pittman & Richmond, 2007).

The finding of a positive relationship between social well-being and learning experiences shows that indeed connection with others is important for learning within the higher education context. This experience of embeddedness in terms of understanding and contributing to the university community may be important to better understand student learning experiences. We believe this finding shows that when students do not feel isolated and are able to interact with others in a way that facilitates learning effectively, this

has the potential to facilitate positive learning experiences. Moreover, previous research has argued that when individuals experience a sense of belonging, flourishing and positive learning experiences may be enhanced (Datu, 2018; Mainhard et al., 2018; Opić, 2016).

Practical Implications

The present study has demonstrated the importance of psychological and social well-being for student engagement and student learning experiences. We explored these two outcome variables separately as engagement takes an emotive stance, while learning experiences taps into actual activities and behavioural changes directed towards learning.

Reflecting on the theoretical contribution of our study, our findings further support arguments that individual's experience of autonomy, relatedness to others and competence (components of self-determination theory; Deci & Ryan, 2014) are said to foster, motivation and engagement for activities. Even in deprived contexts, promoting well-being will lead to gains in learning experiences and engagement.

Limitations

The cross-sectional nature of the study makes it difficult to make conclusions of causality. Our findings are inconclusive in terms of well-being as the sole determinant of engagement and learning experiences as controlled experimentation and longitudinal data would be needed to ascertain this. In addition, the emerging poor model fit indices for the CFI and TLI warrants that caution is taken in application of, particularly, the findings on the overall model fit and further work is needed to support the results. In addition, the learning experiences scale will need to be further validated as it produced poor fit indices prior to implementing the suggested model modifications. A further limitation is the need to consider the likely impact of other mediating or moderating variables including socio-demographic factors and the social climate of the university to fully understand the antecedents of learning and student engagement.

Conclusions

The findings and its relation to extant literature have been discussed, and here, we outline practical implications for the South African higher education context. Our study has shown that engagement and learning experiences, which are desired outcomes of education stakeholders, are linked to students experiencing psychological and social well-being. Importantly, it shows that even in contexts of disadvantage, promoting targeted student well-being interventions is important for better educational outcomes.

However, while psychological and social well-being predict engagement and learning experience, these are distinctly different outcomes. Our analysis suggests social well-being particularly, as a stronger predictor of learning experience, while psychological well-being is a stronger predictor of engagement. Thus, within a context of limited resources, well-being interventions must be designed to consider the particular outcome it is trying to improve.

Our study thus suggests that support for socio-economically disadvantaged students must be tailored to promote aspects of their psychological and social well-being, for example through interventions aimed at enhancing psychosocial well-being. Student support services can focus on improving psychological functioning and a sense of belonging among these first-generation students as they navigate the double burden of financial anxiety and pressures from schoolwork. The overarching insight is that while the South African government has done well in providing a very comprehensive platform of financial support to disadvantaged students to access higher education, further investments in intervention towards positive psychological and social well-being can result in even greater benefits to academic achievement.

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Data Availability The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of interest The authors have no competing interests to declare that are relevant to the content of this article.

Ethics approval The study was approved by the Human Sciences Research Council Ethics Committee and (REC 3/23/09/20) the study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Consent to participate Informed consent was obtained from all individual participants included in the study.

Consent for publication Research participants in this study have provided permission for the emerging data to be published in academic journals.

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