



Application of the Theory of Planned Behavior to Identify Variables Related to Academic Help Seeking in Higher Education

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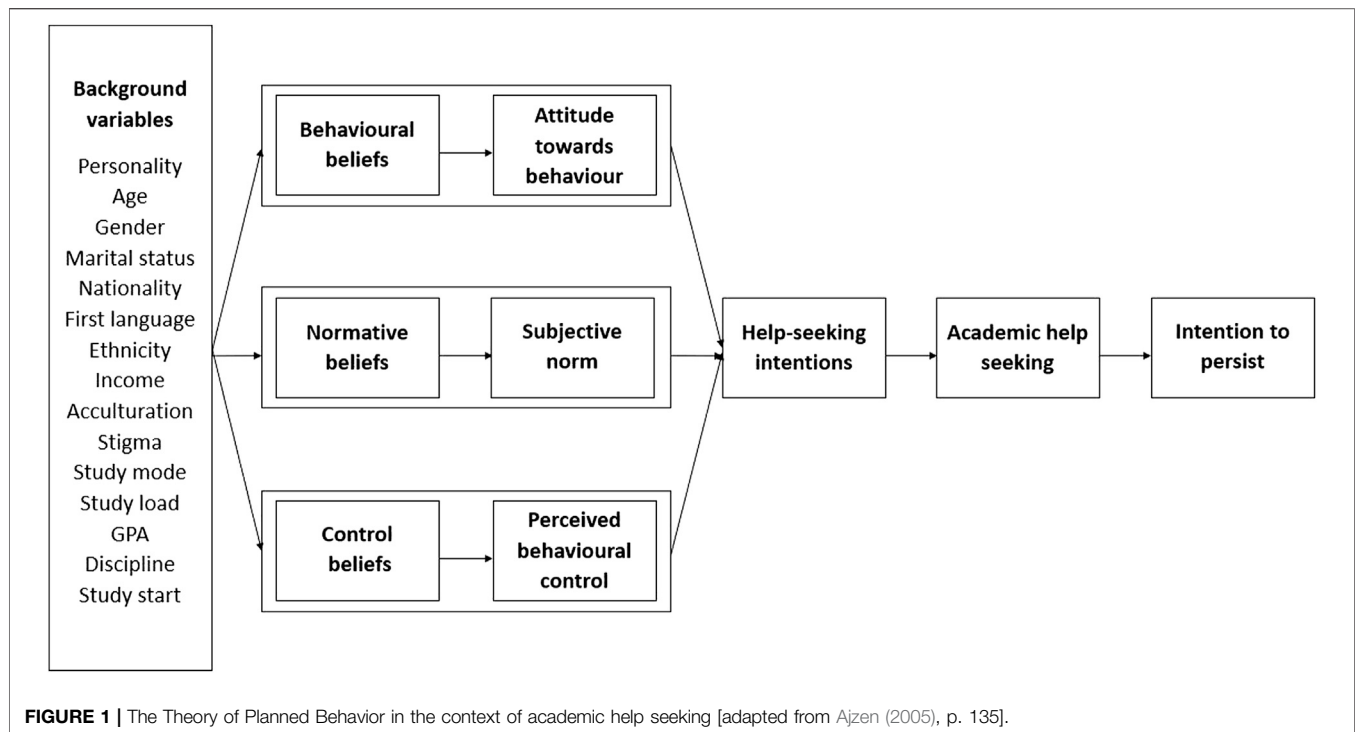
Universities admit and enrol increasingly diverse student cohorts with varying academic entry standards. To increase student success, universities offer academic support to students, however, often students do not engage in or access this academic support. Building on the Theory of Planned Behavior and a comprehensive literature review, this study aims to identify personality variables, background variables and variables related to the Theory of Planned Behavior that can predict academic help seeking in higher education to inform the design of engaging and accessible academic support. Quantitative data were collected via an online survey across a range of different disciplines and undergraduate year levels at an Australian university. Structural Equation Modelling revealed that public stigma, self-stigma, extraversion, agreeableness, neuroticism, gender and the Theory of Planned Behavior variables perceived behavioural control, subjective norm and attitude towards help seeking play a role in predicting intentions to seek academic help, and academic help-seeking behaviour. Findings indicate that 20% of the variance of help-seeking intentions but only 5.7% of the variance of academic help seeking could be explained. Findings are discussed as to how they can inform interventions to increase help-seeking intentions and behaviour. Finally, this study explores how to overcome the present intention-behaviour gap.

Keywords: academic help seeking, higher education, theory of planned behavior, personality, background variables

INTRODUCTION

To compete in the current higher education sector, universities admit increasingly diverse student cohorts with varying academic entry standards. These cohorts include school leavers, but also mature-aged students, international students, and students from low socioeconomic backgrounds (Alexander, 2006; Adams et al., 2012; Harryba et al., 2012). As a result of varying entry standards, students' academic skills often vary and impact the success in their degree (MacGillivray, 2009; Hoyne and McNaught, 2013). This may lead to poorer academic achievement and lower retention rates, challenging universities' reputations and financial stability. One measure undertaken by universities is to provide academic support services to students to address this issue (Reader, 2018).

Universities offer a range of different academic support services, including workshops, one-on-one support, self-access resources or subject integrated advice covering mainly the areas of academic writing, mathematics and statistics, reading, researching and generic academic skills (e.g., Brown



University, 2021; James Cook University, 2021; The University of Melbourne, 2017; University of Bristol, 2021). Academic support also encompasses content advice from academics who are First Year Coordinators (Boehm et al., 2017), Program or Course Coordinators, or regular lecturers and associate lecturers, as well as enrolment advice regarding courses and subjects. Overall, academic support has been shown to be beneficial for student success (Collins, 2012; Chen, 2017). However, universities struggle to engage students in seeking academic help (Hoyne and McNaught, 2013) and little information is known about factors influencing a student's decision to seek academic help (Bornschlegl et al., 2020). Therefore, the aim of this study was to identify variables related to academic help seeking in higher education to inform the design of engaging and accessible academic support.

While recent research does not give considerable insight into factors related to academic help seeking, the Theory of Planned Behavior (Ajzen, 2005) and recent research about help seeking in other contexts provide a good theoretical foundation for further investigations in the area of academic help seeking. The Theory of Planned Behavior (Ajzen, 2005) proposes that a person's background, such as personality, age, gender, nationality and cultural background, acculturation, stigma and socioeconomic status, influences a person's beliefs about a behaviour. These beliefs encompass behavioural beliefs, normative beliefs, and control beliefs which influence three main parameters: 1) a person's attitude towards a behaviour, 2) a person's perceived subjective norm, and 3) a person's perceived behavioural control, respectively. An attitude towards a behaviour is a "favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). Subjective norm concerns whether a

person's social environment supports a certain behaviour and perceived behavioural control is a person's evaluation of the perceived probability of performing the behaviour in question successfully (Ajzen, 1991). These parameters then influence the intention to perform the behaviour, which ultimately influences a person's behaviour (Figure 1).

In a review of recent literature, limited existing evidence was found in the area of academic help seeking and even less in the context of higher education. However, there is some evidence from other help seeking areas, particularly psychological help seeking. In a comprehensive systematic scoping review, Bornschlegl et al. (2020) found that there is strong evidence for attitude towards help seeking, subjective norms, gender and stigma to be related to help seeking (e.g., Cheang and Davis, 2014; Choi and Miller, 2014; Pumpa and Martin, 2015; Seamark and Gabriel, 2018; Zochil and Thorsteinsson, 2018). Furthermore, the relation of personality, age, socioeconomic status, cultural background, acculturation, and educational background to help seeking was ambivalent. No conclusion could be drawn for nationality and perceived behavioural control. The majority of these variables were either not considered in any research regarding academic help seeking or examined in only one or two studies (Bornschlegl et al., 2020). However, Bornschlegl et al. (2020) found that there is some evidence for personality, age, gender, and cultural background (e.g., Dietsche, 2012; Ghyasi et al., 2013; Roessger et al., 2018) to be related to academic help seeking.

With regard to academic help seeking, females seem to be more likely than males to seek academic help (e.g., Virtanen and Nevgi, 2010). Furthermore, the Big Five Personality dimension of extraversion was found to be positively related to seeking help for

academic purposes (e.g., Ghyasi et al., 2013). Neuroticism, openness, conscientiousness, and agreeableness do not seem to be crucial for academic help seeking, however, some studies found these variables to be related (Bornschlegl et al., 2020). Inconsistent results were also found for age and cultural background (Bornschlegl et al., 2020). The relationship between age and academic help seeking was found to be positive as well as negative (e.g., Dietsche, 2012; Roessger et al., 2018). Cultural background was found to be related in some studies but not in others (e.g., Zusho and Barnett, 2011; Dietsche, 2012).

Given the inconsistent findings from recent research regarding psychological help seeking and the sparse body of literature about variables related to academic help seeking, this study considered a range of variables that might be related to academic help seeking. Therefore, to answer research question 1 “How are background variables, personality and variables related to the Theory of Planned Behavior related to academic help-seeking behaviour in higher education?”, the model as shown in **Figure 1** was tested for its applicability in the context of academic help seeking in higher education. Furthermore, research question 2 “What are the effects of academic help seeking on student retention?” was examined by testing this model. As shown in **Figure 1**, the variables examined in this study include age, gender, marital status, income, nationality, first language, study mode (internal vs. external), study load (full-time vs. part-time), discipline, study start, GPA, acculturation, ethnicity, the Big Five personality dimensions (extraversion, agreeableness, conscientiousness, neuroticism, openness), self-stigma, public stigma, attitude towards help seeking, subjective norm, perceived behavioural control, help-seeking intentions and actual help-seeking behaviour. Public stigma is a person’s perceptions that a given behaviour is not accepted by society (Vogel et al., 2006), while the related concept of self-stigma describes internalised public stigma (Corrigan, 2004). Additionally, the students’ intention to persist in their study was included as academic help seeking was shown to be positively related to student success (Collins, 2012; Chen, 2017).

Given the sparse body of literature concerning variables influencing academic help-seeking behaviour as well as the inconsistent findings in the area of psychological help seeking, this study aims to test one relatively exploratory hypothesis. It is proposed that some personality and background variables in addition to the Theory of Planned Behavior are related to academic help-seeking behaviour in higher education (H1). Furthermore, as shown in previous research (Collins, 2012; Chen, 2017), it is expected that academic help seeking is positively related to the students’ intention to persist (H2).

MATERIALS AND METHODS

Data was collected with a volunteer/convenience sample of undergraduate students at James Cook University (JCU) *via* an online survey using the Qualtrics platform. Participating students completed the survey in March, April, and May 2020, as well as in August, September, and October 2020. Due to the

Coronavirus pandemic, the surveys could not be conducted during face-to-face lecture/tutorial time. As the whole university moved its teaching online, the surveys were conducted in online live teaching sessions *via* the Collaborate platform or outside of class time *via* the survey link provided on the university’s learning management system LearnJCU. Data was analysed using Structural Equation Modelling.

Sample

JCU students from 36 subjects volunteered to participate in the survey. This included students from four campuses, as well as external students. The subjects were selected to represent various disciplines and undergraduate year levels. Sixteen first year subjects from 16 disciplines, 10 second year subjects from nine disciplines, nine third year subjects from nine disciplines and one fourth year subject took part. In total, 430 students participated in the survey. One-hundred and forty-four responses were removed because the survey was not completed. Three responses were removed because they were completed by Master students who were not part of the target population of this study. Therefore, a total of $N = 283$ responses were included in the initial analysis of the survey. The participants had a mean age of $M = 24.80$ ($SD = 8.19$). Two-hundred and five participants were female, 75 were male and three did not report their gender. Most were single (49.3%) or in a relationship (35.7%). The remaining students were either married (10.7%), separated (2.9%) or divorced (1.4%). Most participants’ nationality was Australian (86.1%), and first language was English (89.2%). Furthermore, their ethnicity was mostly Caucasian (78.1%). Other ethnic origins include Aboriginal (2.6%), Asian (5.6%), African (0.4%), Middle Eastern (0.7%), Eurasian (3.0%), Caucasian/Aboriginal (1.9%) and other combinations (7.8%). Most participants reported that they either lived in a household with an income less than AU\$20,000 (24.2%) or more than AU\$100,000 (26.3%). Most students were studying on the Townsville (53.4%) or Cairns (35.9%) campuses. Others were either studying externally (5.7%) or from one of the smaller campuses, such as Mackay or Mt Isa (5.0%). The majority of the participants was enrolled full time (95%). Most participants commenced their studies in 2020 (36.4%), 2019 (25.7%) or 2018 (21.4%). The students’ mean GPA was $M = 5.40$ ($SD = 0.86$). Participants were studying 19 different disciplines and various double degree combinations.

Instruments

The online survey consisted of 121 items and took approximately 15 min to complete. It consisted of questions regarding the students’ background and validated scales for personality (BFI-10; Rammstedt and John, 2007), attitude towards help seeking (Kraft et al., 2005), perceived behavioural control (Kraft et al., 2005), subjective norm (Kraft et al., 2005), public stigma (PSOSH; Vogel et al., 2009), self-stigma (SSOSH; Vogel et al., 2006), help-seeking intentions (Ajzen, 2019a), intention to persist (Shin, 2003) and self-generated actual help-seeking behaviour items. Most items were rated on five- or seven-point scales.

The students’ background was examined using 16 open-ended questions as well as rating scales, single items and multiple-choice question types. The background questions included

demographics of age, gender, marital status, nationality, first language, ethnicity, household income, and study information of study mode, study load, the degree the student is studying, when the student commenced their studies at JCU, and their current GPA. Students were also asked if they were an international student and if yes, were asked to rate how often they wish they were still in their home country as an indicator of their level of acculturation.

The students' personality was examined using the Big Five Inventory (BFI-10) which is a 10 item 5-point Likert scale measuring the Big Five personality dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness. One item was added to the scale agreeableness to increase the scale's reliability. Therefore, 11 items were used to assess has personality in this survey. This short version of the BFI-44 achieved acceptable values for "retest reliability, structural validity, convergent validity with the NEO-PI-R and its facets, and external validity" (Rammstedt and John, 2007, p. 203). All 11 statements begin with the stem "I see myself as someone who. . . ." Students could disagree strongly, disagree a little, neither agree nor disagree, agree a little and agree strongly. An example item of the BFI-10 is "I see myself as someone who is reserved." Internal consistency analyses revealed the following Cronbach α values: $\alpha = 0.71$ for extraversion, $\alpha = 0.46$ for agreeableness, $\alpha = 0.54$ for conscientiousness, $\alpha = 0.57$ for neuroticism, and $\alpha = 0.15$ for openness. As the scales only consist of two and three items, no changes could be made to the scales to improve their reliability. Due to the low internal consistency of the scale openness, this scale was not included in the analysis. All other subscales were included in the analysis, as Lovik et al. (2016) suggested that lower values for internal consistency can be expected when using 2-item scales. Furthermore, other studies have also reported internal consistency values below 0.60 (e.g., Balgiu, 2018; Kunnell et al., 2019) and Balgiu (2018) suggested that the cut-off value for 2-item scales is $\alpha = 0.45$.

The students' public stigma was measured using the Perceptions of Stigmatization by Others for Seeking Help (PSOSH) scale. It is a 21-item, 5-point Likert scale developed by Vogel et al. (2009) to measure public stigma for seeking psychological help. Vogel et al. reported an internal consistency of $\alpha = 0.96$. Not all items were applicable for examining public stigma for seeking academic help. In total, 11 items were suitable and were selected for this study. All items begin with the item stem "Imagine you wanted to seek academic advice. If you sought academic advice, to what degree do you believe that the people you interact with would" An example continuation of the stem is "see you as weak." All items are rated on a 5-point scale ranging from "not at all" to "a great deal." The internal consistency of the scale in this study was $\alpha = 0.96$.

The students' self-stigma was examined using the Self-Stigma of Seeking Help (SSOSH) scale. It consists of 10 items and measures self-stigma associated with seeking psychological help on a 5-point, partly anchored Likert-type scale ranging from "strongly disagree" to "agree and disagree equally" to "strongly agree." Testing of reliability and validity revealed good values for internal consistency ($\alpha = 0.91$) and evidence

of construct, criterion, and predictive validity (Vogel et al., 2006). All items were adapted for use in this study to measure self-stigma associated with seeking academic help. For example, an item used in this study is "Seeking academic advice would make me feel less intelligent." Reliability analyses revealed high values of Cronbach's α . The initial internal consistency was $\alpha = 0.90$ and could be increased to $\alpha = 0.91$ by deleting the item "My self-esteem would increase if I sought academic advice."

The scales for attitude towards help seeking (eight items), perceived behavioural control (nine items) and subjective norm (four items) are all based on the Theory of Planned Behavior and have been used frequently in previous research. All three scales are measured by seven categories with anchors on each side of the items (Kraft et al., 2005). The attitude towards help seeking scale consists of the sentence stem "Seeking academic advice for me would be" adapted from the sentence stem "My . . . performing behaviour . . . during the next 2 weeks would be" and eight opposing adjectives that are rated on a 7-point scale. For example, "Seeking academic advice for me would be unwise/wise" (Kraft et al., 2005). The initial internal consistency of this scale in this study was $\alpha = 0.88$. However, Cronbach's α could be increased by deleting the item "Seeking academic advice for me would be stressful-relaxing." Deleting this item was confirmed by an exploratory factor analysis, as this item loaded higher on a second factor. Therefore, the item was removed, and the internal consistency was increased to $\alpha = 0.89$.

The perceived behavioural control scale asks participants to rate nine statements and questions on a 7-point scale with opposing anchors on each side of the scale. For example, "How easy or difficult would it be for you to seek academic advice?" with the anchors "very difficult" and "very easy" (Kraft et al., 2005). The internal consistency of the scale in this study was $\alpha = 0.88$.

Similarly, the subjective norm scale invites subjects to rate four statements on a 7-point scale with opposing anchors on each side of the items. An example statement is "Most people who are important to me would wish that I seek academic advice." with the anchors "very unlikely" and "very likely" (Kraft et al., 2005). Reliability analyses showed an initial Cronbach's α of 0.76. After deleting the item "I feel under social pressure to seek academic advice" the internal consistency could be increased to $\alpha = 0.86$.

Following Ajzen's (2019b) recommendations to examine behavioural intentions, students were asked to rate how likely they will seek academic support in the future on a 7-point scale. To assess students' actual help-seeking behaviour, students were asked how many times they access various support services offered at JCU for three different problem types each semester. In total, 24 items were used to assess actual help-seeking behaviour in this study. To account for support services not integrated in this survey, participants were asked to list any other support services they accessed during their time at JCU and estimate how many times they access this service each semester.

To investigate the relationship between academic help seeking and student retention, the students' intention to continue their studies was assessed. Shin's (2003) intention to persist scale was used in this study. The scale consists of six items, which are rated on a 5-point scale. The scale has a good internal consistency of $\alpha =$

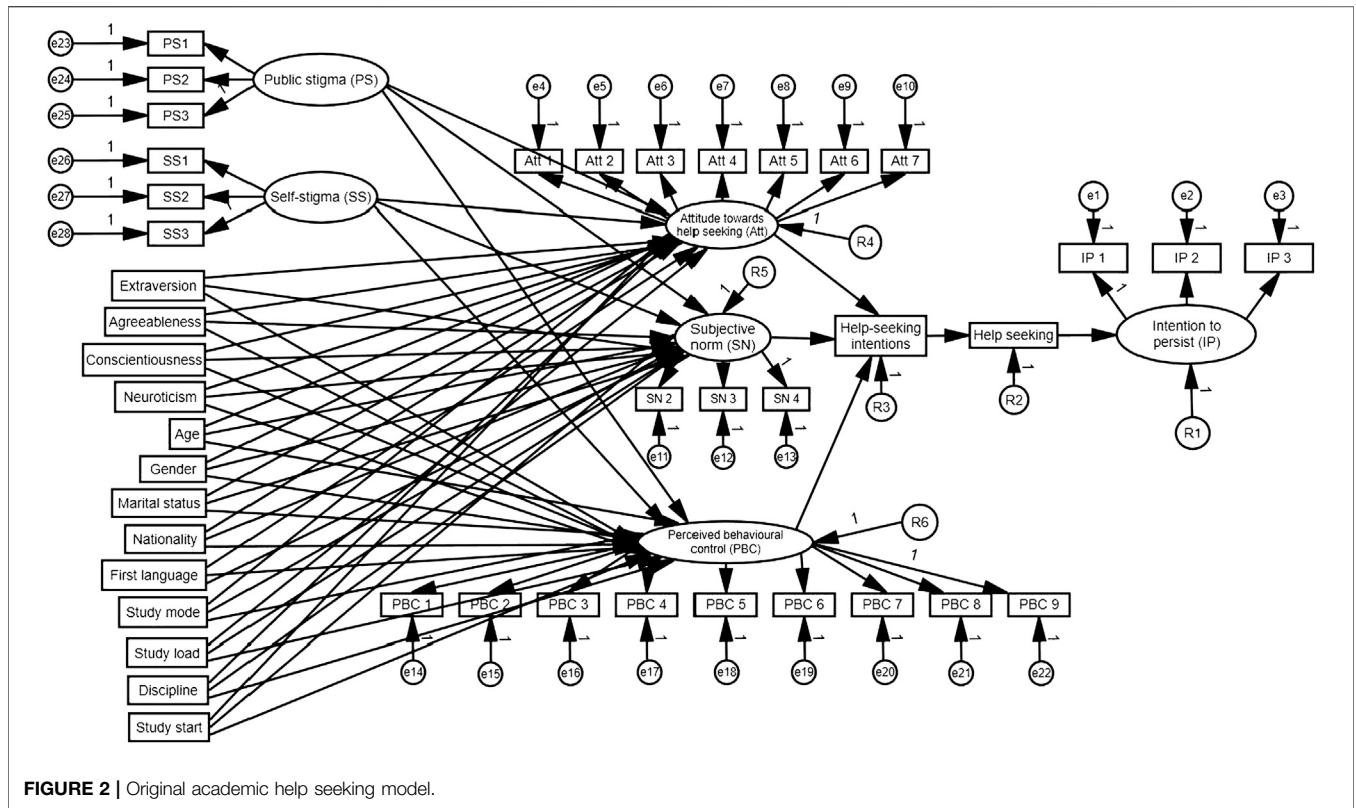


FIGURE 2 | Original academic help seeking model.

0.83 (Shin, 2003). An example item of Shin’s scale applied in this study is “Graduating from JCU is important to me.” The internal consistency of the scale in this study was $\alpha = 0.80$.

Data Preparation

To perform Structural Equation Modelling with Maximum Likelihood estimation, various measures were undertaken to prepare data for this analysis. This included the deletion of cases with missing values, the deletion of variables with too many missing cases and item parcelling for ordinal 5-point scales. First, the following variables of GPA (146 missing values), income (97 missing values), ethnicity (14 missing values), and acculturation, as only 4.9% of the sample were international students and given the option to answer this item, were deleted. Furthermore, Little’s MCAR test revealed that data was missing completely at random and, therefore, cases with missing data were deleted listwise to perform the analysis based on complete cases (Bowen and Guo, 2012) because the sample size was large enough with $N > 200$ (Kline, 2005) resulting in a sample size of $N = 220$.

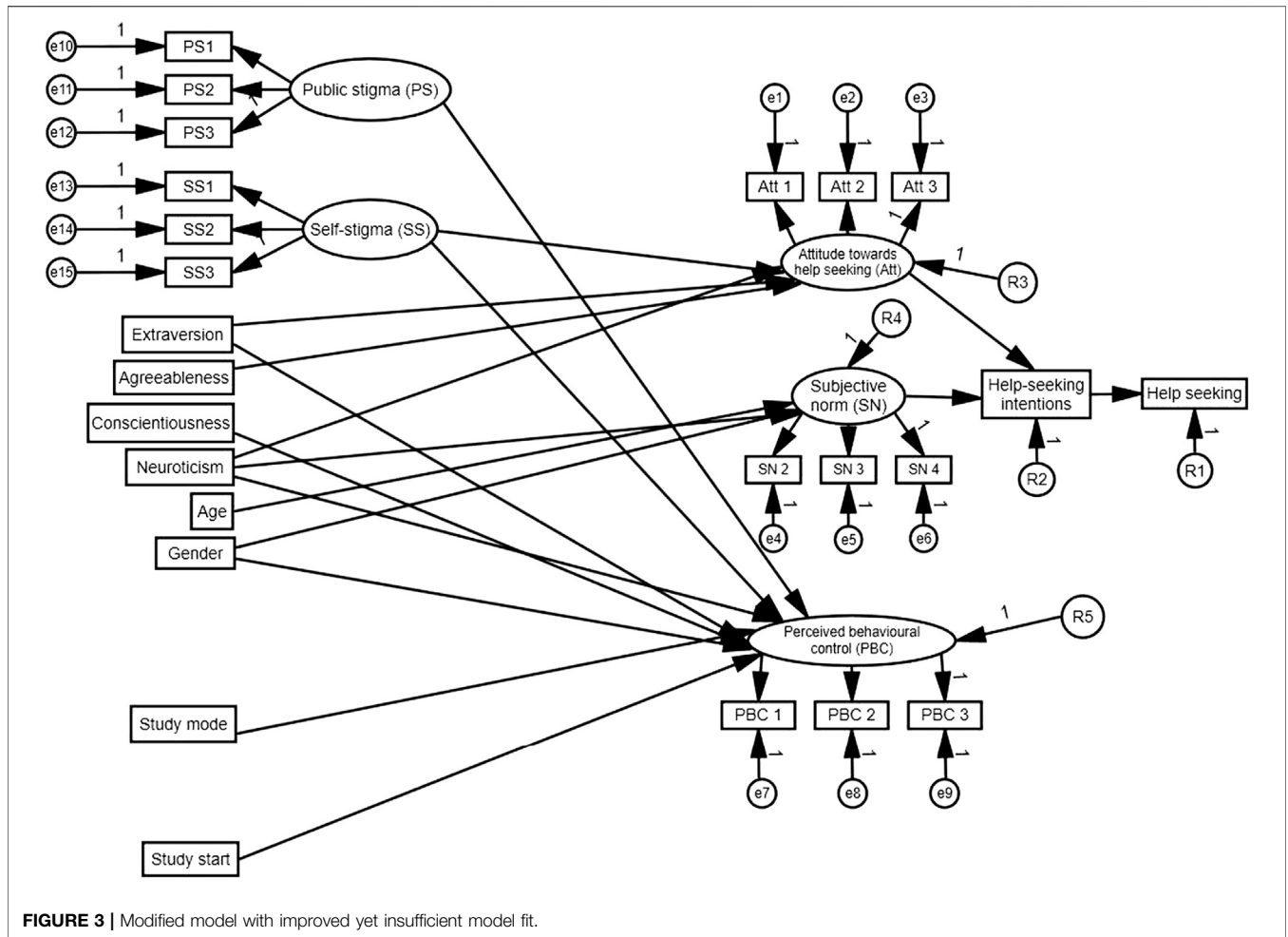
To use the Maximum Likelihood estimator, item parcelling was performed to transform ordinal 5-point scales into interval scales and to ensure data better fits the normal distribution (Matsunaga, 2008). Following Matsunaga’s recommendations, three parcels were formed for the scales of self-stigma, public stigma and intention to persist. The random algorithm was used to assign items to one of the parcels. As the scales extraversion, agreeableness, conscientiousness and neuroticism only exist of

two, three, two and two items respectively, one parcel was formed for each of the scales. Following this procedure, data was not normally distributed according to the Kolmogorov Smirnov test. However, their skewness and kurtosis did not exceed ± 3 and ± 10 respectively indicating that data was not extremely skewed and kurtotic. Moreover, the skewness and kurtosis of variables in the second and final model presented in this paper did not exceed ± 2 and ± 7 respectively (Kline, 2005). Therefore, the Maximum Likelihood estimator, which has been shown to be robust to violations of the assumption of multivariate normality when data is complete and when exogenous variables are uncorrelated, could be used for this analysis (Savalei, 2008).

Following Schreiber et al.’s (2006) recommendations, data was also assessed for linearity, multicollinearity and outliers. A curve estimation for all relationships in the model using IBM SPSS statistics 27 showed that not all relationships were linear, a limitation that needs to be considered when interpreting the results. There were no multicollinearity issues for all independent variables. Furthermore, 10 outliers were identified using Mahalanobis distance. However, removing the outliers from the dataset did not improve the model fit and are, therefore, kept in the data. As no further cases were removed from the data, the final sample size for the following analysis was $N = 220$.

Data Analysis

Data were analysed using Structural Equation Modelling with Maximum Likelihood estimation in IBM SPSS Amos 27 Graphics



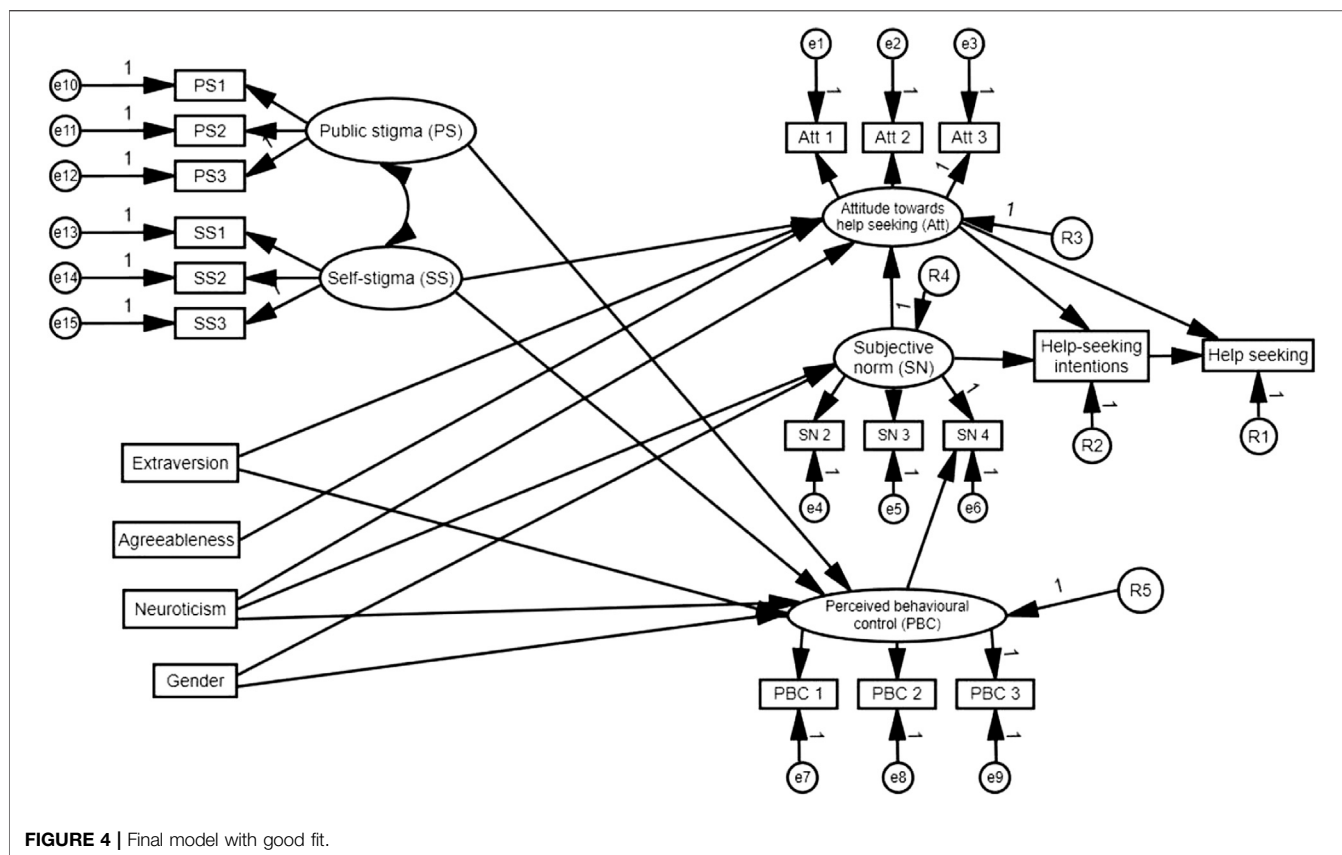
to test the relationships in the academic help seeking model outlined in **Figure 1** and to conduct factor analyses for latent concepts included in the model. Various model modifications to the original model were undertaken to generate a theoretically sound model with good fit (Bowen and Guo, 2012) including the deletion of nonsignificant paths, item parcelling, and by adding directional and non-directional paths. A range of goodness of fit indices were used to determine the fit of the model. These include chi-square (χ^2), root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), goodness-of-fit index (GFI), and adjusted goodness of fit index (AGFI). The cut-off criteria for a good model fit are $\chi^2/df \leq 3$ (Kline, 2005), $RMSEA \leq 0.05$ (close fit) and $RMSEA = 0.05-0.08$ (reasonable fit) (Browne and Cudeck, 1993), $CFI \geq 0.95$ (Hu and Bentler, 1999), $TLI \geq 0.95$ (Hu and Bentler, 1999), $GFI \geq 0.90$ (Hoyle and Panter, 1995), and $AGFI \geq 0.85$ (Schermelleh-Engel et al., 2003). Originally, the χ^2 test is used to test whether the input and implied model are statistically equal. Therefore, “if the p -value associated with χ^2 is nonsignificant, the researcher can claim that the model is consistent with the data” (Bowen and Guo, 2012, p. 144). However, large sample sizes can make it difficult to achieve a nonsignificant result (Bowen and Guo,

2012). Therefore, it is recommended to consider the ratio χ^2/df instead (Schermelleh-Engel et al., 2003 as cited in; Jöreskog and Sörbom, 1993). A good fit is achieved if the majority of the fit indices meet the minimum requirement (Townshend and Caltabiano, 2019).

RESULTS

The original model as shown in **Figure 2** failed to fit the data ($\chi^2/df = 2.378$, $p = 0.000$; $RMSEA = 0.079$, $LO 90 = 0.075$, $HI 90 = 0.084$; $CFI = 0.758$; $TLI = 0.736$; $GFI = 0.688$; $AGFI = 0.642$).

Therefore, the following model modifications were undertaken to improve the fit of the model in an iterative process: First, all variables with non-significant paths were removed. This included intention to persist, marital status, nationality, discipline, first language and study load. A further step removed all non-significant paths, then the indicators for attitude towards help seeking and perceived behavioural control were item parcellled to further simplify the model and to improve the fit of the model as recommended by Matsunaga (2008). For both scales, items were randomly assigned to three item parcels.



This led to the model shown in **Figure 3**. Compared to the original model, the model fit did improve. However, according to the minimum requirements for the fit indices described above, the model did not fit the data well enough ($\chi^2/df = 2.378$, $p = 0.000$; RMSEA = 0.079, LO 90 = 0.071, HI 90 = 0.087; CFI = 0.879; TLI = 0.864; GFI = 0.810; AGFI = 0.769).

Further modifications were undertaken to improve the fit of the model. Age and study start were removed from the model as they were no longer significant predictors. Additionally, considering modification indices, correlations were added between public stigma and self-stigma, a directional path from subjective norm to attitude towards help seeking, a directional path from perceived behavioural control to indicator four of the subjective norm scale, and a directional path from attitude towards help seeking to help seeking. To further simplify the model, study mode was deleted because it is not in the Theory of Planned Behavior and was initially added to the original model only because of the context of higher education. Conscientiousness was deleted because the majority of reviewed studies found no relationship to help seeking (Bornschlegl et al., 2020). These modifications led to the final model (**Figure 4**) that is parsimonious, theoretically sound and fits the data well ($\chi^2/df = 1.623$, $p = 0.000$; RMSEA = 0.053, LO 90 = 0.042, HI 90 = 0.064; CFI = 0.962; TLI = 0.955; GFI = 0.894; AGFI = 0.862).

As shown in **Table 1**, the confirmatory factor analyses conducted as part of the model, showed high loadings with

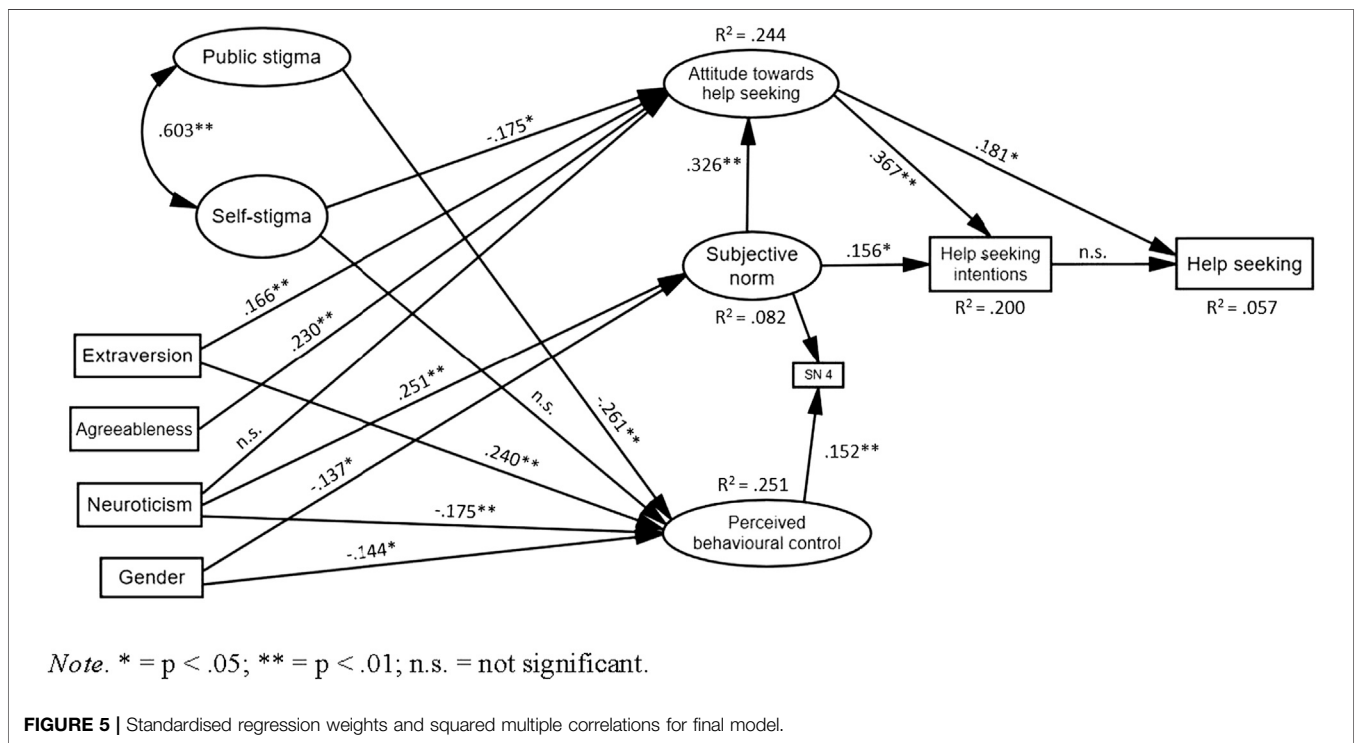
$p < 0.01$ for most items or item parcels to their respective factor and confirmed the one factor solution for all latent constructs in the model (Shi et al., 2019).

As shown in **Figure 5**, attitude towards help seeking was significantly predicted by self-stigma ($\beta = -0.175$, $p < 0.05$), extraversion ($\beta = 0.166$, $p < 0.01$) and agreeableness ($\beta = 0.230$, $p < 0.01$) indicating that lower self-stigma is associated with a more positive attitude towards academic help seeking, and higher levels of extraversion and agreeableness are associated with a more positive attitude. Subjective norm is predicted by neuroticism ($\beta = 0.251$, $p < 0.01$) and gender ($\beta = -0.137$, $p < 0.01$). Therefore, higher levels of neuroticism lead to increased perception that academic help seeking is approved by the social environment (subjective norm) and males seem to have higher levels of subjective norm than females.

Perceived behavioural control is predicted by public stigma ($\beta = -0.261$, $p < 0.01$), extraversion ($\beta = 0.240$, $p < 0.01$), neuroticism ($\beta = -0.175$, $p < 0.01$) and gender ($\beta = -0.144$, $p < 0.05$). This suggests that students with lower levels of public stigma are more confident that they could seek academic advice (perceived behavioural control) and students with higher levels of extraversion also have higher levels of perceived behavioural control. Students with higher levels of neuroticism seem to have lower levels of perceived behavioural control and males seem to be more confident that they can seek academic help. Perceived behavioural control only predicts one of the item parcels of

TABLE 1 | Factor loadings for all items or item parcels and their respective latent construct.

Factor	Number of items in each parcel	Item/item parcel	Factor loading
Public stigma	4	PS 1	0.973
	4	PS 2	0.906
	3	PS 3	0.968
Self-stigma	3	SS 1	0.952
	3	SS 2	0.858
	3	SS 3	0.872
Attitude towards help seeking	3	Att 1	0.838
	2	Att 2	0.945
	2	Att 3	0.785
Subjective norm	1	SN 2	0.811
	1	SN 3	0.898
	1	SN 4	0.827
	3	PBC 1	0.871
Perceived behavioural control	3	PBC 2	0.748
	3	PBC 3	0.748
	3	PBC 3	0.935



subjective norm ($\beta = 0.152, p < 0.01$). However, subjective norm positively predicts attitude towards help seeking ($\beta = 0.326, p < 0.01$) and help-seeking intentions ($\beta = 0.156, p < 0.05$). Attitude towards help seeking predicts help-seeking intentions ($\beta = 0.367, p < 0.01$) and help seeking ($\beta = 0.181, p < 0.05$). Therefore, the behaviour of interest, academic help seeking, is directly affected by attitude towards help seeking and indirectly affected by subjective norm and perceived behavioural control, as well as public stigma, self-stigma, extraversion, agreeableness, neuroticism, and gender.

The amount of variance explained varied among the dependent variables. There are moderate effects for perceived

behavioural control, attitude towards help seeking and help-seeking intentions. Lower yet “practically” significant effects were found for subjective norm and help seeking (Ferguson, 2009). 25.1% of the variance of perceived behavioural control, 24.4% of the variance of attitude towards help seeking and 20.0% of the variance of help-seeking intentions was explained. For subjective norm and help seeking 8.2% and 5.7% of the variance were explained respectively.

Other Model Considerations

Among the models presented above, a slightly different model as shown in (Appendix A) was also considered. The main

differences to the final model as shown in **Figure 5** are that the three Big five dimensions extraversion, agreeableness and neuroticism were combined to a general personality factor and that directional paths were added from public stigma and self-stigma to personality. This model also fits the data well, however, was not chosen in this context for theoretical as well as statistical considerations. First, there is an ongoing debate about whether the Big five personality dimensions can be combined to a general personality factor and many researchers believe there is no general personality factor (Chang et al., 2012). Furthermore, only three of the five Big five dimensions were included, and a general personality factor would not comprehensively describe personality in this study. Additionally, Ortega et al. (2006) used three Big five personality dimensions in their study and did not combine them to a general personality factor in the model analysis.

Second, the factor loadings for extraversion, agreeableness and neuroticism on personality were low. Therefore, these personality dimensions did not seem to represent a general personality factor. Finally, although the direct paths from public stigma and self-stigma to personality were significant and moderate in strength, the authors preferred to omit these paths to ensure an accurate model estimation using Maximum Likelihood. Savalei (2008) explained that the estimator is robust against normality violations when exogenous variables are not related. Therefore, direct paths and correlations between exogenous variables were kept at a minimum.

DISCUSSION

Overall, this study has shown that some aspects of personality, some background variables, and variables related to the Theory of Planned Behavior play a role when predicting academic help-seeking behaviour in higher education. Answering research question 1 as to how these variables are related to academic help-seeking behaviour, it was shown that academic help-seeking behaviour is mostly affected indirectly by Theory of Planned Behavior variables of subjective norm and perceived behavioural control, as well as the background variables of public stigma, self-stigma, extraversion, agreeableness, neuroticism, and gender. Consistent with the findings in this study, Ajzen (2019a) also suggested that perceived behavioural control moderates the effects of subjective norms on intentions rather than being directly related. Furthermore, academic help seeking was directly affected by the Theory of Planned Behavior variable of attitude towards help seeking. Therefore, hypothesis 1, that some personality, background variables and variables related to the Theory of Planned Behavior are related to academic help-seeking behaviour in higher education can be upheld. Consistent with the findings of Bornschlegl et al. (2020) and Ghyasi et al. (2013), extraversion indirectly positively impacts academic help seeking in this study. However, contradicting Bornschlegl et al. (2020) and Virtanen and Nevgi's (2010) findings, the results of this study suggest males may be more likely to seek academic help than females. With regard to research question 2 and hypothesis 2 (Collins, 2012; Chen, 2017), no relationship was found between

academic help seeking and the students' intention to persist and the hypothesis is therefore rejected.

Although a moderate to large amount of variance was explained for attitude towards help seeking, perceived behavioural control and help-seeking intentions, the variance explained for actual help-seeking behaviour was rather small. Furthermore, help-seeking behaviour was only predicted by attitude towards help seeking and not, as postulated in the Theory of Planned Behavior and other research (e.g., Sheeran, 2002) by help-seeking intentions. For example, contradicting the findings of this study, Sheeran and Webb (2016) explained that intentions better predict behaviour than attitude. However, the authors also explained that poor "translation of intentions into action" (p. 504) leads to an intention-behaviour gap. The intention-behaviour gap can be influenced by the quality of the intention, challenges encountered to realise the intention and self-regulation skills. However, the intention-behaviour gap can be improved by modifying its causes (Sheeran and Webb, 2016).

For example, more specific and realistic goals lead to better quality intentions and are more likely to be translated into successful behaviour (Oettingen et al., 2013). Therefore, in the context of academic help seeking in higher education, students should be taught to plan to seek help from a specific service for a specific situation. For example, a student could intend to seek help for academic writing from a Learning Advisor for the first essay of the semester rather than intending to seek academic help in general. In collaboration with academic support staff, lecturers could promote specific academic support services at the right time for upcoming assignments to support students to plan to seek help in a specific context. Challenges to enact an intention can include forgetting the intention or missing an opportunity (Sheeran and Webb, 2016). A student might have the intention to seek academic help at the beginning of the semester but forget about it during busy assignment times or miss the opportunity because of poor time management skills possibly resulting in an assignment deadline being missed. To counteract this issue, it is crucial students are reminded of available academic support services just in time throughout the semester. Other self-regulatory challenges a student could encounter include procrastination and preparatory behaviours (Sheeran and Webb, 2016). For example, students need to make an appointment to meet with a Learning Advisor. Harkin et al. (2016) suggested tracking the progress of the planned behaviour improves the chances of the behaviour being performed. In the context of academic help seeking in higher education students should, for example, be prompted to plan to make appointments for academic support when they plan their semester.

Furthermore, this study showed that reducing public stigma and self-stigma, and increasing attitude towards help seeking, subjective norm and perceived behavioural control may also lead to increased help seeking. Public stigma can be reduced by ensuring the names of the academic support services do not reinforce help seeking for a deficit and by locating services in open spaces to normalise accessing academic support for students (McNaught and Beal, 2012). To increase subjective norms,

Thomas and Tagler (2019) advocated conducting information campaigns about academic help seeking with key stakeholders, such as lecturers, family and other students. Similarly, Brown et al. (2020) suggested that the promotion of academic help seeking demonstrating its benefits through educators with the use of role models can increase students' attitude towards academic help seeking. University campuses should therefore carefully plan the promotion of academic support by addressing the above-mentioned factors, such as reducing stigma.

Overall, the final model in this study fit the data well. The goodness of fit indices of $\chi^2/df = 1.623$, $p = 0.000$; RMSEA = 0.053; CFI = 0.962; TLI = 0.955 and AGFI = 0.862 met the standard cut-offs of $\chi^2/df \leq 3$ (Kline, 2005), RMSEA ≤ 0.05 (close fit) and RMSEA = 0.05–0.08 (reasonable fit) (Browne and Cudeck, 1993), CFI ≥ 0.95 (Hu and Bentler, 1999), TLI ≥ 0.95 (Hu and Bentler, 1999), and AGFI ≥ 0.85 (Schermelleh-Engel et al., 2003). The GFI of 0.894 did not meet the cut-off of GFI ≥ 0.90 (Hoyle and Panter, 1995). However, the GFI was only slightly below the desired minimum value and the majority of the fit indices met the cut-off criteria. Therefore, the final model shown in **Figure 4** fit the data well and can be used to describe what influences academic help-seeking behaviour in higher education. Furthermore, the reliability analyses of the scales and the confirmatory factor analysis part of the structural model showed that the items and scales used in this study have high reliability and high factor loadings and could therefore be used to measure academic help seeking and related variables in higher education contexts.

The sample was drawn from various disciplines and year levels to maximise representativity. Compared to student characteristics of all enrolments at JCU in March 2021, the sample of this study represents JCU's student body well (N. Emtage, personal communication, March 17, 2021). However, due to the unique and diverse characteristics of JCU's student cohorts, the applicability of these findings should be carefully considered when used in other contexts. Larger samples in future research could allow to investigate how factors are related to academic help seeking for different groups, such

as income groups, Aboriginal and Torres Strait Islander students and other ethnic groups, to better support diverse student cohorts and to target students who are not eager to access academic support services. Additionally, future research should employ longitudinal designs to examine the impact of academic help seeking on student retention instead of using the students' intention to persist, which is only an indication of whether they successfully graduate from their study. Furthermore, it would be beneficial to investigate why the students' intentions to seek help did not translate into help-seeking behaviour and to plan interventions as to how this intention-behaviour gap can be decreased. Overall, this study offers comprehensive insight into variables related to academic help seeking at an Australian university and offers suggestions for interventions to better engage students in seeking academic help.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusion of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by James Cook University Human Research Ethics Committee. Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

MB: Conceptualization, methodology, data collection, data analysis, writing, review and editing. KT: Data analysis. NJC: Supervision, review and editing.

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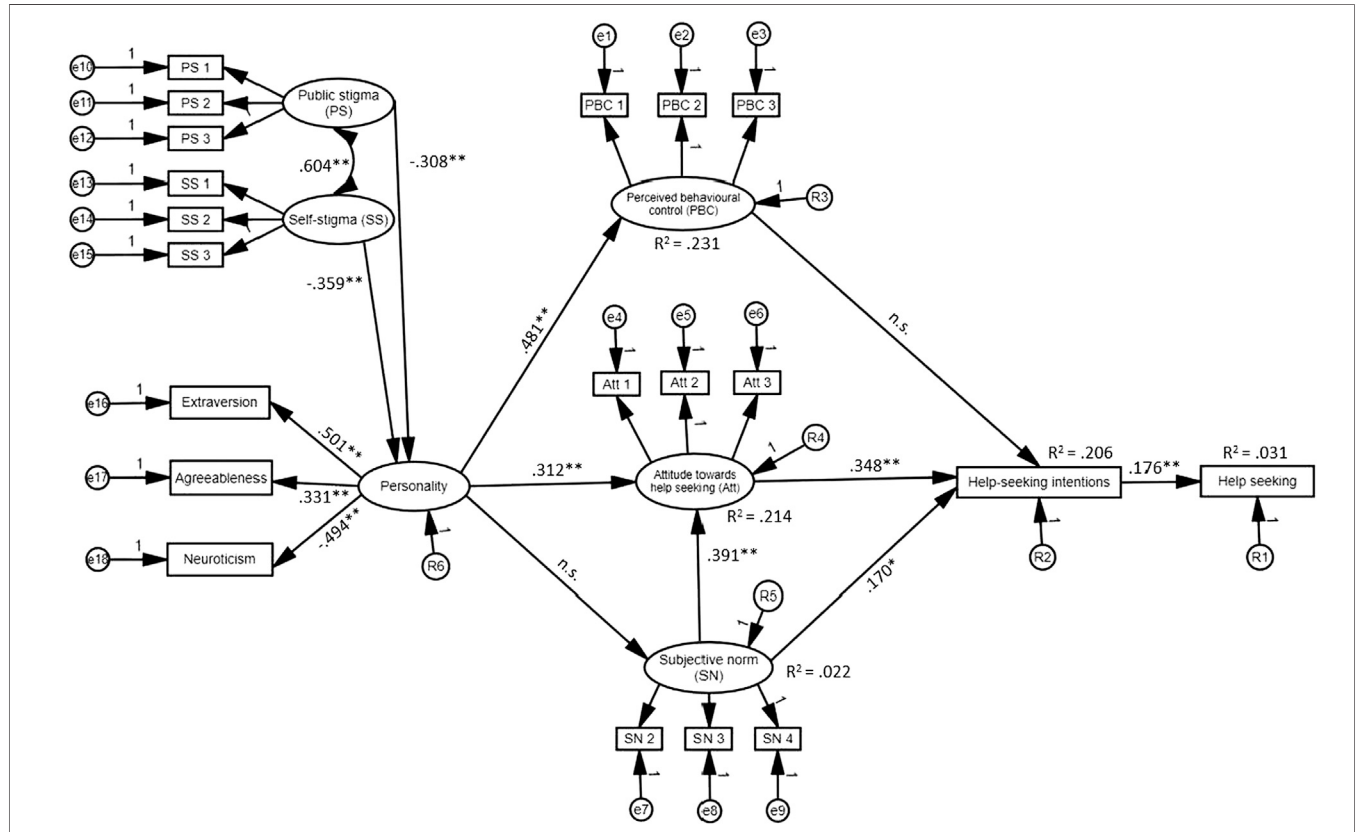
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APPENDIX



Note. * = $p < .05$; ** = $p < .01$; n.s. = not significant.

Figure A | Alternative model with standardized regression weights and squared multiple correlations. ($\chi^2/df = 1.657, p = 0.000$; RMSEA = 0.055, LO 90 = 0.043, HI 90 = 0.066; CFI = 0.963; TLI = 0.956; GFI = 0.893; AGFI = 0.861).