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Sense of Purpose in Life Predicts University Performance and Attrition

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Abstract

Individual differences are important predictors of academic success. A sense of purpose in life is gaining increasing attention as a key individual difference factor to foster in university students. The current study examined whether a sense of purpose in life, a dispositional tendency to pursue goals and activities in line with one's overarching life direction, predicted better academic success across several years of university. Students (n = 769) at a large, U.S. public university were asked to complete a baseline survey in the summer prior to entering university, which included measures for a sense of purpose and background characteristics. Students were then followed throughout their first three years of university. Results demonstrated that higher levels of purpose were associated with a higher grade point average (GPA), more credits earned, less credits dropped, and an increased odds of persisting through the first three years of university. A sense of purpose also appeared to buffer the negative effect of low entrance scores on university GPA. These findings support cultivating a strong sense of purpose prior to entering university as an effective means of improving a variety of academic outcomes.

***Keywords**:* Purpose; academics; retention; grade point average; higher education.

Introduction

University graduates, relative to those with only a high school degree, report having greater opportunities for social connection, feeling a greater sense of accomplishment, better long-term health outcomes, and higher average incomes (Oreopoulous & Petronijevic, 2013). Thus, understanding predictors of student retention and attrition is critical for developing programs to assist student transitions into university. Researchers have widely acknowledged that students' dispositional characteristics such as their personality and self-efficacy beliefs play an important role in understanding who will succeed at university (e.g., Bauer & Liang, 2003; Komarraju et al., 2009; Krumrei-Mancuso et al., 2013) and who will drop out (e.g., Eskreis-Winkler et al., 2014; Tross et al., 2000). Theories of university student retention and achievement have posited that students who demonstrate greater goal commitment should be more likely to complete their degrees (Tinto, 1975). In addition, research has demonstrated that perseverance can help predict who intends to stay in university beyond the first year (Bowman et al., 2018).

Given these foci on goal commitment and perseverance, higher education research would seemingly benefit from considering students' sense of purpose in life, defined as the perception one has set commitments and goals for the future that provides their life with direction (Hill et al., 2016; Ryff, 1989). Theories on the effect of a sense of purpose in life typically incorporate aspects of goal selection and maintenance, and self-regulation (Lewis, 2020; McKnight & Kashdan, 2009). More specifically, it is posited that individuals tend to orient themselves towards their purposes via setting long-term overarching goals (e.g., becoming a doctor) which then leads to the identification of a multitude of sub-goals (e.g., going to medical school), which one accomplishes (in part) via adopting the necessary strategies and self-regulation techniques needed to accomplish said goals (e.g., studying for the Medical College Admission Test MCAT). Said differently, those with a strong sense of purpose in life are likely to set meaningful aims which in turn helps facilitate adaptive self-regulation techniques as they work towards said aims, something that is highly relevant in the context of university (Pfund et al., 2020). Purposeful university students are more likely to report high levels of perseverance as well as *increases* in perseverance over the course of a semester (Hill, Burrow & Bronk, 2016; Sharma & Yukhymenko-Lescroart, 2022). A sense of purpose is also associated with students reporting more positive relationships with others (Pfund et al., 2022, better emotion regulation strategies over the first semester of university (Lohani et al., 2022), and more adaptive relationships with parents when they are away at university (Hill, Burrow & Sumner, 2016). Higher levels of purpose also have been shown to indirectly associate with a higher grade point average (GPA) and odds of persisting through the first year of university through increased degree commitment (Yukhymenko-Lescroart & Sharma, 2023). As such, increasing attention has been paid by researchers interested in how to cultivate purpose development during university (Colby, 2020; Pfund et al., 2020).

A primary reason for this greater attention is that sense of purpose is a *malleable* psychosocial resource. Studies have demonstrated that university students can fluctuate in their levels of purposefulness from week-to-week (Pfund et al., 2024), and within-person variability is evident at the daily level during adolescence (Ratner et al., 2023). Indeed, while sense of purpose is somewhat dispositional in nature (Hill et al., 2023), recent work demonstrates that significant within-person variability can be evidenced in studies evaluating purposefulness at hourly, daily, weekly, and monthly levels across adult samples (Pfund, 2024). In sum, sense of purpose is not simply a predictor of university student success and wellbeing, it also presents a critical opportunity for programs within higher education, given its standing as a factor that may be subject to intervention over time.

Current Study

Research is needed that more formally tests whether sense of purpose directly predicts university student success and retention. The paucity of research on the topic likely results from at least two primary reasons. First, some popular sense of purpose measures may be less applicable to younger samples. For instance, the most commonly employed scale references one's sense of lifelong achievement (Ryff, 1989). Second, given the potential malleability of the construct, even at the daily level, sense of purpose assessments completed during university may partly reflect a student's perception of their school success. Failing an exam or class may lead students to feel a reduced sense of life direction and goal progress, in turn complicating directional claims. As such, it proves critical to assess student's sense of purpose prior to entering university, in order to better understand whether it predicts outcomes such as GPA and course completion while in university.

The current study examined whether a sense of purpose in life prior to entering university predicted later GPA, credits earned, credits dropped and retention, using a purpose measure developed specifically for emerging adults (Hill et al., 2016). To demonstrate the additional predictive value for sense of purpose, we examined these claims when accounting for traditional predictors of university student success, including age, race, gender, first-generation student status, and entrance exam scores (i.e., Scholastic Aptitude Test [SAT] or American College Test [ACT]). Finally, following a resource substitution account (e.g., Ayoub et al., 2018; Damian et al., 2015), we examined whether a sense of purpose may provide a compensatory factor for students who entered with lower entrance exam scores. Specifically, we tested whether sense of purpose may confer a greater benefit for students who entered university with below average entrance examination scores.

Methods

Participants

The present study utilized data from the College Student Transition (CST) study which was approved by the University's Institutional Review Board (IRB). This study surveyed a representative sample of incoming first year freshmen[1] from a large public U.S. institution. Out of an incoming class of 3,855 students, 775 were randomly selected and completed a baseline

[1] In the United States, a Freshman is the term to describe a student in their first year of study.

electronic survey via Qualtrics before the beginning of their orientation. Recruitment started on July 31st, 2019 and ended August 16, 2019 to ensure participants completed the baseline assessment before orientation for the upcoming academic year began. Males and those with lower SAT/ACT scores were oversampled to ensure an even distribution. After completing consent through Qualtrics, participants completed a set of questionnaires that took approximately 30-45 minutes to finish. They were compensated US$20 for completing the baseline assessment. All predictor variables were assessed at this baseline assessment with all academic outcomes encapsulated in the University Registrar Office reports sent to the study team. The final report was sent in July 2022, including the first three years of academic data on this cohort (freshman through junior year). [2]

Measures and Variables

Covariates

Age, gender, race, standardized test score (ACT/SAT), first generation status, and perceived socioeconomic status (SES) were included as covariates in the present study, since they have known relationships with academic performance (Alderson, 2023; Burks et al., 2015; Noftle & Robbins, 2007). Each participant's date of birth was provided by the institution so that an exact age at time of baseline in decimal places could be calculated. Participants were asked to identify their gender with a choice of male (coded as 1), female (coded as 0), or other. Since only six individuals chose the "other" category, they were removed from the dataset to simplify analyses. Participants identified their race using six different categories (1=American Indian/Alaskan Native, 2=Black, 3=White, 4=Mixed, 5=Unknown, 6=Other). Due to a majority white sample (90.25% white), race was dummy coded such that 0 = White/Caucasian and 1 = all other minority groups (see Table 1 for a full breakdown of the racial composition of the sample). SES was measured with the MacArthur Scale of Subjective Social Status (Adler et al., 2000). First generation status and standardized test score for each participant were obtained via the University's Registrar Office. A student was deemed first generation if neither of their parents/legal guardians obtained a degree in higher education (e.g., associates degree, bachelors degree). Data on students' ACT and SAT scores were both provided if available; however, for ease of interpretation, ACT scores were used in the analyses. If participants only had an SAT score reported, their score was translated to its ACT equivalent using a conversion chart (https://www.act.org/). These scores were then z-standardized for ease of interpretation.

Sense of Purpose in Life

Sense of purpose in life was measured via a brief four item Likert scale questionnaire at baseline that was specifically designed for emerging adults, and showed good internal consistency in the present sample (α = .86) (Hill et al., 2016). Participants were asked to rate the extent to which they agreed or disagreed with each statement (e.g., "There is a direction in my life"). Higher scores on this measure correspond to having a higher sense of purpose in life. This measure has demonstrated reliability and predictive validity in multiple past studies (e.g., Hill et al., 2016; Hill et al., 2021; Scott & Cohen, 2020).

Academic Outcomes

Grade Point Average (GPA)

Students' GPAs were obtained via the University's Registrar Office. GPA was measured on a 4-point continuum and was calculated by multiplying a value associated with grade earned in the course (A=4, B=3, C=2, D=1, F=0) by the number of credits it was worth. GPA after the end of the first semester (M_{gpa} = 3.11, *SD* = .89), the cumulative GPA at the end of the first year (M_{gpa} = 3.24, *SD* = .79), and the cumulative GPA at the end of the third year (M_{gpa} = 3.39, SD = .47) were used in the present analyses (see Table 1 for a full breakdown).

Retention

Student retention rates were obtained via the University's Registrar Office. To be considered "retained" a student must have registered and completed some coursework (at least one credit hour) for the semester they registered. Importantly, a student could drop out and not return for the proceeding semester, but later be categorized as retained if they registered and completed courses again at a subsequent time point. A total of 99 students were not retained from the first to the second year of university, an additional 50 dropped out at some point before completing the end of their second year, and an additional 61 students dropped out before completing the end of their third year. In total, 549 students persisted through all three years with 210 dropping out at some point during their education.

[2] In the United States, a junior is an undergraduate student in their third year of university.

Credits Earned and Dropped

Number of credits earned and dropped was looked at both continuously and dichotomously. The number of credits a student attempted (credits a student registered for) and completed (earned by completing the course) were obtained via the University's Registrar Office. To be considered a full-time student by the University, a student must register and complete 12 credits (usually four classes) worth of coursework each semester. We calculated whether a student averaged at least 12 credits across the six academic semesters (72 total credits earned) in order to classify students as either "on-track" or not "on-track" to graduate within five years. Note, if students completed credits during summer sessions and/or had college credits (i.e., advanced placement [AP] coursework) prior to attending this institution, these were included in their total credits earned. Using this threshold, a binary variable was constructed to compare those that met the minimum credit threshold (N = 558) versus those who did not (N = 201) for the three years of data available. To determine the number of credits a student dropped, we calculated a difference score from the number of credits a student enrolled in versus the number of credits a student actually completed. Like credits earned this variable was also dichotomized to compare those who have never dropped a credit (n = 455) to those who have dropped at least one credit (n = 304).

Analysis Plan

To estimate associations between purpose and GPA, we performed a series of multiple linear regressions with age, gender, race, standardized test score (ACT/SAT), first generation status, and perceived SES as covariates. All continuous variables were standardized for ease of interpretation. To test for a moderating effect for sense of purpose, we included an interaction term for sense of purpose and standardized test score.

To estimate associations between purpose and retention and being on time to graduate, we performed a series of logistic regressions with age, gender, race, standardized test score (ACT/SAT), first generation status, and perceived SES as covariates. All continuous variables were z-standardized for ease of interpretation.

To estimate associations between purpose and credits earned and dropped, we utilized Poisson and Zero Inflated Poisson (ZIP) regression modeling for these outcomes as it is the most appropriate statistical tool to use with count data such as this. ZIP models are particularly useful when there is a greater probability for a large number of 0 scores. In our sample, almost 60% of students have never dropped a course. ZIP models correct for this type of distribution and provide odds ratios associated with a unit change in each predictor for those who have dropped a course. Specifically, ZIP models allow one to interpret if increases in a given predictor are associated with either decreased or increased odds of dropping a greater number of courses. As credits earned had a relatively normal distribution, a standard Poisson model (as opposed to a zero inflated) was used. Age, gender, race, standardized test score (ACT/SAT), first generation status, and perceived SES were included as covariates, with all continuous variables standardized for ease of interpretation.

Results

Table 1 displays the descriptive information and Table 2 displays the correlations for the study variables.

Table 1

Descriptive Study Information

	M (SD)	Range	N (%)
Age	18.61 (.33)	18.08-20.11	-
Gender			
Male	-	0-1	387(50.33)
Female	-	0-1	382(49.67)
Race			
White	-	0-1	694(90.25)
Minority	-	0-1	75(9.70)
American Indian/Alaskan	-	0-1	4(0.52)
Black/African American	-	0-1	17(2.20)
Mixed	-	0-1	34(4.40)
Other	-	0-1	20(2.60)
SES	6.56 (1.51)	1-10	-
First Generation			-
First Gen		0-1	162(21.07)
Non-First Gen		0-1	607(78.93)
SAT/ACT	24.06 (4.54)	14-36	-
Purpose	4.03 (.82)	1.00-5.00	-
First semester GPA	3.11 (.89)	0-4.00	769
First year cumulative GPA	3.24 (.79)	0-4.00	724
3-year cumulative GPA	3.39 (.47)	1.55-4.00	559
Total credits earned	80.09 (33.77)	0-187	-
> 12 per semester			562(73.08)
< 12 per semester			207(26.92)
Total credits dropped	6.93 (9.11)	0-51	-
= 0			455(59.16)
< 0			304(40.84)

Note. SES = Socioeconomic status, GPA = Grade point average

Table 2

Correlation Matrix for Variables

	Age	Gender	Race	SES	First-Gen	SAT/ACT	Purpose	1st Sem GPA	1st Year GPA	3 Year GPA	Credits earned
Age											
Gender	.07										
Race	-.03	.00									
SES	-.04	.04	**-.12**								
First-Gen	.05	.00	.07	**-.35**							
SAT/ACT	-.04	**.16**	-.04	**.13**	**-.14**						
Purpose	-.02	**-.08**	-.02	**.10**	-.01	-.03					
1st Sem GPA	-.04	-.03	-.06	**.12**	**-.13**	**.38**	**.11**				
1st Year GPA	-.03	**-.08**	**-.11**	**.16**	**-.16**	**.41**	**.09**	**.89**			
3 Year GPA	-.05	**-.10**	-.04	.06	**-.10**	**.41**	.02	**.72**	**.82**		
Credits Earned	-.04	-.03	-.07	**.10**	**-.16**	**.37**	**.07**	**.66**	**.74**	**.59**	
Credits Dropped	.00	.06	**.09**	**-.10**	.04	**-.24**	-.06	**-.53**	**-.63**	-.71	**-.52**

Note. Bolded values indicate significant correlations (p <.05)

Table 3 displays the hierarchical models for predicting first semester, cumulative first year, and cumulative three year GPA. Being female and having a higher SAT/ACT score was associated with a higher first semester, first year, and cumulative three year GPA. Being a white student and not identifying as first generation associated with only a higher first year GPA. Higher sense of purpose was associated with a higher first semester and first year GPA.

Table 3

Linear Regression Models for GPA Outcomes

	First semester GPA			Cumulative first year GPA			Cumulative three year GPA		
	b (*se*)	*β*	*p* value	*b* (*se*)	*β*	*p* value	*b* (*se*)	*β*	*p* value
Age	-0.01 (.03)	-0.01	.825	-0.01 (.03)	0.81	.806	-0.01 (.02)	-0.02	.706
Race	-0.10 (.10)	-0.03	.304	-0.21 (.09)	0.02	.017	-0.08 (.07)	-0.05	.239
Gender	-0.16 (.06)	-0.09	.007	-0.21 (.05)	-0.14	.000	-0.16 (.04)	-0.16	.000
SES	0.04 (.03)	0.04	.258	0.05 (.03)	0.06	.075	0.01 (.02)	0.01	.726
FirstGen	-0.13 (.08)	-0.06	.096	-0.15 (.07)	-0.08	.024	-0.06 (.05)	-0.05	.252
SAT/ACT	0.35 (.03)	0.39	.000	0.32 (.03)	0.42	.000	0.20 (.02)	0.43	.000
Purpose	0.09 (.03)	0.11	.001	0.07 (.03)	0.09	.010	0.02 (.02)	0.04	.344
Purpose X ACT	-0.05 (.03)	-.06	.066	-0.06 (.03)	-0.07	.026	-0.02 (.02)	-0.05	.192

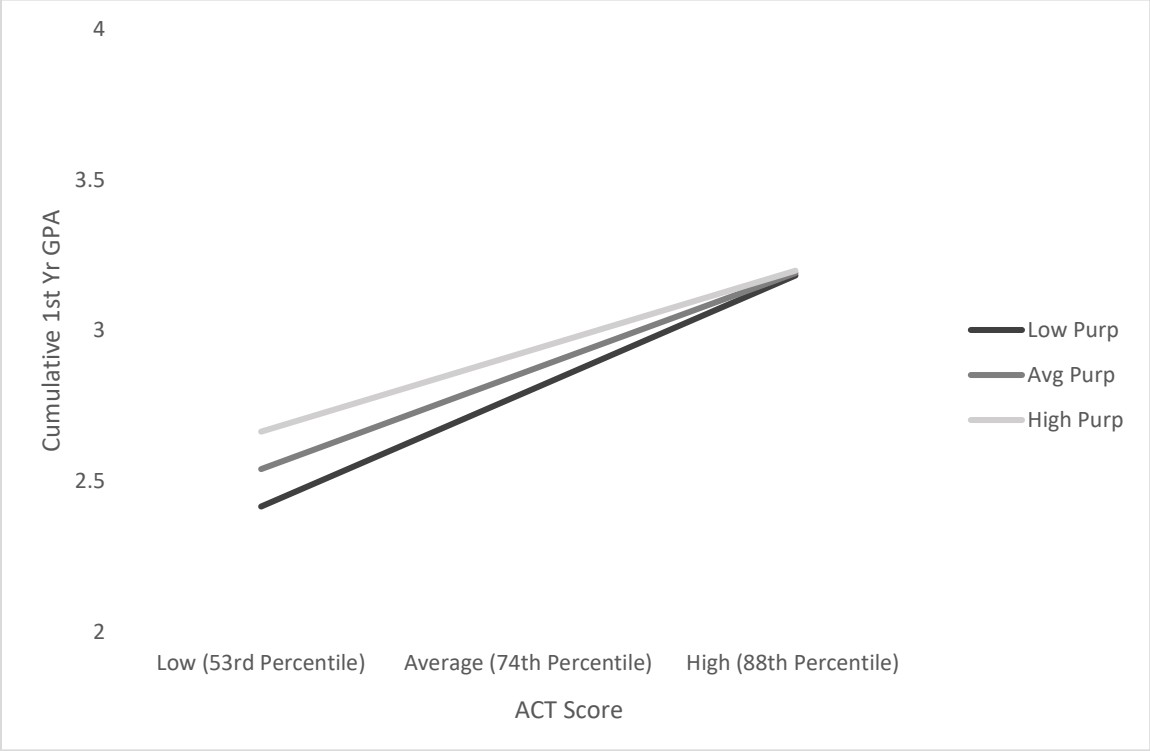
Note. All continuous variables were standardized

Additionally, there was a significant interaction between sense of purpose and SAT/ACT score for cumulative first year GPA. Specifically, higher levels of purpose were more strongly associated with higher GPA for those students with average or below average SAT/ACT scores.

Said differently, sense of purpose buffers against the effects of average or low entrance exam scores (see Figure 1). Importantly, this interaction term was only significant for first year GPA.

Figure 1

Purpose by Standardized Test Score for Culmiative 1st Year GPA



Note. Percentiles reflect the raw scores national percentile ranking

Table 4 displays the logistic regressions for purpose predicting first year, second year, and third year retention. Not being a first-generation student and having a higher SAT/ACT score was associated with increased odds of persisting through all three years of university. Being female was associated with increased odds of persisting through the second year of university. Higher levels of purpose were associated with increased odds of completing the second and third year of university. For example, a one standard deviation increase in purpose was associated with a 20% increase in odds of persisting through the first three years of university.

Table 4

Logistic Regression Models for Retention

	First year retention		Two year retention		Three year retention	
	OR (95% CI)	*p* value	OR (95% CI)	*p* value	OR (95% CI)	*p* value
Age	0.92 (0.74-1.13)	.409	0.95 (0.79-1.14)	.554	1.01 (0.86-1.19)	.893
Race	0.84 (0.42-1.65)	.607	0.70 (0.40-1.23)	.225	0.68 (0.40-1.15)	.149
Gender	0.83 (0.54-1.30)	.422	0.68 (0.46-0.99)	.045	0.82 (0.58-1.15)	.250
SES	0.93 (0.73-1.17)	.516	1.03 (0.85-1.26)	.743	1.09 (0.91-1.30)	.364
FirstGen	0.60 (0.35-1.00)	.050	0.68 (0.43-1.08)	.010	0.63 (0.42-0.95)	.027
SAT/ACT	1.71 (1.34-2.18)	.000	1.78 (1.44-2.20)	.000	1.73 (1.44-2.08)	.000
Purpose	1.23 (0.99-1.52)	.059	1.26 (1.05-1.51)	.014	1.20 (1.02-1.42)	.029

Note. Odds ratios reflect odds of being retained (as opposed to dropping out)

Table 5 displays the logistic regressions for predicting whether students were on time to graduate in five years and if they have ever dropped a course. Having a higher SAT/ACT score was associated with increased odds of being on time to graduate and never having dropped a course. Being white was associated with increased odds of being on time to graduate. Higher levels of purpose were associated with increased odds of being on time to graduate in five years and never having dropped a course.

Table 5

Logistic Regression Models for Credits Earned and Credits Dropped

	Credits Earned		Credits Dropped	
	OR (95% CI)	*p* value	OR (95% CI)	*p* value
Age	1.01 (0.86-1.20)	.889	0.95 (0.81-1.10)	.474
Race	0.51 (0.30-0.86)	.011	0.62 (0.36-1.07)	.086
Gender	0.72 (0.51-1.02)	.067	0.74 (0.54-1.01)	.054
SES	1.06 (0.88-1.26)	.563	0.99 (0.84-1.17)	.889
FirstGen	0.67 (0.44-1.02)	.060	1.44 (0.97-2.15)	.072
SAT/ACT	1.77 (1.47-2.14)	.000	1.76 (1.50-2.08)	.000
Purpose	1.19 (1.00-1.41)	.044	1.25 (1.07-1.47)	.004

Note. For credits earned, a score of 1 indicates the student is on time to graduate. For credits dropped, a score of 1 indicates the student has never dropped a credit

Table 6 displays the results for the Poisson and zero-inflated Poisson (ZIP) models for credits earned and credits dropped. Results demonstrated that being white, being female, not being a first-generation student, having a higher SAT/ACT score, and having higher levels of purpose were associated with an increased odds of earning more credits. For example, a one standard deviation increase in purpose was associated with a 3% increase in odds of earning one additional credit. For credits dropped, being younger, belonging to a racial minority group, being male, having a lower SES, being a first-generation student, and having a lower SAT/ACT score was associated with an increased odds of dropping credits.

Table 6

Poisson and Zero inflated Poisson Models for Credits Earned and Credits Dropped

	Credits earned			Credits dropped		
	Count			Count (Zero-inflated)		
	b (se)	OR	*p* value	b (se)	OR	*p* value
Age	-0.01 (0.01)	0.99	.156	-0.04 (0.01)	0.96	.002
Race	-0.81 (0.01)	0.44	.000	0.13 (0.04)	1.14	.001
Gender	-0.07 (0.01)	0.93	.000	0.19 (0.03)	1.21	.000
SES	0.001 (0.00)	1.00	.665	-0.08 (0.01)	0.92	.000
FirstGen	-0.11 (0.01)	0.90	.000	0.10 (0.04)	1.11	.006
SAT/ACT	0.15 (0.00)	1.16	.000	-0.16 (0.02)	.85	.000
Purpose	0.03 (0.00)	1.03	.000	0.00 (0.01)	1.00	.780
	-			Logistic (zero-inflated)		
	-	-		OR (95% CI)		*p* value
Age	-	-		-.06 (-0.21-0.10)		.473
Race	-	-		-0.47 (-1.02-0.07)		.086
Gender	-	-		-0.31 (-0.62-0.01)		.054
SES	-	-		-0.01 (-0.18-0.15)		.888
FirstGen	-	-		0.36 (-0.03-0.77)		.072
SAT/ACT	-	-		0.57 (0.41-0.73)		.000
Purpose	-	-		0.23 (0.07-0.38)		.004

Note. Odd's ratios reflect the odds of earning (or dropping) one additional credit. The zero inflated model represents the odds of dropping at least one credit

Discussion

The present study examined whether a sense of purpose in life, assessed prior to entering university, predicted academic outcomes including subsequent GPA, credits earned, credits dropped, and retention. Results demonstrated that higher levels of purpose were associated with higher first semester and first year GPA, increased odds of persisting through the second and third year of university, increased odds of never having dropped a course, increased odds of having earned more credits, and increased odds of being on time to graduate in five years or less. Additionally, purpose moderated the association between standardized test scores and first year GPA such that it acted as a protective factor for those with average or below average standardized testing scores. In sum, higher levels of purpose consistently predicted better academic outcomes, net of key sociodemographic factors with known associations with academic performance.

These findings add to the accruing literature suggesting that a sense of purpose provides multiple benefits for university students (e.g., DeWitz et al., 2009; Lohani et al., 2022). Such work also supports theoretical frameworks which emphasize individual dispositions and goal commitment as two key factors in the prediction of student dropout (Tinto, 1975). Past research has demonstrated a significant association between grades and sense of purpose among high schoolers (Yukhymenko-Lescroart & Sharma, 2022) and indirect positive effects of purpose on GPA and persistence through degree commitment (Yukhymenko-Lescroart & Sharma, 2023). However, the present study is among the first (using this measure of purpose) to demonstrate a direct association between sense of purpose and academic success in a university sample.

Along with the direct effects of purpose, it also served as a potential protective factor for students with average-to-low standardized test scores. Perhaps those with a higher sense of purpose perceive challenges (academic or otherwise) as more attainable relative to those with lower levels of purpose. Indeed, past research has demonstrated that sense of purpose may provide university students with a different mindset when confronted with physical or presented obstacles (Burrow et al., 2016). With regards to academics, high purpose students with average or below average university entrance exam scores may view this challenge, or "gap" in preparedness, as more easily surmountable and, perhaps, are more motivated to adapt to the academic rigor of university. Similarly, sense of purpose is associated with greater university student self-efficacy (DeWitz et

al., 2009). This work, along with findings in the present study, point to developing and providing purpose interventions for incoming students with lower entrance exam scores in particular. These students are at an increased risk of not being retained but may benefit most from an increased sense of purpose in life. Future research should also test motivational beliefs, stressor perceptions, and goal selection as potential mechanisms explaining why sense of purpose helps those with lower standardized scores to succeed at university. Specifically, perhaps students with a higher sense of purpose may have a more incremental as opposed to entity view of their intelligence which may lead to them engaging in more effective study techniques/habits which could in turn lead to better grades, increased degree commitment, and an increased likelihood of staying in university. A randomized intervention design where students with similar entrance exam scores and high school GPA are randomly assigned to either receive or not receive a purpose intervention would offer a straightforward approach to testing this.

Implications for Intervention and Application

Given these findings, it is perhaps unsurprising that universities are increasingly discussing student purpose development as a goal for educators (e.g., University of Texas; Washington University in St. Louis, 2022). The current findings provide further support for the value of such programs going forward. As noted above, sense of purpose does hold both dispositional and state-like characteristics, insofar that while rank-order stability is evidenced over years (Hill et al., 2016; Pfund & Lewis, 2020), within-person variability has been consistently demonstrated across different temporal levels of assessments (e.g., Kiang, 2012; Pfund et al., 2022; Ratner et al., 2023). These findings have led researchers to develop frameworks that can both account for these state-trait fluctuations, as well as guide future efforts for intervention and policy. Specifically, researchers/administrators in higher education could employ the PATHS (Purpose as Trait, Habit, and State) model for interventions which seek to increase sense of purpose in life for incoming freshman (Hill et al., 2023). This model recognizes the individuality associated with feeling a sense of purpose in life and encourages individuals to recognize actions, thoughts, and/or behaviors that afford feelings of purpose in the moment (State), cultivate these into habitual practices (Habit), and connect these to broader a more trait like aim of living a purposeful life (Trait).

Multiple conceptual and theoretical papers have specified potential avenues that higher education can play in student's purpose development process (Colby, 2020; Hill et al., 2024; Pfund et al., 2020). Recommendations on this front have included providing opportunities for students to observe purpose-driven community members, allowing more reflective exercises as part of class activities, and creating experiences for underrepresented students to "see" themselves as integrated within the university community. These points adhere to recommendations for intervention and application programs to more fully consider whether individuals see developing a purpose as something *feasible* and *congruent* with their broader community (Burrow et al., 2021). Based on this framework, it is critical for universities and colleges to consider ways to both increase the ease of purpose pursuit (feasibility), potentially through greater access to mentorship and advising resources, and to encourage students to find ways in which their environment "fits" with their purpose journey (congruence), such as through programs that highlight the variety of life purposes that previous alumni have pursued. This point is particularly relevant when considering the development of underrepresented students within university settings, who perhaps have a greater likelihood to pursue life goals that differ from those espoused by their professors and university officials (Hill et al., 2024).

Limitations

While the current findings are promising, there are some important limitations that should be addressed in future research. Our study focused on the role a sense of purpose in life plays in the academic success of undergraduates. However, other individual difference factors, such as the Big Five personality traits, do have known associations with academic performance (Mammadov, 2021). These traits have also been shown to associate with a sense of purpose in life (Hill et al., 2016). As such, future research would benefit from the inclusion of other individual difference factors in addition to sense of purpose in a single model in order to test for associations between purpose and academic performance over and above other individual differences. Additionally, this study is limited in that the sample comes entirely from one university, which is largely comprised of white students. Importantly, this sample of white students primarily come from areas in rural Appalachia characterized by lower SES. Although this is a key geographic population to study (Pollard & Jacobsen, 2021), findings are more difficult to generalize to other universities, as student bodies at other universities may differ in terms of their racial/ethnic composition. However, since our sampling methods achieved a high degree of diversity of those lower versus higher academically functioning, we believe our findings do have some generalizability.

It should be noted that this cohort of students was impacted by the COVID-19 pandemic and had some of their coursework completed entirely virtually. However, the university this sample was recruited from had a mixture of both in-person and online classroom structure throughout much of the pandemic. While all students were instructed virtually for the final three

months of their freshman year (Spring 2020), some students either partially or fully returned to campus for their sophomore year (Fall 2020 – Spring 2021), [3] while others' instruction remained entirely virtual depending on their major and classes (Alderson, 2023). Data was unavailable regarding whether a student's classes were taught remotely, in person, or with a hybrid model (a mix of in-person and online), thus limiting the present study's ability to discern the impact of the shift to online coursework. Future research should consider whether similar findings are obtained during times of consistent in-person instruction and/or for students primarily completing university via online coursework.

Conclusion

The present study found evidence that pre- university sense of purpose was positively associated with a variety of academic indices, including GPA, credits earned, credits dropped, and retention. Purpose also served as a protective factor for students with average to low university entrance exam scores. These findings support the idea that cultivating a strong sense of purpose prior to entering university could be an effective means of improving student retention and success. Moreover, it suggests that purpose-based initiatives should be increasingly adopted by higher education institutions. Overall, when considering the variety of non-cognitive individual differences between students, a sense of purpose may be a promising construct when exploring why students succeed or leave university.

[3] In the United States, a sophomore year refers to the second year of university.

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