Discrepancies in College Belonging: How Demographics May Shape the Fulfillment of Belonging Expectations

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Abstract: In this paper, we seek to understand belonging fulfillment, which is the difference between how well a student believes they will belong to their college and their actual feelings of belonging to their college. We examined (a) whether students' expectations about college belonging are fulfilled during their tenure and (b) how demographic background predicts the degree to which students' expectations about college belonging are fulfilled during their tenure. Participants consisted of 100 undergraduates enrolled at a private research university. We found that the university may be failing to fulfill students' expectations of college belonging and that low-income students are more likely to have their college belonging expectations fulfilled and surpassed. These results have important implications for higher education practitioners.

Introduction and Background

Existing research has consistently shown that students who report higher levels of belonging to their college also report greater academic success, persistence (Hausmann et al., 2007), retention (Walton et al., 2023), and well-being (Suhlmann et al., 2018). Conversely, students who do not feel like they belong at their institution are more likely to experience elevated levels of anxiety and depression, as well as increased difficulties with learning. Additionally, students' understandings of and experiences with a sense of belonging are influenced by their sociocultural identities (e.g., socioeconomic status, race/ethnicity; Strayhorn, 2019).

Income status is a key contributor to developing a sense of belonging for college students because students typically need to spend money to easily form and maintain social relationships (e.g., dining out, social events) which is supported by campus climate, practices and norms (McClure et al., 2017; McClure & Ryder, 2018). Therefore, low-income students unsurprisingly feel less supported and report lower levels of experienced college belonging and educational satisfaction than their wealthier peers (Soria & Stebleton, 2013). These lower levels of college belonging for low-income students in turn, negatively impact mental health and lower academic self-efficacy (Bernard et al., 2017), both of which have implications for student success and retention (Ostrove & Long, 2007).

In contrast to experienced belonging, prospective belonging is a student's anticipation, expectation, or belief of how well they will belong to an educational setting in a future context. Murphy and Zirkel (2015) found that first-year students who felt that their racial group was represented in a major reported greater prospective belonging to that major and were consequently more willing to consider joining said major. Therefore, prospective belonging may affect student decision-making for individuals belonging to marginalized social identities; it is thus important to further explore how these early expectations about belonging can affect the student experience.

In this paper, we examine belonging fulfillment (Rayford et al., 2023) for undergraduate students in the college context. The goals of this study are twofold. First, we aim to understand whether college students' expectations about belonging to their college are, on average, being fulfilled. Second, we aim to investigate whether students with different sociocultural identities experience differing levels of belonging fulfillment. We anticipate that insight into these areas will serve researchers, educators, and students by shedding light on how universities can meet college students' expectations about belonging to their institution. Our research questions (RQs) are as follows:

1. To what degree are students' expectations about college belonging fulfilled during college?
2. How do sociocultural identities (i.e., race/ethnicity, income status) predict the degree to which students' expectations about college belonging are fulfilled?

Methods

Data collection was approved by the authors' Institutional Review Board (IRB). Data for this analysis came from a longitudinal survey study that explored students' sense of college belonging over time at a midsize, predominately white, upper-class private university in the Western United States. Students were recruited via purposeful stratified sampling based on race/ethnicity. Researchers administered the survey online at seven points in time (beginning and end of each academic year, with no data collection during Spring 2020 because of the onset of the Covid-19 pandemic). For this paper, two timepoints were included in data analysis: data collected in

the Fall of 2017 (referred to as Timepoint 1 hereafter) and data collected in the Spring of 2021 (referred to as Timepoint 2 hereafter). These timepoints were selected to represent the two major events in a student's academic journey: college entry and graduation. The analytic sample consists of students who completed the survey at both timepoints, for a total of 100 students.

Measures

Prospective College Belonging

At Timepoint 1, participants completed a five-item scale (*"I feel like I will belong at [institution]", "I think I will fit in well at [institution]", "I think I will feel like an outsider at [institution]", "I feel like people at [institution] will accept me",* and *"I am similar to the kind of people who succeed at [institution]"*) assessing their prospective sense of belonging in college. These five items were adapted from Walton and Cohen's (2007) Sense of Social Fit Scale (SSFS), a measure designed to measure the overall sense of belonging to a specific context. Possible responses ranged from 1 = Strongly disagree to 7 = Strongly agree. We used the mean score for analysis; a higher score indicated a higher level of prospective belonging in college (M = 5.37, SD = 0.89).

Experienced College Belonging

At Timepoint 2, participants completed the full, 17-item version of the SSFS, which assessed their experienced sense of belonging in college as fourth-year students. Participants indicated their level of agreement to 17 statements related to their current, experienced levels of belonging and inclusion in the university environment (e.g., *"I fit in well at [institution]"*). Although participants completed the full version of the SSFS at Timepoint 2, we restricted the analysis to the five items that had corresponding items on the prospective college belonging scale administered at Timepoint 1 (e.g., *"I feel like I will belong at [institution]"* and *"I belong at [institution]"* were corresponding items at Timepoints 1 and 2, respectively). This step was taken to ensure that survey items captured a consistent definition of college belonging across the two timepoints of data used the mean score for analysis (M = 5.07, SD = 1.03).

College Belonging Fulfillment

We operationalized belonging fulfillment as the difference between each participant's prospective belonging score at Timepoint 1 and experienced belonging score at Timepoint 2. Specifically, we subtracted each participant's mean score on the five prospective college belonging items from their mean score on the five experienced college belonging items to obtain our measure of college belonging fulfillment. A score of 0 indicated that one's expectations about belonging in college were met, with the student mean score being -.30. (SD = 1.10).

Demographic Background

Participants were provided the opportunity to self-report their demographic information. All participants self-identified as either men or women (41% men, 59% women). We conducted a post hoc power test using G*Power, and to preserve a statistical power of .8 (Cohen, 1988), race/ethnicity was coded as a binary variable (65% Person of Color, 35% white). We defined a Person of Color as someone who did not identify as white/Caucasian/European (e.g., Black, Hispanic, North African). Participants were classified as low-income if they either self-reported themselves as being low-income or were a recipient of a Federal Pell Grant, a source of need-based aid for low-income undergraduate students in the United States (60% non-low-income, 40% low-income). We defined first-generation college students (FGCS) as someone whose parents did not complete a four-year college degree (64% FGCS, 36 non-FGCS).

Results

All analyses were conducted using the base and lavaan packages in Rstudio 4.1.2 (R Core Team, 2020; Rosseel, 2012). Although we performed multiple statistical tests in the present study, we chose to evaluate all results against an alpha level of .05 (rather than correcting for multiple testing) because each of our statistical tests addressed a distinct hypothesis related to an unexplored phenomenon of interest (see Rubin, 2017). Table 1 contains means, standard deviations, and correlations for all measures included in the analysis. We found a significant negative correlation between students' income status and their prospective belonging (p = .0007), though there was no correlation found between students' income status and their experienced belonging (p = .99).

Table 1

Means, Standard Deviations, and Pearson Correlations of Measures in Analysis

Variable	Mean	SD	1	2	3	4	5	6
1. Gender	—	—	—					

Variable	M	SD	1	2	3	4	5	6
2. Income status	—	—	0.06	—				
3. Race	—	—	0.02	-0.51***	—			
4. FGCS status	—	—	-0.01	0.45***	-0.25*	—		
5. PB	5.37	0.89	-0.22*	-0.33***	0.31**	-0.25*	—	
6. EB	5.07	1.03	0.01	0.001	0.19	-0.10	0.35***	—
7. BF	-0.30	1.10	0.18	0.27**	-0.08	0.10	-0.48***	0.65***

Note. "PB" = prospective college belonging. "EB" = experienced college belonging. "BF" = college belonging fulfillment. Gender: (0 = male , 1= female)

*$p < .05$, **$p < .01$, ***$p < .001$

RQ1: To What Degree Are Students' Expectations About College Belonging Fulfilled During College?

We compared participants' prospective college belonging and experienced college belonging scores to assess the degree to which students' expectations about college belonging were or were not fulfilled during college. To select an appropriate statistical method, we conducted a Shapiro-Wilk test to assess whether participants' difference scores were normally distributed. Results of the test showed evidence of non-normality in participants' difference scores ($W = 0.97$, $p = .03$). Based on this result, we opted to use a paired-sample Wilcoxon signed rank test to evaluate the difference between participants' median prospective and experienced college belonging scores. Results of the test revealed a statistically significant difference in participants' median prospective belonging scores at Timepoint 1 and median experienced belonging scores at Timepoint 2 ($p = .02$) with a medium effect size ($r = .23$) (Cohen, 1988). In other words, on average, participants' experienced sense of college belonging as fourth-year students was statistically significantly lower than their prospective belonging at the beginning of their first-year of college. Sense of college belonging as fourth-year students failed to meet their initial, anticipated level of college belonging as freshmen.

RQ2: How Does Demographic Background Predict Belonging Fulfillment During College?

To explore the association between students' demographic background and the degree to which expectations about college belonging were or were not fulfilled during college, we performed a multiple linear regression of college belonging fulfillment on gender, income status, race/ethnicity, and FGCS status. Before examining our results, we screened our data for violations of multiple regression's assumptions of normality of residuals, no multicollinearity, and homoscedasticity. We found there were no violations.

The regression of college belonging fulfillment on gender, income status, race/ethnicity, and FGCS status explained a significant 6.72% of the variance in overall college belonging fulfillment ($F[4, 95] = 2.78$, $p = .03$). Table 2 presents the full results of multiple linear regression. Of all the predictors included in the analysis, only income status had a significant effect on college belonging fulfillment; gender, race/ethnicity, and FGCS status had non-significant effects. More specifically, low-income students were more likely than their non-low-income counterparts to have experiences with belonging at the university that fulfilled and surpassed their expectations, holding gender, race/ethnicity, and FGCS status constant, such that low-income students reported lower levels of prospective belonging ($m = 5.08$) compared to their non-low-income peers ($m = 5.54$) at time 1, but reported similar levels ($m = 5.15$) of experienced belonging to their peers ($m = 4.93$).

Table 2
Results of Multiple Regression

Variable	b	SE	β	t
	95 %Confidence interval			
(Constant)	-0.84	0.24	0.00	-3.56**
	[-1.30, -0.37]			
Gender	0.37	0.22	0.17	1.69
	[-0.06, 0.80]			
Income status	0.68	0.28	0.30	2.47*
	[0.13, 1.23]			
Race	0.17	0.26	0.08	0.67
	[-0.34, 0.69]			
FGCS status	-0.03	0.25	-0.01	-0.13
	[-0.53, 0.46]			

Note. Gender: (0 = male , 1= female)

Discussion

RQ1: Unfulfilled Expectations About College Belonging: A Prevalent Phenomenon

Our first research question explored the extent to which students' expectations of college belonging are fulfilled during their time in school. We found that, on average, participants' expectations of college belonging were not being met—as first-year students, our participants entered college with high expectations of developing a sense of belonging to their institution, only for the university to fail to meet those expectations by their fourth year. This finding suggests that the university may not have been properly supporting its students in the ways that they needed. This phenomenon may be partly attributable to campus climate. Previous research has noted the importance of campus climate for college belonging and retention (Strayhorn, 2019), especially for students of color (Johnson et al., 2007) and students from low-income families (Ostrove & Long, 2007). Furthermore, low-income students often report facing unwelcoming and hostile interactions which often leads to lower reported levels of belonging (Bettencourt, 2021). However, it is also important to note that during the students' tenure, the Covid-19 pandemic occurred, and it is likely that their expectations about the norms, culture, and behaviors of their college community remained unmet during their time. Unfortunately, sufficient data was not collected for us to examine the effects that the global pandemic may have had on students' belonging fulfillment. Therefore, although the study raises important concerns about the university's ability to meet their students' expectations about college belonging it should be interpreted and cautiously.

RQ2: Fulfilled Expectations of College Belonging for Low-Income Students

Our second research question asked whether students' demographic characteristics predict belonging fulfillment in college. We found that low-income students were more likely than their non-low-income counterparts to have experiences with college belonging that met or surpassed their expectations. This result was surprising, given that existing literature suggests low-income students struggle to develop a sense of belonging to their college (Means & Pyne, 2017; Nguyen & Herron, 2021). However, these studies are cross-sectional and thus do not capture the initial expectations of college belonging held by low-income students. In this study, low-income students reported lower levels of prospective belonging (m = 5.08) compared to their non-low-income peers (m = 5.61) at Timepoint 1, though low-income students reported similar levels of experienced belonging to their peers at Timepoint 2. Furthermore, the correlation between income status and prospective belonging was significant, although the correlation between income status and experienced belonging was not (see Table 2). Thus, within our sample, low-income students had low expectations of how well they would belong at the institution, only for their experienced belonging to rise to similar levels as the other students.

It is possible that our low-income participants had access to institutional resources that helped them develop a sense of college belonging: our participants' university context was unique in that low-income students had access to an office dedicated to supporting first-generation and low-income students. The office has a strong presence on the campus and provides low-income students with community, resources, and social and academic support. There is research to support the effectiveness of campus initiatives and offices in improving college belonging for students of minority identities, like low-income students (Means & Pyne, 2017). Thus, we believe that the presence of an office dedicated to supporting low-income students may partially explain why low-income students were more likely to develop a sense of college belonging beyond what they had originally anticipated.

Finally, apart from income status, we failed to find evidence that students' levels of college belonging fulfillment vary significantly across demographic identities. This finding may suggest that incoming low-income students may have had an especially negative view of their ability to belong to this university context. Notably, private universities tend to cost more than public ones. Hence, given the private university context, students' income statuses may have played an especially important role in shaping their expectations about their ability to integrate into this university environment. This may, in turn, explain why low-income students reported greater levels of belonging fulfillment than their peers, after experiencing similar levels of belonging overall as seniors. However, we emphasize that low expectations are not circumstances that should be desired.

Given the implication of belonging being low (Murphy & Zirkel, 2015) or not met (Wirth et al., 2017), our findings suggest that students with unfulfilled belonging may be at risk for lower persistence, lower academic success, and greater negative emotional affect. However, more research will need to be done before making such a definite claim. We expect that greater alignment between students' expectations of and experiences with college belonging may lead to greater learning experiences and outcomes for students.

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