Supporting First-Generation Student Experiences in Programs and Advising: Lessons from a Pandemic

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The COVID-19 pandemic exacerbated inequities within higher education. This study examined how first-generation students, compared to their continuing-generation peers, navigated institutional resources such as programs and academic advising during the pandemic. To examine institutional resource barriers, usage, and helpfulness for students, the study analyzed survey data of 524 students at a four-year private university in the United States. Results showed that lack of time, awareness, and access to institutional resources were barriers for first-generation students in using institutional resources. Furthermore, qualitative findings reveal factors that first-generation students found helpful in their college career: transparency of institutional resources on campus, initiative from institutional figures in reaching out to students, and holistic support for academic, personal, and professional development.

The COVID-19 pandemic engulfed the world and exacerbated issues of equity within higher education including limited access to technology, financial hardship, and mental health concerns (Fain, 2020). The persistence of these issues and the growing harms they cause illuminate how learning outcomes interrelate with social-emotional factors, basic needs, and support networks. Nevertheless, the dominant narrative of individualism and meritocracy—where successful students are those who help themselves regardless of circumstances—prevails in higher education (Carnevale et al., 2020; Phuong et al., 2023). For instance, in our research study, a first-generation student participant described how this culture of individualism permeated through resources offered on campus:

> When it comes to academic resources on campus tailored to the needs of first-generation low-income students, they seem to follow a model of assimilation. They serve as

an attempt to change first-generation low-income students and teach them to adapt to the independent contexts perpetuated by elite institutions and universities. Instead of trying to shape first-generation low-income students to fit in independent contexts, there is a need for institutional change.

This student's words echo a need for systemic change in higher education institutions to improve equity in institutional resources by combatting notions of individualism. To challenge the myth of meritocracy, this study examined the equity of institutional resources to shift the narrative from a model of meritocratic student independence to a more organizational and collaborative model of supporting first-generation and marginalized students (Small, 2009). Toward this aim, we analyzed survey data to assess differences in institutional resource barriers, usage, and helpfulness between first-generation and continuing-generation students during the COVID-19 pandemic. We discuss how an array of institutional resources across different contexts—such as programmatic centers and sites and academic advising—can support first-generation students' college experiences. While we sampled participants from a private institution that is not representative of all higher education institutional contexts, the findings can be insightful for other institutions and promote similar examinations across different contexts.

Literature Review

The Problem with a Myth of Meritocracy in Higher Education

The myth of meritocracy poses an equity barrier for first-generation students by asserting that successful students should be solely independent and "pull themselves up by the bootstraps" (Carnevale et al., 2020; Cech, 2013). The notion of meritocracy stemmed from a long history starting with the Protestant work ethic of independence in the United States that became reified in cultural values, institutional messaging, norms of

interactions, and eventually, individual thoughts and feelings (Markus & Conner, 2014). The narrative of meritocracy is an illusion because students' differential privilege impacts access to out-of-school resources that support learning in higher education (Jack, 2019); the COVID-19 pandemic exacerbated this differential access to such resources (Fain, 2020; Soria et al., 2020). Furthermore, the false narrative of meritocracy negatively impacted first-generation students' performance, persistence, and retention (Phillips et al., 2020; Seymour & Hunter, 2019). For instance, studies showed American university administrators espouse middle-class cultural norms of independence, which creates a cultural mismatch for first-generation students from working-class backgrounds that have interdependent motivations for pursuing college degrees (Stephens et al., 2012). Consequently, first-generation students experiencing this mismatch experienced greater academic challenges, which impacted their academic grades (Stephens et al., 2012). Moreover, a meritocratic stance contributes to deficit-based perspectives of students from marginalized backgrounds rather than acknowledging inequities in institutional structures to address the needs of a diverse body of students. Additionally, a meritocratic and independent narrative invalidates the important strengths of family values for first-generation students in contexts such as Latine/x and Asian American households (Covarrubias et al., 2019).

Resource Navigation of First-Generation Students

In this article, we refer to first-generation students as those whose parents or primary caregivers have not completed a four-year college or university degree. Conversely, continuing-generation students have at least one parent or primary caregiver with a completed postsecondary degree. In higher education, first-generation students navigate the college years differently compared to continuing-generation students (Cataldi et al., 2018; Collier & Morgan, 2008; Pike & Kuh, 2005; Terenzini et al., 1996). These different experiences persist and a large body of work demonstrates how first-generation students have less academic preparation, more difficulty transitioning to college, and more challenges with persistence and retention (Salehi et al., 2020). However, Pascarella et al. (2004) argue that "surprisingly little is known about their college experiences or their cognitive and psychosocial development during college" and much is limited to only the first year experience (p. 250). Pascarella et al.'s (2004) longitudinal study revealed that first-generation students completed fewer credits and were less likely to apply to selective institutions. Nevertheless, first-generation students had greater benefits from extracurriculars and peer interactions compared to other students, even when they were significantly less likely to engage in these activities (Pascarella et al., 2004). Recent research continued to show that first-generation students experienced lower levels of social support and success; for example, although first-generation students had equally perceived academic support as continuing-generation students, first-generation students did not have the same academic performance as continuing-generation students (Eveland, 2020).

While a wide range of institutional resources were examined in our study, this article focuses on first-generation student experiences with programmatic centers and sites and with academic advisors. This focus builds on literature concerning the importance of advisors and counselors in supporting students' college experiences. Recent qualitative research on first-generation students' resource utilization has highlighted how a range of resources have different impacts on student experiences. In particular, relational resources such as "warm" and "hot" relationships with trusted sources were the most helpful for first-generation students compared to "cold" resources such as websites and emails (Demetriou et al., 2017; Grim et al., 2021). NACADA: The Global Community for Academic Advising (NACADA) conceptualized academic advising as "a series of intentional interactions with a curriculum, a pedagogy, and a set of student learning outcomes" where it "synthesizes and contextualizes students' educational experiences within the frameworks of their aspirations, abilities and lives to extend learning beyond campus boundaries and timeframes" (NACADA, 2006). A large body of literature in higher education has pointed to the important role of academic advisors in supporting students' persistence and retention because advisors support students with planning, connecting to other resources or experiences, and navigating the institution (Drake, 2011; Kuh et al., 2011; Light, 2001; Pascarella et al., 2004; Tinto, 1987).

Effective advising in higher education has been conceptualized as prescriptive advising, developmental advising, learner-centered advising, and counseling (Jordan, 2000). In the context of engineering students, for instance, national surveys

found that best practices for retention and persistence include personalizing advising, being proactive, keeping students focused, actively listening to students' concerns, acting on concerns, and believing in the student; whereas, ignoring and embarrassing students are bad practices in advising (Uddin, 2020).

NACADA also published the Core Competencies of Academic Advising that describe three competencies for exemplary academic advising: relational skills such as rapport building, communication, and ongoing assessment; conceptual skills such as understanding of theory and equity-oriented practices; and informational skills such as knowledge of the institution, policies, and campus resources (NACADA, 2017). While prior literature highlighted effective advising practices, there is room for more evidence-based and rigorous empirical research on the barriers, usage, and helpfulness of advising resources for first-generation students.

Institutional Resources in Higher Education Learning Spaces

Examining institutional resources is critical because these resources are key in providing equitable support for college success of students from diverse backgrounds (Astin, 1984; Kuh et al., 2011; Tinto, 1987); however, previous surveys on institutional resources are outdated (Neal & Heppner, 1986) or limit institutional resources to a subscale of help seeking in a larger survey on college coping (Ackermann & Morrow, 2008). For instance, Neal and Heppner (1986) designed and used the Campus Resource Utilization Checklist to measure students' awareness, usage, and satisfaction with student services available in their college campus and surrounding community; however, this checklist was created decades ago. The survey measured resource awareness as a yes/no dichotomous variable; resource usage as a numeric number amount provided by respondent; and satisfaction on a 5-point Likert rating scale from "*not at all*" to "*a great deal.*" More recent research has not examined resource usage specifically but has looked at other aspects of campus experiences such as Ackermann and Morrow (2008)'s Coping with College Environment Scale. Within this scale, for instance, is a 7-item subscale called Seeking Support from Institutional Resources measure, which is a 4-point Likert rating scale from "never" to "often" for items such as "I join a study group," which has a reliability coefficient of 0.82. The survey developed for our

study draws on these previous surveys and further expands the examination of more types of institutional resources and its barriers, usefulness, and helpfulness.

The Zone of Proximal Self Theoretical Framework

To go beyond individualistic conceptions of student success, we drew on a sociocultural framework called the zone of proximal self (ZPS), in which the distance between a learner's current self and their possible selves can be bridged through supportive interactions with individuals and institutional resources (Nguyen et al., 2022). The ZPS framework places emphasis on what institutional structures and figures can do to support students across a wide learning ecology including formal classrooms, peer groups, programs, and advising and tutoring. In doing so, the ZPS framework positions college learning as a cultural process in which interactions with resources, counselors, advisors, and programs advance students' social-emotional and academic development. Aligned with the ZPS framework, this study focuses on a variety of institutional resources across a higher education learning ecology.

The Present Study and Research Questions

Consistent with extant literature, understanding barriers to why students have a hard time accessing resources helps inform inclusive design of institutional resources for first-generation students. Furthermore, to advance equity, it is important to not only ensure that resources exist but also that first-generation students are aware of such resources and feel safe to engage with these resources. By offering insights into what makes certain institutional resources helpful for first-generation students, we could refine current theoretical understandings of equity-oriented practices supporting first-generation student success across a wide range of resource settings.

Consequently, this article explores the interplay between higher education institutional resources and first-generation status, and examines the equity of institutional resources for first-generation students compared to their continuing-generation peers. In light of this goal, we focus on the following research questions:

1. What equity barriers do first-generation students experience with institutional

resources compared to continuing-generation students?

2. What are differences in the frequency of using different institutional resources (i.e., advisors, programmatic centers and sites, course staff, peers) between first-generation and continuing-generation students?

3. What are differences in the helpfulness of different institutional resources for first-generation compared to continuing-generation students? Why do students find resources that they ranked highly helpful toward their goals?

Methods

This study employed a mixed-methods research approach to understand quantitative trends that can be explained with qualitative data. We used a convergent parallel design (Creswell & Plano Clark, 2017) to collect quantitative and qualitative data. We analyzed quantitative and qualitative data separately for results. Then, we used qualitative data to help explain quantitative trends to address the research questions.

Measure

To answer the research questions, we developed a survey adapted from previous literature on resource usage and experiences in higher education (Ackermann & Morrow, 2008; Neal & Heppner, 1986). We interviewed administrative personnel to check whether resources in the survey were exhaustive and representative. To improve construct validity, four undergraduate students piloted the survey with cognitive think-aloud protocols to provide feedback on the interpretation of survey items and relevance of resources in the survey.

The final survey contained a mix of nine major sections of Likert-scaled questions, one ranked question, one checklist question, and five open-ended questions. Likert-scaled responses included students' awareness of different resources, frequency of their usage, and their helpfulness. The main categories of resources were course personnel, peers, programmatic centers and sites, advisors, and mentors and tutors. For the Likert-scaled items on awareness and helpfulness of resources, the survey listed specific resources such as academic positions and center names at the institution. An example question for awareness and frequency of use is "How aware and how often do you use this resource?" with response items including "not

aware of it," "aware of it, but never used," "rarely use it," "sometimes use it," and "use it a lot." To assess helpfulness, the survey asked how helpful each resource is on a scale of 1–5, which ranged from "not at all" to "extremely" helpful.

To better understand the helpfulness of resources, the survey also asked participants to rank their top three most helpful resources in their undergraduate education. The resources were grouped into pre-identified categories: advisors, mentors, tutors, peers, centers and sites, and course instructors/teaching assistants. The ranking prompt was followed by open-ended response questions asking for elaboration on why resources were highly ranked.

The survey assessed barriers with a checklist question including the following responses: being unaware of resources, not having access to resources, resources not being effective, not having time to use resources, and the option to type in their own barriers that were not included in the checklist.

Participants

A total of 524 undergraduate students from a four-year private university in the western U.S. completed the survey, including an introduction with informed consent. Participants' identities remained anonymous. We recruited participants through diverse email LISTSERVs for undergraduate students on campus. Because our goal was to understand first-generation student experiences compared to continuing-generation students, we made sure there was an adequate representation of first-generation students in the sample compared to the overall campus population. Table 1 displays the descriptive statistics of the demographics of student participants in the sample based on first-generation status, minoritized status (e.g., Black/African American, Indigenous, and Latine/x), gender, and major. More first-generation students identified as Latine/x (35%) compared to continuing-generation students (8%). In the continuing-generation sample, there were more White (32%) and Asian (43%) students compared to first-generation students, at 17% and 33%, respectively. Both groups showed comparable percentages of Black (8%), Indigenous (3%), and Native Hawaiian or Pacific Islander (2%) students. Table 2 shows the student distribution for the students' year in school by first-generation status. Most students answered all demographic questions, but we had missing data for about 20 students.

Table 1. Demographics of Sample (n = 524)

Demographic	n	% in sample	% in institution
First-generation status			
First generation	203	40	20
Continuing generation	304	60	80
URM status			
URM	108	21	25
Mixed race	110	22	N/A
Not URM	289	57	54
Gender			
Female	315	62	51
Male	177	35	49
Gender non-conforming/non-binary	16	3	N/A
Major			
Science, technology, engineering, mathematics (STEM)	282	54	27
Social sciences and humanities	240	46	19

Quantitative Analyses

Principal Components Analysis

To analyze differences in the categories of barriers, we used chi-squared Fisher's exact test at the 5% significance level to examine if there were any descriptive differences between demographic groups. For institutional resource usage frequency and helpfulness ratings, we first completed a principal components analysis (PCA) to identify whether five main categories of academic resources (i.e., course staff, peers, centers and sites, advisors, mentors) could be further grouped into sub-categories. We averaged the usage frequency rating of individual resources of each resource category identified in the PCA to calculate the overall usage of that category. For example, the advisors category included academic major advising, premajor advising, academic advising, and department center advising.

Starting with Ordered Logistic Regression

We first used ordered logistic regression to examine frequency of using the identified categories across different demographic groups. We started with ordered logistic regression because the questions about frequency of resource usage have ordered categories in the response options. In this analysis, the base regression model included dichotomous variables for first-generation status and minoritized status as main predictors because they were relevant to the pre-existing theories. Using a bottom-up approach, we first started with the base model with these two main predictors, then added their interaction term as well as other predictors—year, gender, major—to account for the possibility of omitted-variable bias. We used a Brant Test to check whether the proportional odds assumption of the regression model was met (i.e., the coefficients describe relationships between the categories equally). Then, we conducted model-fit comparisons using both the Akaike information criterion (AIC) and Bayesian information criterion (BIC) to compare whether including any additional predictors and/or their interactions improved the model fit. We used the identified

Table 2. Year in School (n = 524)

	First-Generation (n = 201)		Continuing-Generation (n = 304)	
	n	%	n	%
Freshman	49	24	26	9
Sophomore	57	28	91	30
Junior	48	24	75	25
Senior	38	19	96	32
Super senior or above	9	4	16	5

simplest best-fitting model with the most explanatory power. The inclusion of interaction terms did not improve the fit of the models significantly. Therefore, we did not focus on the regression equations that include interactions between first-generation status and minoritized status.

We averaged the helpfulness rating of individual resources of each resource category identified in the PCA to calculate the overall helpfulness of that category. We conducted ordered logistic regression to examine the helpfulness of the resource categories across demographic groups. We used the same main predictors and bottom-up approach as the one used in frequency analysis in these regression analyses.

Reporting Linear Regression Models

We reran the analyses for frequency and helpfulness of resource categories using linear regression with robust standard errors and normalized continuous variables to help with the interpretation of coefficients and effect sizes. The best-fitted model from these analyses were kept and compared with the ordered logistic regression analyses. Using the 5% significance level, we present findings in response to RQ2 and RQ3 that show a statistically significant result across the ordered logistic regression and linear regression with normalized dependent variables. Because the ordered logistic regression and linear regression with normalized continuous variables showed similar results, we report the results of the linear regression model in this article for ease of interpretation.

The following are the regression models used in the analyses at the 5% significance level:

$$\text{resource usage score}_i = \beta_0 + \beta_1 firstgen_i + \beta_2 URM_i + \epsilon_i$$

$$\text{resource helpfulness score}_i = \beta_0 + \beta_1 firstgen_i + \beta_2 URM_i + \epsilon_i$$

We ran this equation for each resource categories identified in the PCA.

Qualitative Analyses

We analyzed qualitative data using inductive thematic coding (Saldaña, 2015) in which open codes were placed into categories that developed into larger themes related to the research questions. We used the qualitative data to examine the second question of why certain resources are helpful or highly ranked for first-generation students and what other barriers exist that hinder the usage and/or helpfulness of different institutional resources. We examined the survey question "Why did you pick the ranking above" after students ranked resources from the list of advisors, mentors, tutors, peers, centers and sites, course instructors, and other.

Results

Research Question 1: Institutional Resource Barriers

Compared to continuing-generation students, more first-generation students had barriers with time to use resources (71% FG; 57% CG)[1], awareness of resources (64% FG; 54% CG), and access to resources (32% FG; 17% CG). Figure 1 shows the distribution of the common barriers for resource usage for first-generation and continuing-generation students.

Because this study was conducted during the COVID-19 pandemic, the conditions illuminated how not having time for and/or access to resources was particularly challenging for first-generation students. A first-generation low-income student mentioned how their home context created challenges during distance learning:

> It is much more difficult to access resources when on limited bandwidth and siblings require internet as well. I understand that [the university] has provided financial aid for covering expenses for technology, but some of us come from a large family. In addition, it's more difficult to access resources because we are resources for our families when remote; our immediate presence leads us to be more involved with tasks at home than had we been a student only on campus.

In addition to barriers listed in the survey response options, students reported other barriers: anxiety or fear of reaching out for help, navigation difficulty, lack of motivation, geographical time differences, limitations of distance learning, and long wait times.

Another first-generation student described how the mindset of doing things independently may have prevented them from seeking resources:

> I don't have a lot of experience using the resources available to students on campus due

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[1] FG stands for first-generation students. CG stands for continuing-generation students.

Figure 1. Graphs of Barriers by First-Generation Status

Barriers comparison by percent of first-generation and continuing-generation status
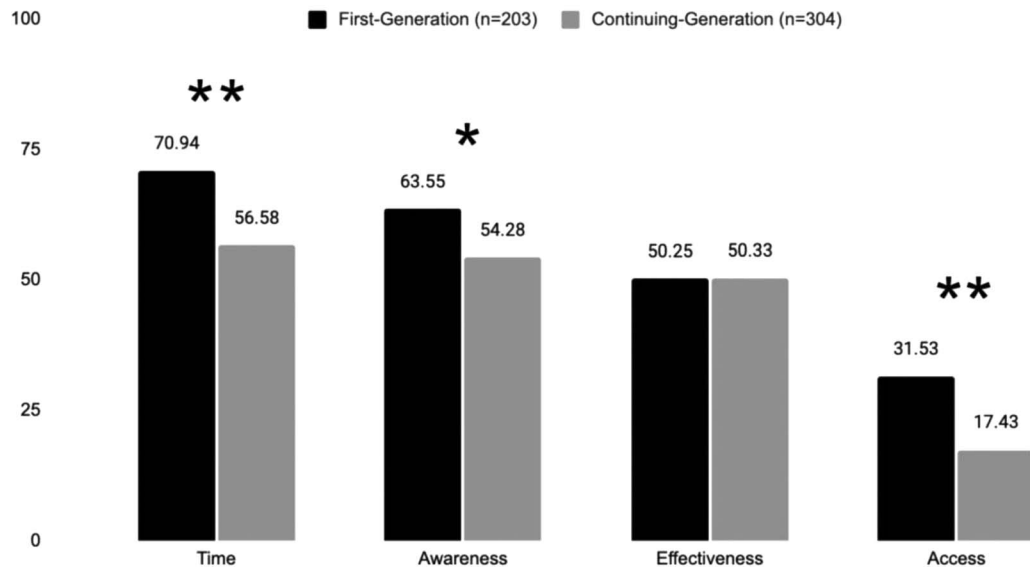
*p < .05, **p < .01

to a lack of familiarity with them. Growing up in low-income contexts has conditioned me to try and figure things out by myself rather than seeking help from others.

Anxiety and lack of motivation are also related to a lack of representation at the university. For instance, a first-generation student of color indicated they "would love more representation in leadership of these resources, e.g. more tutors of color with notable experiences compared to quiet white men who know content well."

Twenty-two students indicated a need for better resource communication. As one student elaborates, "Personally, I think the issue isn't that there aren't enough resources. It's that there's too much, and I don't know which to use." This finding aligns with "lack of awareness," which was the second major barrier for resource usage. For example, one student illustrated how first-generation students might miss opportunities that may have been beneficial in their undergraduate career: "I think that there are a lot for first-generation low-income students, but things aren't centralized and consolidated, so it's super easy to miss things."

And another student compared this experience to a minefield: "It often feels like a lucky information minefield where you just know the right person with whom you had a conversation with once, and that's how you know to do X."

Research Question 2: Institutional Resource Frequency of Usage

PCA led each main category to be split into two components based on the scree plot and loading plot graphs. The exception was the resource category of advisors, which did not have more than one component. The PCA led to seven categories of resources: peers in group-specific programmatic settings, peers in formal settings, course personnel in humanities and social sciences, course staff in STEM, advisors, general programmatic center and sites, and group-specific programmatic center and sites.

There were no significant differences between first-generation and continuing-generation students on using institutional resources for advisors, peers in groups-specific programmatic settings, peers in formal settings, STEM course personnel, and non-STEM course personnel. However, compared to

Table 3. Regression Table for Frequency Meeting with Programmatic Centers and Sites

Parameter	Model 1: General Centers and Sites Estimate (Standard Error)	Model 2: Group-specific Centers and Sites Estimate (Standard Error)
URM	.73* (.35)	.09 (.18)
First-generation	1.22*** (.26)	.40** (.14)
Intercept	−.87*** (.15)	−.26** (.08)

Note. Robust standard error in parentheses.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

continuing-generation students, first-generation students more often use programmatic and community resources on campus such as offices for first-generation students and centers for specific community groups (e.g., Latinx Student Center). For instance, 47% of first-generation students frequented community centers sometimes or a lot, while 22% of continuing-generation students fell into the same category. Table 3 contains the linear regression models with robust standard errors and normalized dependent variables for frequency meeting with programmatic centers and sites. Programmatic centers and sites were divided into general- and group-specific-centers and sites. Controlling for students' minoritized status, first-generation students were estimated to use general centers and sites (e.g., Office of Undergraduate Students) more frequently compared to continuing-generation students on average by 1.22 standard deviations ($b = 1.22$, t = 4.67, $p < 0.001$). They were also estimated to use group-specific centers and sites more frequently, compared to continuing-generation students on average by 0.40 standard deviations ($b = 0.40$, t = 2.79, $p = 0.006$), after controlling for students' minoritized status. We found no evidence of collinearity between predictors for both models (mean VIF = 1.09).

We performed a post-hoc power analysis using G*Power (Faul et al., 2009) obtaining a power of 0.99 accounting for all the variables in the first regression model for general centers and sites. With our sample size and the effect size detected for the variable of interest, our analysis is overpowered with 200 participants. Although our analysis is overpowered, we do not solely rely on *p*-values because we present standardized regression coefficients. We also performed a power analysis using G*Power obtaining a power of 0.86 accounting for all the variables in the second regression model for group-specific centers and sites. With our sample size and the effect size detected for the variable of interest, our analysis is adequately powered with 200 participants.

Research Question 3: Institutional Resources Helpfulness

As part of the survey, students ranked the top three most helpful resources in their undergraduate education. Figure 2 shows the percentage of students who selected a resource as the highest ranked across first-generation and continuing-generation student status. The top three most frequently chosen resources selected in first place for first-generation students are peers (35%), course personnel (29%), and advisors (13%); continuing-generation students made similar rankings: peers (35%), course personnel (31%), advisors (17%). Overall, the order and distribution of most helpful resources were similar across first-generation and continuing-generation status with two slight differences: 1) A greater percentage (7%) of first-generation students report centers and sites as the highest-ranked resource compared to the percentage of continuing-generation students (3%; $p<0.01$), which aligned with a previous finding that centers and sites were more frequently used by first-generation students; 2) On the other hand, a greater percentage of continuing-generation students (31%) found course instructors as the highest-ranked resource compared to first-generation students (29%; $p<0.01$).

One student mentioned how advisors and mentors helped her navigate personal and professional goals: "[I'm] meeting with advisors and mentors all the time for personal, professional, and academic issues/questions. I've always really appreciated their counsel throughout my four years, especially considering I am first-gen low income." Furthermore, advisors and mentors are more accessible, as one student mentions that they could not "afford tutors, [so they relied on] older mentors further down the road [who knew] what's up." There are opportunities for free

Figure 2. Graphs of Resource Ranking by First-Generation Status
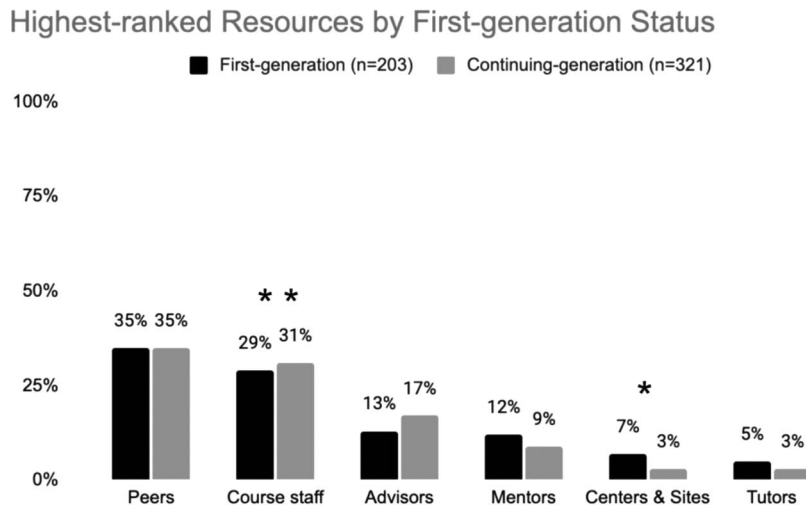
*p < .05, **p < .01

tutors on campus for some departments; however, as one student reported, they needed "free tutoring for a wider range of subjects, not just the most common STEM subjects like Computer Science and Math."

There was no significant difference between first-generation and continuing-generation students for the helpfulness of peers, course personnel, and advisors. Refer to Table 4 for the linear regression of the models with robust standard errors and normalized dependent variables for helpfulness of meeting with programmatic centers and sites. Compared to continuing-generation students, first-generation students' ratings on the helpfulness of general centers and sites were, on average, estimated to be 0.19 standard deviations higher ($b=0.19$, $t=7.3$, $p<0.001$) and 0.08 standard deviations higher ($b=0.08$, $t=3.01$, $p=0.003$) for group-specific centers and sites, after controlling for students' minoritized status.

We found no evidence of collinearity between predictors for both models (mean VIF = 1.14 for general centers and sites; mean VIF = 1.13 for group-specific centers and sites).

We performed a post-hoc power analysis using G*Power (Faul et al., 2009) obtaining a power of over 0.99 accounting for all the variables in the regression model for general centers and sites. With our sample size and the effect size detected for the variable of interest, our analysis is overpowered with 483 participants. We also performed the same power analysis using G*Power obtaining a power of 0.96 accounting for all the variables in the regression model for group-specific centers and sites. With our sample size and the effect size detected for the variable of interest, our analysis is overpowered with 447 participants. Although our analyses are overpowered, we do not solely rely on p-values because we present standardized regression coefficients.

Table 4. Regression Table for Helpfulness Meeting with Programmatic Centers and Sites

Parameter	Model 1: General Centers and Sites Estimate (Standard Error)	Model 2: Group-specific Centers and Sites Estimate (Standard Error)
URM	.04 (.03)	.04 (.04)
First-generation	.19*** (.03)	.08** (.03)
Intercept	.19*** (.01)	.14*** (.02)

Note. Robust standard error in parentheses.
*p < 0.05, **p < 0.01, ***p < 0.001.

There are several reasons why programmatic centers and sites were highly ranked by students. In students' open-ended responses, we found three major categories of support that these centers and sites offer: resource navigation, a sense of community, and support with personal and professional goals.

The programs and centers helped first-generation students navigate resources on campus. A first-generation student explained how they found resources: "Centers and sites usually provide a weekly bulletin that highlights resources that I otherwise would've missed. The students there tended to be much more community-oriented so a lot of opportunities are passed down as well." Connections and relationships that formed in the community centers and first-generation offices helped students become more aware of resources. As another student mentioned: "These spaces also usually helped point me to resources that I may have previously been unaware of."

These centers and programs also created a safe space that fosters community and belonging. Some first-generation students' intersectional identities included experiences of being students of color; therefore, many centers focused on ethnic identities created a safe space for first-generation students of color from minoritized backgrounds. For example, a student indicated why one such space helped them feel a greater sense of belonging: "I feel that El Centro Chicanx Latinx has provided oversight for so many other services that helped me identify with the [college] community." Another student made a similar remark about the community center: "Community centers are amazing safe spaces and I really miss going to them."

Finally, participants indicated that centers and sites were helpful for pursuing personal and professional goals. One student remarked how an ethnic center helped them with their professional goals:

> One of the most helpful resources for me throughout my [college] career has been the Asian American Activities Center. The directors there have been so formative in helping me think through issues in my personal, academic, and professional life that I genuinely am considering their professions as a career.

Discussion

Institutional Resources in Higher Education: Equality is not Equity

Different institutional resources—advisors, programmatic centers and sites, course staff, peers, mentors/tutors—can play a critical role in enhancing students' college experiences. If designed equitably, these resources can help address disproportionate challenges that students from marginalized backgrounds face. In this study, we explored equity in institutional resources for first-generation students. We examined the barriers for using institutional resources, how frequently first-generation students used different resources compared to their continuing-generation peers, and why certain resources were most effective.

Our results show that regardless of generational status, the most helpful resources were peers, course personnel, and advisors; there was no significant difference in how frequently first-generation and continuing-generation students use these resources. These findings complement previous work showing how first-generation students may perceive equal academic support with continuing-generation students (Eveland, 2020). Additional research has demonstrated that college advisors and course personnel can be helpful. Nguyen et al. (2022) found that college advisors and counselors who apply more equitable practices can significantly increase students' progress toward their personal and professional goals. These equity-oriented practices can include creating a brave space, validation, and supporting students' social-emotional competencies (Nguyen et al., 2023). Further research has shown that college instructors and personnel can adapt their practices to reduce equity barriers and significantly improve all students' experiences and success, including those from minoritized backgrounds and identities (Phuong et al., 2017a; Phuong et al., 2017b; Phuong & Nguyen, 2019; Phuong et al., 2021, Phuong, Nguyen, Vo, Hunn, & Mejia, 2022; Phuong, Nguyen, Vo, Hunn, Mejia, & Huang, 2022; Phuong et al., 2023).

While the results of this study show equality of use, they do not necessarily indicate equity in resource usage. Equality in resource usage is when students are provided with and use a resource at an equal rate, regardless of how much they need that resource. However, we envision equity as providing access and opportunities for all students in ways that honor and support their sociocultural contexts, backgrounds, strengths, and areas for growth. Equity in resource usage, then, is an ongoing process to ensure that students who need a resource would have access to that resource. Furthermore, once students have access to these resources, the resources should be welcoming enough to invite students to use them often in ways that reduce equity and systemic

barriers to their success (defined broadly). For example, previous studies showed first-generation students were less likely to have received the sufficient incoming preparation for STEM college courses during high school because of historical and systemic inequities in the U.S. K-12 STEM education system; while first-generation students may need STEM resources more, in this study we do not find them using these resources more than continuing-generation students (Salehi et al., 2019; Salehi et al., 2020; Thompson, 2021). In this case, we see equality but not equity because the variation in student needs does not match the usage of needed resources. Because higher education institutions are dominated by upper-middle-class cultural norms and a myth of meritocracy, institutions can be more proactive in reaching out and providing more institutional resources in multiple learning contexts for first-generation students.

Theoretical Significance

Ultimately, the theoretical implication of this work is a deepening of the zone of proximal self-conceptual framework, which offers a sociocultural and learning sciences perspective toward student development in higher education, especially with a lens on equity and how roles such as academic advisors can support first-generation students. Because first-generation students enter higher education with constraints on their social and cultural capital (Jack, 2019), equitable institutional resources in the higher education learning ecology provide the social-emotional support necessary for first-generation students to navigate academia and pursue holistic goals for their possible selves. Moreover, equitable institutional resources within these spaces can be transformative when they not only affirm first-generation students' resilience but also provide a more supportive path to developing social-emotional competencies related to students' academic, professional, and personal goals.

Practical Implications for Academic Advisors

Institutions and practitioners can advance equity in institutional resources by drawing on findings of why first-generation students frequented programmatic centers and sites more often than continuing-generation students. Qualitative data from first-generation student voices expressed the importance of institutional resources in supporting their academic, professional, and personal goals. In imagining students' possible selves, academic competencies such

as how well students perform on assessments are important for their ideal future career; however, these academic competencies also depend on students' social and emotional development. The findings of this study reveal how first-generation students' learning experiences are influenced by interacting with institutional resources in the learning ecology, which strengthen their social-emotional competencies. For instance, compared to continuing-generation students, first-generation students used out-of-class programmatic centers and sites more often and found them helpful because academic advisors and coaches connect students to other resources on campus. The increased social connections that students form strengthened the development of specific social-emotional competencies such as relationship skills building. Furthermore, students found value in advisors who catalyzed other social-emotional competencies development such as self-management in navigating the intersectionality of being first-generation and another minoritized identity. In particular, students appreciated how programmatic centers and sites supported their navigation of resources on campus, provided a sense of community, and strengthened progress in personal and professional goals.

The overall rankings of institutional resources showed descriptive data of how peers, course personnel, and advisors remained critical spaces of learning for all students. This demands attention from institutional figures on how to strengthen these institutional resources for first-generation students. Because students indicated a need for better resource communication, a centralized place to navigate all resources at the institution could mitigate barriers of awareness. A lack of resource centralization was overwhelming for students and also contributed to inequities in how first-generation students could be supported on campus. Academic advisors can support first-generation students through a variety of strategies: help increase transparency in what different institutional resources are available and how to use them, compile a list of centralized resources on campus, or reach out to first-generation students proactively with helpful resources and effective ways to use them. Proactive resource support can increase students' awareness about different resources, and demand less time from students to seek and find resources that are tailored to their needs. Proactively providing institutional resources also helps with access to resources and further addresses emotional hurdles first-generation students face in seeking help.

Limitations and Future Directions

This work faces several limitations including relying primarily on self-report survey data. Combining quantitative trends with qualitative voices of first-generation students is critical in this study for triangulating data of students' experiences. While there are no significant interaction effects in the quantitative regression models, qualitative evidence highlights the importance of intersectionality in first-generation student experiences. Moving forward, research can extend this work by employing other methodologies to examine first-generation students' learning experiences with a more in-depth analysis of practices. Furthermore, this study focused on one type of higher education institution—a four-year private university. We examined why particular institutional resources are helpful or not for first-generation students, which could be useful across multiple contexts. Nevertheless, other institutions may have different types of, access to, and funding for institutional resources on campus. Using the tools and insights developed in this study, future studies can explore first-generation students' interactions with institutional resources at other institutions (e.g., public universities, state colleges, community colleges, etc.).

The need for more equitable institutional resources is highlighted by this study occurring during the COVID-19 pandemic. Because all students were enrolling in college classes from home, the connection between home communities and academic learning in school became more apparent. As first-generation students expressed in this study, barriers of time, resource awareness, and resource access were connected to family obligations, which will continue to exist in the new normal of the post-pandemic. First-generation students may have responsibilities to take care of siblings, elder caregivers, or themselves, which showcased resilience on top of navigating a hidden curriculum of success in school. Additionally, help seeking is an emotional hurdle when first-generation students have been conditioned to struggle independently through the pervasiveness of the myth of meritocracy. Future work should further examine how to leverage the accessibility of online resources offered during the COVID-19 pandemic to increase equity for first-generation students.

Conclusion

This article presented results and recommendations from a study examining how first-generation students interacted with different resources within an institution to support their college career. The findings illuminate how academic advising and programmatic centers and sites can be transformational spaces in equitably supporting first-generation students' college experiences. In doing so, academic advising and programmatic centers can be levers for institutional change when it comes to equitably supporting first-generation students in higher education.

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