Show Me the Data: Using Numbers to Drive DEI Progress in Libraries and IT

David Consiglio, Bryn Mawr College
Katherine Furlong, Bucknell University
Alexandrea Glenn, University of Pennsylvania
Craig Milberg, Willamette University
Wesley Ng-A-Fook, Barry University
Ellen Yu, Union College

Introduction and Framework

Colleges and universities have recently taken a broader approach to addressing and redressing their institutional relationship with diversity, equity and inclusion within their communities. This includes formal acknowledgments of the land upon which the institutions reside, to who built the campuses, the diversity within the faculty, student, and staff populations, the retention of people of color, to the experiences of people of color at the institutions. This increased focus on diversity, equity, and inclusion (DEI) extends to all aspects of the academy. In this study, we use a DEI lens to explore two critical service areas within academic communities: technology and library services.

Using survey data collected from the years 2017 to 2024, from more than 135,000 faculty and students at 139 institutions, this research seeks to understand if faculty and students of color experience technology and library services differently than their white peers. Respondents evaluated the importance of and their satisfaction with up to 90 different technology and library services. We use this data to examine the following research questions:

- Do students of color find library and technology services to be more or less important to them than their white peers?
- Do faculty of color find library and technology services to be more or less important to them than their white peers?
- Are students of color more or less satisfied with library and technology services than their white peers?
- Are faculty of color more or less satisfied with library and technology services than their white peers?

This research is focused on macro-level processes examining whether there are systemic differences in the way faculty and students look at library and technology services in general based on their racial/ethnic identity. As a result, the focus of this analysis is not on any individual technology or library service, but rather for patterns that span the range of services.

Context

While a full literature review is beyond the scope of this paper, the library and academic IT professions have a long yet spotty history of advancing diversity, equity and inclusion as core values.[iii]. Although individual services and the diversity of members of the profession have been studied, we found no attempts to measure how students and faculty of color perceive the services offered by our organizations.

It has been almost a decade since Jennifer Vinopal's influential piece called out the problematic lack of data on diversity to understand the landscape of our profession.[iii] This is our attempt to meet a part of that challenge.

Data and Methods

The data in this study is drawn from the Measuring Information Services Outcomes (MISO) Survey.[iv] The MISO Survey, first launched in 2005, is offered annually to higher educational institutions in the United States and Canada for a fee. Since its inception, more than 180 higher educational institutions have participated with data collected from roughly 400,000 faculty, students, and staff. Most institutions participating in the MISO Survey do so on a recurring basis, distributing the survey on a one, two, three, or four year cycle. This study uses faculty and student responses from the 139 institutions which have run the MISO Survey between 2017 and 2024.

Liberal Arts colleges are overrepresented in the data. Nearly 60% of the institutions used in this analysis are from the Liberal Arts sector or define themselves as offering a liberal arts curriculum. The remaining 40% represent major research institutions, large state schools, prestigious national universities, and regional private schools.

The MISO Survey is issued during the early months of each calendar year. It launches during the fourth week of a term ensuring the data is collected at the same relative time at each institution. The median institutional response rates are 58.2% for faculty and 45.9% for undergraduate students.

The survey questions span many areas. This study utilizes data collected from the questions asking about the importance respondents place on different services, their satisfaction with those services, and the racial/ethnic and other demographic information provided by the respondents in the survey. There are 90 different technology and library service points measured in the faculty version of the survey, while the student version of the survey measures 66 different technology and library areas. Both the importance and satisfaction questions utilize a four-point Likert scale.

The analysis looks for statistically significant differences in mean scores for each service point based on racial and ethnic identity. The alpha level used for determining statistically significant differences is 0.01 for the bulk of the analysis. Effect sizes are calculated when statistically significant differences are found. Since the goal is to explore macro-level processes, no particular service point is explored or discussed. Instead, we assess how many service points have statistically significant differences based on racial/ethnic identity, the direction of those differences (more or less important, more or less satisfied), and the size of the effects when statistically significant differences are present.

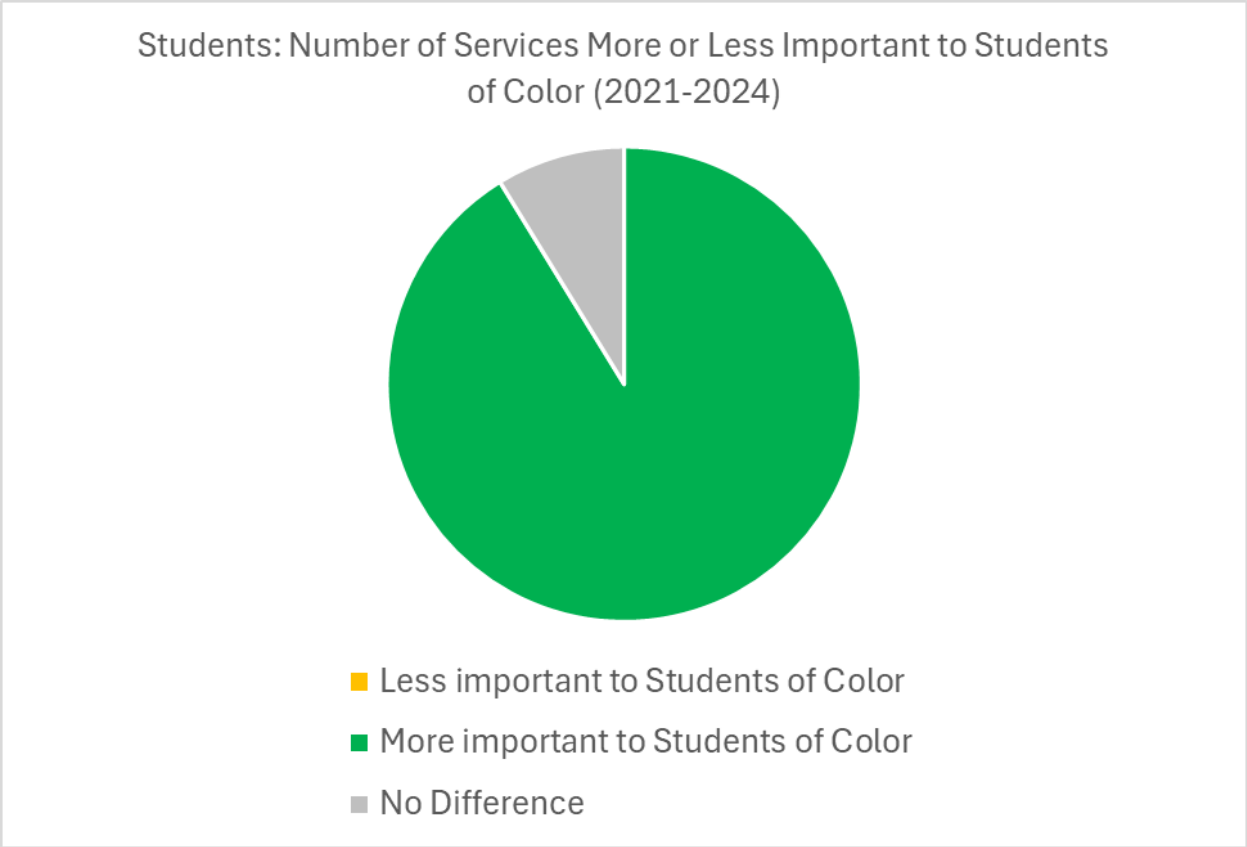
The analysis begins by exploring the relationships between racial/ethnic identity and service importance and satisfaction without controlling for other factors. It then tests the robustness of the relationships by controlling for a series of potentially confounding factors.

Throughout the analysis we compare faculty of color and students of color to their white peers. For the purposes of this study, a person of color is anyone who self-identifies as anything other than white and white alone. Two demographic questions are used for the categorizations. First, a “check all that apply” race question that includes the following options: White, Black or African American, Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and Other. The second question asks respondents, “Are you of Hispanic, Latino, or Spanish origin?” If a respondent selects “Yes” to the latter question or checks any of the racial identities other than “White” then that person is categorized as a person of color in this research. This includes individuals who select “White” as an option if they choose some other identity in addition to selecting “White.” In total, students of color account for 33.7% of all student responses and faculty of color account for 22.8% of all faculty responses. (Footnote: We recognize there are many ways researchers may choose to define a person of color. The analysis conducted in the research was done using several different definitions. The overall findings remain robust across the many definitions tested.)

Analysis

Research question 1: Do students of color find library and technology services to be more or less important to them than their white peers?

Chart 1:



Of the 66 technology and library services tested among the student population, 59 services (89%) were found to be more important to students of color than they are to their white peers. The remaining seven services (11%) were of equal importance to students of color and their white peers. None of the 66 services were less important to students of color.

Cohen's D Effect Size allows us to measure the relative size of the relationship between our independent variable (race/ethnic identity) and the dependent variables (technology and library services). A generally accepted rule of thumb for interpreting Cohen's D Effect Size is as follows:

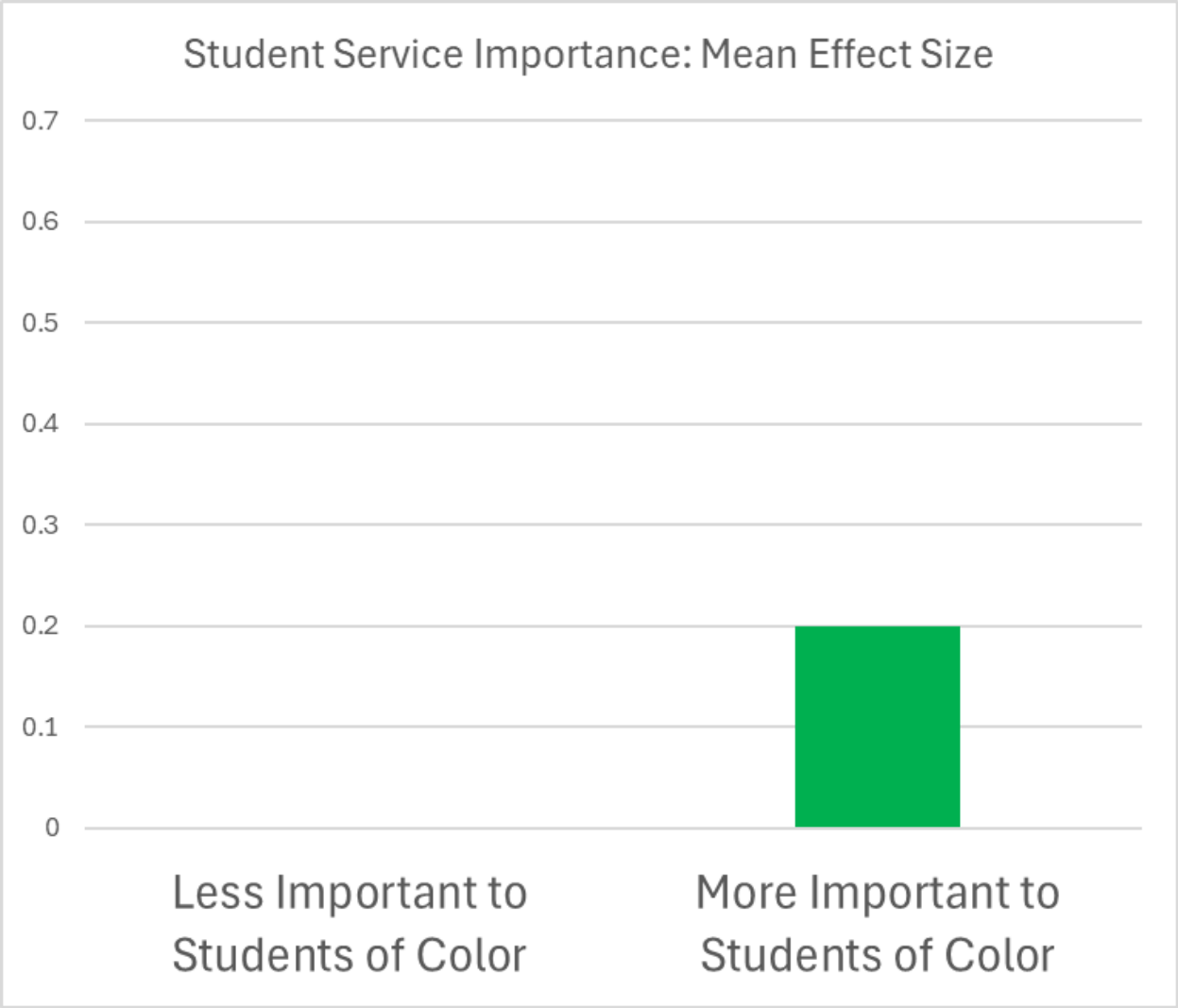
.3 = Small effect

.5 = Moderate effect

.8 = Large effect

In our analysis, we are interested in macro-level patterns and therefore do not examine the effect size of any individual service. As a result, we have calculated the mean effect size across all statistically significant relationships.

Chart 2:



We can see by the results presented in Chart 2 that the mean effect size across all statistically significant measures where the services are more important to students of color is relatively small (Cohen's D = 0.20). The effect sizes across the 59 statistically significant service areas ranged in size from very small (Cohen's D = 0.04) to moderate size (Cohen's D = 0.48).

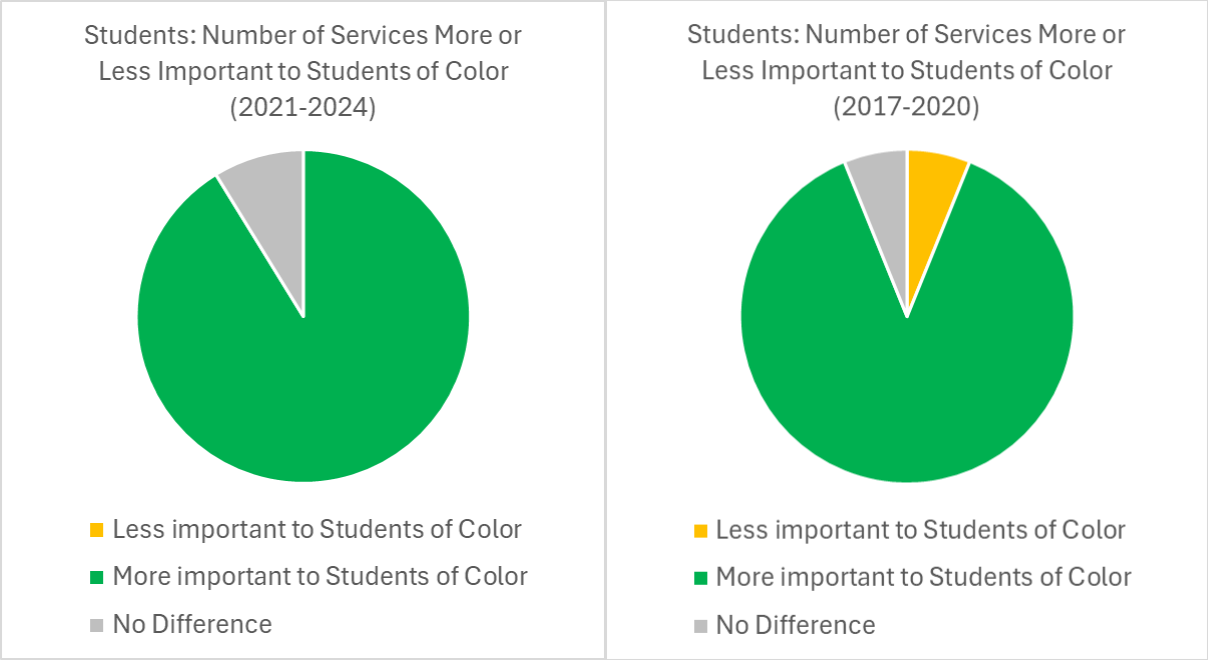
Despite the effect sizes being relatively small, the macro-level finding is unexpected. Nearly all of the services examined are more important to students of color than they are to their white peers. This finding demands further exploration about the nature and robustness of the findings.

To explore this relationship further, we tested its persistence across a number of potentially confounding factors. These include time (2017-20 vs. 2021-24), academic institution type (liberal arts colleges vs. all other colleges and universities), student career stage (first-years and sophomores vs. juniors and seniors), and first-generation college students.

Time Effects

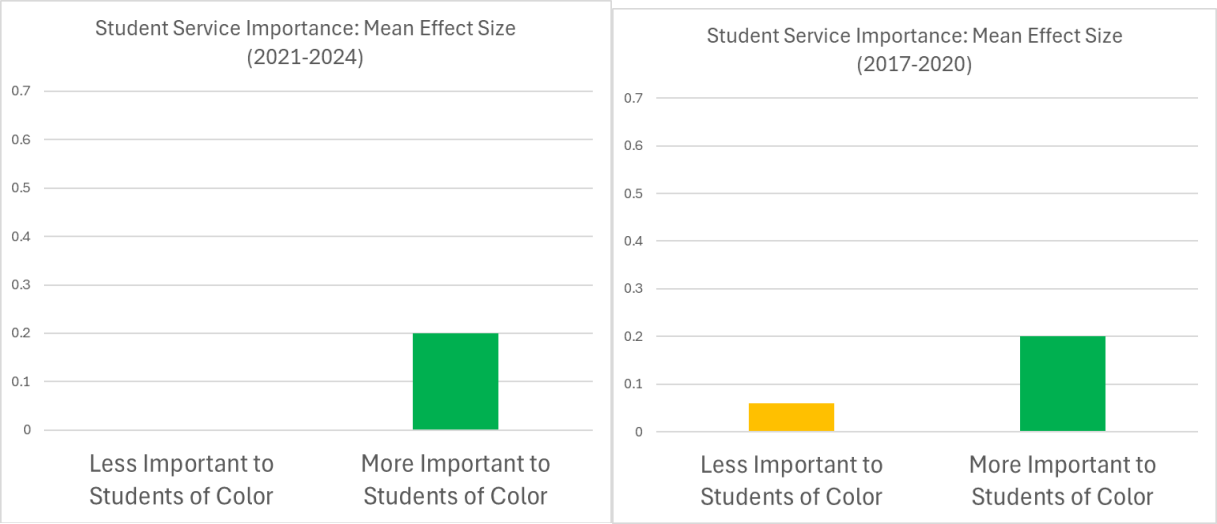
The first potentially confounding factor we considered is whether this is a new phenomenon. Using the same data source, we compared the student data collected between 2017 and 2020 to the data collected between 2021 and 2024.

Chart 3:



The 2017-2020 results show some minor differences compared to the 2021-2024, the most notable of these being 3% of the services were viewed as being less important to students of color from 2017-2020, while none are from 2021-2024. Despite this difference, the overall pattern remains, i.e., nearly all technology and library services are more important to students of color than they are to their white peers.

Chart 4:



The mean Cohen's D Effect Size for the services that are more important to students of color is essentially unchanged across the two time periods examined. This suggests a robustness in the relationship despite the mean effect size being relatively small.

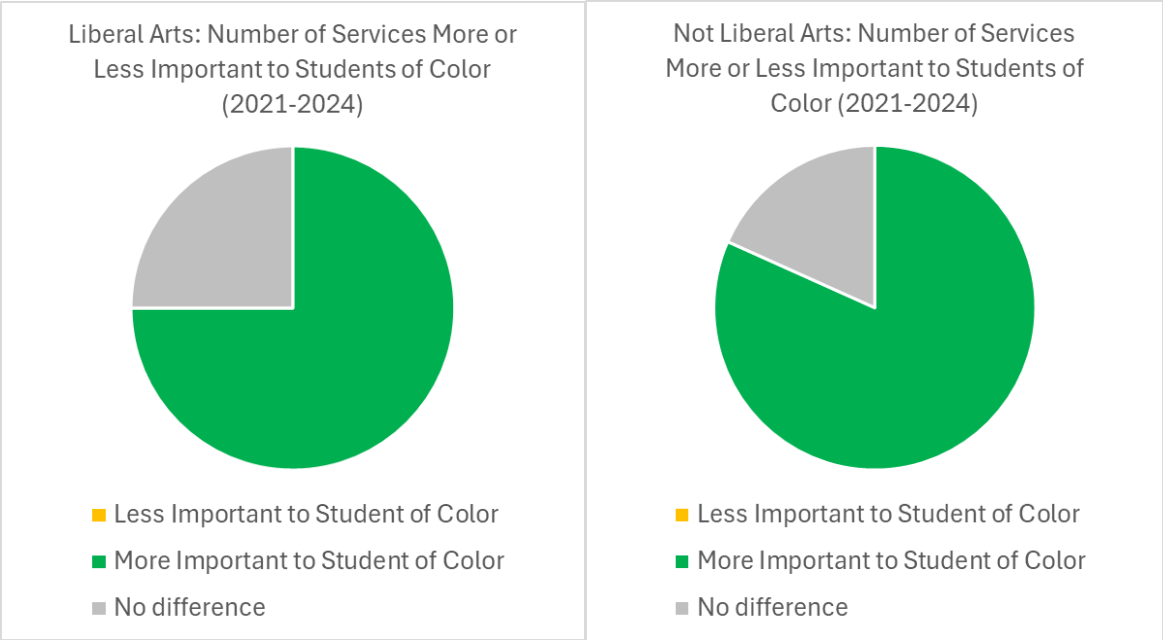
The mean effect size for the three services (6%) less important to students of color from 2017 to 2020 is 0.06. This is an extremely small effect size. An effect size this small suggests the statistically significant differences found in the data have little to no practical meaning. As a result, we will treat the differences as having no practical usefulness.

It is worth noting all data collected in the 2017-2020 time period was collected prior to COVID-19 impacting American colleges and universities. This suggests that not only is the phenomenon robust over time, but also robust across significant disruptive events.

Institution Type Effects

Next, we explore whether these results are driven by institution type. A little more than half of the institutions in the data are classified as liberal arts colleges or define themselves as offering a liberal arts curriculum.

Chart 5:

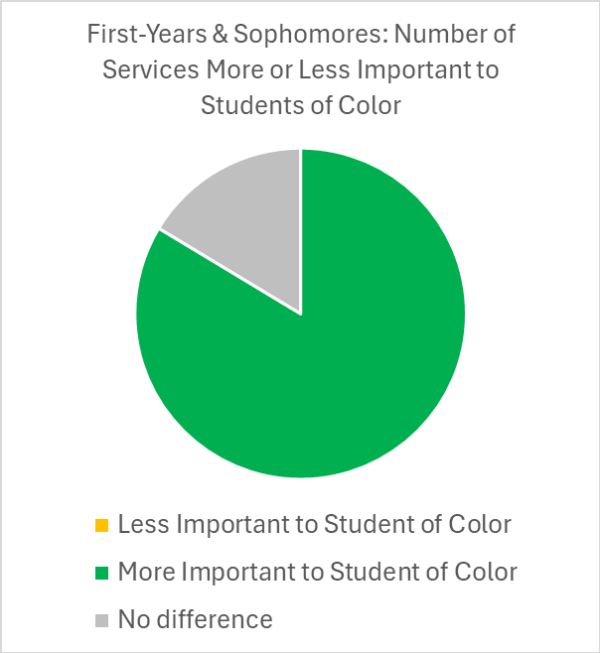


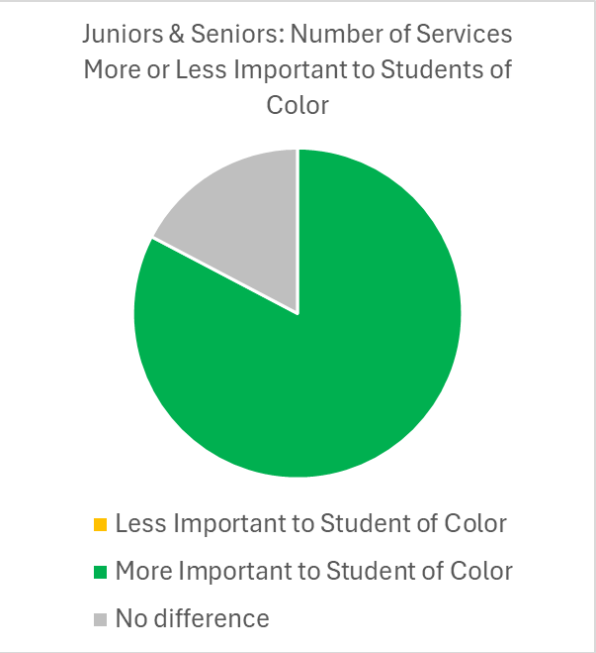
The results are not impacted by the type of institution (Chart 5). Comparing Liberal Arts Colleges to other institution types reveals an almost identical pattern. The overwhelming majority of technology and library services are more important to students of color than to their white peers.

A negligible difference in the mean effect sizes exists between Liberal Arts colleges and other institution types. The mean effect size at liberal arts colleges is 0.22, while at other institution types it is 0.23. In both cases, the mean effect sizes are relatively small.

Career Stage Effects

Chart 6:





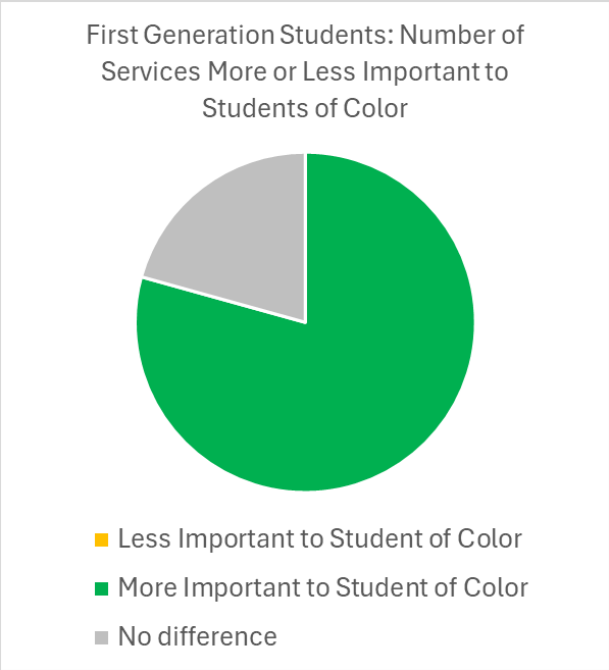
Another potentially confounding factor might be the career stage of the students, i.e., class year. Comparing first-year and sophomore students to junior and senior students finds no meaningful differences based on class year. The percentage of services more important to students of color is nearly identical (First-year and Sophomore = 84%, Junior and Senior = 83%). Similarly, the effect sizes are very close with the mean effect size for first-year and sophomore students equal to 0.21 versus junior and senior mean effect sizes equal to 0.22.

Thus far, none of the potentially confounding factors can explain away or even mitigate the initial findings. The overwhelming majority of technology and library services are more important to students of color than their white peers. Despite the modest Cohen's D effect sizes, this phenomenon is remarkably robust. It persists over time, across institution type, and across student class years.

First-Generation Student Effects

In 2022, the MISO Survey introduced a new demographic question asking students if they are a first-generation college student. Of the 25.413 total responses to the question, 6.421 (25.3%) identified themselves as a first-generation college student. Slightly more than half (53.1%) of the first-generation college students identified themselves as a student of color.

Chart 7:



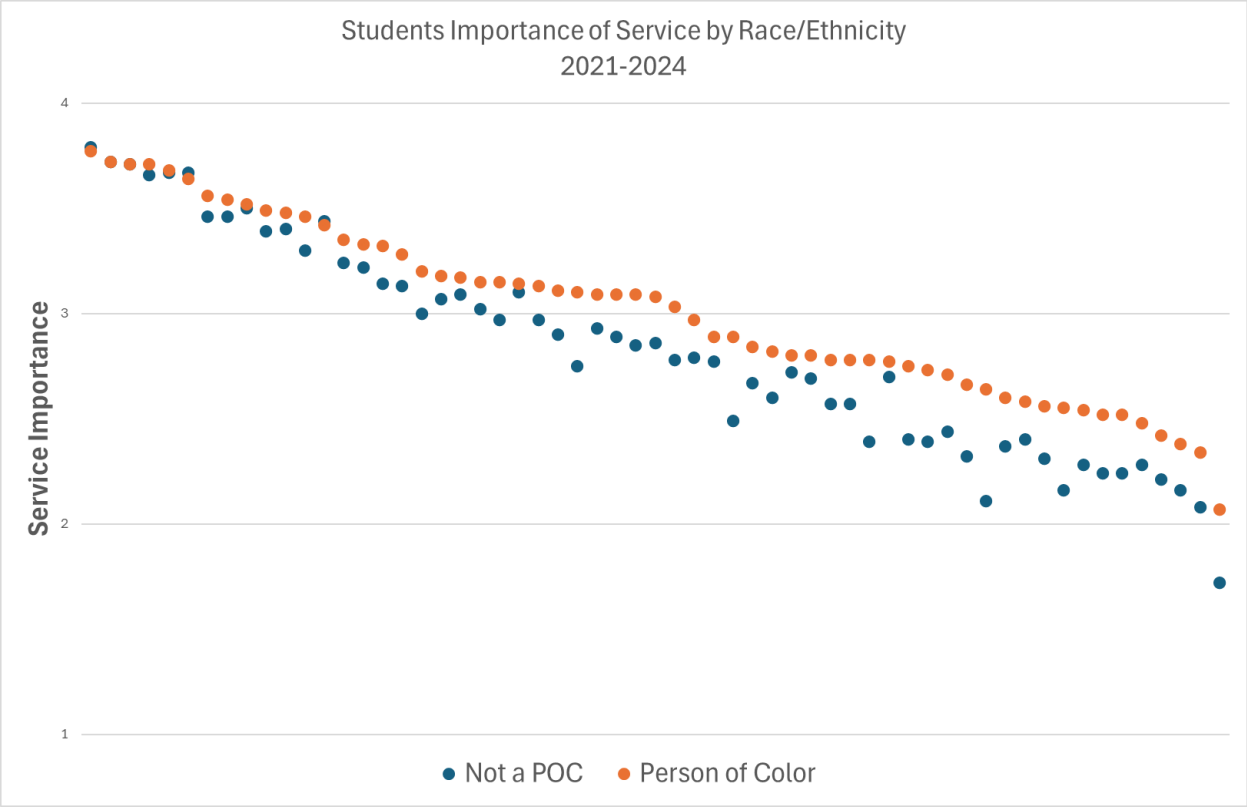
In examining the importance of technology and library services by racial/ethnic identity within first-generation students, students of color find these services to be more important to them than their white peers at nearly the same rate as among all students regardless of first-generation status.

Interestingly, the mean effect size is slightly larger within the first-generation with a mean effect size of 0.26. However, it remains relatively small and the difference is modest.

Effect Size Variations

Throughout this analysis we have treated Cohen's D effect sizes without regard for variation of the effect sizes across services. In this section we will explore the variations across services in a bit more detail.

Chart 8:

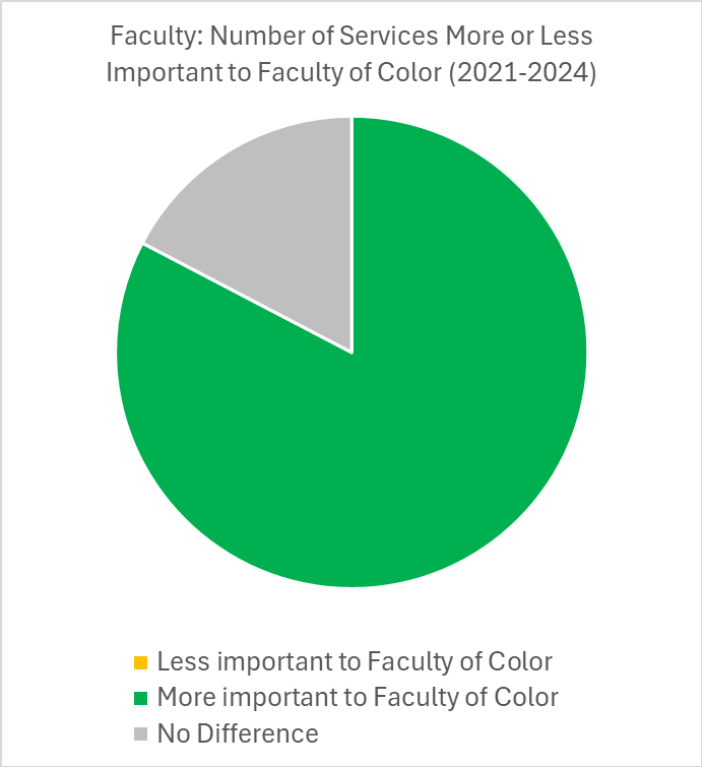


As can be seen in Chart 8, a strong relationship exists between the overall importance of a service, as measured by all student responses, and the size of the gap in perceptions of the service's importance based on racial/ethnic identity. This means the differences in service importance based on racial/ethnic identity are more pronounced for services viewed as being less important by the student population overall. The strength of this relationship is rather strong with a Pearson's r = -.645.

Research question 2: Do faculty of color find library and technology services to be more or less important to them than their white peers?

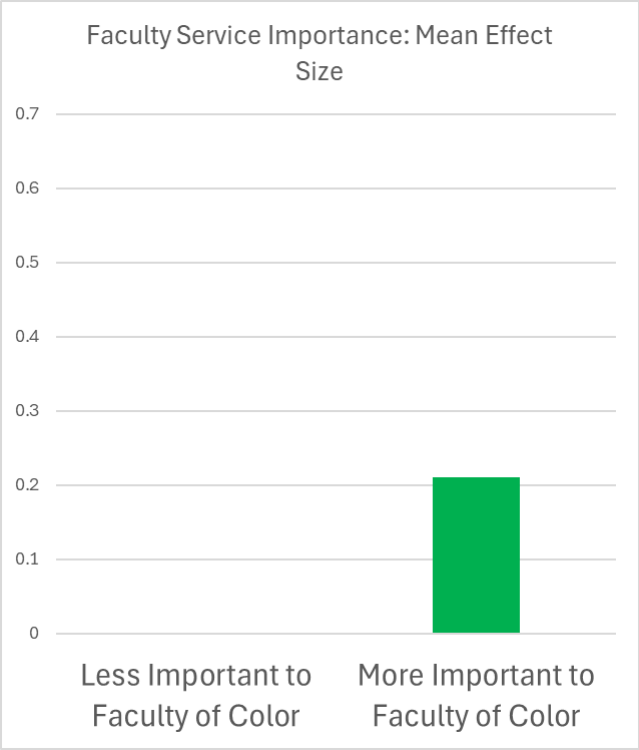
The student analysis of technology and library service importance by racial/ethnic identity found a persistent and robust pattern where the overwhelming majority of these services are more important to students of color than to their white peers. We now explore whether similar or different patterns exist within the faculty population.

Chart 9:



Of the 75 technology and library services tested among the faculty population, 62 services (83%) were found to be more important to faculty of color than they are to their white colleagues. The remaining 13 services (17%) were of equal importance to faculty of color and their white peers. None of the 75 services were less important to students of color. The distribution and pattern are nearly identical to that found among the student population, where 89% of the services were more important to students of color and no services were less important.

Chart 10:



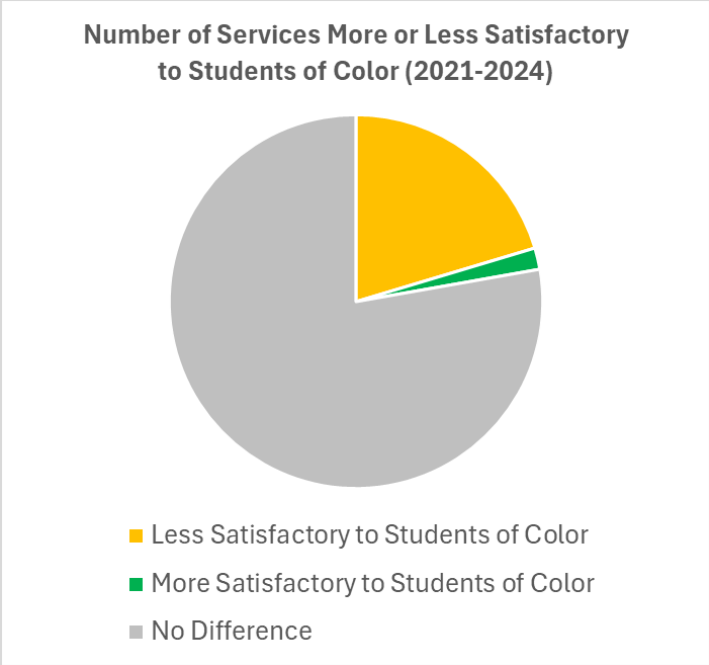
The mean Cohen's D effect size for the faculty is 0.21. It is nearly identical to the student's mean effect size. The racial/ethnic differences on the importance of technology and library services appear to be nearly identical for students and faculty.

Examining the faculty differences across a range of potentially confounding factors

- Over time: Comparing the faculty results from 2017-20 to 2021-24, both the percentage of services (83%) and the mean effect sizes (.21) are identical.
- Institution type: The results are similar with 63% of services being more important to faculty of color in liberal arts colleges compared to 79% in other institution types. No services were less important for faculty of color for either institution classification. Despite the minor differences in the percentage of services, the mean effect sizes are identical and the overall pattern holds.
- Age: Some minor differences based on age emerge. A slightly larger percentage of services are "more important" among faculty 50 and older compared to those under age 50 (72% vs. 60%). The effect sizes again remain very similar for both groups (0.25 vs. 0.23). While there are some minor differences based on age the overall pattern is very strongly present in both age groups.
- Gender: Like age, there are some minor differences in the pattern based on gender. Individuals identifying as "Female" have fewer services where the racial/ethnic differences in service importance is found to be statistically significant when compared to those identifying as
  "Male" (59% vs. 84%), however, like age, this overall pattern remains strongly in place. Like elsewhere, the effect sizes are similar in both groups (0.21 vs. 0.27).

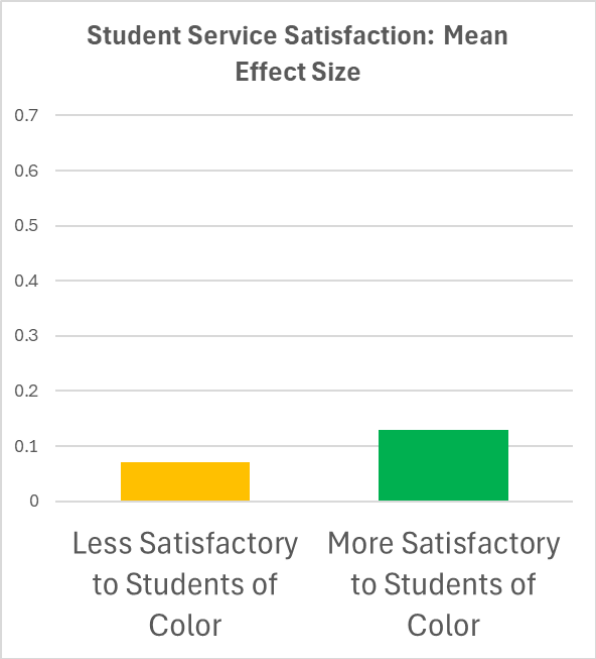
Research question 3: Are students of color more or less satisfied with library and technology services than their white peers?

Chart 11:



Of the 54 services tested, 42 (78%) showed no statistically significant differences in service satisfaction when comparing students of color to their white peers (Chart 1). Where statistically significant differences were found, the differences were largely in the direction of students of color being less satisfied with the services (20% of services less satisfactory vs. 2% of services more satisfactory).

Chart 12:



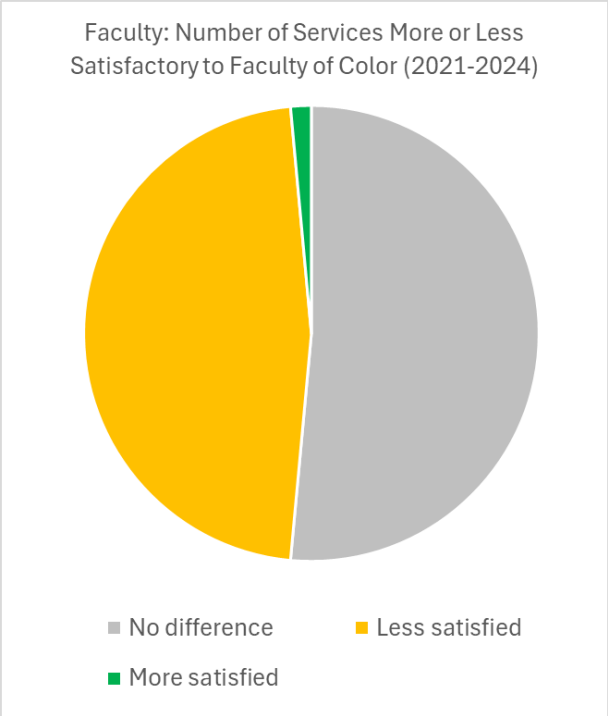
The mean effect sizes for services that are both more satisfactory and less satisfactory are very small. These effect sizes in combination with the relatively small number of services having statistically significant differences indicates there are very little or no meaningful differences in library and technology service satisfaction among students based on racial and ethnic identity.

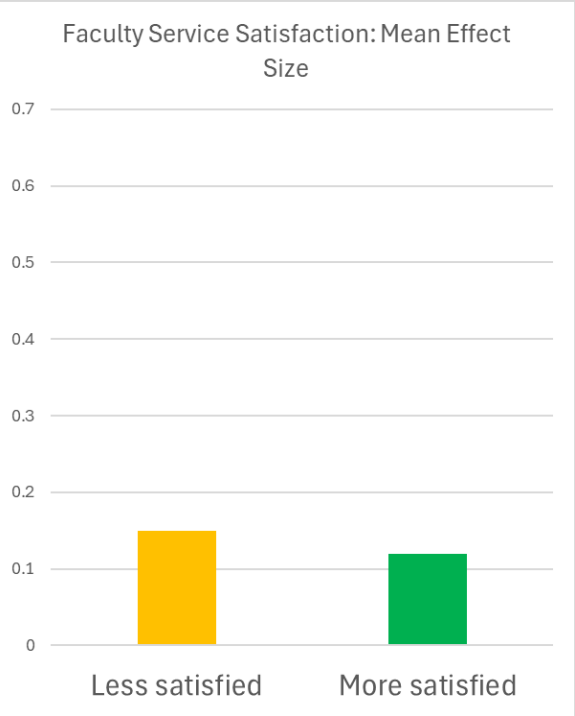
Research question 4: Do faculty of color find library and technology services to be more or less satisfactory to them than their white peers?

We now explore whether similar or different patterns exist related to service satisfaction within the faculty population.

Unlike the student analysis of technology and library service satisfaction by racial/ethnic identity, there is a difference in the faculty data.

Charts 13:

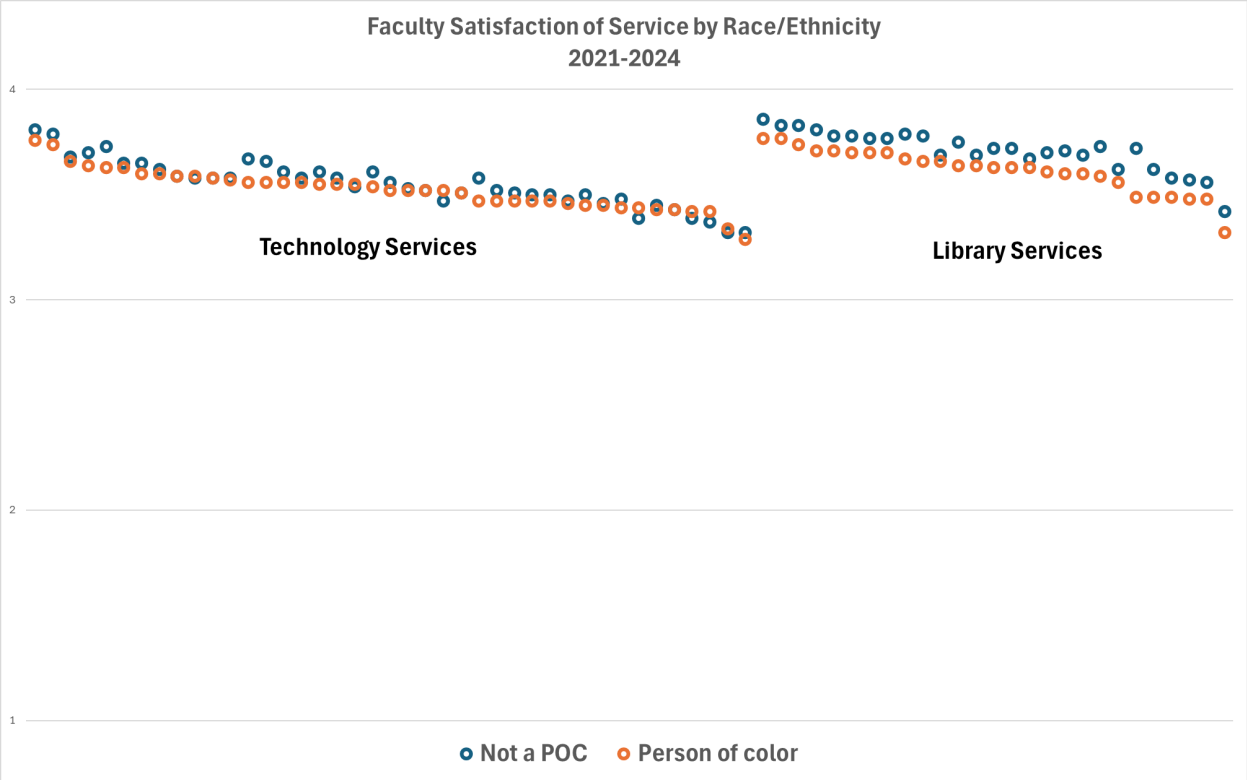




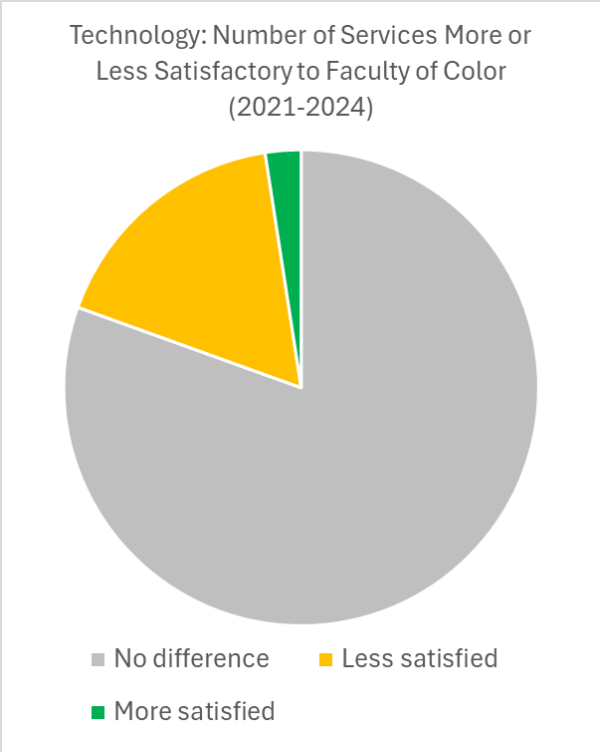
For almost half of the services, faculty of color are less satisfied. This is quite different from what we were seeing with the student data. Even though the effect sizes are small, and they are quite small, they're also bigger than what we were seeing with the student data. When looking at “Less Satisfied”, the mean effect size for faculty was more than double that of students (0.16 vs. 0.07).

Library vs. Technology Services

Chart 14:



Charts 15:



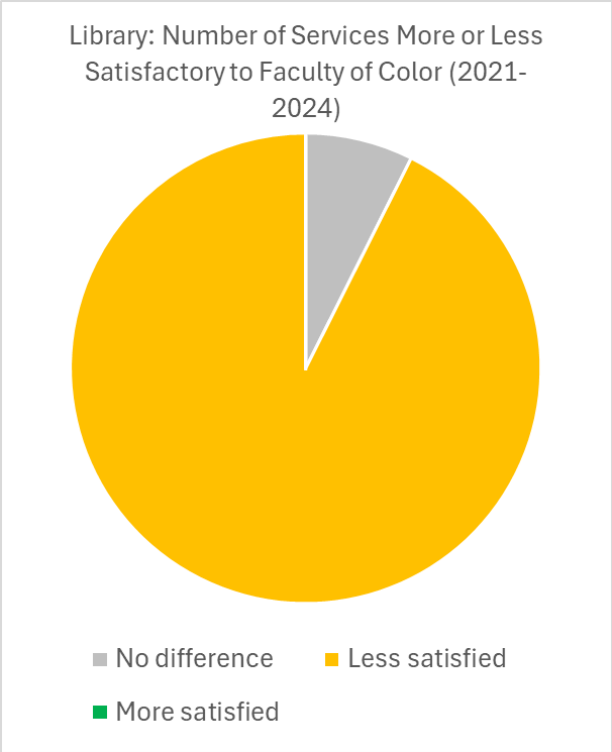


Chart 15 compares the differences in faculty service satisfaction along racial and ethnic lines for technology and library services. There are no meaningful differences with technology service satisfaction based on racial and ethnic identity. However, the overwhelming majority of library services are less satisfactory to faculty of color than they are their white colleagues. 93% of library services are less satisfactory to faculty of color than their white peers compared to only 17% of technology services. Amplifying this more, the effect size of these differences is larger for the library services than the technology services (0.17 vs. 0.12).

While overall library services are less satisfactory, it is important to note that the data doesn't show that faculty of color are dissatisfied with the library services. Library services in general have very high satisfaction numbers, and overall, faculty of color are very satisfied with our library services. But crucially, they're not as satisfied as their white peers. It would be difficult to argue that the across the board lower satisfaction with library services among faculty of color is the result of a more general pattern across all institutional services because the pattern is not present for technology services. Similar to what was found elsewhere in this analysis, the pattern persists over time, across institution types, across age groups, and across genders.

Conclusion

This study contributes to the ongoing effort to better understand the needs of diverse academic communities. Among the key findings of this study, students and faculty of color consistently rate library and IT services as more important than students who identify as only white. While there are no meaningful differences in student service satisfaction based on racial and ethnic identity, faculty of color report less satisfaction with *library* services than their non-POC colleagues. These findings are robust across a wide variety of potentially confounding factors.

Members of the MISO Survey leadership team have been working with this data for several years and continue to find the underlying reasons for these findings elusive. While presentations at the Association for Institutional Research (AIR) in 2022,[v] the Association of College and Research Libraries (ACRL) in 2023,[vi] and this paper presented at the Library Assessment Conference (LAC) in 2024 generated robust discussions, they did not yield definitive answers.

Continued monitoring and exploration of these trends are essential. As this paper is finalized in early 2025, the landscape of diversity, equity, and inclusion (DEI) research is rapidly evolving. Some of the webpages cited in this paper no longer exist. The potential impact of policy changes on observed patterns remains unknown, further emphasizing the need for ongoing investigation.

Future research should explore the reasons behind these findings, particularly the greater importance placed on technology and library services by faculty and students of color, and why faculty of color are less satisfied with library services. As we develop potential explanations for the observed phenomenon, it is critical to test the hypotheses with empirical data like that found in the MISO Survey.

This understanding will inform better service provision and promote equity and inclusion within academic communities.

Endnotes

[i] Kang, Q., Lu, J., Wang, P., & Wang, H. (2024). A systematic review of IDEAs in librarianship: Working together move toward greater ideas. Journal of Librarianship and Information Science. https://doi.org/10.1177/09610006241230104

[ii] EDUCAUSE. "Diversity, Equity and Inclusion" October 24, 2024. https://library.educause.edu/topics/leadership-and-management/diversity-equity-and-inclusion-dei URL no longer available as of February 2025.

[iii] Vinopal, Jennifer. 2016. "The Quest for Diversity in Library Staffing: From Awareness to Action." In the Library with the Lead Pipe, January. http://www.inthelibrarywiththeleadpipe.org/2016/quest-for-diversity/

[iv] MISO Survey Website. "Home." October 24, 2024. https://www.misosurvey.org/

[v] Consiglio, David; Furlong, Katherine; and Milberg, Craig I. "Looking at Academic Library & IT Services through a DEI Lens: Results from 96 Institutions." (2022). AIR Forum, Phoenix AZ, June 8, 2022.

[vi] Furlong, Katherine; Milberg, Craig I; and Consiglio, David, "Looking at Library and IT Services Through a DEI Lens" (2023). *ACRL 2023, "Forging the Future" Pittsburgh, PA, March 16, 2023.* https://digitalcommons.bucknell.edu/lit_pubs/12