

INSTITUTIONS' USE OF DATA AND ANALYTICS FOR STUDENT SUCCESS

Results from a National Landscape Analysis

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Executive Summary

As higher education institutions in the United States strive to maximize their use of resources to better support students, it is now even more critical for professionals to make data-informed decisions.

Currently, most institutions are gathering an abundance of data from multiple sources, which provides a good opportunity for functional units, divisions, and departments to share timely and relevant data and to collaboratively deliver programs and services. Three of many integral units involved in data-informed strategies are institutional research (IR), student affairs, and information technology (IT). Thus, three higher education membership associations—the Association for Institutional Research (AIR), NASPA–Student Affairs Administrators in Higher Education, and EDUCAUSE—partnered to conduct a survey that examined the current landscape of higher education’s use of data and analytics for student success.

This report describes a variety of challenges and opportunities regarding institutions’ readiness to expand data use across functions. The results include distinctions by size and sector of institution as well as by professional role. Among the many findings that highlight how IT, IR, and student affairs divisions are engaged in collaborative data-oriented work, three are especially relevant to this discussion:

1. Although primary data-oriented roles and responsibilities for IR, IT, and student affairs are somewhat siloed, these units are contributing to institutionwide goals of improving student success.
2. Most institutions are investing in data and analytics projects, but few are measuring the resulting costs.
3. For most institutions, first-year students are the main focus of multiple student success studies.

Finding 1: Although primary data-oriented roles and responsibilities for IR, IT, and student affairs are somewhat siloed, these units are contributing to institutionwide goals of improving student success.

Institutional researchers and IT professionals are primarily responsible for developing models, collecting and managing data, and interpreting and analyzing data. Student affairs professionals are mainly responsible for developing and conducting interventions and for managing early-alert systems, which help institutions identify students who may benefit from proactive interventions. Prior research suggests that although institutional researchers, student affairs professionals, and IT professionals could do more to integrate the data that they routinely collect and use, each group has a purpose for data use that connects to an institutional mission and to larger strategies for helping students succeed.

As shown in Figure 1, most (96%) institutions cited that improving student outcomes was a goal for their student success studies, followed by 71% that reported a goal of more efficient delivery of programs or services. Thirty-nine percent reported a third goal of eliminating or reducing programs.

NASPA recently interviewed senior-level student affairs professionals, including vice presidents of student affairs, and found that one leading factor that influenced their use of data was an institutional commitment to increasing undergraduate retention and improving enrollment management (Burke, Parnell, Wesaw, & Kruger, 2017). AIR has also found, through several prior studies of members, that IR professionals routinely use data for compliance reporting and to provide information to institutional senior leaders and stakeholders for decision making (Swing, Jones, & Ross, 2016). EDUCAUSE has found that the primary motivation for investing in analytics for student success is the improvement of retention, followed closely by improving students' course-level performance and demonstrating higher education's effectiveness (Yanosky & Arroyo, 2015). Each of these previously identified reasons is consonant with the findings of this report.

Finding 2: Most institutions are investing in data and analytics projects, but few are measuring the resulting costs.

Nearly all respondents (95%) said that student success studies are conducted at their institution, which suggests that now is a time of great promise for

**“Now is a time
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for data-informed
decision making.”**

Figure 1. Institutions' Goals for Conducting Student Success Studies (N = 389)

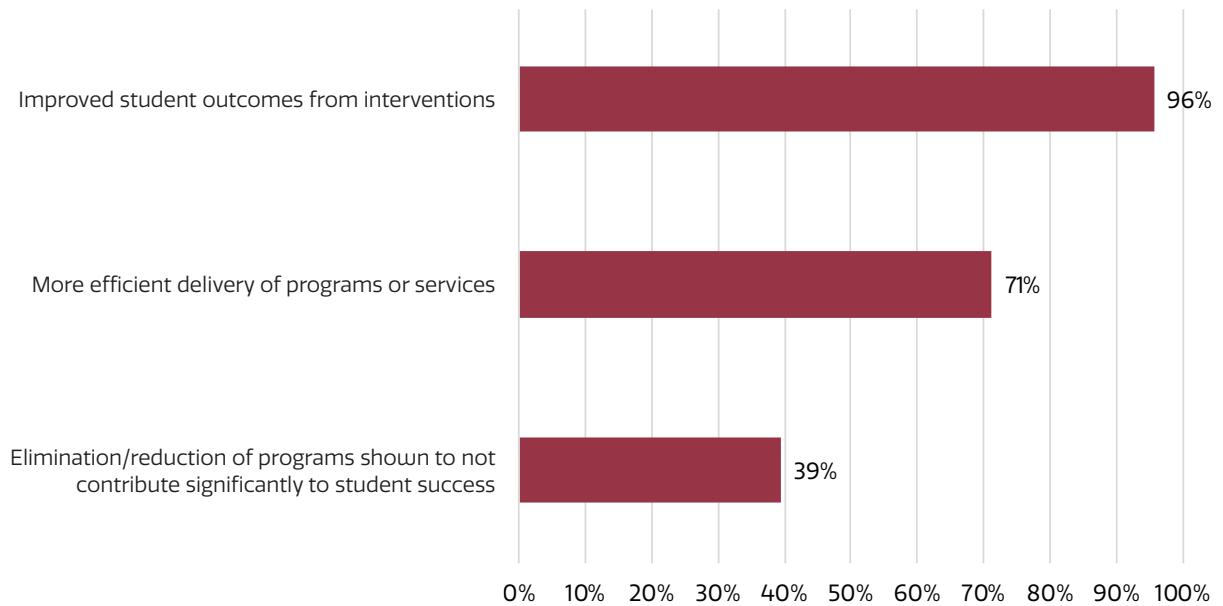
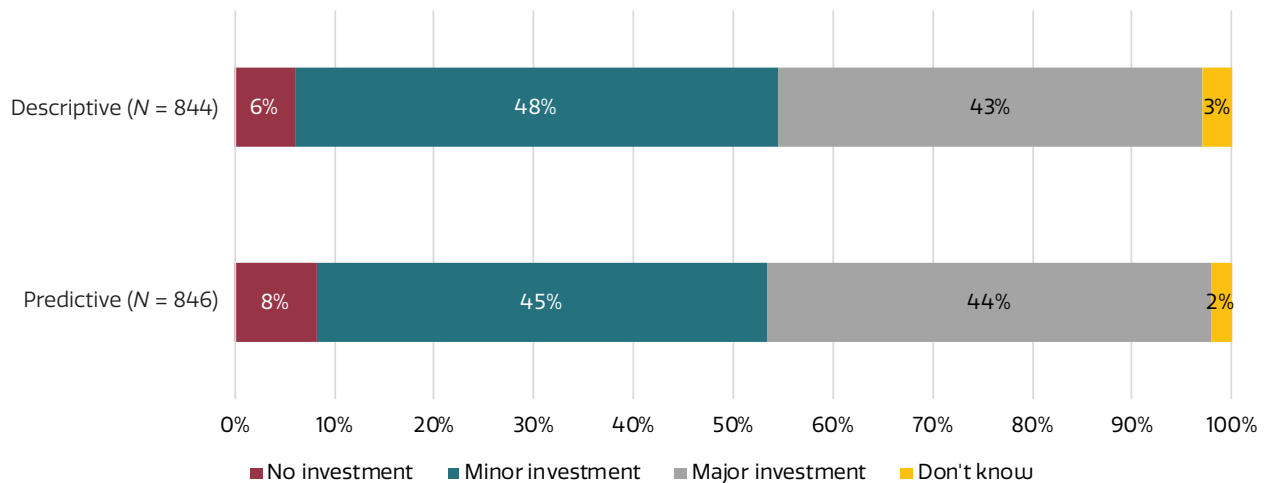


Figure 2. Institutions' Investment in Data and Analytics



data-informed decision making. Figure 2 shows that 91% of institutions are making some investment in descriptive studies, including those that describe the student environment and identify high-risk courses, for example. Eighty-nine percent of institutions are making some investment in predictive studies, including those that examine the factors that influence retention, persistence, and grade point average (GPA), for example. At least 80% of both public and

Table 1. Institutions' Investment in Data and Analytics, by Institution Size

	DESCRIPTIVE					PREDICTIVE				
	Under 1,000 (N = 99)	1,000–4,999 (N = 336)	5,000–9,999 (N = 157)	10,000–19,999 (N = 127)	20,000 and over (N = 121)	Under 1,000 (N = 99)	1,000–4,999 (N = 338)	5,000–9,999 (N = 158)	10,000–19,999 (N = 127)	20,000 and over (N = 120)
No investment	12%	7%	6%	3%	2%	12%	10%	8%	7%	2%
Minor investment	51%	57%	45%	47%	29%	48%	50%	50%	43%	25%
Major investment	34%	32%	48%	48%	65%	36%	36%	41%	49%	73%
Don't know	3%	4%	1%	2%	3%	3%	4%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note. Percentages may not total to 100% due to rounding.

private institutions, as well as two- and four-year institutions, are investing in student success studies. A noticeably higher percentage of institutions that serve 20,000 or more students are making major investments in both descriptive and predictive studies as compared with institutions that serve fewer students, as shown in Table 1.

Ninety percent of institutions reported using a homegrown, customer relationship management (CRM), or vendor model for their descriptive or predictive data analyses. Figure 3 shows that among these types of models, more institutions are using homegrown models as the primary option for both descriptive and predictive work. Over 70% of both public and private institutions and two- and four-year institutions are using a homegrown model for descriptive analyses. For predictive analyses, 68% of private four-year institutions are using a homegrown model, compared with 59% of public four-year and 57% of public two-year institutions. One third of public four-year institutions use a vendor model for predictive analyses, which is higher than private four-year (15%) and public two-year (19%) institutions.

As shown in Table 2, several respondents reported that their institution never or rarely measures the cost of analytics work. Over half of respondents said that within the past two years, their institution did not regularly measure the cost for descriptive and predictive analyses; 49% said cost was never or rarely measured for early-alert projects. Leading reasons for not monitoring costs were that the institution did not have adequate staff capacity to conduct such analyses

Figure 3. Institutions' Use of Homegrown, Vendor, or CRM Models as a Primary Option

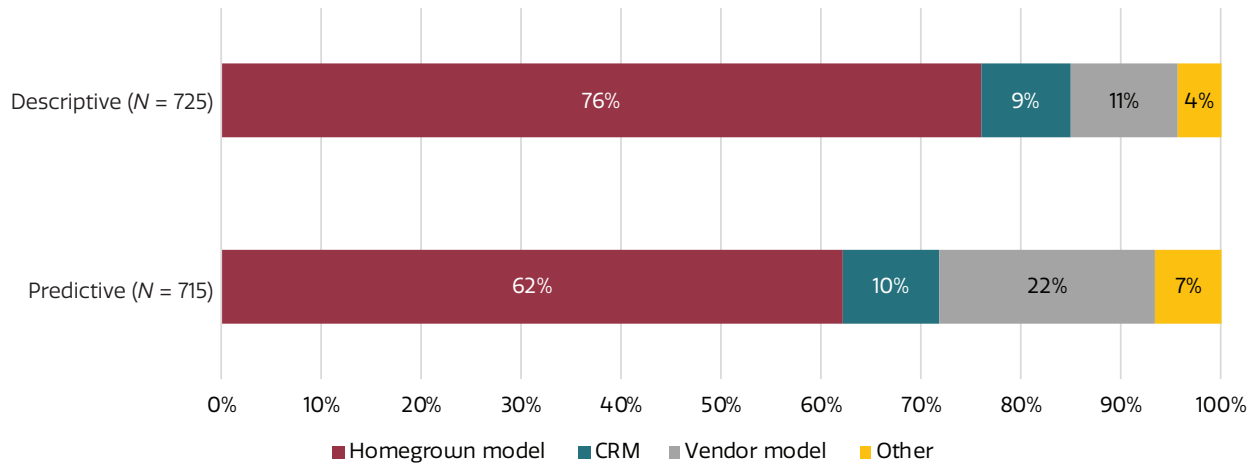


Table 2. Percentage of Institutions That Measure Costs and Outcomes of Student Success Studies

	COSTS			OUTCOMES		
	Descriptive (N = 272)	Predictive (N = 265)	Early-alert (N = 226)	Descriptive (N = 265)	Predictive (N = 254)	Early-alert (N = 223)
Never/rarely	60%	58%	49%	28%	33%	26%
Somewhat	31%	29%	39%	47%	43%	47%
To a great extent	10%	12%	12%	23%	24%	27%
Total	100%	100%	100%	100%	100%	100%

Note. Percentages may not total to 100% due to rounding.

(over 50%), the data infrastructure is not fully developed (nearly 30%), and that it is unclear which data are necessary to conduct the analysis (over 20%).

Although institutions could do more to measure the cost of their data analytics work, they do appear to be assessing their outcomes to a greater degree. At least 70% of respondents said that in the past two years, their institution measured the outcomes of descriptive analyses and early-alert systems. IR professionals are most likely to measure outcomes of descriptive

and predictive analyses, and student affairs professionals are most often responsible for monitoring the outcomes of early-alert systems.

Finding 3: For most institutions, first-year students are the leading focus of multiple student success studies.

As shown in Table 3, for first-year students, pipeline studies (e.g., admissions yield, enrollment trends, recruitment) were conducted by 85% of participating institutions, followed closely by studies of academic progress and success (e.g., undergraduate student progress, factors that influence GPA) at 82%. Institutions also focused more on transfer students, first-generation students, and students from underrepresented populations. Over 50% of institutions conducted studies related to the academic progress and success for these three populations.

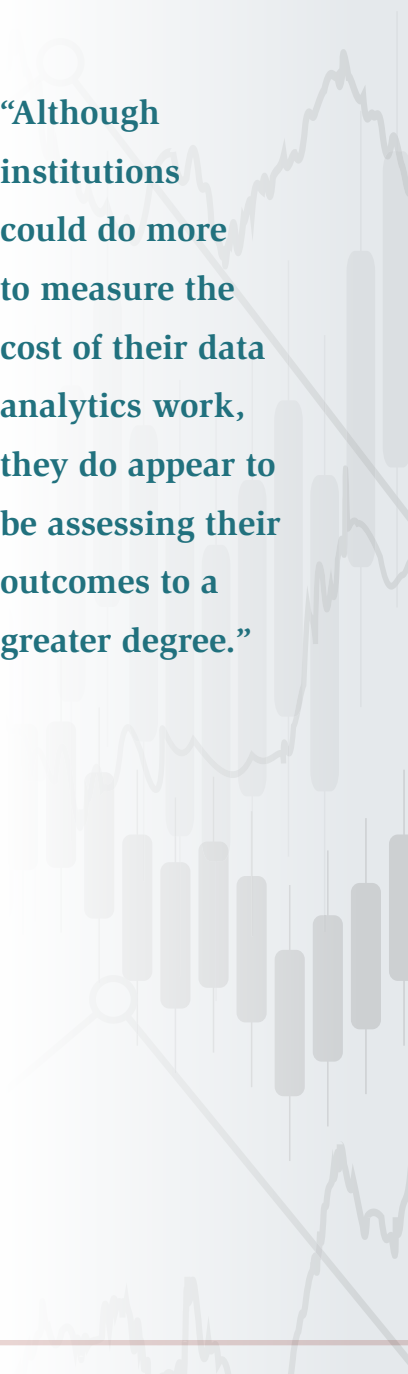
This report will build on these findings with a discussion of major themes from the national survey, which explored four core areas:

Table 3. Focus of Studies in Support of Student Success (N varies)

	First-year students	Sophomores	Transfer-in students	Student athletes	Students of color	LGBTQIA students	Nontraditional students	First-generation students
Student pipeline	85%	28%	58%	27%	48%	5%	33%	44%
Academic progress and success	82%	53%	56%	39%	58%	9%	39%	54%
Efficiency of degree completion	68%	45%	38%	19%	35%	7%	27%	32%
Career pathways and postgraduation outcomes	56%	32%	45%	21%	41%	7%	30%	39%
Student ability to afford higher education	48%	29%	30%	12%	23%	5%	22%	28%

1. **Types of student success data projects:** findings will address the types of data that institutions are collecting, the types of analyses that are conducted, and the priority student populations for data projects.
2. **Structures in place:** discussions will focus on which professionals have access to certain types of data, how data are protected, and the management of personnel and financial resources for data projects.
3. **Level of coordination:** results will describe the intersections of roles and responsibilities across units, such as levels of data sharing and training.
4. **Programs, interventions, and outcomes:** findings will address how institutions are using the results of the analyses to help students who are identified as needing more targeted resources, and how institutions are determining whether their data work has been effective.

The landscape of institutions' use of data and analytics for student success is nuanced in that challenges and opportunities vary by institution size and sector. This report will address these distinctions to provide context for how IR, student affairs, and IT professionals work together to execute a cross-functional, institutionwide data strategy. The report concludes with a discussion of how institutions can improve their capacity to integrate data from IR, IT, and student affairs functions and maximize their use of student success studies.



“Although institutions could do more to measure the cost of their data analytics work, they do appear to be assessing their outcomes to a greater degree.”

Discussion of Findings

Part I: Types of Student Success Data Projects

Key Findings

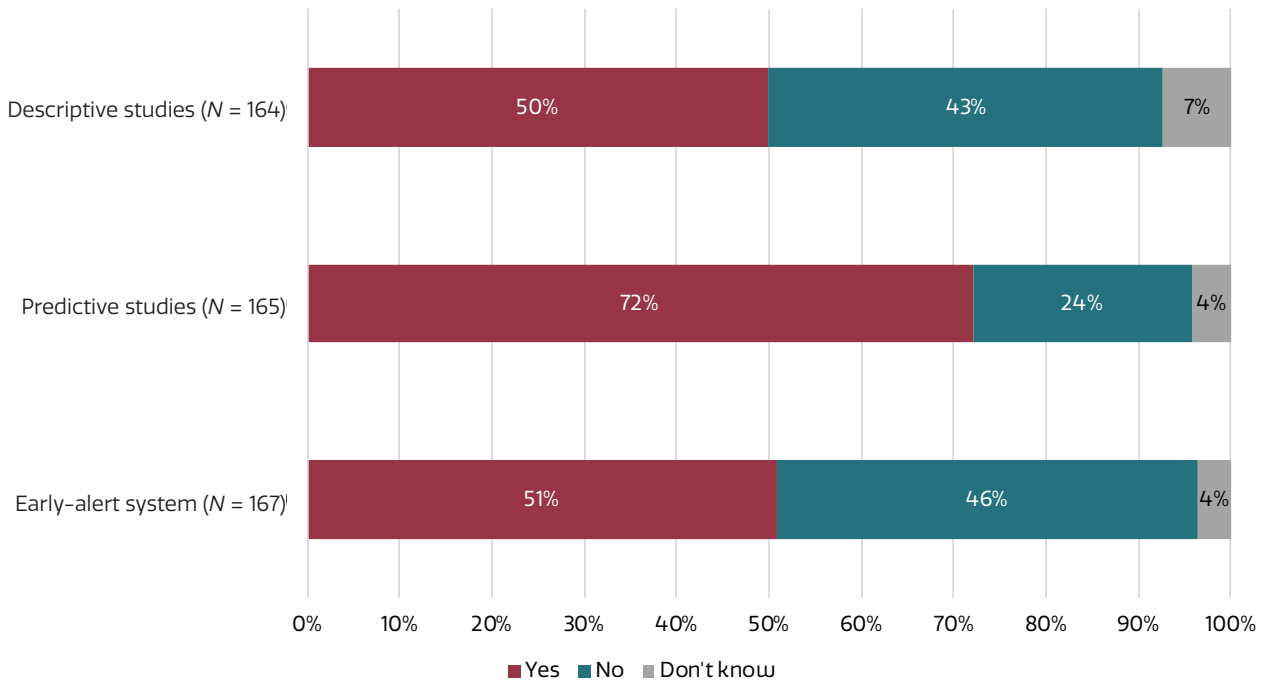
- Institutions are conducting several types of student success studies annually.
- Studies of students' academic progress and success are the leading types of data projects.
- First-year students, transfer students, and first-generation students are the leading groups of focus for data studies.

Institutions are collecting large amounts of data from multiple sources, which provides opportunities for rich analyses to support students from all backgrounds. The survey addressed the specific types of data that institutions are gathering and how their analyses are used to help students succeed. Table 4 shows that, on an annual basis, more than half of institutions conduct studies related to recruiting, admissions, and enrollment—also referred to as the student pipeline—as well as students' career pathways or postgraduation outcomes. Another third or more of institutions report conducting annual studies of graduate student progress, faculty workload and performance, and the academic progress and success of undergraduate students. The efficiency of degree completion appears to be an emerging type of student success study, as 32% of respondents said their institution plans to research the topic in the next year and 42% reported conducting research, albeit with some degree of irregularity. Institutions report devoting

Table 4. Types of Studies in Support of Student Success (N varies)

	Institution is not conducting these studies	Institution is planning to conduct these studies within the next year	Institution is conducting these studies but not annually	Institution conducts these studies annually
Career pathways and postgraduation outcomes	8%	11%	18%	63%
Student pipeline	2%	11%	32%	54%
Graduate student progress	35%	6%	17%	42%
Faculty workload and performance	21%	10%	28%	40%
Academic progress and success	6%	20%	41%	33%
Student ability to afford higher education	46%	22%	21%	11%
Efficiency of degree completion	16%	32%	42%	10%

Figure 4. Institutions' Use of a Vendor for Student Success Studies



considerably less regular attention to issues related to students' ability to afford higher education or to complete their degrees efficiently.

For most institutions, first-year students appear to be the leading focus of multiple student success studies (see Table 3). As mentioned in the executive summary, for first-year students, pipeline studies (e.g., admissions yield, enrollment trends, recruitment) were conducted by over 85% of participating institutions, followed closely by studies of academic progress and success (e.g., undergraduate student progress, factors that influence GPA) at 82%. More than half of institutions conducted studies related to academic progress and success for transfer students, first-generation students, and students from underrepresented populations. Several institutions are conducting studies with the help of vendors, especially for predictive analytics, as reported by 72% of respondents (see Figure 4).

“For most institutions, first-year students appear to be the leading focus of multiple student success studies.”

Part II: Structures in Place

Key Findings

- Institutions of all sizes could increase their focus on training in their institutionwide data strategy.
- Nearly one fourth of institutions are not collecting usable business and systems-level data.
- Few institutions are systematically collecting, integrating, **and** using their data.

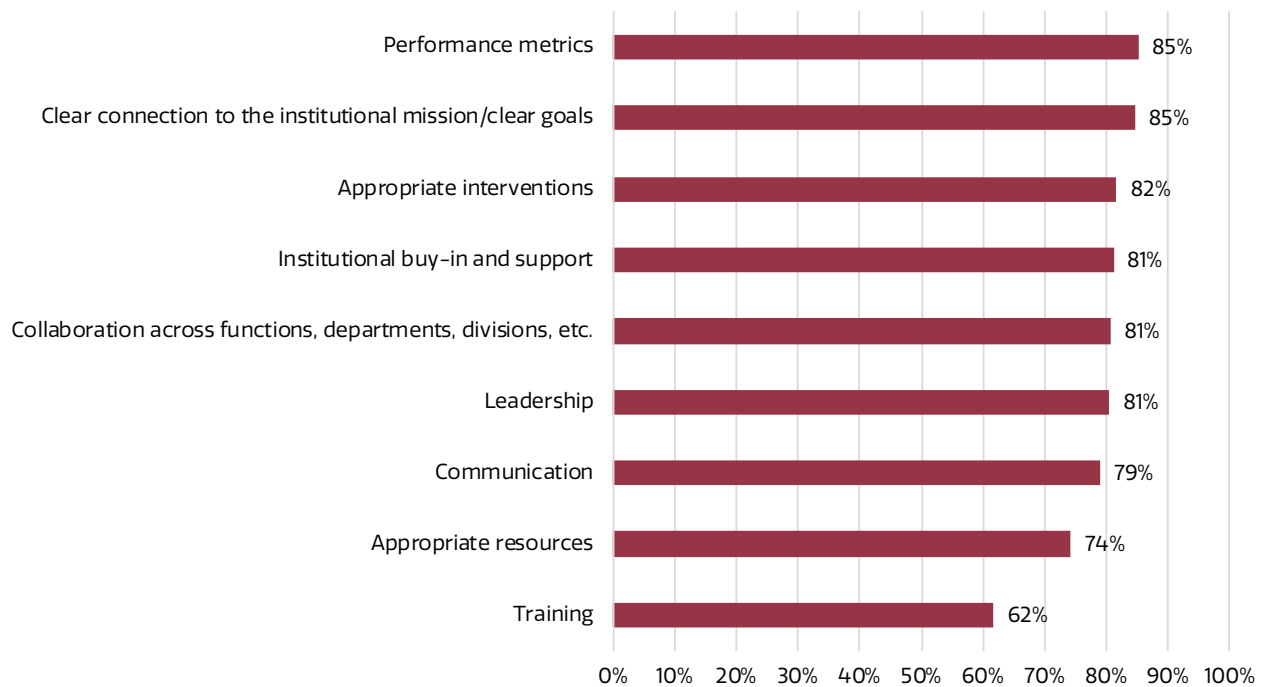
As functional units and departments conduct various analyses to support student success, it is important for professionals across the institution to be informed of the results and have access to relevant data. The extent to which units systematically collect, integrate, and use their data varies. As shown in Table 5, student information system data (e.g., admissions, financial aid, academic course data) are the only student data systematically collected, integrated, and used to any meaningful extent. About 1 in 10 institutions collect, integrate, and use student data from institutional business sources (e.g., housing, advancement, national surveys); fewer than that do so with data collected from student systems (e.g., CRM system, learning management system) or other sources.

Most respondents (85%) reported that their institution's data-informed

Table 5. Collection, Integration, and Use of Data in Student Success Studies (N varies)

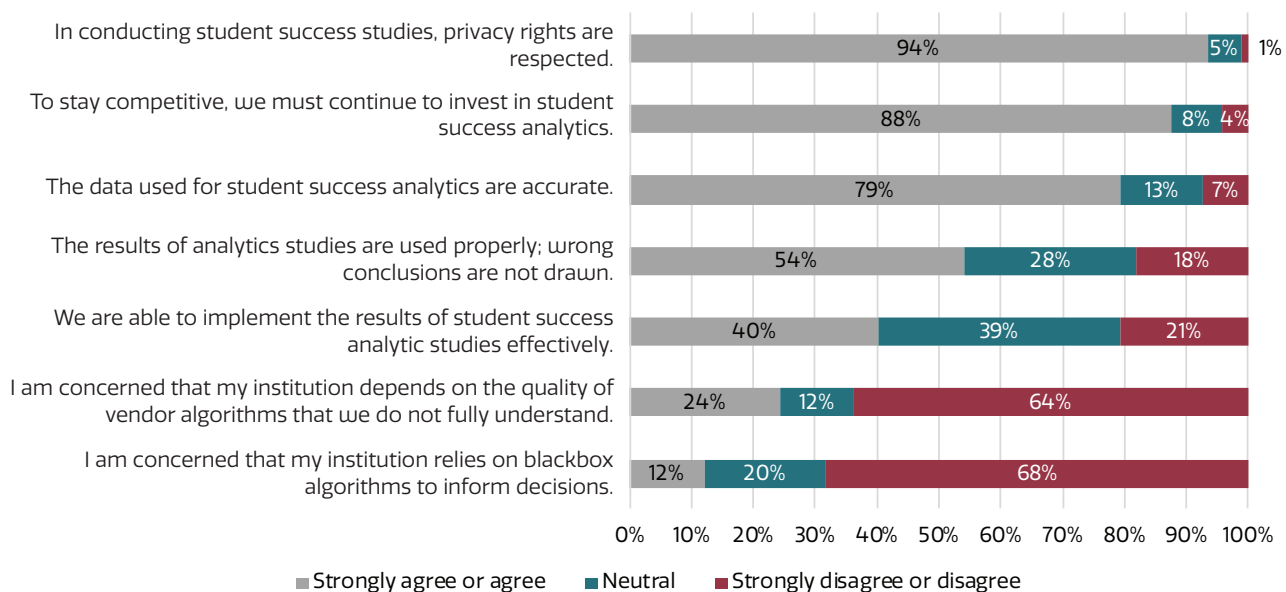
	Institution does not collect usable data	Data are collected but not integrated	Data are systematically collected and integrated	Data are systematically collected, integrated, and used
Student information system data	2%	25%	42%	31%
Institutional business	20%	48%	21%	11%
Systems-level data	28%	42%	22%	8%
Other student data	40%	39%	14%	7%

Figure 5. Components Included in Institutions' Data-Informed Strategy (N = 517–520)



strategy and mission are clearly connected and include performance metrics (Figure 5). Other highly reported aspects of institutionwide data strategy include institutional buy-in and support, interventions, and cross-functional collaboration, all of which were listed by more than 80% of respondents.

Figure 6. Agreement With Statements on Data and Analytics (N = 331–432)



These results could indicate that institutions are well-positioned to increase their use of data to make decisions. However, institutions must also address training needs, as the survey revealed training as the lowest component (62%). Training appears to be an issue for smaller institutions: 38% of institutions that serve fewer than 1,000 students and 27% of institutions serving 1,000 to 4,999 students claimed that their institutionwide data strategy never or rarely includes training, while only 18% of respondents from institutions serving 20,000 or more students said never or rarely. One third of public two-year institutions and private four-year institutions reported never or rarely including training—a higher amount than public four-year institutions (23%).

One primary training need relates to the accurate interpretation and effective implementation of results. As shown in Figure 6, only about half of respondents (54%) found that wrong conclusions were not drawn from the results of analytic studies at their institution; only 40% reported the ability to implement results effectively. However, respondents appear much less concerned about the appropriate handling of student data and the quality of the data collected, as more than 90% agreed that data privacy rights are respected and nearly 80% reported that the data used for analytics work is accurate.

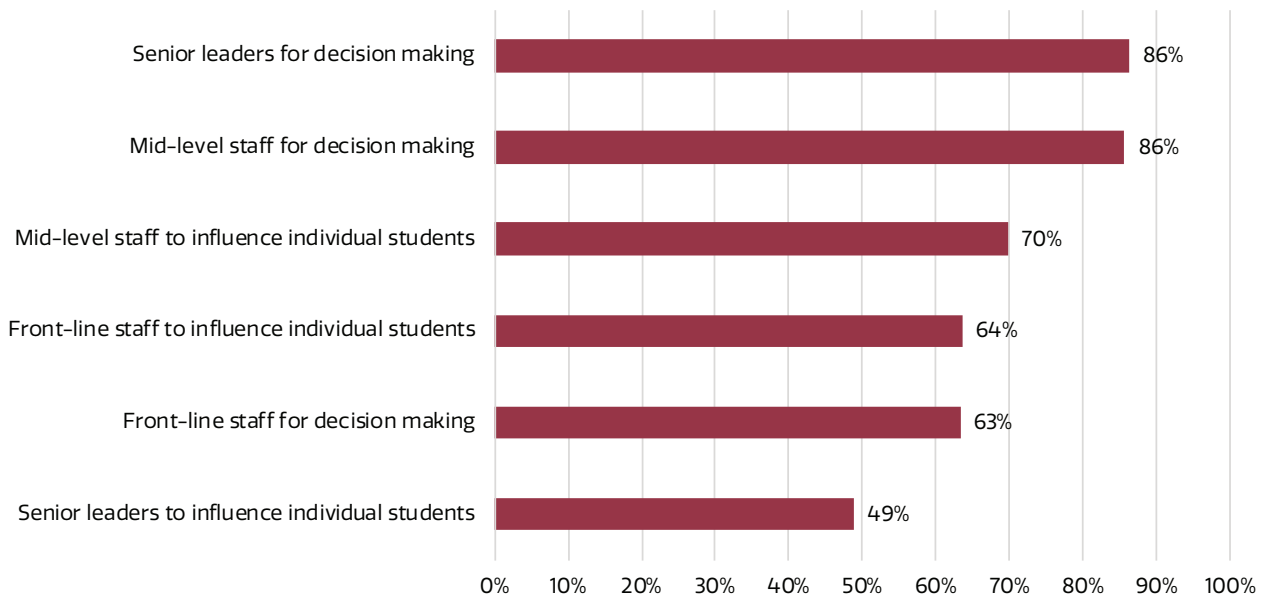
Part III: Level of Coordination

Key Findings

- ➔ Although IR and IT professionals are primarily responsible for developing the institutionwide data strategy, student affairs and academic affairs professionals have significant supporting roles.
- ➔ Institutions need more staff for roles that involve analytics reporting and management.
- ➔ Data are presently being used much more for mid- and senior-level decision making than for directly influencing students.

An effective institutionwide data strategy requires professionals at all levels to use information to support students. Figure 7 shows that 86% of senior leaders and mid-level staff are using data for decision making, followed by 63% of front-line staff. While nearly half of respondents said that senior leaders are using results of success studies to influence individual students (e.g., developing focused interventions to address challenges or increase effective practices), it appears that mid-level and front-line staff use results

Figure 7. Use of Student Success Study Results, by Professional Level (N = 506)





“Although IT, IR, and student affairs professionals share responsibilities for several data strategy components, many respondents said more staffing is needed.”

more for that purpose, as reported at 70% and 64%, respectively. At least 30% of respondents from all institution sizes said that senior leaders never or rarely use data to influence individual students.

Responses differed by position type as well, as 88% of IR respondents said senior leaders use data for decision making, compared with 83% of respondents from student affairs and 75% from IT. Student affairs professionals led in the use of data to influence individual students, with 83% for mid-level staff and 68% for front-line staff, compared with 64% and 62% for IR and 78% and 68% for IT professionals.

Figures 8 and 9 show how IT, IR, and student affairs professionals are involved in data-informed strategies. IT professionals and institutional researchers are more responsible for developing models, collecting and managing data, and interpreting and analyzing data, while student affairs professionals are responsible for developing and conducting interventions and managing early-alert systems, which help institutions identify students who may benefit from proactive interventions (see Figure 8).¹ Although such clearly defined leadership roles might appear to be siloed, Figure 9 displays several areas for which IT, IR, and student affairs professionals share responsibilities. For example, although IR is primarily responsible for developing the institutionwide data strategy, 59% of respondents said student affairs is also involved, and 55% said IT is involved. Another 65% of respondents said academic affairs is in a supporting role. Similarly, although institutional researchers are primarily responsible for disseminating results to multiple groups and interpreting results, nearly half of respondents said student affairs and academic affairs professionals have these responsibilities as well.

Although IT, IR, and student affairs professionals share responsibilities for several data strategy components, many respondents said more staffing is needed (Table 6). For example, only a third (32%) of institutions reported that they have sufficient staffing to carry out their student success studies. Three in 10 institutions report sufficient staffing for the management of analytics, and 2 in 10 have enough staff for analytics and reporting. The largest segment of respondents reported that while their institution has staff in place for these areas, more staff were needed to be optimal (48% for data functions, 42% for management of analytics, and 39% for analytics and reporting functions).

¹ One possible explanation for lower percentages for primary and shared responsibilities for IT professionals is a lower response rate from IT professionals for the survey. See Appendix A: Methodology.

Figure 8. Primary Responsibilities of IT, IR, and Student Affairs Professionals (N = 379–504)

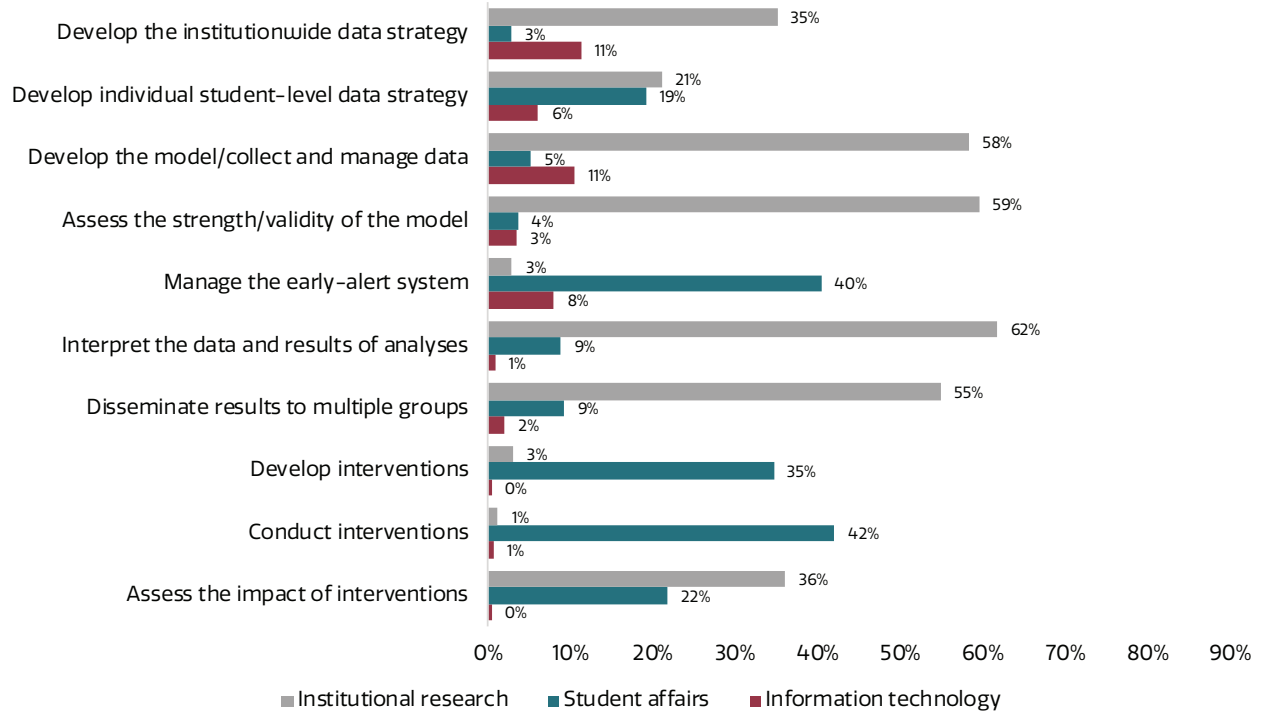


Figure 9. Shared Responsibilities of IT, IR, and Student Affairs Professionals (N = 314–426)

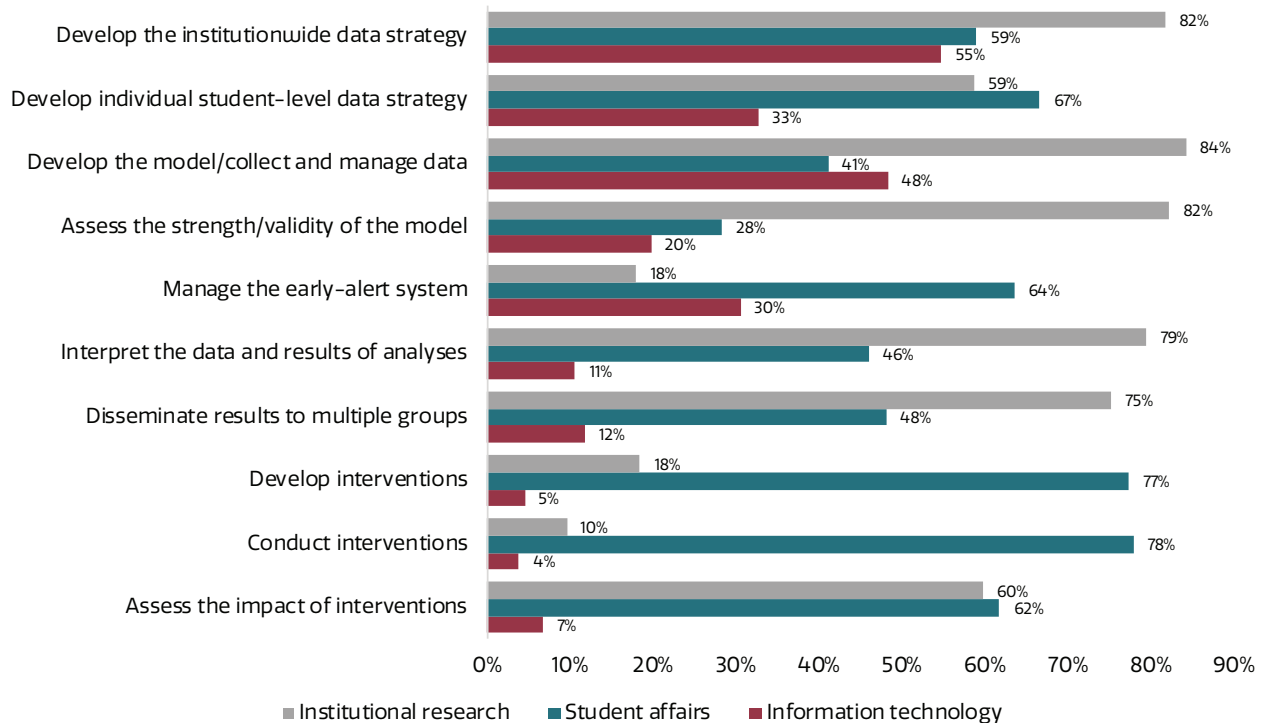


Table 6. Staffing Required for Student Success Studies (N varies)

	Not in place and not needed	Not in place but is needed	Already in place, more is needed	Already in place, no more needed
Data functions	0%	20%	48%	32%
Management of analytics	0%	29%	42%	28%
Analytics and reporting	8%	35%	39%	19%

Unfortunately, a sizable portion of institutions (35% for analytics reporting, 29% for management of analytics, and 20% for data functions) reported that there were no staff functions in place for this work but that those functions were needed.

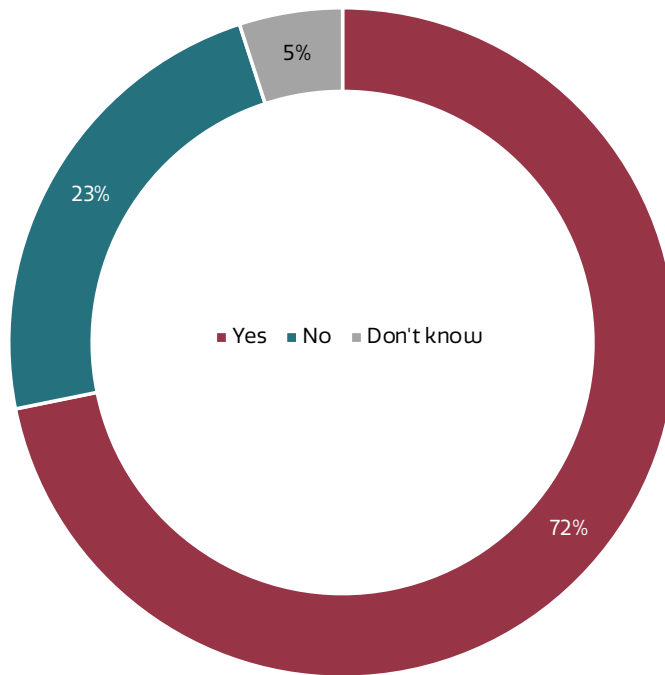
Part IV: Programs, Interventions, and Outcomes

Key Findings

- Early-alert systems are widely used by institutions of all types and sizes.
- The leading types of interventions in use are advising, tutoring, and counseling.
- Fewer institutions are measuring the cost of their student success studies as compared against the outcomes.

If conducted effectively, student success studies can help institutions identify not only students who are thriving academically, but also those who would benefit from additional programs, services, and other resources. Such interventions are critical to helping students remain enrolled and persist to graduation. Over 70% of respondents said that their institution is using an early-alert system, which helps institutions identify students who may need assistance (see Figure 10). Nearly 74% of institutions are using a “see something, say something” model, which allows anyone concerned about a student to alert the institution (e.g., an anonymous online form, a monitored

Figure 10. Use of Early-Alert Systems by Institutions (N = 660)



“Over 70% of respondents said that their institution is using an early-alert system.”

e-mail, or a phone number). Sixty-eight percent of institutions are using a data-informed model, which uses academic achievement and behavioral data to proactively identify students in need of additional support.

As shown in Table 7, smaller institutions appear to favor the “see something, say something” model, while larger institutions favor a data-informed model. Eighty-six percent of institutions that serve over 20,000 students use a data-informed model, compared with 64% of institutions that serve 1,000 to 4,999 students and 56% that serve fewer than 1,000 students. This breakdown could be related to varying institutional cultures and resource capacities, as smaller institutions may be better positioned to identify students who need more resources and larger institutions may have more personnel or financial resources to invest in a data-informed model.

For the institutions that are not using an early-alert model, 65% reported a lack of resources (e.g., financial, staff, software, IT support). Additional reasons include a lack of interest from senior leaders and in-progress implementation of a system. Interventions are most effective when used by professionals who regularly interact with students. Figure 11 shows that academic and faculty advisors are the leading staff members with access to early-alert system data. This trend was consistent for two- and four-year institutions and for institutions of any size.

Table 7. Use of Early-Alert Systems, by Institution Size

	Under 1,000 (N = 56)	1,000–4,999 (N = 179)	5,000–9,999 (N = 76)	10,000–19,999 (N = 59)	20,000 and over (N = 62)
A system that allows anyone concerned about a student to alert the institution (e.g., an anonymous online form, a monitored e-mail, or a phone number). This system does not use data to proactively identify at-risk students.	61%	86%	76%	71%	55%
A system that uses student data (e.g., student characteristics, academic achievement, behavioral data) to predict which students are at risk.	56%	64%	62%	77%	86%
I don't know.	8%	2%	5%	7%	2%

Figure 11. Staff With Access to Student-Level Data from Institutions' Early-Alert Systems (N = 327–341)

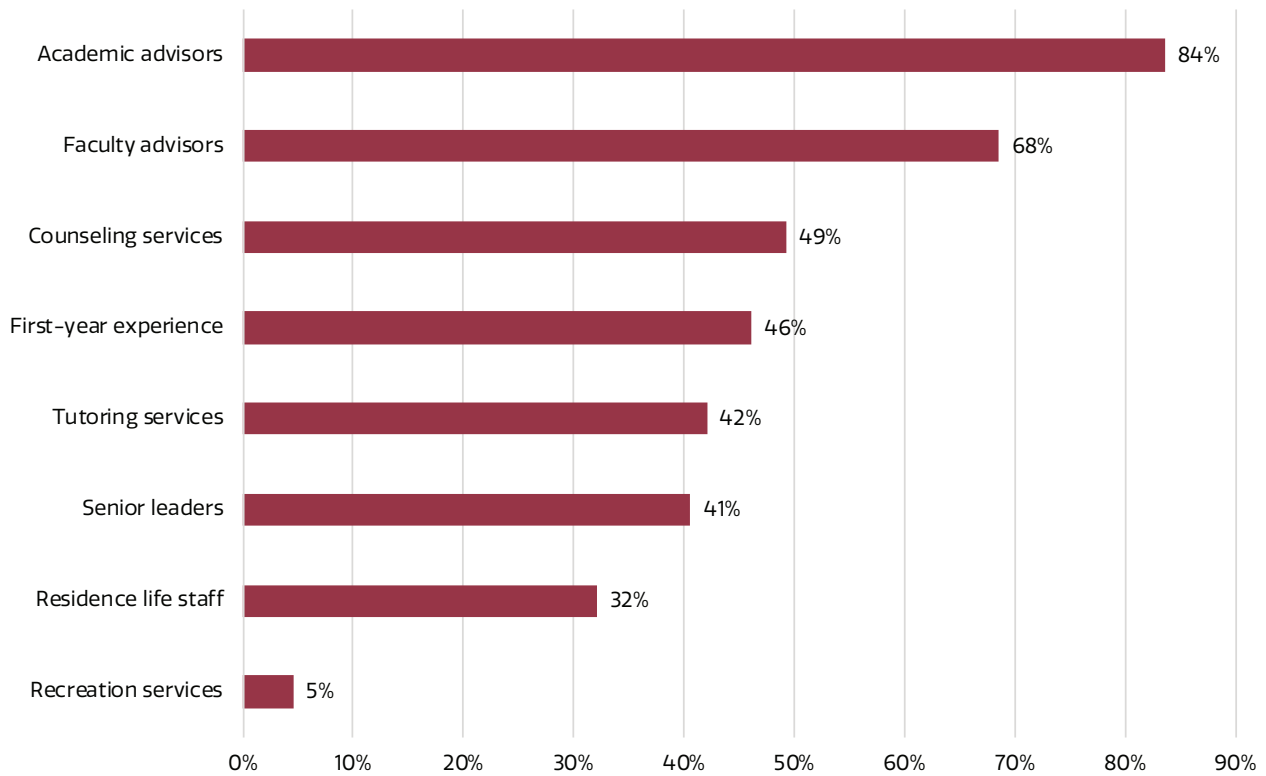


Figure 12. Student Affairs Primarily Responsible for Interventions (N = 50–247)

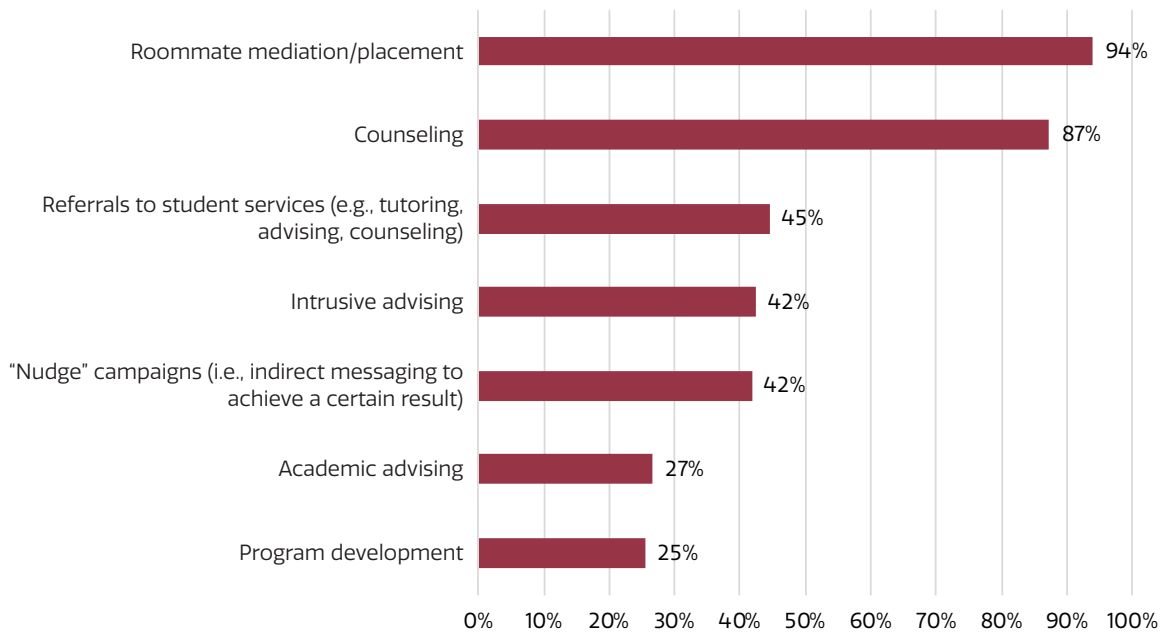


Figure 13. Interventions in Use at Institutions to Improve Student Success (N = 443)

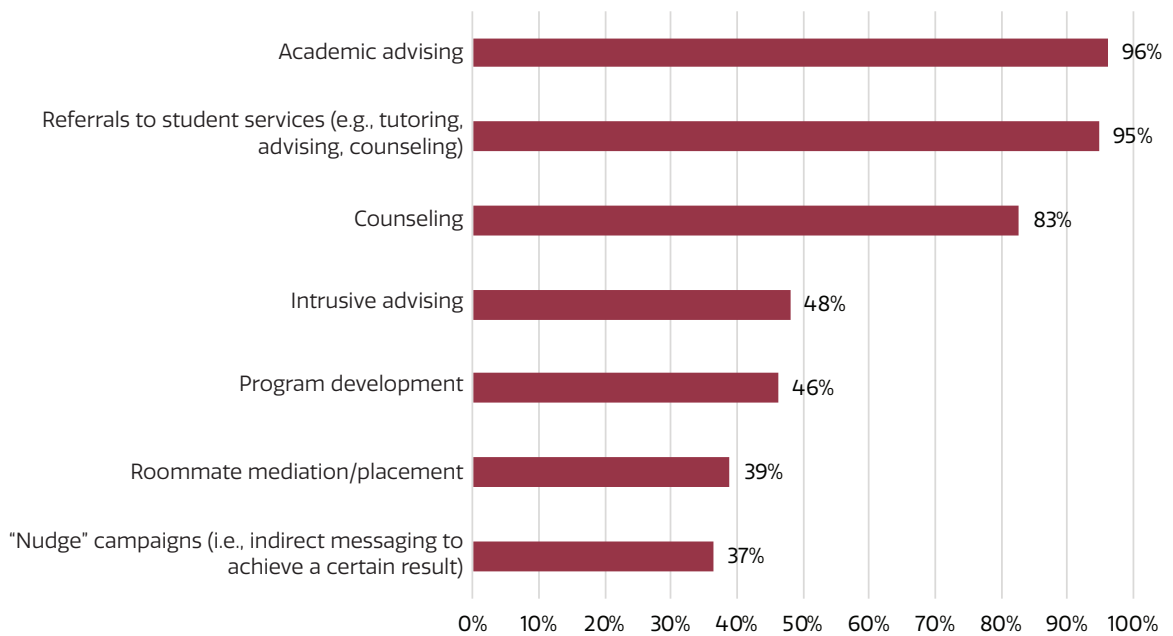
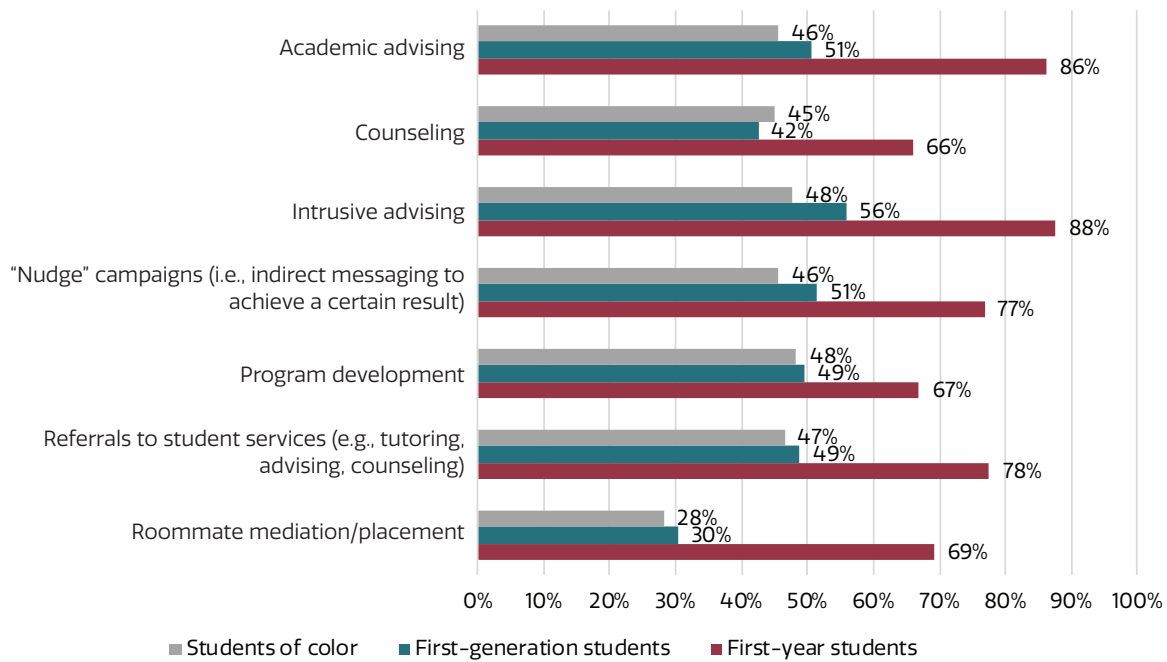


Figure 14. Interventions That Focus on Specific Types of Students



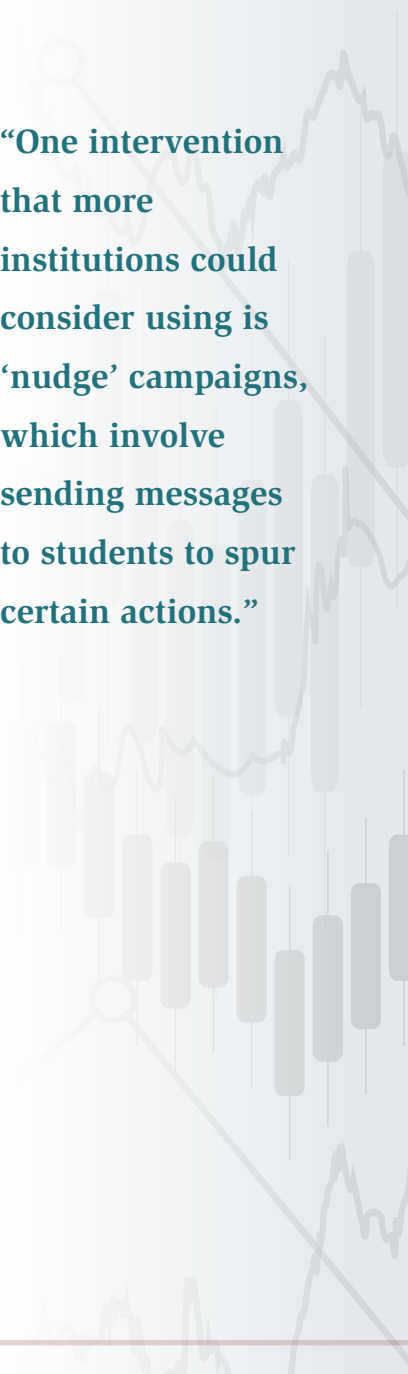
As mentioned earlier and shown in Figure 12, student affairs professionals are often primarily responsible for developing and conducting interventions such as counseling and roommate placement. Several additional types of interventions are currently in use. For example, over 90% of respondents said that their institution intervenes with academic advising and referrals to student services such as tutoring and counseling (see Figure 13). One intervention that more institutions could consider using is “nudge” campaigns, which involve sending messages to students to spur certain actions. Thirty-seven percent of respondents reported using nudges. First-year students, underrepresented students, and nontraditional students are the priority populations for these interventions (see Figure 14).

Senior leaders who are responsible for managing their institution’s investment in student success studies will need to periodically assess the effectiveness of their data strategy. As shown in Table 2, several respondents reported that within the past two years, their institution never or rarely measured the cost of analytics work. For example, over 40% of respondents said that the cost for all three types—descriptive, predictive, and early-alert projects—was not often measured. Public two-year and four-year institutions could do more to measure the cost of predictive studies, as 48% of four-year respondents and 66% of two-year respondents said their institution never or rarely measured costs in the past two years.

These findings are consistent by size of institution as well, as reported by at least half of respondents from all institution sizes. Respondents said the leading units responsible for measuring the cost of these studies are the office of the provost, IR, and the finance or business office.

Institutions appear to be doing more to assess the outcomes of their student success studies. Over 60% of respondents said that in the past two years, their institution measured the outcomes of descriptive and predictive analyses and early-alert systems. Respondents said the offices of IR and student affairs were primarily responsible for measuring the outcomes of student success studies. Nearly half of respondents from all institution sizes and sectors said their institution measured outcomes of their studies within the past two years.

While institutions may not be fully examining the outcomes of their studies, the survey findings suggest that many are making progress. As stated earlier, over 70% of respondents cited more efficient delivery of programs or services and improved student outcomes from interventions as intended goals for their institution's student success studies. At least half of respondents said their institution has evidence of progress toward these goals. This is consistent for all institution sizes and sectors.



“One intervention that more institutions could consider using is ‘nudge’ campaigns, which involve sending messages to students to spur certain actions.”

Implications and Recommendations

This research was conducted by three large higher education associations, and it is intended to signal a broader awareness of the value of implementing a cross-functional data strategy. Despite the inherent challenges of aligning the necessary resources to execute data and analytics work for student success, the future of this type of work will be driven by stronger relationships between IR, IT, and student affairs professionals, among other core functions. The landscape analysis revealed that while institutions could do more to use data strategically across these siloed functions, institutions are well-positioned to make bolder moves in the years ahead.

The survey findings mostly indicate common priorities for institutions regardless of size or sector. For example, most senior leaders at all types of institutions will need to align student success studies with their core missions and effectively evaluate resource capacities and needs. One core area that must be addressed for all types of institutions is training. Many institutions appear to have an abundance of data and information but limited professional staff who can interpret analyses and identify trends to inform programming.

The research identified four core areas for institutions to consider when conducting student success studies. As institutional leaders evaluate their current governance structures, policies, and procedures for executing data-informed projects, the following recommendations offer a starting point for reexamining cross-functional data use. Specifically, senior leaders could benefit from expanding roles for IR, IT, and student affairs professionals; transcending or removing certain organizational silos and strategically communicating across all position levels; prioritizing the measuring of

student outcomes; and increasing the use of qualitative data, especially from students.²

Recommendation 1: Identify and expand institutionally appropriate roles for IR, IT, and student affairs.

Although each institution’s data strategy likely has a unique mission-centered set of priorities, the process by which IR, IT, student affairs, and other units collaborate could be expanded to include new responsibilities. The research highlighted IR professionals as leaders in gathering and interpreting data. For units that lack those primary functions, IR offices could help by consulting with and coaching non-IR administrators and staff. The research also indicated that student affairs divisions are leading the development of interventions, thus providing opportunities for these professionals to interact closely with students. Therefore, an expanded role for student affairs divisions could be to facilitate the sharing of student perspectives. Student affairs could have additional context that would help explain the reasons for certain student performance indicators.

IT professionals could expand their roles of procurement and data stewardship by consulting with student affairs, academic affairs, and other units that gather data via manual processes. For example, NASPA’s prior research on institutions’ use of engagement and behavioral data revealed that some types of data collection, particularly related to students’ use of services, are paper based (Burke et al., 2017). Although IT organizations must continue supporting data collection, management, and reporting efforts, they also need to position themselves as a strategic partner to support student success initiatives, facilitate change management efforts, and address the needs of all end-users. These expanded roles would advance the progress of helping all members of the institution make data-informed decisions. It is expected that the nature of these roles and relationships will need to appropriately reflect the context of the institution. For example, at some institutions, IT and IR functions and student affairs and academic affairs are located in the same division, which may require different approaches for these expanded roles. This is especially relevant to the role of academic affairs.

² See Appendix B for additional resources to measure data capacity.

“Many institutions appear to have an abundance of data and information but limited professional staff who can interpret analyses and identify trends to inform programming.”

“As algorithms become more sophisticated, there will increasingly be opportunities for faculty to become more engaged in the delivery of interventions. For faculty, the notion of leveraging data in their context will be akin to pedagogical decision making, but it also would evoke how they might diminish the psychological distance students might be feeling from their institution.”

—**C. EDWARD WATSON**, Associate Vice President for Quality, Advocacy, and LEAP Initiatives, Association of American Colleges & Universities and Director of the Center for Teaching and Learning, University of Georgia

Recommendation 2: Transcend or remove certain organizational silos to improve communication across all position levels.

The research identified clear silos of functions among IR, IT, and student affairs professionals, which presents an opportunity for institutions to expand their sharing of information across divisions. One approach for transcending organizational silos is to establish a data-sharing and evaluation team, with the team developing or expanding its data governance structure. For example, if the team is working together to improve enrollment management, it would develop a protocol for collecting and sharing the data, including who should have access to the information and how it will be used.

Change management is critical for student success studies, especially when end-users, particularly front-line staff, are responsible for implementing data-informed programs and services. For example, many senior leaders cite student success as a primary goal for their institution’s data and analytics work. However, in some instances, the definition of student success is unclear and not very visible. Routine communications about the institution’s progress toward its core goals will help professionals at all levels to buy into the use of data for decision making. Internal communications could include regular sharing of data success stories between front-line staff in academic affairs and student affairs, both of which regularly interact with students. External communications could range from visible displays of data metrics on the campus to strategic placement of data points on the institution website or other public domains.

“Communication is key. With this campuswide effort, there are messages that are now part of the institutional culture. We have to keep the communication going so people don’t forget.”

—JASON MERIWETHER, Vice Chancellor for Enrollment Management and Student Affairs, Indiana University Southeast

Recommendation 3: Prioritize measuring student outcomes.

In addition to establishing a clear, visible, and mission-centric definition of student success, institutions would benefit from making sure that the definition connects to measurable goals. Institutions can prioritize measuring student outcomes in a variety of ways, including connecting students’ engagement data to academic outcomes data, creating a regular cycle for collecting ad hoc data, selecting interventions, and assessing programs and services. It is important for senior leaders to use and discuss assessment data in ways that are sensitive to campus culture, especially with regard to identifying underperforming programs. Prioritizing the measuring of student outcomes requires ongoing coordination of assessment activities and purposeful reporting of strengths and areas for improvement. These responsibilities could push institutions to ask how such work should be managed. For example, the Association for Institutional Research, in its Statement of Aspirational Practice, proposed that institutions consider creating a strategic data-management position (e.g., chief data officer) and that such a position be responsible for supporting and coordinating all data-focused decision-support activities. These responsibilities, in addition to managing relationships across functions, are critical to measuring student outcomes (Swing & Ross, 2016).

Recommendation 4: Increase the use of qualitative data, especially from students.

Although analysis of data from the student information system and learning management system provide valuable input about student performance, institutions should consider additional sources of rich data, such as student interviews. For example, qualitative data from student focus groups would provide context for how well the interventions developed by student affairs and academic affairs are addressing core needs. Student perception surveys

and other quantitative approaches provide a good foundation for the types of questions that should be further explored via interviews. As administrators, staff, and faculty continue to identify the most critical student needs, it is important that they not miss opportunities to gather input from students about the programs and services that would best serve them.

“Faculty should encourage students to participate in university-sponsored assessments. Let students know that the institution values their voice. Provide examples of how the university is making improvements based on previous feedback.”

—TIMOTHY BONO, Lecturer in Psychological and Brain Sciences and Assistant Dean for Assessment and Analytics, Washington University in St. Louis

This research suggests that despite the challenges regarding timely sharing of information, data stewardship and governance, competing resource priorities, and various external demands for accountability, it is possible for institutions to execute cross-functional data strategies. As higher education leaders prepare to expand their use of data to refine their business models and make more precise, real-time decisions, the relationships between IR, student affairs, and IT will be more important than ever. In the years ahead, these professionals—and many others—can collaborate to deliver the high-quality experiences that students deserve.

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Appendix A

Methodology

AIR, EDUCAUSE, and NASPA started the project by asking their members to identify primary focus areas for the national survey. The associations then jointly developed the survey instrument, which was delivered to 7,806 recipients, of whom 970 responded. The survey was open from October 2017 to December 2017.

Table 8 shows a breakdown of responses by organization, institution sector, and institution size. Despite the slightly uneven number of responses by position type, there were enough respondents to the survey from each of the three groups to provide a representative discussion of the findings. There was a mostly even distribution of survey responses by institution sector, and the results also reflect diverse representation of institution size.

Table 8. Survey Responses by Organization, Institution Sector, and Institution Size

Organization	Number of responses	Percentage of responses
AIR	627	65%
NASPA	256	26%
EDUCAUSE	87	9%
Total	970	100%
Institution type	Number of responses	Percentage of responses
Public, four-year or above	317	33%
Private nonprofit, four-year or above	388	40%
Public, two-year	222	23%
Other*	43	4%
Total	970	100%
Institution enrollment size	Number of responses	Percentage of responses
Fewer than 1,000	123	13%
1,000–4,999	393	41%
5,000–9,999	177	18%
10,000–19,999	143	15%
20,000 or more	126	13%
Total	962	100%

*Includes the following institution types: private for-profit, four-year or above; private nonprofit, two-year; and private for-profit, two-year.

Appendix B

Additional Resources

Arroway, P., Morgan, G., O’Keefe, M., & Yanosky, R. (2016). *Learning analytics in higher education* (Research report). Retrieved from EDUCAUSE website: <https://library.educause.edu/~ /media/files/library/2016/2/ers1504la.pdf>

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