NACUBO STUDY OF ANALYTICS 2019
About NACUBO

The National Association of College and University Business Officers (NACUBO), founded in 1962, is a nonprofit professional organization representing chief administrative and financial officers at more than 1,900 colleges and universities across the country. NACUBO works to advance the economic vitality, business practices, and support of higher education institutions in pursuit of their missions. For more information, visit www.nacubo.org.

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Citation
As chief business officers and other institutional leaders seek workable solutions and new pathways in a complex environment, they are increasingly turning to analytics. This new work doesn’t always come easy, however. Leaders can lose valuable time grappling with a host of obstacles that can be avoided through anticipation and preparation.

I am pleased to share the results from NACUBO’s 2019 survey on analytics, an effort to understand the business office perspective on the current use of analytics as well as barriers that institutional leaders face as they work to leverage analytics to better support their students and their institutions. Analytics is one of the most important areas of work today for colleges and universities, and yet we know that this is an area in which most institutions underperform. With this report, we hope to provide some guidance to business officers and others on how to influence a culture that supports the use of analytics to identify problems and, more importantly, to frame effective solutions.

The findings of this report will inform the work NACUBO is undertaking to help support analytics efforts on your campuses. Thank you to NACUBO staff who led this effort and the contributors who informed the survey, including David Raney, chief executive officer, Nuventive; Richard Staisloff, senior partner, rpk Group; and the members of NACUBO’s Analytics Advisory Group.

Finally, I would like to acknowledge the dedication of the NACUBO members at 334 colleges and universities who participated in the survey. Your feedback is critical to the tools and resources NACUBO will provide to help all institutions succeed with analytics.

Susan Whealler Johnston, PhD
President and Chief Executive Officer
In Samuel Taylor Coleridge’s classic poem “The Ancient Mariner,” the mariner faces the plight of having “[w]ater, water everywhere, nor any drop to drink.” Today, many colleges and universities are in a similar situation: awash in data but with limited actionable information. Analytics, which can support campuses in harnessing data for better decision-making, is a powerful tool many chief business officers have yet to fully leverage.

Analytics is not a panacea, but using analytics and making data-informed decisions is critical for all leaders in higher education. In NACUBO’s 2016 National Profile of Chief Business Officers, nearly one-third of participants said that the most important aspect of their jobs after managing institutional finances is strategic thinking and decision-making. To deliver on this responsibility, business officers will need to harness the power of analytics.

To better support members in their efforts to integrate analytics to achieve institutional strategic goals, NACUBO conducted a survey that asked:

- To what extent is analytics being used to inform decisions on college and university campuses?
- What barriers have limited colleges and universities in integrating the use of analytics?

About 1,900 members were invited to participate, and 334 completed the survey, each representing a different institution, for a response rate of approximately 17 percent.

### TABLE 1. NUMBER AND SHARE OF PARTICIPATING INSTITUTIONS BY NACUBO CONSTITUENT GROUP

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Colleges</td>
<td>56</td>
<td>16.8%</td>
</tr>
<tr>
<td>Comprehensive/Doctoral Institutions</td>
<td>77</td>
<td>23.1%</td>
</tr>
<tr>
<td>Research Universities</td>
<td>35</td>
<td>10.5%</td>
</tr>
<tr>
<td>Small Institutions</td>
<td>154</td>
<td>46.1%</td>
</tr>
<tr>
<td>Governing boards/System offices</td>
<td>12</td>
<td>3.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>334</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Total does not equal 100 percent due to rounding.

**AREAS TAKING THE GREATEST ADVANTAGE OF ANALYTICS**

Experts have predicted that within the next five years, the number of traditional-age college students will sharply decline. Trends also indicate that groups who are experiencing population growth—those from racial/ethnic minority backgrounds and/or those from lower socioeconomic backgrounds—tend to have lower college-going and college completion rates.
These shifts have major implications for higher education—in particular for enrollment management; student success efforts, with a particular focus on outcomes for students from historically underrepresented groups; and financial management—which is evident, to some degree, in the way institutions are currently using analytics to inform decision-making. Findings show that the enrollment and admissions areas are using analytics the most to support decision-making (see Figure 1). Enrollment management is critical for institutions navigating both demographic shifts and funding model challenges—and analytics is clearly being put to use.

We have contracted with [a vendor] to get more data and build analytics on enrollment and student success. We intend to expand into cost areas in the near future.

Vice President for Finance & Administration,
Public Research University

FIGURE 1. AVERAGE EXTENT ANALYTICS IS USED TO INFORM DECISION-MAKING IN VARIOUS FUNCTIONAL AREAS

1 = Rarely or never used    2 = Occasionally used    3 = Used to a considerable degree    4 = Almost always used

To a slightly lesser extent, on average, analytics is informing decisions related to student progress, financial performance, and student outcomes. This is evidence that colleges and universities are using analytics to increase retention and completion rates—improvements critical to higher education’s mission to serve students—and is also evidence that leaders are using analytics to support decision-making about institutional financial performance.
Analytics is also informing decisions about institutional strategic plans, being used, on average, between “occasionally” and “to a considerable degree.” Strategic planning “takes the long-term perspective” and, guided by the institution’s mission, sets the agenda for investments and activities over at least a five-year period (Goldstein, 2019). Considering the myriad challenges chief business officers face, planning for the longevity of the institution and its ability to serve students now and in the future is paramount and will likely not be accomplished effectively without the use of analytics.

**AREAS IN NEED OF GREATER USE OF ANALYTICS**

Chief business officers, whose core responsibilities are financial planning and budgeting, are charged with ensuring that their institution allocates resources to both advance the institution’s mission and to ensure long-term financial viability. As Figure 1 shows, analytics is used only “occasionally” to inform decisions in several operational areas, including cost of instruction, human resources, faculty workload planning, and space utilization.

Perhaps even more striking is that survey responses, on average, showed that analytics is not “almost always used” in any functional area. This finding reveals that colleges and universities, by and large, are not leveraging analytics to its fullest capacity.

The majority of participants indicated that colleges and universities should be placing more importance on using analytics for decision-making in all of the functional areas included in the survey, including areas supporting student success, resource allocation decisions, facilities utilization, and strategic planning efforts (see Figure 2).

More than 9 out of 10 business officers think more importance should be placed on using analytics in operational efficiencies, cost of instruction, internal academic program assessment, and faculty workload planning.

More than 90 percent of business officers who participated in the survey indicated that greater importance should be placed on using analytics in operational efficiencies, cost of instruction, internal academic program assessment, and faculty workload planning. Nearly as many said their institution should be placing more importance on using analytics to support student progress and success.

These findings show that although analytics is not currently being used to its fullest potential at institutions, business officers see value in working to harness the power of analytics—and that their primary motivators to use analytics are increasing operational efficiencies and improving student success.
Expanded use of analytics on campus appears to be hampered by several barriers. For this study, barriers to the use of analytics were distinguished as being either a cultural barrier or a capacity-related barrier; however, it is important to note that the two are interconnected.

One out of 8 business officers cited fear that analytics would be used to punish certain programs or departments as a pressing cultural barrier to the use of analytics. Peter Drucker’s famous line, “Culture eats strategy for breakfast,” is an apt phrase for understanding the role of culture in using analytics on campus. Even if an institution has the resources to invest in the staff and infrastructure necessary but the campus climate is not conducive to data-informed decision-making, then any investments in capacity building likely will be in vain. In order to harness the power of analytics, institutional leaders need to create a campus-wide culture that understands, values, and uses analytics as part of the regular responsibilities.
The cultural barriers to the integration and use of analytics are ones that show both hesitation and suspicion from some campus stakeholders. Overall, the findings about cultural barriers indicate a concern that data, much of which includes student, faculty, and staff information, may be mismanaged or misused, negatively impacting those the institution should be supporting. For example, the cultural barrier that most business officers described as “pressing” is a fear that analytics will be used to punish certain programs or departments, indicated by nearly 13 percent of participants (see Figure 3).

The cultural challenge of creating a data-informed culture is exacerbated because analytics requires collaboration across the campus to be fully leveraged. Having a siloed campus was cited as another top cultural barrier to the use of analytics, with nearly 62 percent of survey participants identifying this as a contributing or pressing barrier.

These findings show that campus leaders, including business officers, need to make efforts to build campus cultures that value data-informed decision-making and leverage analytics.

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**FIGURE 3. CULTURAL BARRIERS TO INSTITUTIONAL USE AND INTEGRATION OF ANALYTICS INTO BUSINESS OFFICE FUNCTIONS**

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Never a barrier</th>
<th>Was, but is no longer a barrier</th>
<th>Contributing barrier</th>
<th>Pressing barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is fear that analytics will be used to “punish” certain programs/departments</td>
<td>28.2%</td>
<td>18.0%</td>
<td>41.1%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Campus is siloed; there is a lack of collaboration around analytics</td>
<td>14.7%</td>
<td>23.5%</td>
<td>50.2%</td>
<td>11.6%</td>
</tr>
<tr>
<td>There is mistrust and/or misunderstanding of how data and analytics will be generated and used</td>
<td>25.9%</td>
<td>23.7%</td>
<td>39.7%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Leadership does not have the change management skills needed to implement analytics across the institution</td>
<td>30.5%</td>
<td>28.6%</td>
<td>32.7%</td>
<td>8.2%</td>
</tr>
<tr>
<td>There is hesitation to use any data or related resources (e.g., data warehouses, dashboards) until an analytics initiative is complete</td>
<td>38.5%</td>
<td>24.5%</td>
<td>32.5%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Leadership support/commitment is lacking</td>
<td>45.1%</td>
<td>35.7%</td>
<td>16.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td>There is concern that student data will be misused, either violating student privacy or used in ways beyond supporting their success on campus</td>
<td>55.7%</td>
<td>22.6%</td>
<td>19.5%</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

There is concern that student data will be misused, either violating student privacy or used in ways beyond supporting their success on campus.
College and university leaders also need to build the institutional capacity necessary to enable analytics to be created and transformed into actionable information. By and large, business officers who participated in this study indicated that capacity barriers presented greater challenges to the use and integration of analytics into business office functions than cultural barriers.

Overall, staff capacity presents the most pressing barrier to the integration and use of analytics. As Figure 4 shows, 27 percent of participants indicated that the cost of investing in core analytics staff (i.e., staff in institutional research and information technology who facilitate the use of analytics for other campus stakeholders) is a pressing barrier, and another 39 percent indicated it was a contributing barrier. The second-most pressing barrier, also related to staffing, is the lack of workforce capacity, indicated by more than a quarter of respondents.

More than 1 out of 4 business officers cited the cost of investing in core analytics staff and workforce capacity as pressing capacity barriers to the use of analytics.

This means that not only is investing in the skill development of core analytics staff a challenge, but participants also believe there are simply not enough staff to support institutional analytics capabilities. This finding is likely not a surprise to many. The analytical and technical skills necessary to facilitate...
analytics capacity, whether it be the skills to manage data, to build a data warehouse, to create dashboards, or others, are in high demand in other industries. Because colleges and universities have limited resources, it is a challenge to find and retain a skilled workforce to support analytics capacities.

Another barrier cited by respondents is that end users on campuses do not know how to translate data and analytics into actionable information. More than eight out of 10 business officers reported that even when end users had access to analytics, they did not have the ability to translate data into action.

THE JOURNEY AHEAD

As a whole, study findings confirm that higher education is indeed awash with data but is currently not leveraging analytics to support decision-making. NACUBO, in collaboration with the Association for Institutional Research (AIR) and EDUCAUSE, recently released a joint statement on analytics, calling on colleges and universities to move “aggressively forward to harness the power of these new [analytic] tools for the success of our institutions and our students” (AIR, EDUCAUSE, and NACUBO, 2019). The joint call-to-action was created, in part, because higher education should be taking advantage of the vast insights analytics offers.

As business officers and other leaders work to meet this goal, they should be prepared for the journey ahead. With the support of analytics, leaders can make data-informed decisions to navigate today’s challenges (e.g., declining state funding, enrollment concerns, and questions about the value of a degree) and prepare for the future. However, this journey is not without challenges.

Fortunately, higher education leaders can find support from their colleagues and professional associations. One of NACUBO’s strategic priorities is to lead higher education’s integration of analytics to achieve institutional strategic goals (NACUBO, 2019). NACUBO has begun to support business officers in growing institutional capacity for analytics by expanding collaborative efforts, such as those with AIR and EDUCAUSE, to leverage our endeavors; embedding analytics content into all NACUBO conferences and workshops; and leveraging business partnerships to develop analytics tools. Efforts for these initiatives will support the range of staff in the business office—from bursars to budget directors, accountants to investment managers—in developing the skills necessary to harness the power of analytics.

Analytics has the potential to be a game-changing resource for leaders in higher education as they chart a path to take advantage of opportunities and meet challenges. As the AIR, EDUCAUSE, and NACUBO joint statement advises, “Whether you are encouraged by the significant opportunities or driven by the need to solve critical problems, it’s time to take a big step forward. Now.”
REFERENCES


