



DREXEL UNIVERSITY
LeBow
College of Business

precisely

2023 DATA INTEGRITY TRENDS AND INSIGHTS REPORT

Results from a Survey of Data
and Analytics Professionals



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Executive Summary

Businesses today operate in an environment filled with disruptive trends. The long-term effects of the pandemic have impacted virtually every part of daily life, including how people work, consume goods, and interact with technology. Evolving privacy and regulatory requirements expose businesses to new demands and risks. And unprecedented geopolitical instability has created sustained global economic uncertainty.

These macro trends require businesses to be more agile than ever to respond to competitive threats, meet unpredictable consumer demand, navigate supply chain challenges, and manage through talent shortages and skill gaps. To survive and grow, business leaders are turning to their data to support rapid, data-driven business decisions. However, do organizations trust their data or does it lack the accuracy, consistency and context required for data integrity? ▶

Executive Summary Continued

Purpose of this analysis

To better understand the state of data integrity, the Center for Business Analytics at Drexel University's LeBow College of Business (LeBow), in partnership with Precisely, surveyed more than 450 data and analytics professionals on their organizations' data strategies, challenges, and directions. LeBow's nationally recognized Center for Business Analytics is known for partnering with organizations like Precisely to collaborate on research and analytics that will benefit students and businesses. This analysis of the survey findings offers business and data leaders a useful benchmark for data integrity trends, initiatives and investments in 2023 and beyond.

Data-driven decision-making

One key finding of the survey is that 77% of respondents say data-driven decision-making is an important goal of data programs. Data-driven decision-making, in turn, is necessary to support other reported data program goals, such as improving operational efficiency (73%), reducing costs (62%), generating revenue (59%), and improving regulatory compliance (57%). However, the survey also showed that many organizations operate in an environment where resources are constrained, trust in data is low, and data quality challenges impact all aspects of data integrity.

The ripple effect of poor data quality

Low data quality is a pervasive theme across the survey results, reducing trust in data used for decision-making and challenging organizations' ability to achieve success in their data programs. Only 46% of respondents rate trust in data used for decision-making as "high" or "very high", while they also report that poor data quality impedes data program success (36%), data integration (60%), and data integrity (50%).

The path to data integrity and business success

In the face of economic constraints, organizations are leveraging cloud (57%), advanced analytics (50%), automation (43%), and digital transformation (42%) to increase flexibility and efficiency while driving down operating costs. The good news for data-driven business initiatives is that organizations with a data governance program are seeing improvements in the quality of data analytics and insights (57%) as well as the data itself (60%), and more than half have a comprehensive data strategy in place. ■

Methodology and Demographics

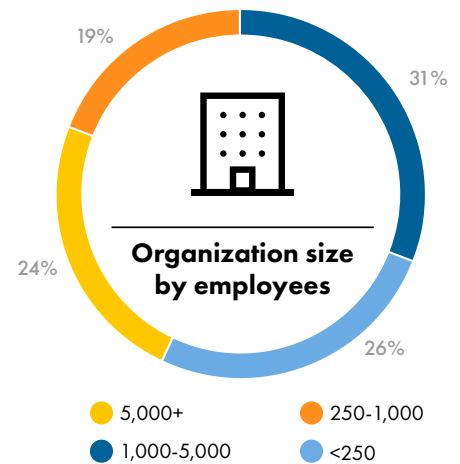
The Survey of Data and Analytics Professionals was conducted in February and March 2023. The online survey was jointly developed by the Center for Business Analytics at Drexel University's LeBow College of Business (LeBow) and Precisely, with an analysis of results led by LeBow in collaboration with Precisely.

More than 450 data and analytics professionals worldwide participated in the survey. Respondents' functional titles include C-level executives, line-of-business executives and managers, IT executives and

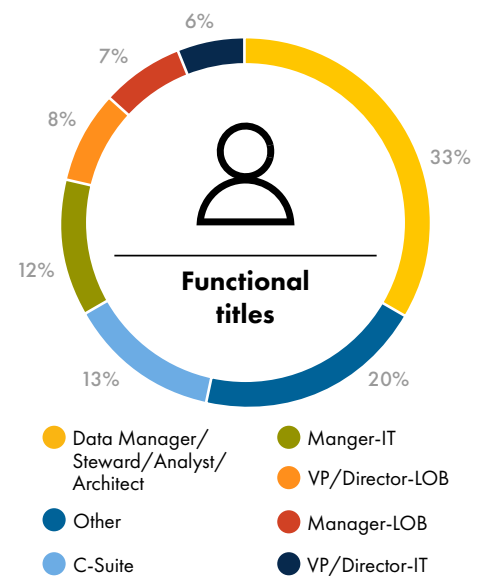
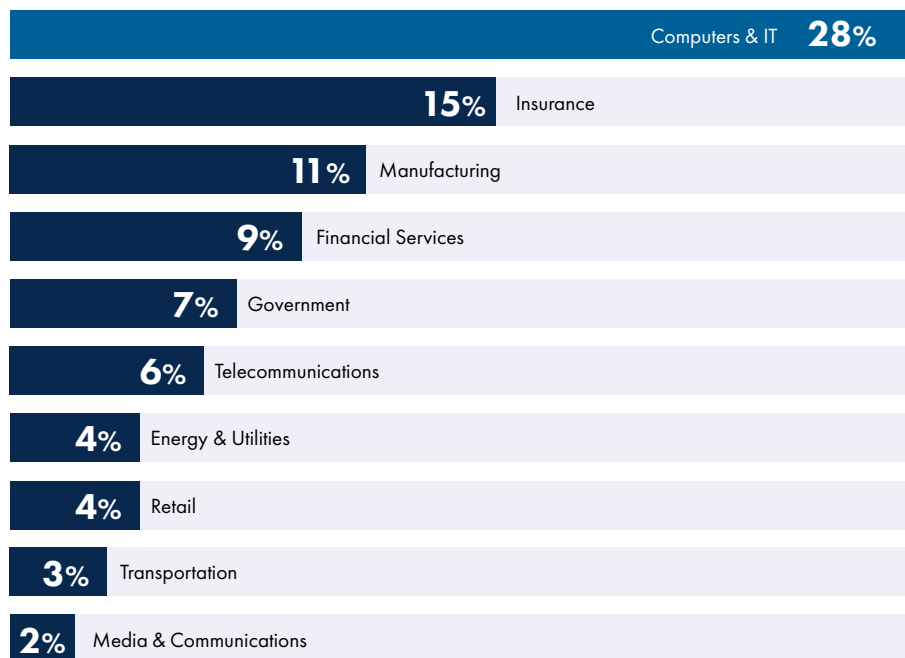
managers, data stewards, data architects, data managers, and data analysts.

Respondents represent a range of industries, including computers and IT (28%), insurance (15%), manufacturing (11%), financial services (8%), and government (6%), as well as other industry verticals. Among respondents, 26% represent organizations with under 250 employees, 19% have 250-1,000 employees, 31% have 1,000-5,000, and 24% work for organizations with more than 5,000 employees.

This report from LeBow and Precisely presents the results of the survey. LeBow and Precisely collaborated on the analysis, putting the findings into context to better describe the state of data integrity today.



Primary industries



Key Findings

Key findings from the 2023 Survey of Data and Analytics Professionals reveal that respondents value data-driven decision-making yet operate in an environment where resources are constrained, trust in data is low, and data quality challenges impact all aspects of data integrity.



46% rate their ability to **trust data used for decision-making** as “high” or “very high”

60% agree that **data quality issues impact data integration** projects

40% have **decreased staffing and resources** due to the economic downturn

41% say **poor address quality** prevents effective use of location data

57% say their overall **data strategy is influenced by cloud adoption** trends

53% rank **data quality as the top priority** for improving data integrity

45% are challenged by **lack of effective data management tools**

57% say **data governance** results in **better analytics and insights**



Data Program Investments are Yielding Business Value

KEY FINDING

The top-ranking goal for data programs is data-driven decision-making. Respondents also report that accelerated data-driven decision-making is the third-ranked outcome of data initiatives.

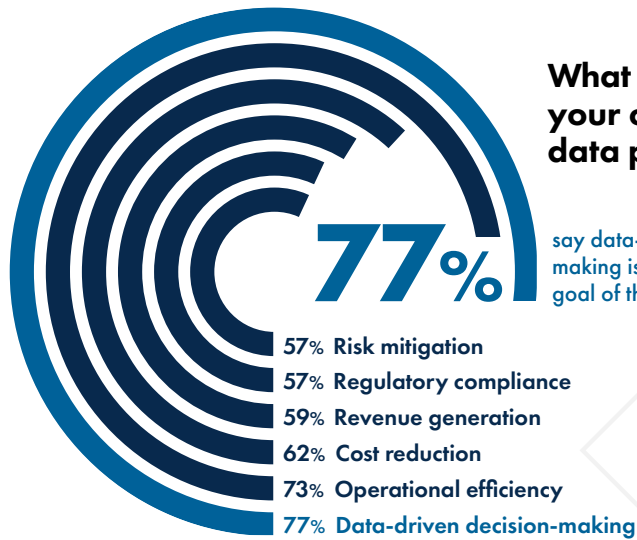


Data-driven decision-making is the top goal for data programs.

Business goals for data programs

The importance of data to an organization is well understood in today's business culture, and data leaders are invested in aligning their data programs' goals with their organizations' business goals. The 2023 Survey of Data and Analytics Professionals, from the Center for Business Analytics at Drexel University's LeBow College of Business (LeBow) in partnership with Precisely, asked respondents to share the goals and outcomes of their data programs and initiatives.

More than three-quarters of respondents (77%) say that data-driven decision-making is an important goal of data programs, an increase of 12% over the 2021 survey. Looking at data program goals by business size, 87% of respondents from



What are the goals of your organization's data programs?

say data-driven decision-making is an important goal of their data programs

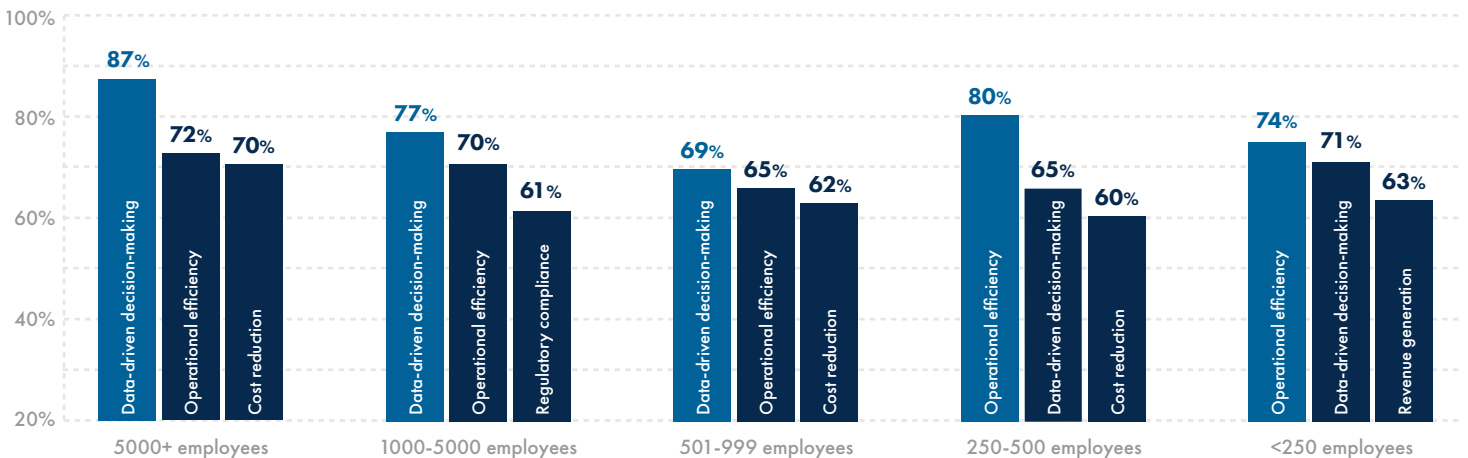
very large companies (with 5,000+ employees) say data-driven decision-making is important.

Organizations are also putting data programs to work to achieve core operational and financial performance improvements. Operational efficiency ranks a close second in organizational goals for data programs. Smaller companies (250-500 employees), however, rank operational efficiency

importance higher than the average, at 80%.

Overall, cost reduction ranks third in goals at 62%, with very large companies putting more importance on cost at 70%. Revenue generation ranks fourth overall at 59%, followed by regulatory compliance at 57%. In our experience, data-driven decision-making is a critical enabler and force multiplier, improving operational efficiency, cost reduction, revenue generation, and compliance outcomes. ▶

Top 3 data program goals by organization size



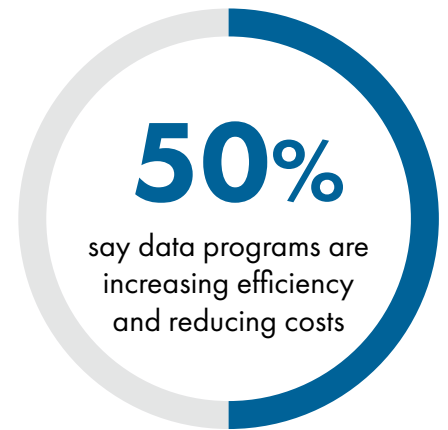
Mapping outcomes to goals of data initiatives and programs

Regarding the outcomes of data initiatives, the greatest number of respondents (50%) say they are seeing efficiency and cost reduction improvements, which they position as their number two and three goals for their data programs. As for whether organizations are meeting the leading goal of data-driven decision-making, 44% of data leaders who have implemented data programs report positive results to that end.

Moreover, 46% of respondents see an increased demand

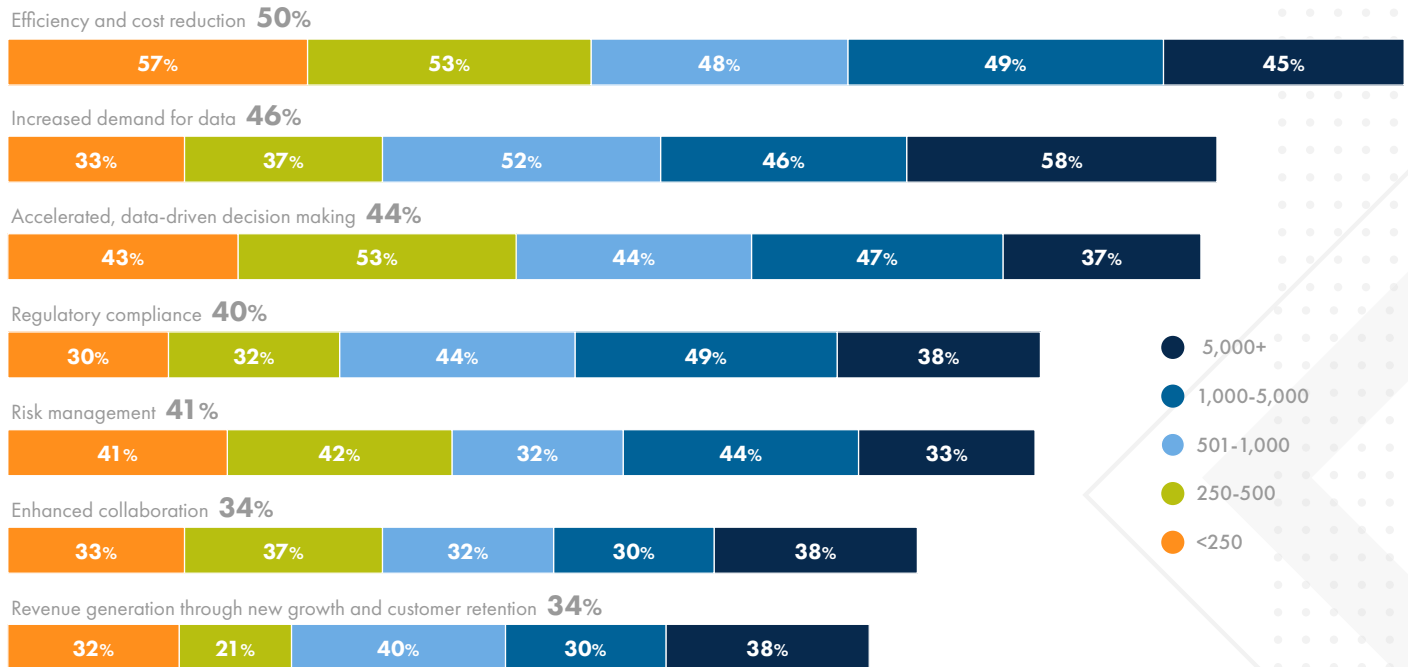
for data, indicating that providing business users with good data can create demand for more of the same. Risk mitigation and regulatory compliance as goals (57% each) and successes (41% and 40% respectively) rank in the middle tier of results, with some success and room for improvement. However, revenue generation cited as a goal (59%) and as an outcome (34%) shows the most significant gap.

The degree of positive results is generally clustered in companies with under 500 employees and companies with 1,000-

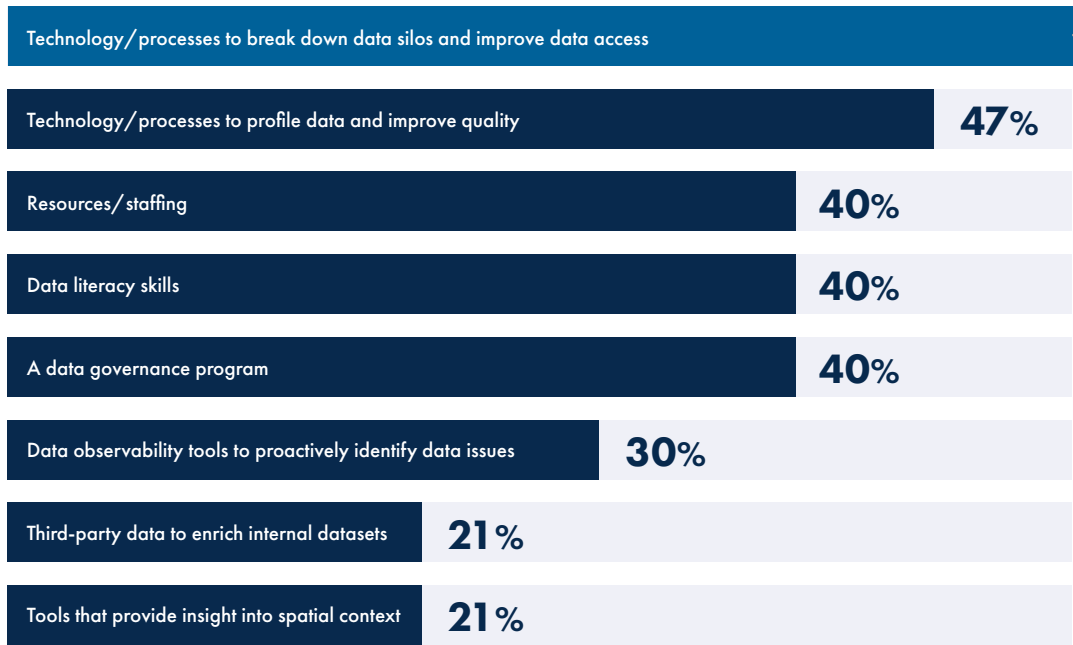


5,000 employees. Notably, outcomes for companies with 5,000+ employees fall below the averages of the overall results for efficiency and cost reduction and accelerating data-driven decision-making, but at 58%, significantly lead to increasing demand for data. ▶

Have your organization's data initiatives resulted in any of the following outcomes?



What steps has your organization taken to improve its use of data for decision-making?



54%

cite using technology and processes to break down data silos and improve data access

Taking steps to improve the use of data for decision-making

Data leaders recognize that siloed data impedes data-driven decision-making, preventing business leaders from working with a comprehensive and single view of an organization’s truth. We know this because when asked what steps their organizations have taken to improve the use of data for decision-making, more than half (54%) cite using technology and processes

to break down data silos and improve data access. The second most frequently selected response, at 47%, is using technology and processes to profile data and improve quality.

Forty percent say they are taking steps involving people, including improving data literacy skills and addressing staffing and resources. Another 40% credit having a

data governance program for enhancing decision-making data, while 30% employ data observability tools to proactively identify data issues. And 21% are investing in third-party data to enrich their internal data sets or apply spatial context to add value to data. ■

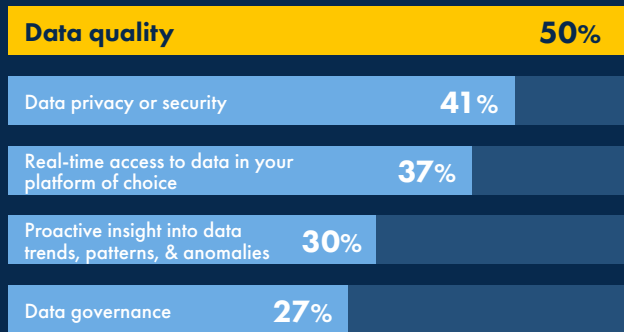
Quality Issues Dominate the Data Discussion

KEY FINDING

In the 2023 Survey of Data and Analytics Professionals, poor data quality is pervasive, with ripple effects across data programs and the business itself.

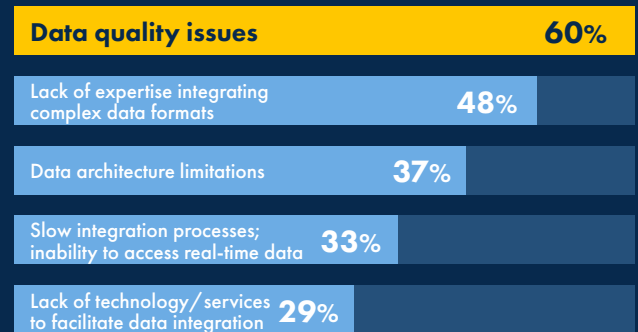
Data quality is the leading challenge to data integrity

What are your organization's top three data integrity challenges?



When data integration projects go poorly, data quality is to blame

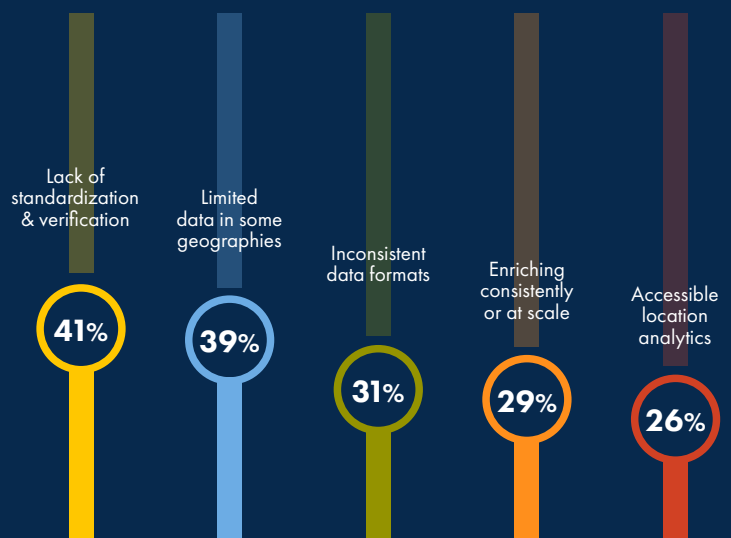
What's the biggest challenge impacting your organization's data integration projects?



Poor address quality impedes using location data effectively, along with geographic limitations on accurate data availability

What's the biggest challenge keeping your organization from effectively using location data for decision-making?

- **41%** Address data is not standardized, verified, and fit for purpose
- **39%** Challenges obtaining accurate data in certain geographies
- **31%** Location data is in inconsistent formats
- **29%** Can't enrich data consistently or at scale
- **26%** Can't deploy accessible location analytics across the organization





Poor Data Quality is Pervasive, Impacting Trust in Data and Success Across Data Programs

KEY FINDING

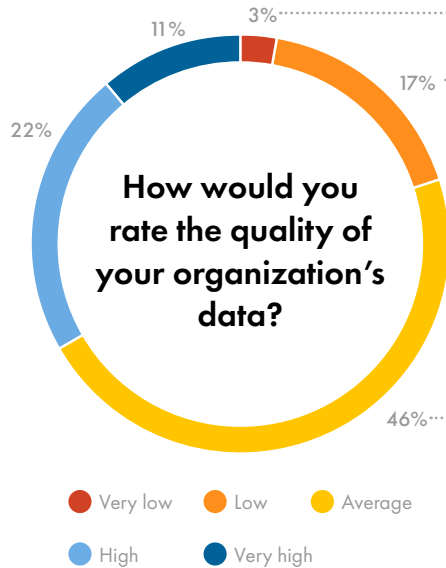
Low data quality is a pervasive theme across the survey results, reducing trust in data used for decision-making and challenging organizations' ability to achieve success in their data programs.

Only **34%**
of organizations rate
the quality of their
data as "high" or
"very high"

Quality issues dominate the data discussion

The 2023 Survey of Data and Analytics Professionals, from the Center for Business Analytics at Drexel University's LeBow College of Business (LeBow) in partnership with Precisely, revealed that poor data quality is pervasive, with 66% of respondents rating the quality of organizational data as average, low, or very low. Moreover, poor data quality has a ripple effect across data programs and the business itself.

Given that 77% of respondents say the leading goal of their data programs is data-driven decision-making, the impact of low-quality data is strongly seen in the trust placed in data used for making decisions



66%

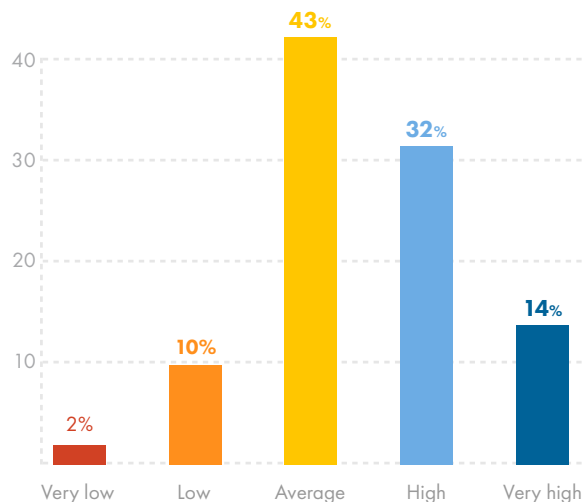
rate the quality of organizational data as "average", "low", or "very low"

that shape the business. More than half of respondents (55%) rate their organization's ability to trust the data used for decision-making as "average", "low", or "very low". It is unsurprising that 71% of respondents report that their organizations spend 25% or more of their work time preparing data for reporting and decision-making.

Obstacles to achieving high quality data

Focusing on those respondents who rated the quality of their organization's data as "low" or "very low", we find that measuring data quality (55%), missing information (53%), and lack of skills/staff (51%) are their most significant challenges to achieving high quality data. Data quality-related roadblocks include ▶

How would you rate your organization's ability to trust the data being used for decision-making?



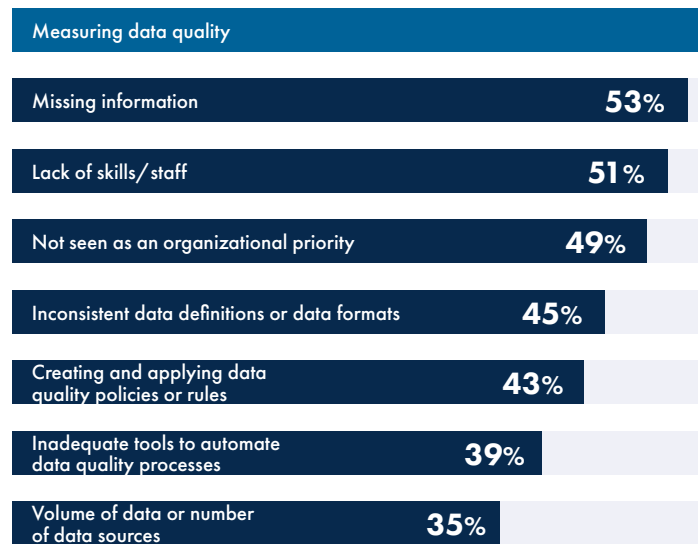
46%

of respondents have "high" or "very high" trust in the data they use for decision-making

inconsistent data definitions or formats (45%), challenges in working with data quality policies or rules (43%), and inadequate tools for automating data quality processes (39%).

While data quality and data governance policies and software can address these issues, making those investments requires an organizational commitment to data quality. However, almost half (49%) said that their companies did not see data quality as an organizational priority.

What's the biggest challenge keeping your organization from achieving high quality data?

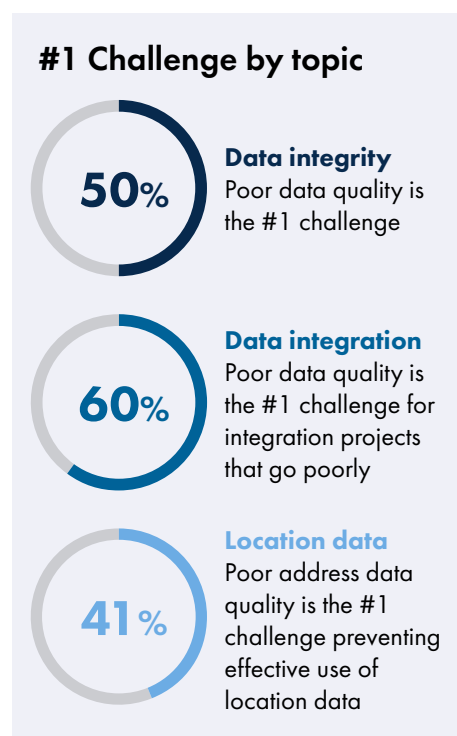


55%
say measuring data quality is the biggest challenge

The ripple effect: Impact of poor data quality on the success of data programs

Overall, 36% of respondents said that poor data quality is a challenge to the success of their organization's data programs. However, for organizations with low trust in the data they use for decision-making, data quality is the greatest challenge to success for 70% of respondents — not a surprising correlation.

When we take a narrower look at challenges to success, data quality captures the leading role:



With the pervasive nature of data quality as a significant issue for organizations today, we are seeing a shift in priorities. During the big data boom, data leaders' biggest concern was volume. Now that dealing with massive volumes of data is the new normal, data leaders focus on the quality of the data used to run the business. ■

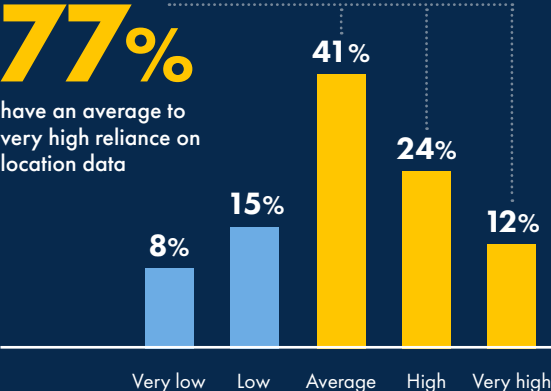
Context and Data Integrity: The Role of Location and Data Enrichment

KEY FINDING

Location and data enrichment are important elements of data integrity. However, the 2023 Survey of Data and Analytics Professionals tells us that before companies can use location for a competitive advantage, they must first address data quality issues. Ultimately, companies that can improve data quality and begin to use location for decision-making will have an edge.

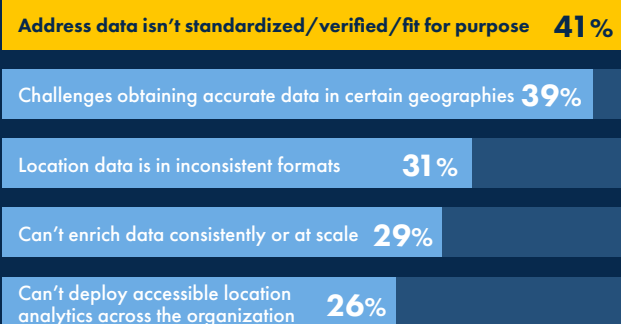
Companies rely on accurate location for decision-making

What is your organization’s reliance on accurate location for decisions related to marketing, facilities, risk assessment, logistics, and other areas?



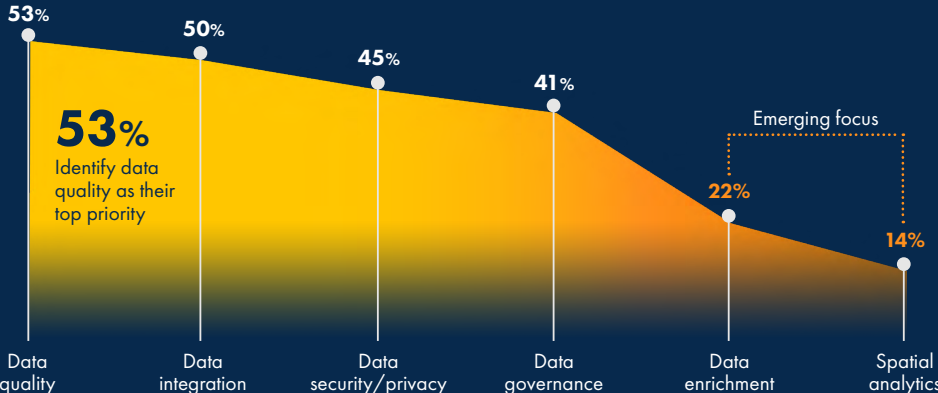
Quality and accuracy stand in the way of realizing business value from location data

What’s the biggest challenge keeping your organization from effectively using location data for decision-making?



Organizations are prioritizing data quality and data integration

What are your organization’s top priorities for improving data integrity in 2023?





From Data Quality to Data Integrity: The Path to Trusted Data

KEY FINDING

In the context of improving their organizations' data integrity, respondents cite data quality and data integration as priorities for 2023 and as challenges to data integrity. Data governance is a critical contributor to data integrity, and those organizations with governance programs are seeing results in better quality analytics and data.

50%

of respondents rank data quality as the leading challenge to data integrity

Building trust through data integrity

There are many paths that organizations can take to achieve data integrity and build trust in their data for confident business decisions. The 2023 Survey of Data and Analytics Professionals, from the Center for Business Analytics at Drexel University's LeBow College of Business (LeBow) in partnership with Precisely, explored three aspects of the data integrity journey: priorities for improving data integrity, maturity of data integrity practices, and challenges to achieving data integrity. Echoing the pervasive theme of low data quality that emerged across the survey results, we see data quality playing a leading role in all three areas of inquiry.

Zeroing in on data quality and data integration

The top-ranking priority for improving data integrity in 2023 is data quality at 53%, followed closely by data integration at 50%. Companies must advance the quality and integration of their data to make better data-driven decisions and thrive in today's challenging



What is data integrity?

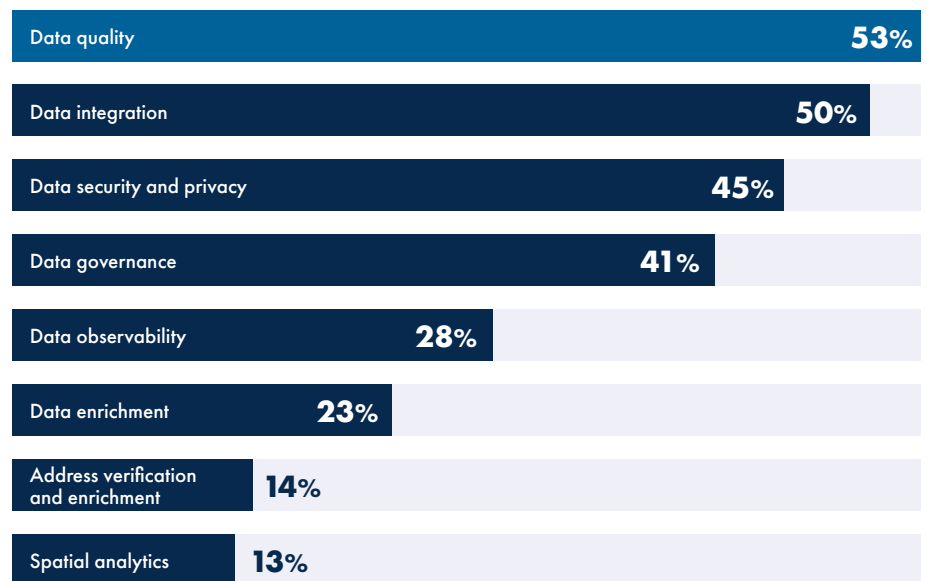
Accurate, consistent, and contextual data that you can trust for making confident business decisions.

business climate. Data security and privacy (45%) and data governance (41%) rounded out the top tier of 2023 priorities.

It is worth noting that, given organizations' reliance on context for decision-making, we see data enrichment and spatial analytics as

emerging technologies poised for growth once data quality, integration, and governance are addressed. For example, 77% of responding organizations rely on location for logistics, risk assessment, marketing, and facilities decision-making. ▶

What are your organization's top priorities for improving data integrity in 2023?



Mapping data integrity maturity to priorities

We asked respondents to rate the maturity of their organization’s data integrity practices as high, moderate, or low. With 52% of respondents rating data privacy and security as “mature” and 36% as “moderate”, this practice has by far the highest level of maturity. Maintaining high levels of data privacy and security is a long-standing organizational imperative reinforced by the need to comply with regulations calling for the same.

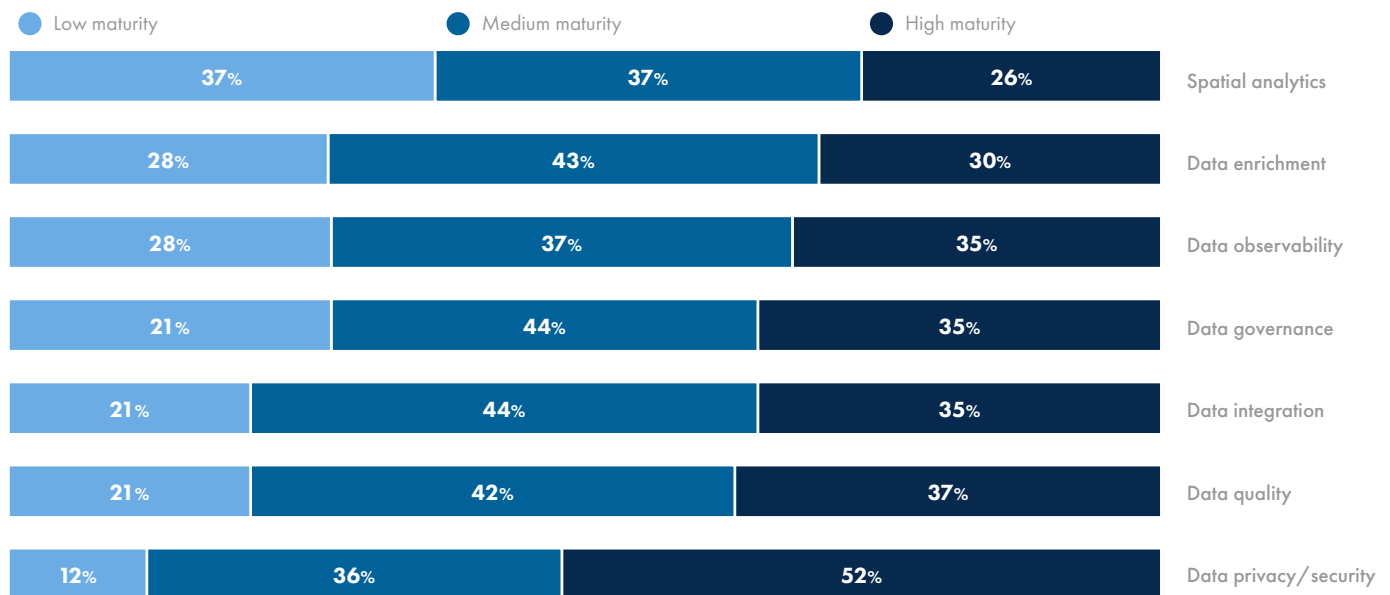
Because organizations have mature data privacy and

security practices and thus an infrastructure to address a continuously changing environment, they can afford to elevate the pressing issues of data quality and integration as leading data integrity priorities. With only 37% reporting a high level of maturity for data quality and 35% reporting a high level of maturity for data integration, this finding reinforces the need for organizations to increase investment in these areas to advance data integrity. Maturity in spatial analytics and data enrichment are



industry-dependent, with the greatest use in insurance, telecommunications, media and communications, manufacturing, and financial services. ▶

Rate the maturity of your organization’s data integrity practices in relation to:



Obstacles to data integrity

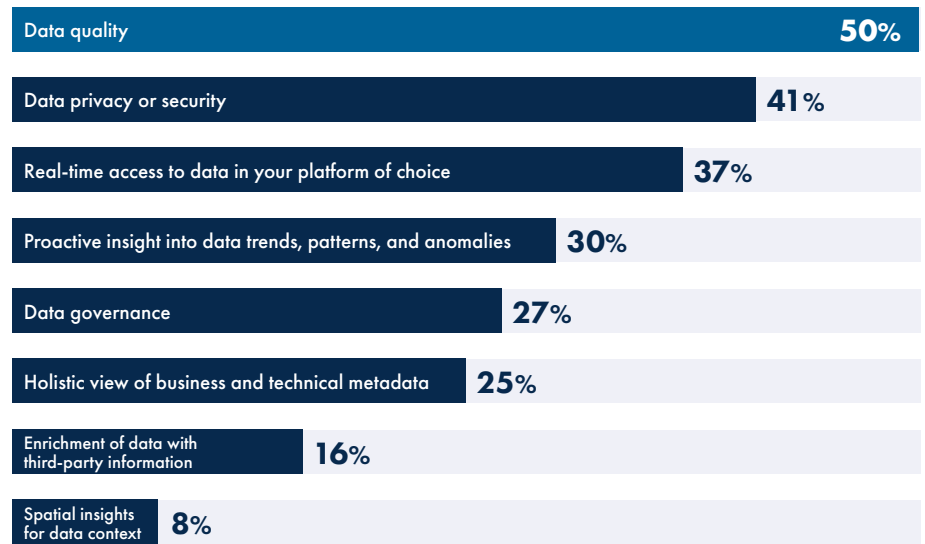
Data quality, at 50%, places first in survey respondents' ranking of their organization's top three data integrity challenges, followed by data privacy or security at 41%. Real-time access to data in the platform of choice, an issue related to data integration success or failure, was ranked third at 37%. And proactive insight into data trends, patterns, and anomalies, with results from investing in data observability, ranked fourth at 30%.

Advancing data integrity through data governance

Further down in the rankings of data integrity challenges, data governance falls into the fifth-place spot (27%), followed at 25% by a holistic view of business and technical metadata, which supports a strong data governance program. Consistently across all relevant survey questions, we find responses related to data governance falling in the middle zone.

We believe this consistent "in the middle" ranking relates to the finding that 60% of organizations surveyed have an ongoing data governance program in place, consistent

What are your organization's top three data integrity challenges?

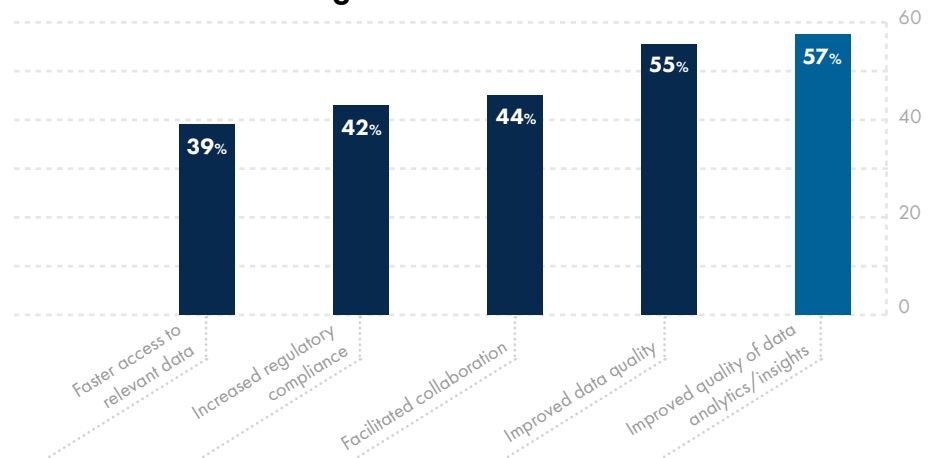


with the results of the 2021 survey conducted by Precisely and LeBow.

The good news is that organizations are realizing added value from data governance in the areas that matter most. For the 2023

study, 57% of respondents report seeing improved quality of data analytics and insights, 55% report improved data quality, and 44% say collaboration is easier. ■

How has your data governance program added value to the organization?



Technologies that are Influencing Data Strategy Help Drive Business Agility

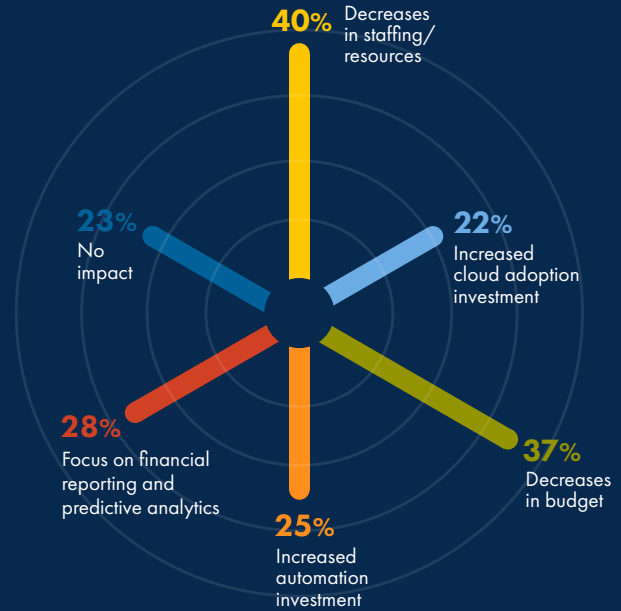
KEY FINDING

The economic downturn, and the resulting tightening of budgets and resources, have impacted organizations' data strategies and increased adoption of technologies that extend flexibility, agility, and cost-efficiency.

Measuring the impact of the economic downturn on data strategy

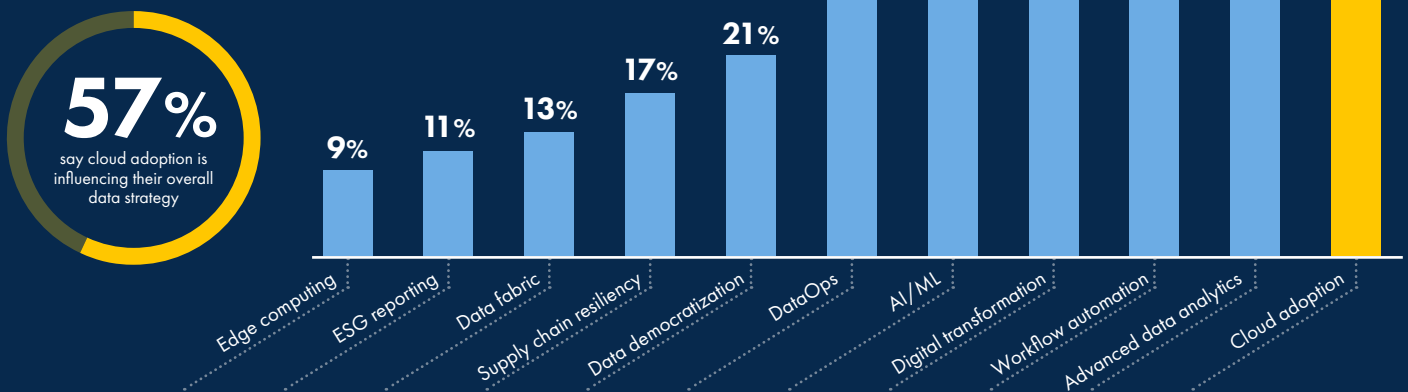
How has the economic downturn impacted your organization's data strategy?

- **40%** Decreases in staffing and resource allocation
- **37%** Decreases in budget
- **28%** Increased focus on financial reporting and predictive analytics
- **25%** Increased investment in automation
- **23%** No impact
- **22%** Increased investment in cloud adoption



In the face of budget constraints, companies accelerate the adoption of cloud technologies and launch digital transformation initiatives to increase flexibility while reducing costs. They also employ automation to reduce resource requirements.

Which of the following trends are influencing your organization's overall data strategy? Select all that apply.





Forging a Data Strategy for Success in Uncertain Times

KEY FINDING

Companies face considerable challenges to the success of their data programs, exacerbated by operating in an unpredictable macro-economic environment. However, they manage against those challenges by forging data strategies that employ technology to address constraints.

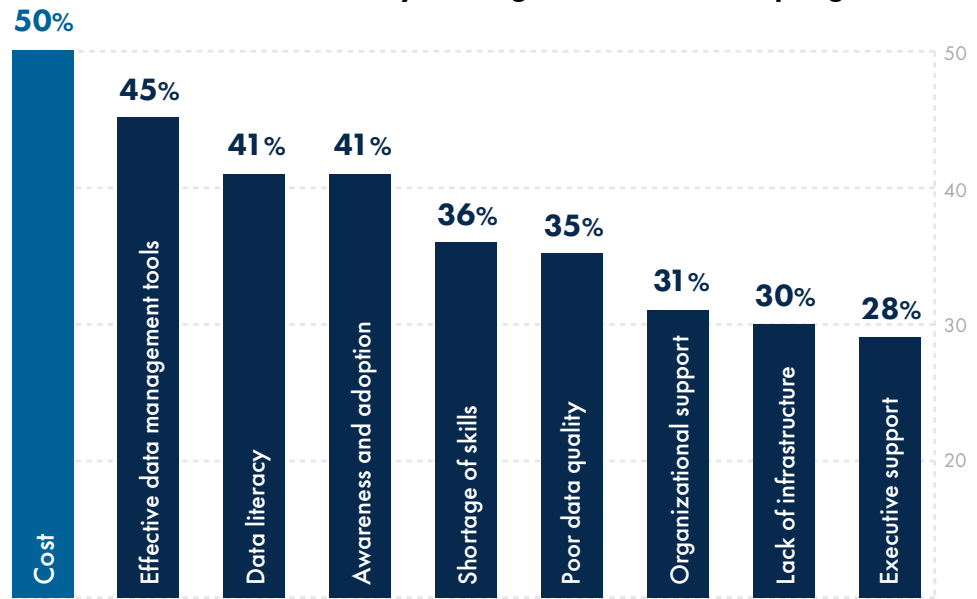
57%

of organizations have a comprehensive data strategy in place

Impediments to data program success

Data professionals responded to the 2023 Survey of Data and Analytics Professionals, from the Center for Business Analytics at Drexel University’s LeBow College of Business (LeBow) in partnership with Precisely, during a time of economic downturn and considerable uncertainty. They reported facing challenges to the success of their data programs — including cost (50%), lack of effective data management tools (45%), poor data literacy/program adoption (41%), and skills shortages (36%) as well as poor data quality (36%).

What are the challenges facing the success of your organization’s data programs?



50% say cost is the biggest challenge to their data management program success.

Impact of the economic downturn



The economic downturn and data strategy

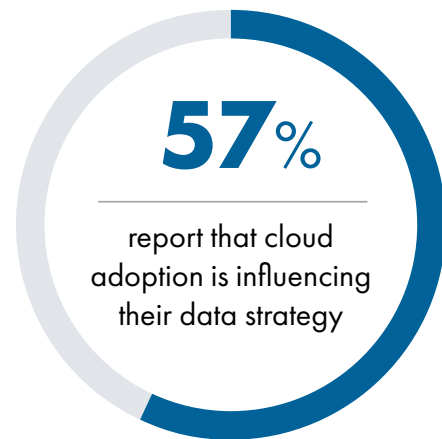
When asked if their organizations have a comprehensive data strategy, 57% of respondents said “yes.” We also asked if the economic downturn has impacted their organizations’ data strategies. Forty percent report decreases in staffing and resource allocations, and 37% cite budget decreases, which go hand in hand with the reported challenges of cost and skills shortages. ▶

At the same time, the research shows that technology trends are influencing overall data strategies. Organizations leverage technologies to manage constraints and accelerate business and data operations performance. For example, 57% are moving workloads to the cloud, and 42% are going through digital transformation, which can help organizations increase flexibility, efficiency, and agility while lowering operating costs.

Half of the respondents (50%) say their strategies are influenced by advanced data analytics, a critical technology for amplifying data-driven decision-making. They also

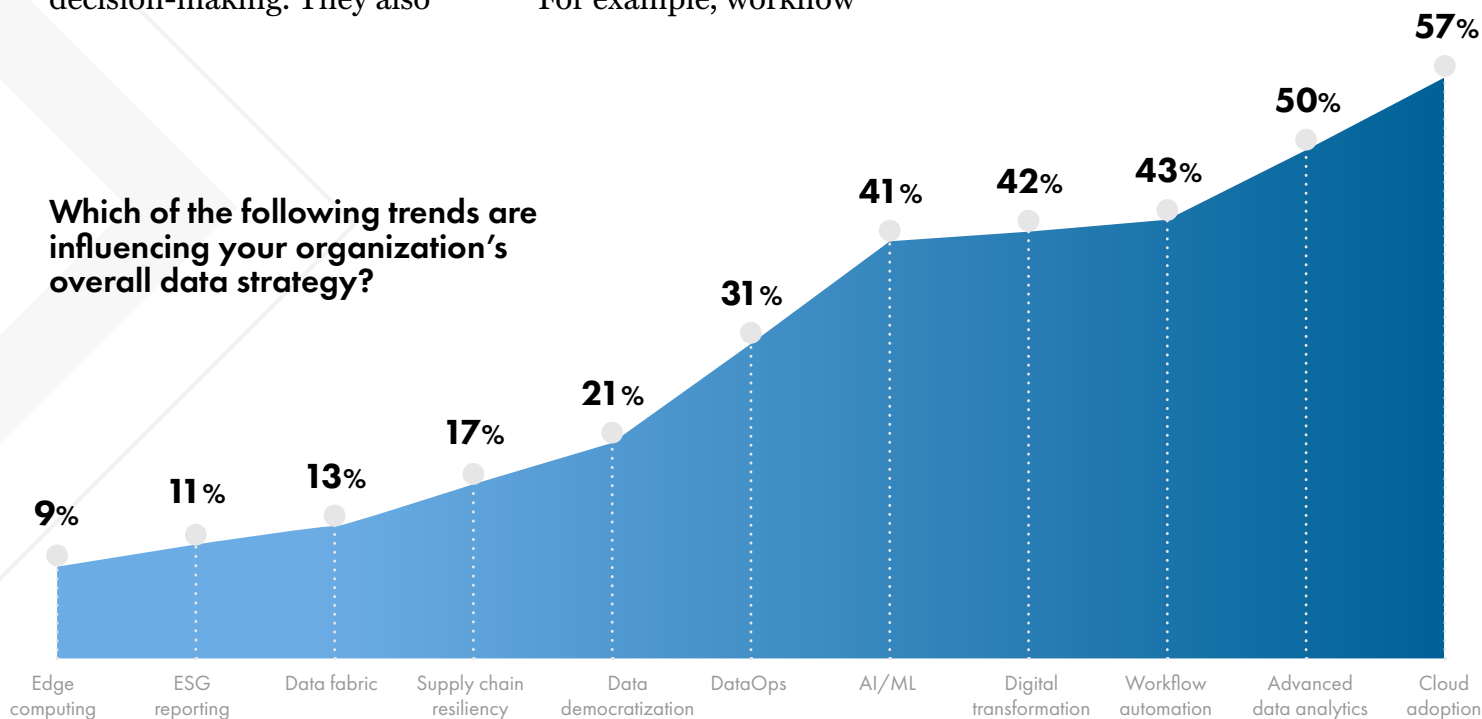
report an increased focus on financial reporting and predictive analytics (27%) in response to the economic downturn. And they cite improved quality of data analytics and insights (57%) as the leading added value realized from data governance programs. These data points tell us that in an uncertain economic environment, organizations are leaning into advanced analytics to help them make decisions and rapidly iterate on business reports and modeling as macro forces evolve.

Other responses focus on technologies that can help organizations better manage resource and skill shortages. For example, workflow



automation (43%), AI/ML (41%), and DataOps (30%) are complementary technologies that enable organizations to automate data management and data processes so they can improve data quality even when people and skills are scarce. ▶

Which of the following trends are influencing your organization's overall data strategy?



The value of having a data strategy

While it may seem apparent, survey data confirms that having a data strategy in place positively influences the outcomes of data initiatives. However, the influence is not equally distributed. Organizations without a data strategy were more likely to see an increase in demand for data as an outcome of data initiatives and performed well at increasing efficiency and reducing costs (although not as well as their counterparts with a strategy).

The presence of a data strategy is most strongly associated with positive outcomes from data

Why invest in a data strategy?

The study shows that organizations that have invested in a data strategy outperformed organizations without a data strategy in realizing positive outcomes from data initiatives.

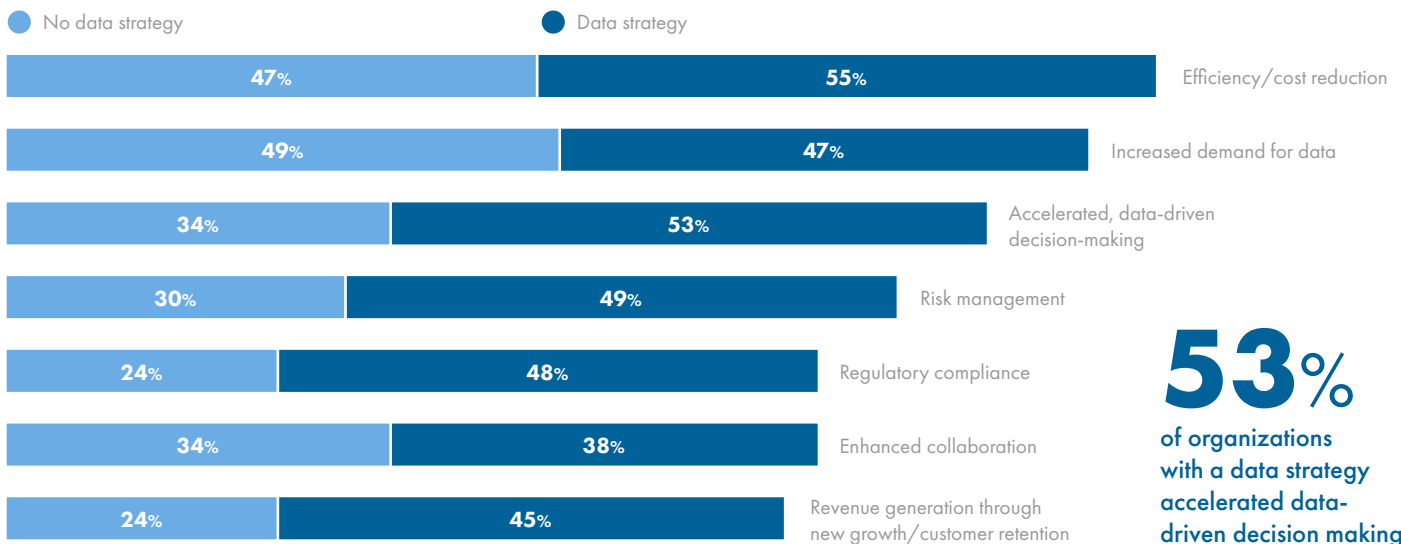
initiatives, including accelerated data-driven decision-making, regulatory compliance, risk management, and revenue generation. Moreover, organizations without a data strategy are consistently more likely to experience challenges to the success of their data programs. ■

Watch the State of the Industry Panel

Precisely CMO Kevin Ruane joins the Drexel University LeBow College of Business for a discussion about the state of the industry.

[Watch the video ▶](#)

Have your organization's data initiatives resulted in any of the following outcomes?



53%
of organizations with a data strategy accelerated data-driven decision making

Conclusion

Organizations are reliant upon data to guide their businesses through disruptive macroeconomic forces, making data more critical than ever to the success of business initiatives. In the big data era, companies worried about gaining control of large volumes of data. In 2023, organizations are dealing with more data than ever before, and they have progressed to taking actions that will help them trust that data and find the meaningful insights it contains. They recognize that data integrity offers a path to trusted data.

The survey respondents say that their number one focus area for improving data integrity is data quality (53%), followed closely by data integration (50%). Persistent problems with data quality and the failure to break down data silos and access data at speed and scale can prevent organizations from fully realizing the competitive advantage of data-driven decision-making. It can also expose them to risks associated with regulatory compliance.

As organizations take tactical steps to address these challenges, they are also making strategic moves, including

establishing a comprehensive data strategy (57%) and investing in a data governance program (60%), both delivering measurable results on the journey to data integrity. Earlier on the adoption curve today are data observability, data enrichment, and spatial analytics.

Location and data enrichment are important elements of data integrity. However, the survey tells us that before companies can really use location for competitive advantage, they must first address data quality, data integration, and data governance issues.

Companies who apply technology advancements such as cloud, advanced analytics, automation, digital transformation, and DataOps will increase flexibility, agility, and productivity while lowering operational costs. Companies that focus on data integrity by improving data quality, while also planning to add context to their data through data enrichment and spatial analytics, will have an edge in their business decision-making.



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