

FORRESTER®

Building Data Literacy

The Key To Better Decisions, Greater Productivity,
And Data-Driven Organizations

A FORRESTER CONSULTING THOUGHT LEADERSHIP PAPER COMMISSIONED BY TABLEAU, A SALESFORCE COMPANY FEBRUARY 2022

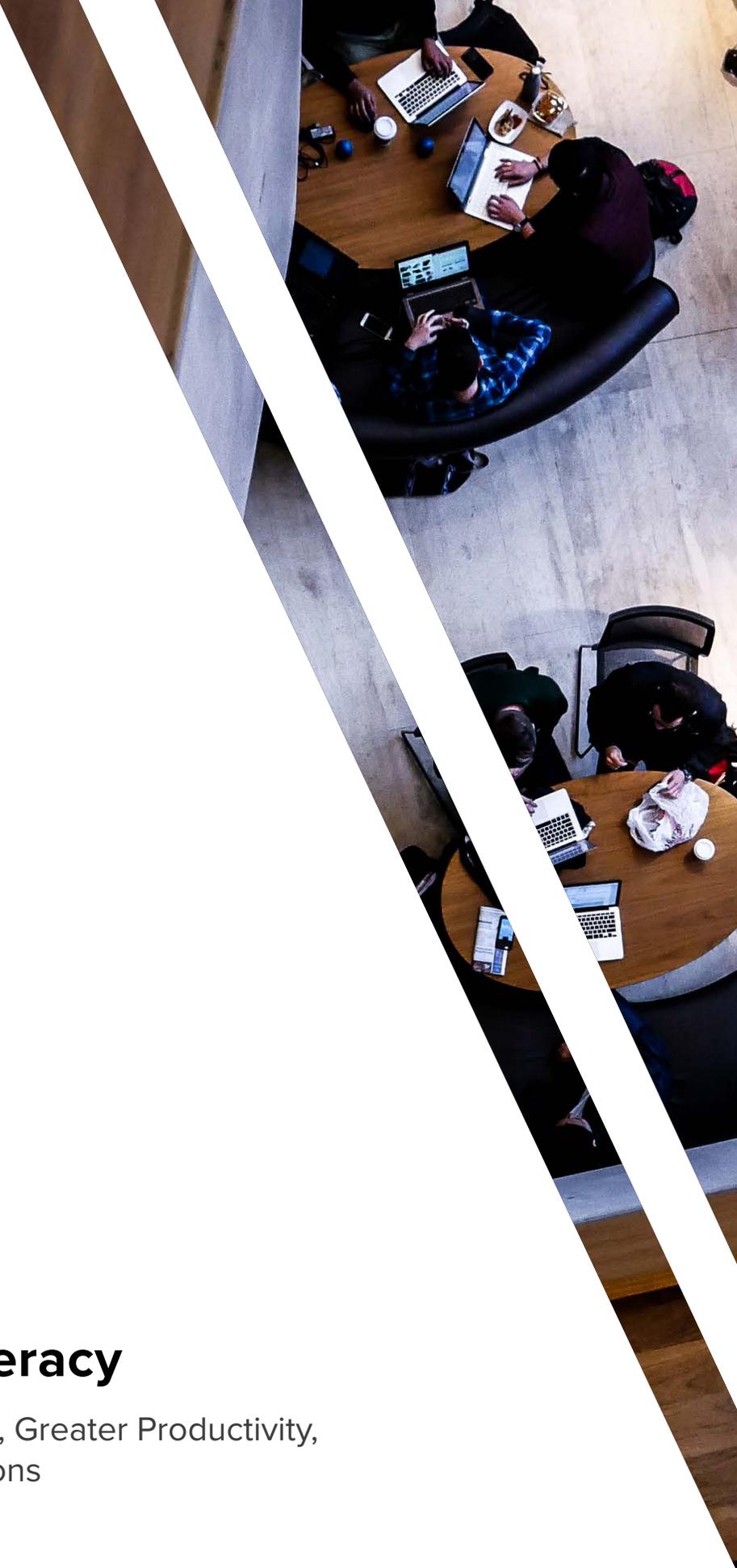


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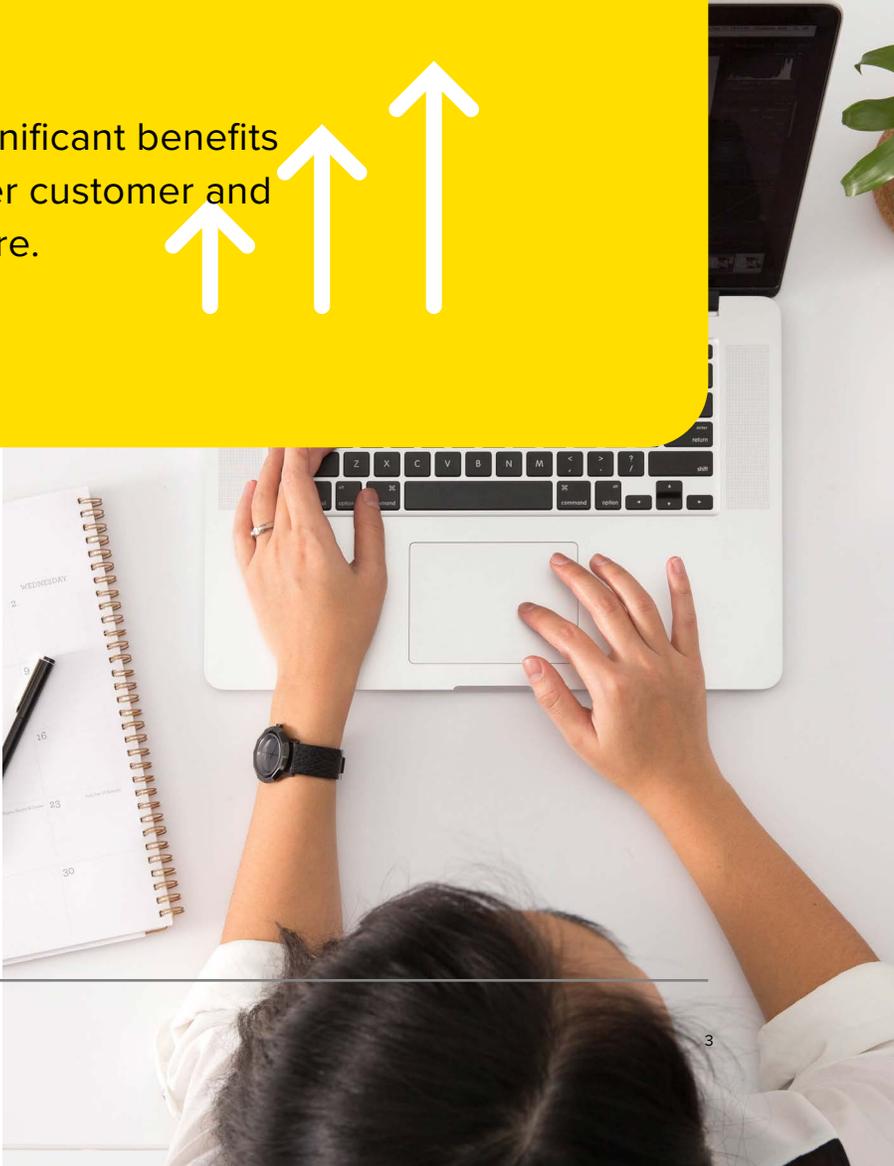
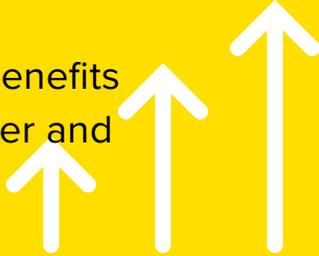
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Executive Summary

Organizations are collecting and processing more data than ever. However, the ability of workers to understand, analyze, and use that data for better decision-making and advancing enterprise goals has not kept pace with technological growth. Smart companies recognize that empowering employees by improving data skills is crucial for digital transformation and the creation of a data culture. Truly data-driven organizations offer opportunities for data training and development beyond traditional data-focused roles. Organizations that invest in data literacy and upskilling at scale across all departments see dramatic benefits, including improved decision-making and productivity as well as greater employee satisfaction and retention. Employee satisfaction benefits were particularly high — employees who were highly satisfied with their organization’s data programs were 10 times more likely to be highly satisfied with their organization overall and nearly twice as likely to say they were likely to still be at their organization in two years.

Data literacy efforts lead to significant benefits in increased innovation, greater customer and employee experience, and more.

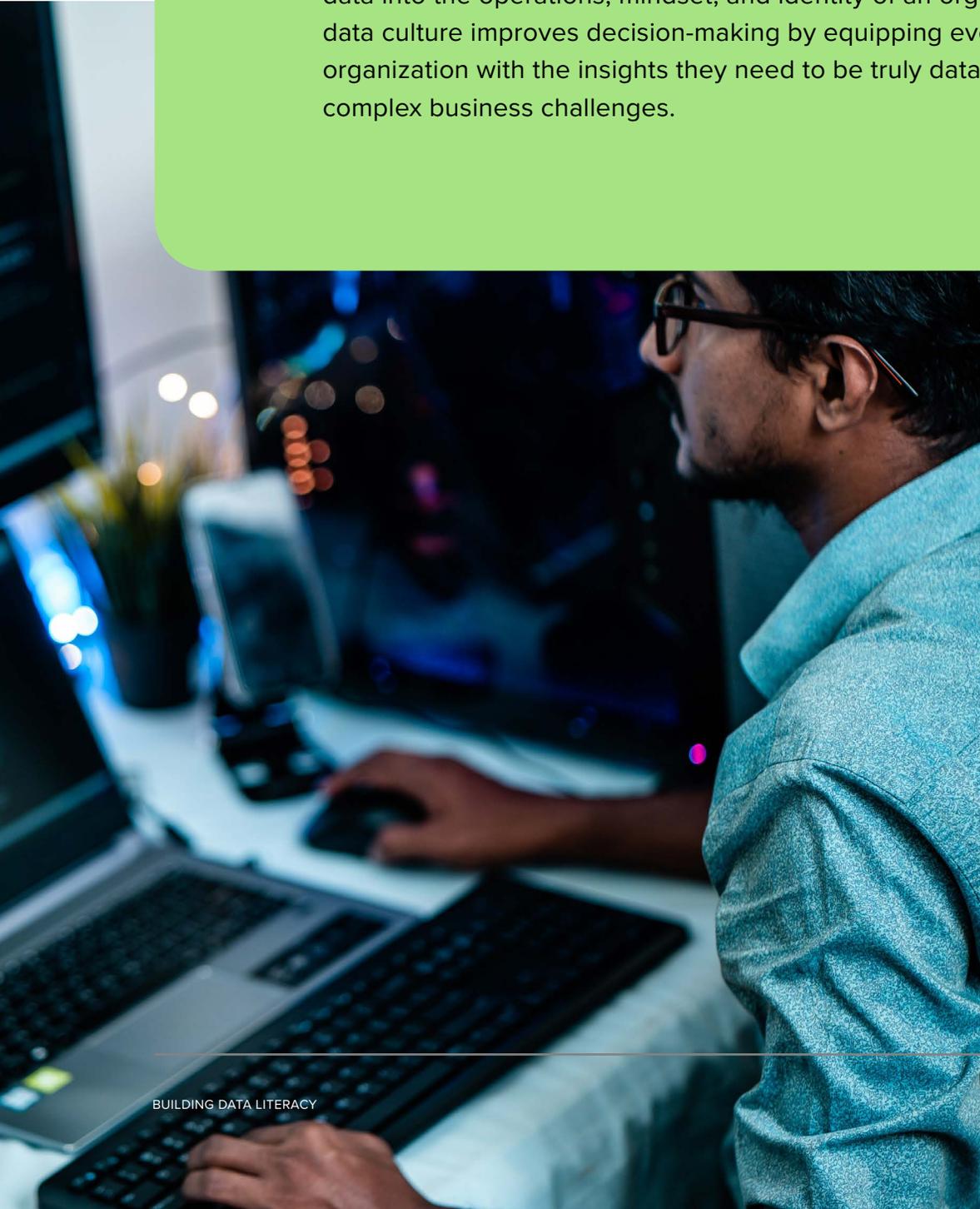


Definitions

Data literacy – Possessing the skills necessary to understand, explore, use, make decisions with, and communicate using data.

Data skills – The techniques used to extrapolate meaning from and communicate discoveries with data. Basic data skills include data literacy and basic data analysis abilities. Advanced skills include data science, AI, machine learning, and advanced analysis techniques.

Data culture – A set of collective behaviors and beliefs that weaves data into the operations, mindset, and identity of an organization. A data culture improves decision-making by equipping everyone in the organization with the insights they need to be truly data-driven and tackle complex business challenges.



Key Findings

Data literacy efforts yielded dramatic benefits. Increased innovation, greater customer experience, better decision making, reduced costs, improved retention, and increased revenues topped the list of benefits. High-maturity programs reported benefits 10% to 50% higher than low-maturity initiatives.

Data skills are recognized as paramount for all workers.

Decision-makers and employees in every department consider basic data skills the most important skills for employee success. By 2025, nearly 70% of employees are expected to use data heavily in their job, up from 40% in 2018.

Training suffers from a lack of resources and companywide strategy. Many organizations rely on department-level initiatives or directly offload upskilling responsibility to employees. Departmental leaders are twice as likely as employees to say the organization has supplied the data skills workers need, showing a major disconnect. Fewer than half of employees surveyed have been offered data training.



Nearly 80%

of employees say they're more likely to stay at a company that sufficiently trains for the data skills they need.

Only 47%

of employees say they have been offered data training by their organization.



Data Skills Are Vital, But Training Lags

Intelligent leaders and employees understand that the vast amounts of data harvested by their organizations are of little value if they cannot quickly understand and act upon it. Many leaders recognize the continued, fast-growing importance of data in a wide variety of jobs across the entire organization. To truly leverage data, organizations must move beyond awareness that data literacy is imperative and scale out the efficient and effective companywide upskilling needed to create a data culture. Those that do see significant benefits in decision-making, innovation, and employee retention.

Tableau commissioned Forrester Consulting to explore the state of enterprise data literacy and culture as well as the organizational issues, challenges and benefits that come with them. Forrester conducted two online global surveys of department decision-makers and workers with common questions between them (1,032 decision-makers and 1,036 employees were surveyed). In surveying these employees and decision-makers, Forrester finds that:

- **Data skills are increasingly crucial.**

Decision-makers and employees agree that better data skills will continue to be of key importance for individuals and teams. Decision-makers rate basic data skills as the most important skills for their employees to succeed in their day-to-day work. It's also seen as the skill that has increased most in importance over the last three years, surpassing project management, communications, and computer skills (see Figure 1). Employees feel the same — basic data skills also topped their list. As organizations evolve their data-driven cultures, expectations will grow beyond basic data literacy. Over the next three years, decision-makers see advanced data skills as rising most in importance.

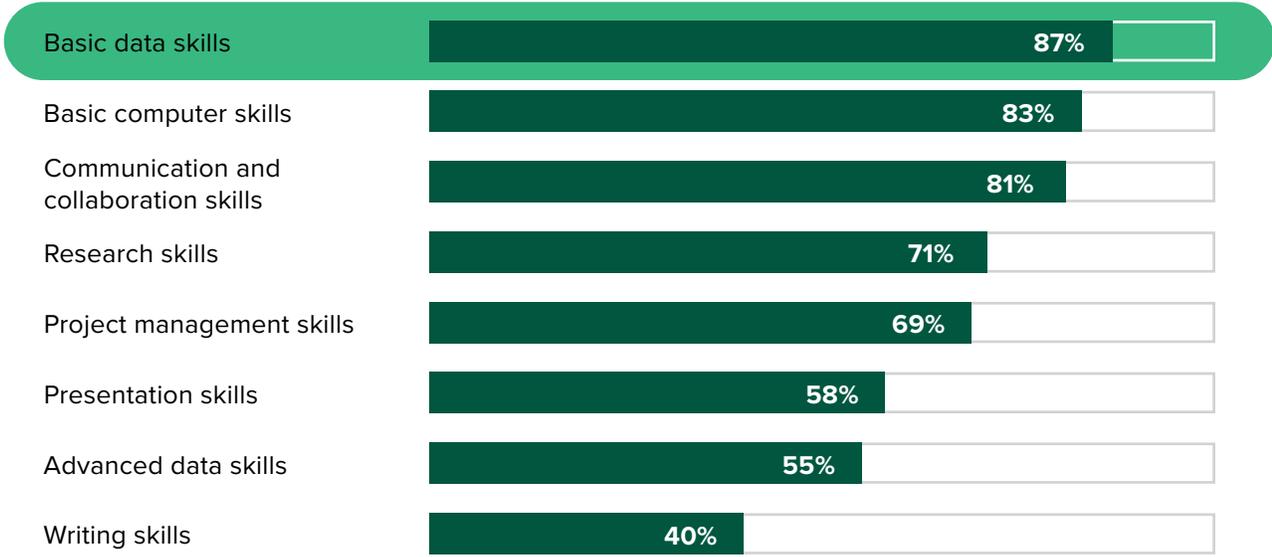


of decision-makers say that they expect at least a basic data literacy from **all employees in their department.**

Figure 1

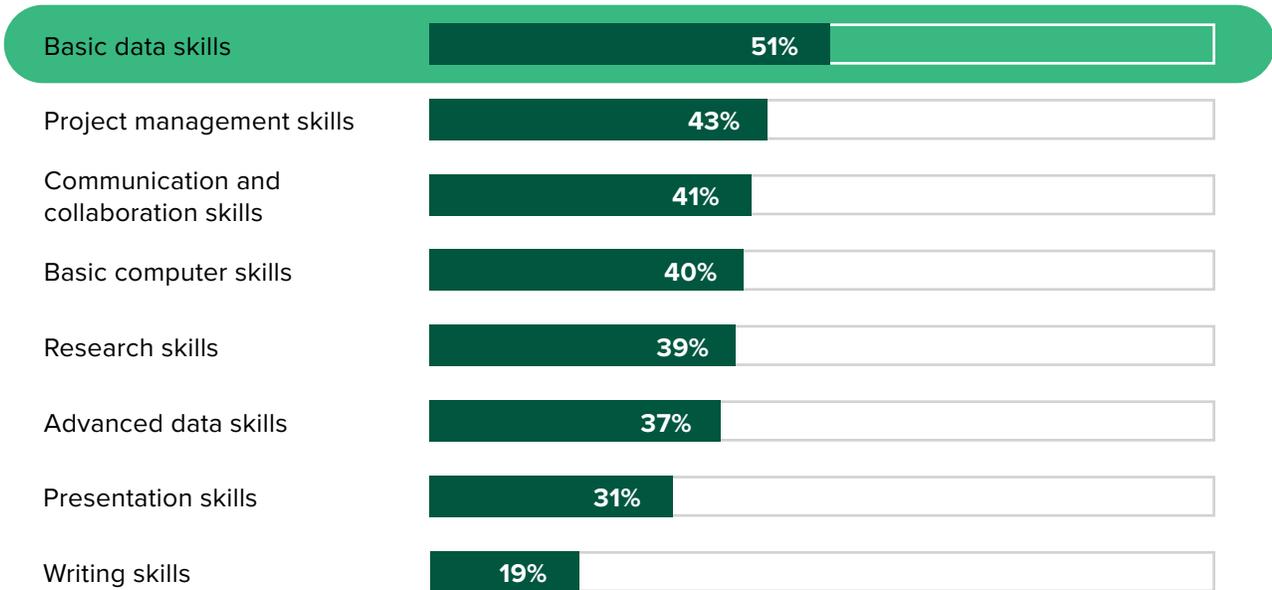
“How important do you think each of the following skills are for the day-to-day tasks of employees in your department?”

● Important/Very Important



“In the past three years, which of the following skills have increased in importance most for your department?”

(Select top three answers.)



Base: 1,032 director and higher data program decision-makers at global companies with 500 or more employees
 Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

- **Data needs expand across all facets of business.** Once required only of specialists, data skills are now a necessity for workers across the enterprise. Employees in Forrester’s study across every department — including product, IT, HR, and operations — cite data skills as the most important skill for success in their roles (see Figure 2).
- **Expectations are rising quickly.** Decision-makers say that fewer than 40% of their employees used data heavily as part of their job three years ago. Today it’s 55%, and that is estimated to reach 69.5% by 2025. Expectations are rising rapidly for all staff, with 82% of decision-makers now expecting every employee in their departments to have at least basic data literacy. More than three-fourths of responding decision-makers currently expect workers to use data whenever possible.

EMPLOYEES

Figure 2

Employees Across Every Department Ranked Basic Data Skills As The Most Important

“How important do you think each of the following skills are for success in your role?”

(Showing “Important” and “Very important” combined)

● Basic data skills



Base: 1,036 employees in all roles with more than three years of experience at global companies with more than 500 employees

Note: Showing top result across 10 departments.

Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

MOST EMPLOYEES AREN'T GETTING THE DATA TRAINING THEY NEED

Despite growing pressures for more effective use of data, many workers may not be learning the skills they need. Forrester found that:

- **There is a gap between data training need and implementation.** Less than half the responding workers have been offered data training by their organization (see Figure 3). Nearly three-fourths of decision-makers hold the optimistic (but unrealistic) belief that employees should improve their own data skills. As a result, many workers must pick up whatever ad hoc, on-the-job knowledge they can. Learning through practice and from coworkers are the most common ways to advance data expertise.

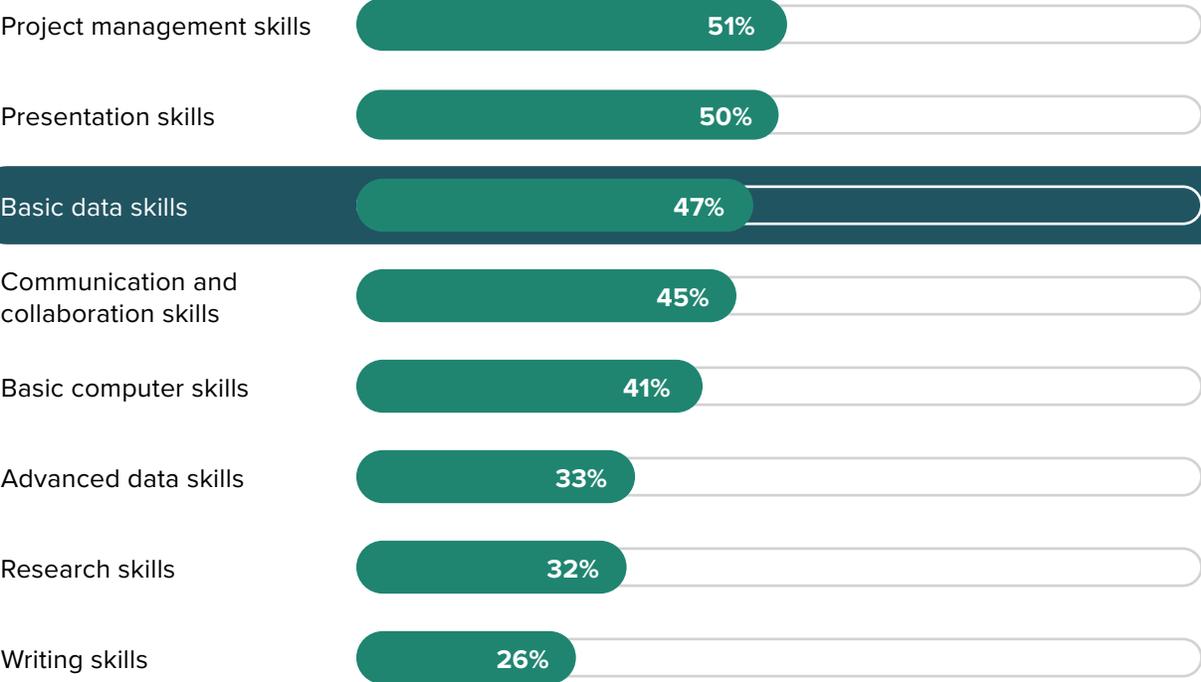
Only 40%

of employees say their organization has provided the data skills they're expected to have.

Figure 3

EMPLOYEES

“For which of the following skills are you offered training for at your organization?”



Base: 1,036 employees in all roles with more than three years of experience at global companies with more than 500 employees
Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

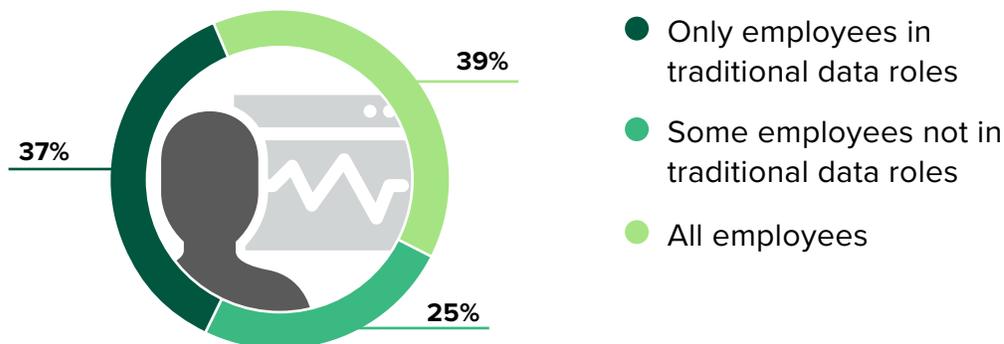
- **Existing training lacks reach and breadth.** Despite clear need and value, nearly 40% of surveyed decision-makers reported their organizations were offering training with participation limited to only employees in traditional data roles; just 25% include some other employees. Only 39% make data training available to all employees (see Figure 4). Even for staff lucky enough to receive training, the range of skills learned is limited (see Figure 5).
- **Employers lack awareness of shortcomings.** Despite the low percentage of staff receiving formal data training, 79% of decision-makers say their department is successfully equipping its workers with needed skills, compared to only 40% of employees. Nearly three-fourths of workers say they want more company-sponsored data training (see Figure 6). This large difference suggests leaders underestimate the training gap in their organizations.
- **Skills gap prevents data-driven culture and decisions.** The big disconnect between employer expectations and the data training employees actually get presents a serious obstacle to creating the data-driven cultures many organizations desire. A telling example is that 69% of decision-makers say a lack of data skills stops employees from using data effectively in decision-making.

Only 47%

of employees say they have been offered data training by their organization.

Figure 4

“Which employees are offered data training?”



Base: 809 director and higher data program decision-makers at global companies with 500 or more employees who offer their employees training on data skills

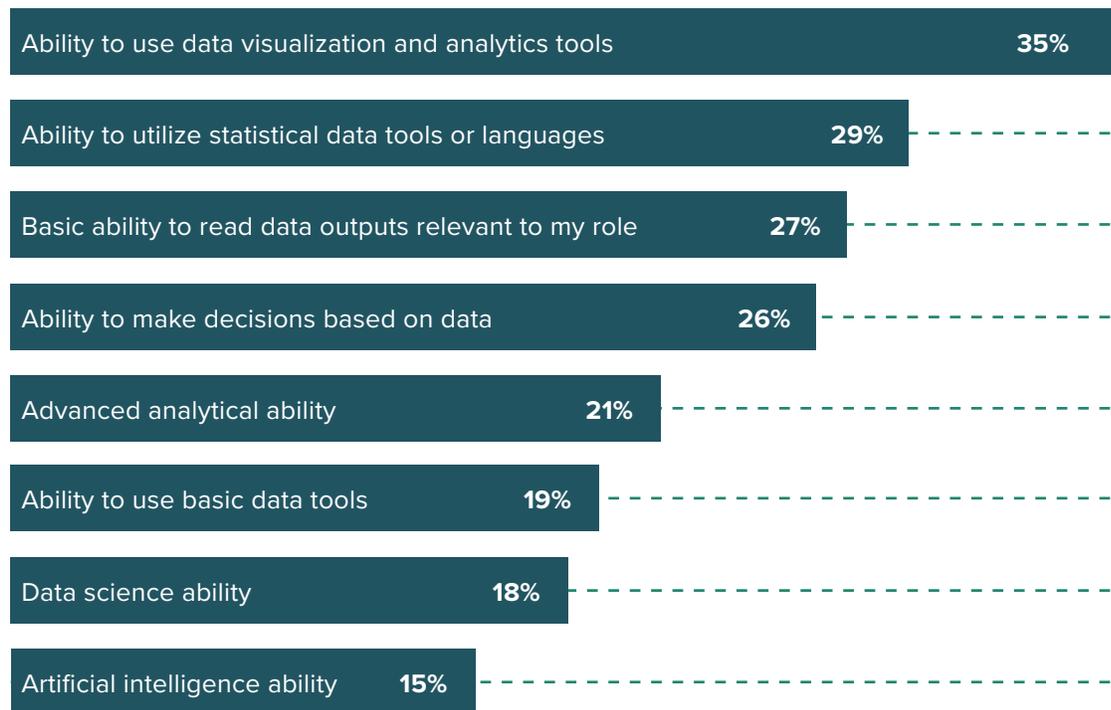
Note: Percentages may not total 100 due to rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

DECISION-MAKERS

Figure 5

“Which of the following data skills have you been trained for?”



Base: 1,036 employees in all roles, with more than three years of experience, at global companies with more than 500 employees
Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

Figure 6



*Base: 1,032 director and higher data program decision-makers at global companies with more than 500 employees

**Base: 1,036 employees in all roles with more than years of experience at global companies with more than 500 employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

Lack Of Resources And Narrow Focus Stall Progress

Democratizing data training across the entire organization is crucial for individual, departmental, and corporate success. However, as detailed in the previous section, many firms currently face a big gap between data training supply and demand. Where do these disconnects come from? Forrester found:

- **Employee reluctance to speak up.** Many workers are hesitant to voice frustrations with data training, likely worrying that a lack of skills will reflect poorly on them. Only 26% say they talked to a manager about wanting more data training. Even fewer workers, 16%, say they complained about the amount of training offered. As a result, most decision-makers may not fully understand the scope of the problem.
- **Lack of companywide initiatives and support.** Despite the crucial role that organizational leadership plays in creating a strong data culture, very few data initiatives come from companywide mandates or programs. Decision-makers report that only 26% of basic data skills training and 9% of advanced training originate outside of departments and teams. Instead, the onus to train employees usually lies at the department or team levels. Many departmental decision-makers report struggling to secure the budget or support needed to run effective data training initiatives.
- **Lack of in-house knowledge and skills.** Even with budget and leadership support, data training efforts are not simple to field, especially when materials are being created internally. For basic data training, organizations are much more likely to use courses designed in-house than from a service or technology partner. Unfortunately, few enterprises have the subject knowledge and expertise to design and deliver effective data courses; decision-makers cited a lack of skilled



69%

of decision-makers say a lack of data skills stops employees from using data effectively in decision-making.

staff to lead training and a lack of knowledge for improving data skills as two of their top challenges in improving data skills (see Figure 7).

Organizations unable to overcome these obstacles face big challenges. Department workforces without sufficient data literacy risk slower and less accurate decision-making, lack of innovation, decreased productivity, and other negative impacts (see Figure 8).

Only 26%

of basic data skills training and 9% of advanced training initiatives are companywide.

Figure 7

DECISION-MAKERS

“Which of the following challenges has your department faced or currently faces in trying to improve its level of data skills (both basic and advanced)?”



Lack of skilled staff to lead training



Lack of budget



Lack of knowledge of how to improve data skills



Lack of support from the wider organization



Lack of a data culture



Resistance from the employees



Inadequate training materials

Base: 1,032 director and higher data program decision-makers at global companies with 500 or more employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

Figure 8

“What issues do you risk facing if your department’s workforce is not sufficiently data literate?”

-  1 Slow decision-making
-  2 Inability to make accurate decisions
-  3 Lack of innovation
-  4 Decreased productivity
-  5 Inability to execute fundamental job functions/tasks
-  6 Failure to perform against from competitors
-  7 Not meeting our department’s objectives
-  8 Risk of losing employees
-  9 Failure to respond to disruptors competing for our customers
-  10 Poor customer experience
-  11 Poor employer brand reputation

Base: 1,032 director and higher data program decision-makers at global companies with 500 or more employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

High Data Literacy Boosts Performance, Satisfaction, And Innovation

Organizations need to progress from recognition to operationalization of data training programs for all workers. The good news is that Forrester’s survey shows that formal and informal upskilling initiatives produce clear benefits for employees, departments, and entire organizations, which should help make program approvals easier. To get a better picture of these benefits, Forrester analyzed employee data satisfaction, along with the maturity of data skilling programs. In both cases, more training, literacy, and maturity are strongly correlated with improved performance, satisfaction, and worker retention.

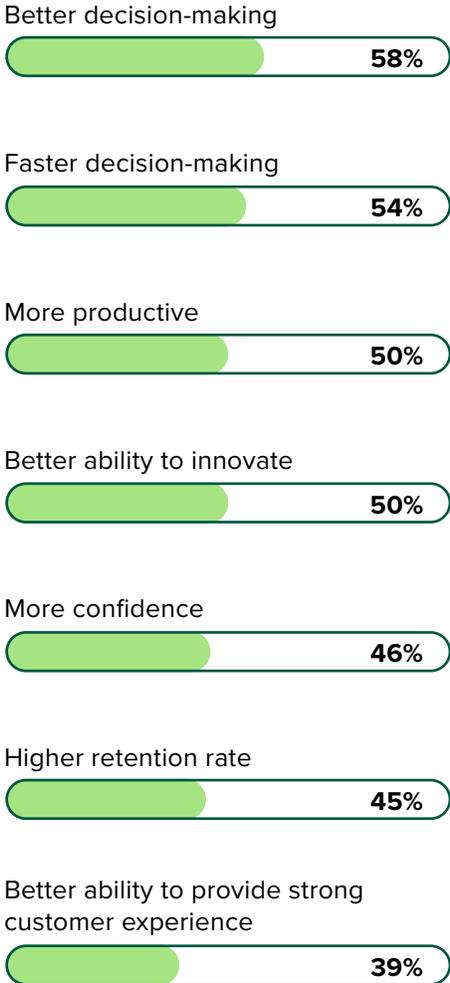
THE DATA IS IN: TRAINING IS A WIN-WIN FOR EMPLOYEES AND EMPLOYERS

Forrester segmented employees based on their satisfaction with their organization’s data training initiatives, data culture, and use of data in decision-making. The goal was to see how employees with the highest data satisfaction compared with their peers in terms of overall satisfaction with their role, motivation, and productivity (see Appendix C for more details). Forrester found that:

- **Data-literacy makes better employees.** Employers highly value data-skilled employees — they see them as making better and faster decisions while being more productive and innovative (see Figure 9). Even more employees surveyed agree, saying they make better decisions (83%) and faster decisions (82%) when they can use data. Moreover, high

Figure 9 **DECISION-MAKERS**

“What value do data-literate employees bring compared with those without data skills?”



Base: 1,032 director and higher data program decision-makers at global companies with 500 or more employees
Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

data satisfaction employees report feeling more competent, motivated, and productive in their daily work than low data satisfaction peers (see Figure 10).

- Data training improves happiness and retention.** Data training also plays a significant role in employee satisfaction and retention. Nearly 80% of employees say they’re more likely to stay at a company that sufficiently trains for the data skills they need. Employees with high data satisfaction are ten times more likely to voice high satisfaction with their organization overall (97% vs. 9%); twice as likely to have high satisfaction with their team and department; and significantly more likely to stay at their organization (see Figure 10).

Figure 10

EMPLOYEES

“Keeping in mind that this survey is completely anonymous, please rate your satisfaction levels in each of the following areas related to your role.”

(“High” and “Very high” shown)

- High data satisfaction employees
- Low data satisfaction employees



Base: 1,036 employees in all roles with more than three years of experience at global companies with more than 500 employees
 Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

MATURE DATA INITIATIVES DELIVER BIGGER BENEFITS

Clearly, data literacy and skills training can produce real benefits. But not all initiatives are created equal. To analyze the difference between basic and advanced initiatives, Forrester segmented respondents based on the maturity of their organization’s efforts. High-maturity organizations offer training for: 1) wide ranges of data skills, 2) all employees, not just traditional data roles, and 3) multiple training modes. Low-maturity organizations are the opposite — offering a small range of skills to a subset of employees though limited training types (see Appendix C for more details).

Forrester found that while all organizations with initiatives to improve employee data skills saw strong benefits, the greatest gains came from high-maturity programs. These report dramatically greater increases in innovation, customer experience, decision making, cost reduction, employee retention, and revenues (see Figure 11).

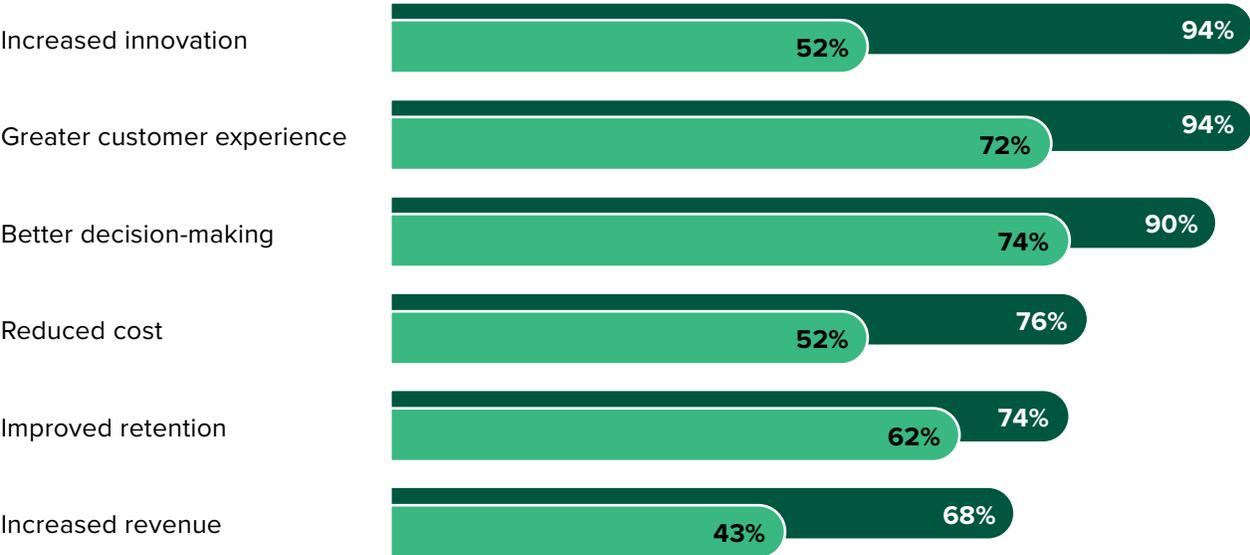
Figure 11

DECISION-MAKERS

“To what extent has your department received the following benefits from its specific data skills initiatives?”

(“Significant benefit” and “Transformational benefit” shown)

● High-Maturity Data Initiative Organizations ● Low-Maturity Data Initiative Organizations



Base: 1,032 director and higher data program decision-makers at global companies with 500 or more employees
 Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

Key Recommendations

Increasingly, enterprises understand the broad and deep value of an entire workforce empowered by ever-improving data literacy and skills. At the same time, though, there's a disconnect between decision-makers feeling they're adequately equipping their employees with the required data skills and employees disagreeing. This is harming firms' competitiveness.

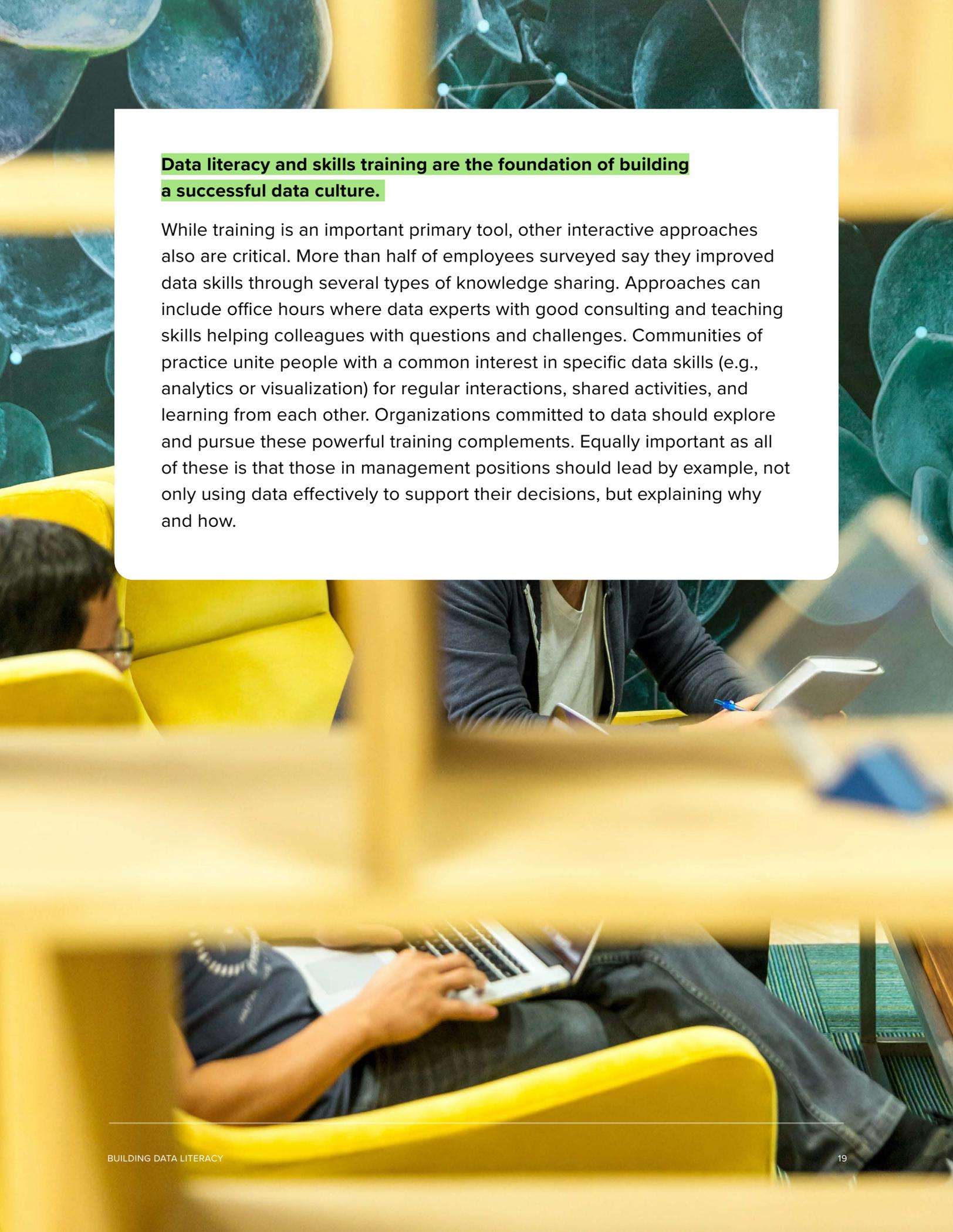
Forrester's in-depth survey of decision-makers and employees yielded several important recommendations for organizations working to build data competencies and transformational, data-driven cultures:

Drive customer, business, and employee value with companywide data skills training.

Top-level leadership and strategy must help ensure that data training is relevant and effective for everyone from new hires to experienced workers across all departments and roles. Employees are hungry for data skills that enable them to see more impact from their work and be more satisfied. The accountability and coordination of a centrally driven, appropriately funded approach is the surest way to drive meaningful customer, business, and employee value. This also can help alleviate talent pipeline issues that many organizations face — finding the specific data skills that organizations need through training instead of hiring.

Consider strategic partners for data skills training that's focused on driving decisions that matter.

Sidestep internal resource and skills constraints with consulting partners, technology vendors, data literacy specialists, and others who can supply a wide variety of on-demand, in-person, individual, or group training for specific technologies and roles. Be aware that people don't learn effectively if they can't see the relevance of the material they're taught. Hence, make sure that training is either as close as possible to an individual's job role or focuses on everyday life situations employees can relate to. This helps employees be more effective in their world as they're able to better understand and analyze data with the context of their role and areas of expertise.



Data literacy and skills training are the foundation of building a successful data culture.

While training is an important primary tool, other interactive approaches also are critical. More than half of employees surveyed say they improved data skills through several types of knowledge sharing. Approaches can include office hours where data experts with good consulting and teaching skills helping colleagues with questions and challenges. Communities of practice unite people with a common interest in specific data skills (e.g., analytics or visualization) for regular interactions, shared activities, and learning from each other. Organizations committed to data should explore and pursue these powerful training complements. Equally important as all of these is that those in management positions should lead by example, not only using data effectively to support their decisions, but explaining why and how.

Appendix A: Methodology

In this study, Forrester conducted two online surveys to evaluate organizational culture around data literacy. One survey with 1,032 director and higher data program decision-makers at global companies with more than 500 employees. The second survey with 1,036 employees in all roles with more than 3 years of experience at global companies with more than 500 employees. Respondents were offered a small incentive as a thank you for the time spent on the survey. The study began in October 2021 and was completed in November 2021.

Appendix B: Demographics

DECISION-MAKER SURVEY

GEOGRAPHY	
APJ	30%
EMEA	30%
Latin America	20%
North America	20%

EMPLOYEES	
20,000 or more	9%
5,000 to 19,999	25%
1,000 to 4,999	40%
500 to 999	26%

INDUSTRIES (TOP 7)	
Financial services and/or insurance	9%
Technology and/or technology services	9%
Retail	9%
Manufacturing and materials	8%
Transportation and logistics	7%
Business or professional services	6%
Travel and hospitality	6%

POSITION	
VP (29%)	29%
Director (71%)	71%

DEPARTMENT (TOP 7)	
IT	13%
Marketing/advertising	13%
Operations	11%
Finance/accounting	10%
Analytics/business intelligence	10%
Human resources/training	10%
Customer experience	9%

ANNUAL REVENUE (USD)	
More than \$5 billion	7%
\$1 billion to \$5 billion	15%
\$500 million to \$999 million	22%
\$400 million to \$499 million	13%
\$300 million to \$399 million	11%
\$200 million to \$299 million	12%
\$100 million to \$199 million	10%
\$1 million to \$99 million	9%

EMPLOYEE SURVEY

GEOGRAPHY

APJ	30%
EMEA	30%
Latin America	20%
North America	20%

EMPLOYEES

20,000 or more	14%
5,000 to 19,999	20%
1,000 to 4,999	38%
500 to 999	27%

INDUSTRIES (TOP 7)

Technology and/or technology services	11%
Financial services and/or insurance	10%
Retail	9%
Manufacturing and materials	9%
Healthcare	7%
Education and/or nonprofits	6%
Transportation and logistics	6%

AGE

18 to 25	5%
26 to 35	39%
36 to 45	37%
46 to 55	13%
56 to 65	6%
66 or more	0.4%

Note: Percentages may not total 100 due to rounding.

POSITION

Manager	45%
Project manager	22%
Full-time practitioner	34%

DEPARTMENT (TOP 7)

IT	15%
Operations	13%
Marketing/advertising	11%
Sales	10%
Human resources/training	10%
Finance/accounting	10%
Engineering	8%

ANNUAL REVENUE (USD)

More than \$5 billion	13%
\$1 billion to \$5 billion	18%
\$500 million to \$999 million	14%
\$400 million to \$499 million	13%
\$300 million to \$399 million	9%
\$200 million to \$299 million	8%
\$100 million to \$199 million	11%
\$1 million to \$99 million	13%
Less than \$1 million	1%

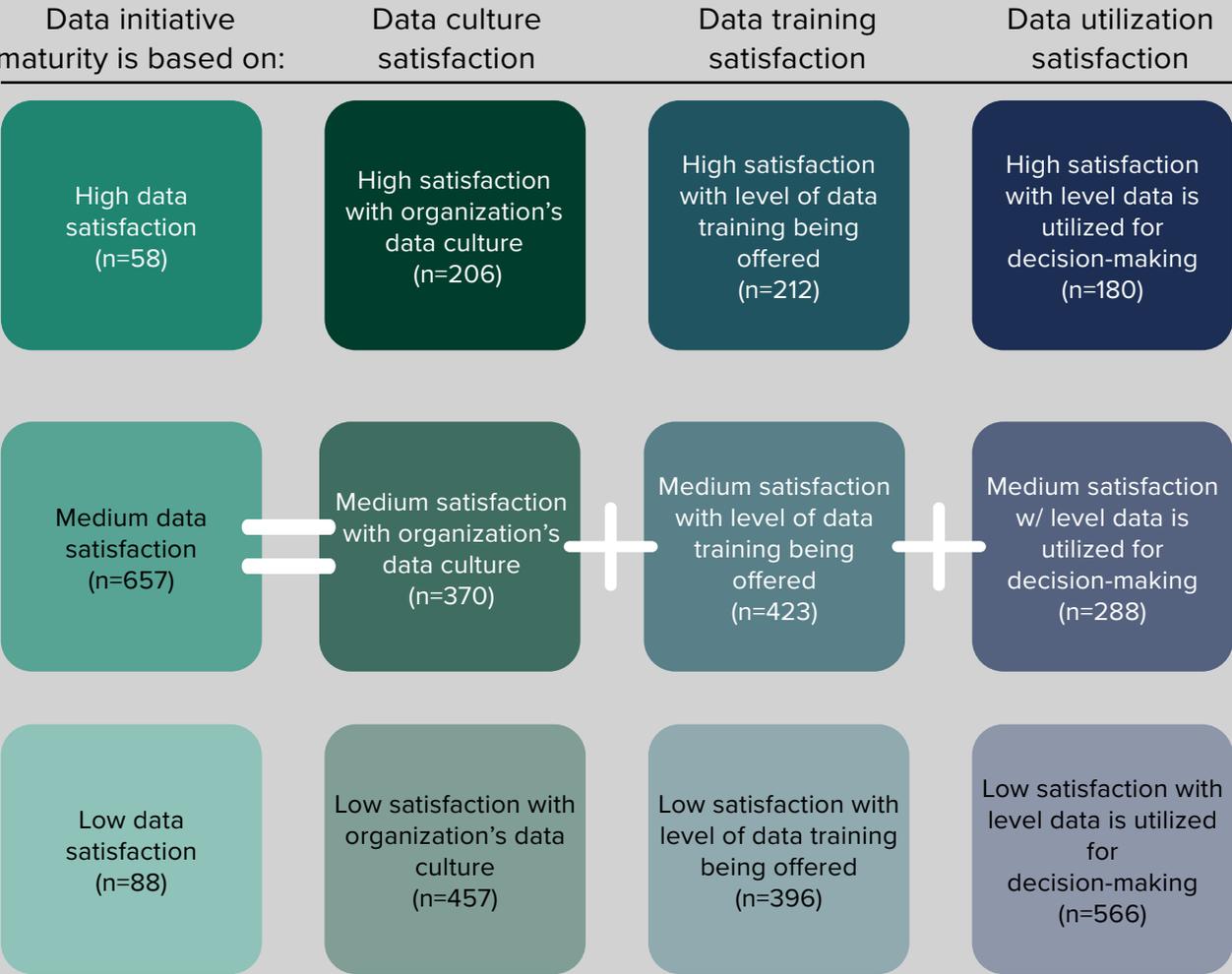
TENURE IN YEARS

3 to 5	45%
6 to 10	31%
More than 10	17%

Appendix C: Data Initiatives Maturity and Data Satisfaction Definitions

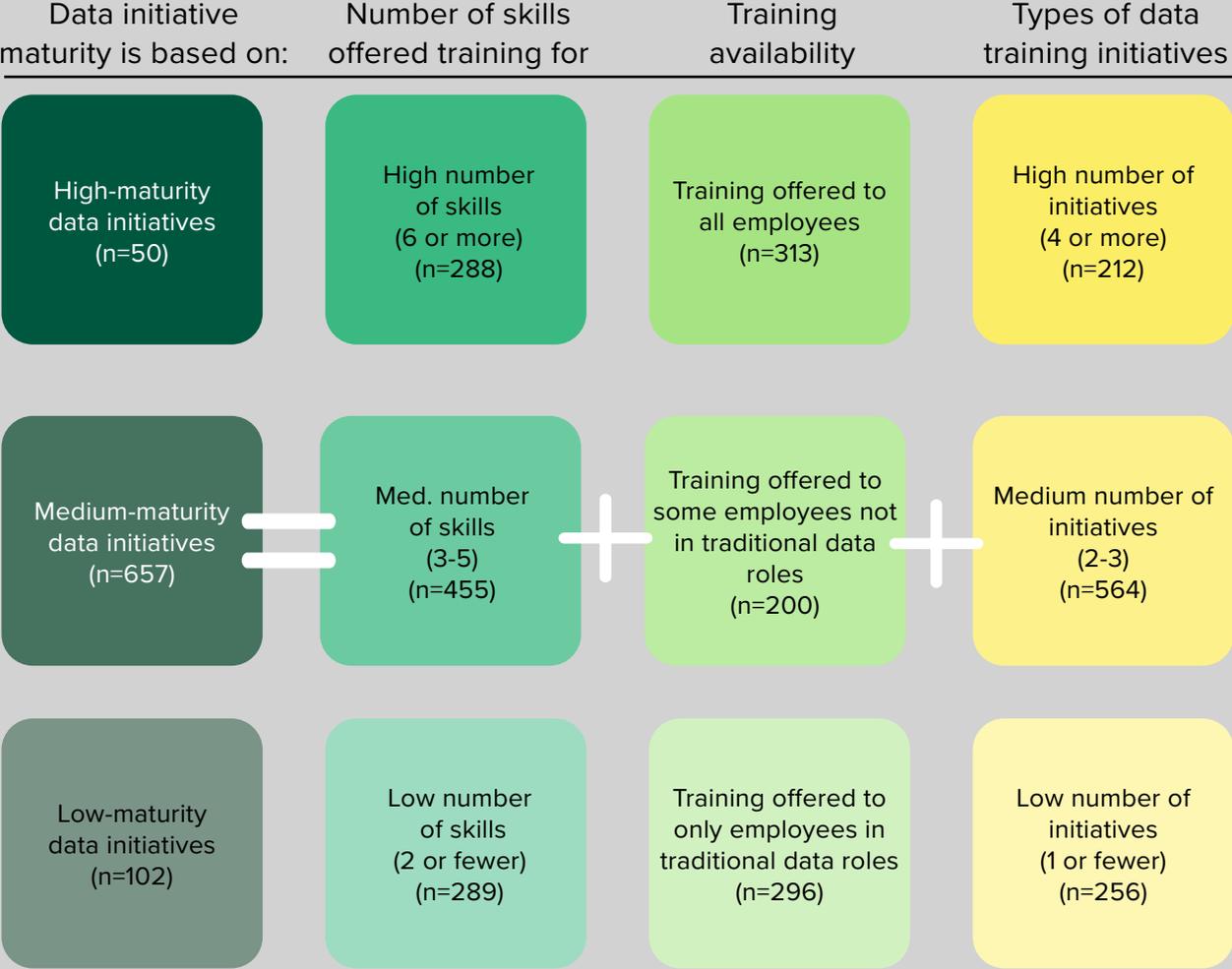
DEFINING DATA SATISFACTION

EMPLOYEES



Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021

DEFINING DATA INITIATIVE MATURITY



Source: A commissioned study conducted by Forrester Consulting on behalf of Tableau, a Salesforce company, November 2021



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