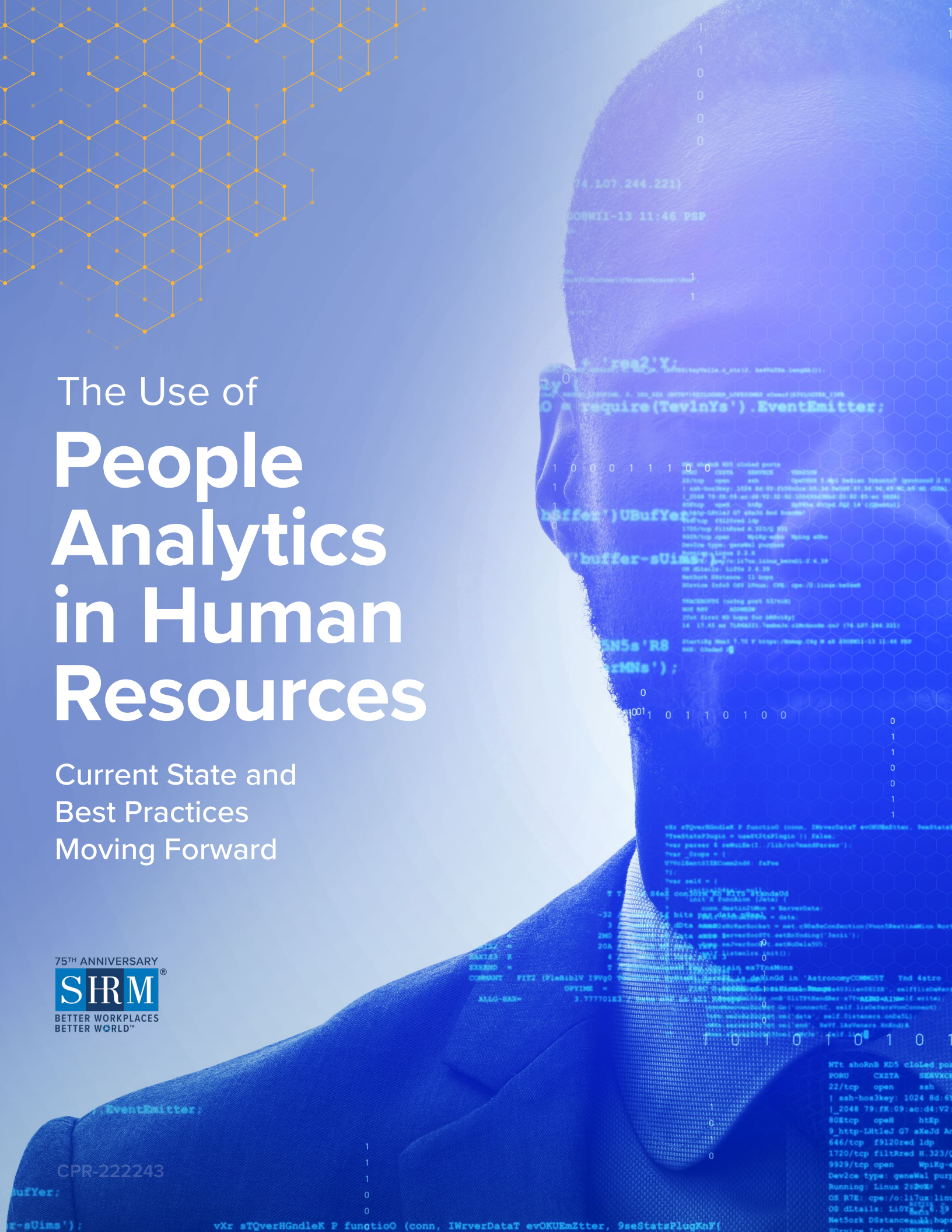
The Use of

People Analytics in Human Resources

Current State and Best Practices Moving Forward



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HR leaders are increasingly looking to people analytics as a tool to answer key business questions

More than 9 in 10 **(94%)** business leaders say that people analytics elevates the HR profession (People Analytics, SHRM Research, 2021). Meanwhile, **71%** of HR executives who use people analytics report that it is essential to their organization's HR strategy. With technological advances and increased computing power, organizations of all sizes can leverage increasing volumes of data within their organizational functions. It is now possible to use data, rather than anecdotes or intuition, to evaluate the efficiency of HR processes; employee productivity, diversity or attrition; and other key business metrics. The improved efficiency that people analytics tools offer can also allow HR professionals to focus more of their attention on innovation and strategy.

If HR professionals and leaders use people analytics appropriately, they can make more effective decisions, improve the employee experience and impact the bottom line.

To better understand the power of people analytics in organizations and the challenges organizations face in their journey, SHRM Research surveyed 2,149 HR professionals and 182 HR executives who work for organizations that currently use people analytics. SHRM Research found that people analytics has great utility and promise to transform HR, but that many organizations have yet to realize its full potential.

What Is People Analytics?

People analytics is the practice of collecting and analyzing employee (or applicant) data to understand, improve and optimize business outcomes.

The utility and promise of people analytics is evident in its use across the employee life cycle. The results reveal that organizations are using people analytics to solve some of the most pressing workplace issues. In fact, U.S. workers, HR professionals and HR executives all ranked recruiting and retaining talent among their top five priorities for 2023.

People analytics has the potential to solve both current and future challenges. HR professionals who use people analytics for recruitment and hiring say it helps them reduce potential bias in hiring decisions **(42%)** and achieve their workforce diversity and inclusion goals **(70%)**. Specifically, **50%** use people analytics to assess the diversity of candidate pools.

It is evident that organizations are using people analytics to solve pressing workplace issues. But how effectively are HR departments using these tools, and how can they leverage the power of people analytics to the greatest effect?

How are organizations using people analytics?

According to HR professionals, organizations are using people analytics most often for:

HR FUNCTION	%	EXAMPLES
Employee retention and turnover	82%	○ Identifying units or departments with high versus low turnover. ○ Determining which employees are most likely to resign by job function, age, tenure with the organization or other factors.
Recruitment, interviewing and hiring	71%	○ Using text "scrapers" to search applications for keywords that match desired skills and qualifications. ○ Conducting computerized screening interviews in which candidates provide answers to a predetermined set of questions so that they can be scored and compared.
Employee engagement	59%	○ Administering an engagement survey to all employees and measuring the percentage of engaged employees. ○ Asking employees to rate on a scale of 0 to 10 how likely they are to recommend the organization as a place to work (referred to as Employee Net Promoter Score®, or eNPS).
Compensation, benefits and total rewards	58%	○ Comparing the organization's compensation and benefits packages with those of its competitors. ○ Conducting pay audits.
Performance management	58%	○ Tracking number of customer service e-mails each employee answers. ○ Matching recorded customer service phone calls against a prescribed script.

Despite **71%** of HR executives saying people analytics is essential to their organization's HR strategy, only **57%** report that people analytics has produced profits or savings for their organization.

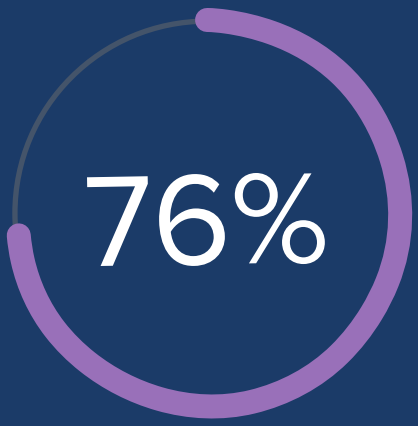
Why is people analytics delivering on its value for some organizations while others still struggle to leverage its potential?

1

Need to Strengthen Data-Driven Culture

While HR executives appear committed to building a data-driven culture, HR professionals are less likely to see signs of that culture throughout their organizations. This disconnect suggests that the shift to a data-driven culture is still in progress in many organizations.

HR EXECUTIVES



claim that their organizations are committed to building data-driven cultures.

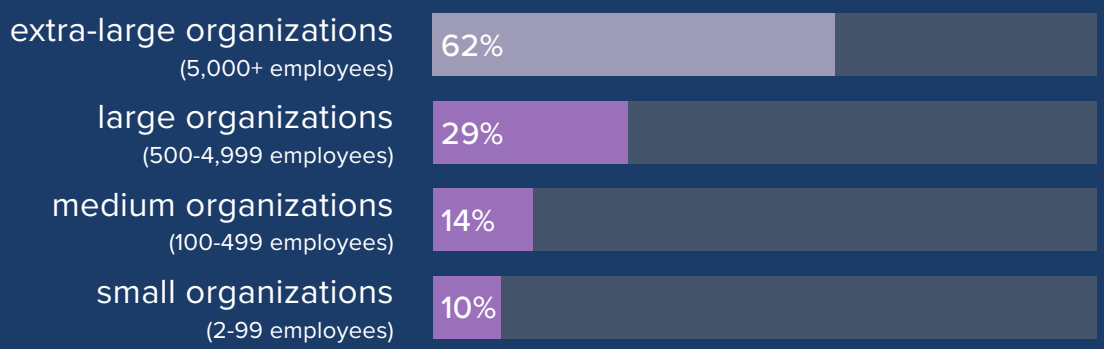
HR PROFESSIONALS

agree that data is used to make decisions at all levels of their organizations.

2

Need to Invest in Analytics Experts

A second reason why some organizations struggle to leverage the full potential of their people analytics may be a lack of investment in people analytics experts. Only **30%** of organizations that use people analytics have an employee, department or division dedicated to this function. And it is rare for small or medium-size employers to have this function:



An Analytics Expert Builds a Data Model and Finds a Surprise

In 2020 Protective Life began encouraging employees to take their accrued paid time off (PTO). The twin goals were to promote employee mental health and well-being and to avoid a surge of absences late in the year as employees faced a choice between using or losing PTO hours exceeding the annual carryover limit. When Matthew Hamilton, vice president of HRIS and people analytics, loaded PTO data into an AI-capable analytics tool, a clear pattern emerged: The higher the average number of PTO hours used, the lower the resignation rate, and vice-versa. A tweet from an executive at another company piqued Hamilton's interest. The executive commented that after she announced her PTO plans for the year, her team did the same. Sure enough, Hamilton found that when managers used more of their PTO, so, on average, did their direct reports.

As Hamilton pointed out, "The entire purpose of this analysis was to be informative to our leaders." Now he had the data to do just that: On average, employees who used their PTO were less likely to quit. And it was particularly important for managers to use PTO, because that guided their team to do the same.

3

Need to Use Analytics for More Sophisticated Purposes

Most organizations have just begun their people analytics journey, meaning that they are only using basic analytic techniques for limited purposes. Basic techniques do have valuable uses and can help answer certain business questions. Still, as analytic techniques become more complex, the amount of insight and business impact they can provide increase significantly. For example, reporting straightforward metrics such as turnover rate is very different from building analytical models that predict trends in employee behavior. In the current research, survey responses were applied to an analytics maturity model made popular by Bersin by Deloitte. The results revealed that **77%** of organizations remain at level 1 or level 2 of the four-stage sophistication model (see graphic). Organizations that move beyond just reporting to prediction will likely extract more value from their people analytics efforts.

ANALYTICS MATURITY MODEL

Popularized by Bersin by Deloitte

Among organizations using people analytics, percentage operating at the following levels of sophistication:

PERCENT	LEVEL 1: OPERATIONAL REPORTING
37%	Using already available data to analyze what happened in the past.

PERCENT	LEVEL 2: ADVANCED REPORTING
40%	Deliberately collecting certain data regularly to analyze relationships between variables (e.g., the connection between a new applicant tracking system and diversity of hiring).

PERCENT	LEVEL 3: ANALYTICS
19%	Using data to construct causal models and other sophisticated analyses to understand why patterns are occurring (e.g., effect of new benefits offerings on employee turnover rates).

PERCENT	LEVEL 4: ADVANCED ANALYTICS
4%	Collecting data to predict what will happen and support decision-making.

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Where Does AI-Driven People Analytics Fit into the Picture?

Artificial intelligence (AI) is an umbrella term for the use of algorithmic computing to transform data into actionable information. **Computer algorithms** refer to step-by-step instructions for completing a sequence of computations on data. A basic example would be a process for sorting a list of numbers from smallest to largest.

What Is AI-Driven People Analytics?

AI-driven people analytics refers to applying computer algorithms to employee (or applicant) data to generate workforce-related recommendations, predictions or decisions.

AI can be applied at any level of people analytics sophistication, as these examples illustrate:

APPLYING AI TO PEOPLE ANALYTICS MATURITY MODEL

LEVEL	OPERATIONAL REPORTING
1	AI could recommend new ways to analyze or explore archival data.

LEVEL	ADVANCED REPORTING
2	AI could combine data from multiple sources to help HR professionals identify why turnover rates have increased.

LEVEL	ANALYTICS
3	AI can identify drivers of turnover. The case study from Protective Life exemplifies level 3 analytics.

LEVEL	ADVANCED ANALYTICS
4	AI could help organizations identify applicants who are most likely to succeed in a position based on the content of their résumés.

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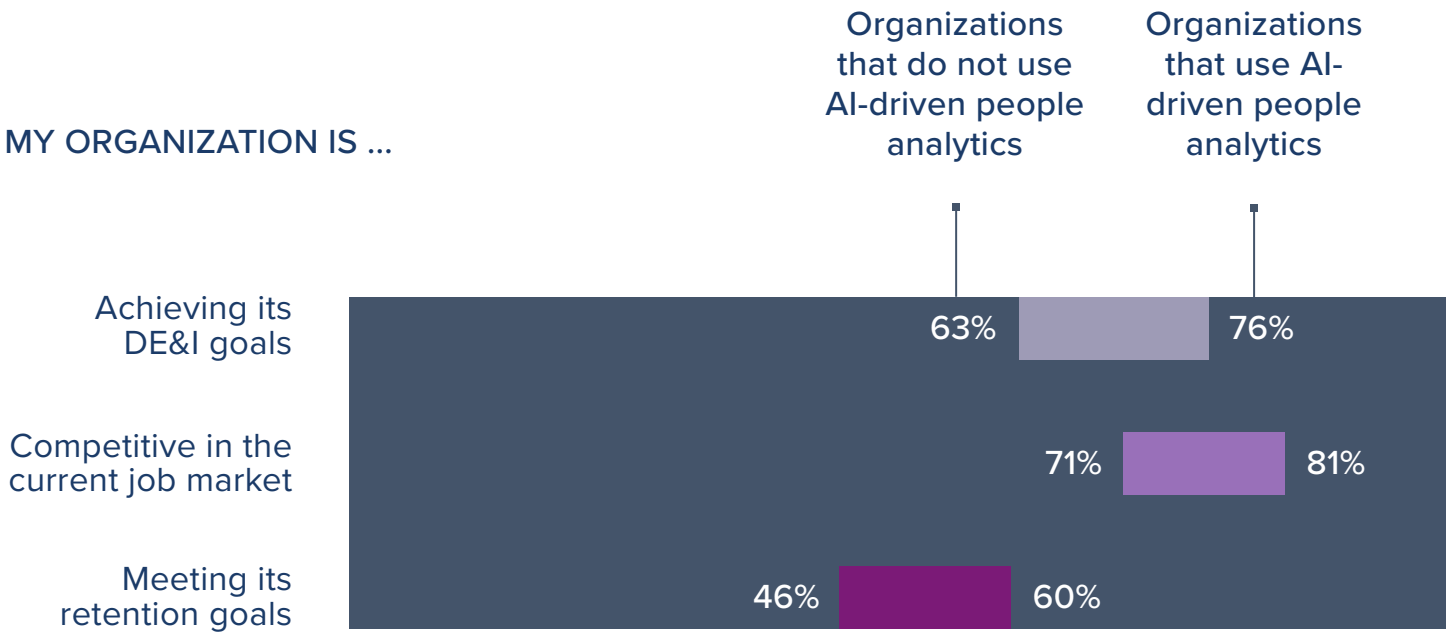
AI-driven people analytics is an area of growing interest. Still, in the present SHRM Research study, only **9%** of HR professionals whose organizations use people analytics use an AI-driven form. Undoubtedly, AI-driven people analytics is enabling some organizations to achieve important HR outcomes. In fact, HR professionals who work for organizations that use AI-driven people analytics report that this tool boosts DE&I, competitiveness and retention.

HR professionals that use this tool are more likely to report that they are achieving DE&I goals, are competitive in the job market and are meeting their retention goals.



Even so, this is still an emerging technology that must be effectively managed to avoid potential pitfalls. For example, many people believe that AI-driven people analytics tools cannot be influenced by unconscious bias or subjective decision-making. However, it is human programmers who determine what algorithms the computer should perform on the data, as well as what data to provide the computer in the first place. The computer's predictions and recommendations are only as good as the data it receives and the calculations it is instructed to perform.

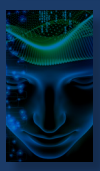
Cautionary Tale: AI Can Veer Off-Course

A multinational corporation sought to improve its success in hiring for technical and software positions. It experimented with developing AI technology to analyze patterns in previously submitted résumés and screen applications for those success factors. In testing, it became obvious that applications from women were being screened out. Why? The machine had recognized that most applicants were male, so it "learned" that women applicants were not likely to succeed. Repeated reprogramming efforts aimed at eliminating demographic bias were unsuccessful. Finally, the company abandoned the effort.

Seven Best Practices for People Analytics

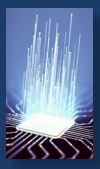
For AI technology to be effective and accurate, it must rest on a strong analytic foundation. This foundation cannot be built without a commitment to invest in the underlying knowledge and expertise needed to follow best practices. Organizations that implement AI-driven people analytics tools without fully understanding them or ensuring best practices are in place may find themselves crashing into roadblocks. In plotting the path forward, it will be important to implement best practices mindfully with each step.

1 Invest in the fundamentals



2 Examine the quality of your data

3 Understand and be prepared to explain how people analytics is used to make decisions



4 Only implement fair, ethical and responsible uses of people analytics

5 Assess compliance and understand the legal risks associated with people analytics, especially when using AI

6 Protect employee and applicant data

7 Establish people analytics governance within your organization

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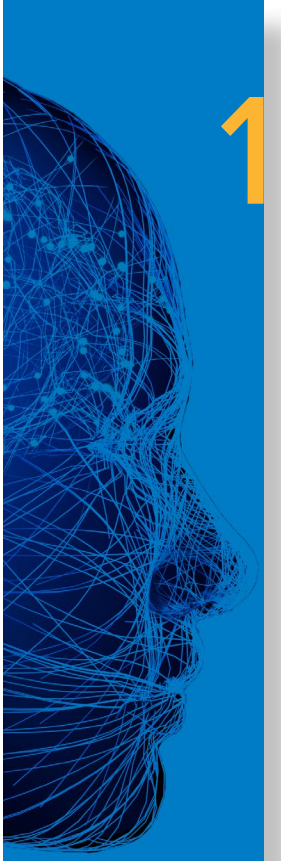


1

Invest in the fundamentals

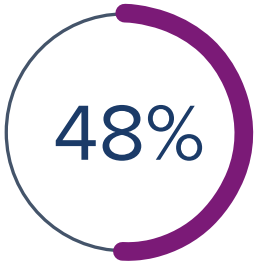
In 2022, **43%** of CHROs said their organization planned to invest more in AI and automation for HR activities than they did in 2021 (CHRO Outlook: HR Leaders Invest in People During Economic Uncertainty, SHRM Research, 2022). Yet, our research suggests that not all organizations have invested in the fundamentals needed to support high-quality people analytics, far less AI applications.

HR executives say their organization provides insufficient resources to:

UPSKILL HR DATA LITERACY

SUPPORT DATA INFRASTRUCTURE

SUPPLY DATA TOOLS AND TECHNOLOGY



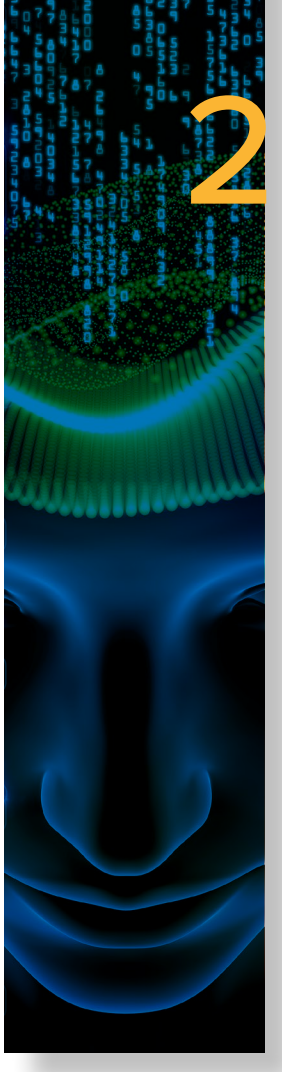
These results suggest that organizations are investing their limited resources in tools that are beyond their current capabilities. Redirecting resources to support data infrastructure and upskill employees in data literacy would establish a solid people analytics foundation that organizations could then use to leverage the power of such tools.

Amping up with AI

Purchasing third-party AI software does not replace the need for either robust infrastructure to compile the data or data literacy to understand how the AI is generating results. Plan for the purchase of AI tools to be an added expense, not a cost saver, at least initially.

From insight to action

Before driving onto the AI express lane, first invest in the necessary infrastructure, data literacy and technology to use people analytics effectively and appropriately. Consider SHRM's People Analytics Specialty Credential to equip employees with the data literacy and people analytics fundamentals they need to expand your organization's people analytics capabilities.



Examine the quality of your data

From a data-entry error to a system setting that causes incomplete data to be analyzed, there are many causes of poor data quality. As the saying "garbage in, garbage out" reminds us, high-quality data is a prerequisite for gaining meaningful insights from people analytics. At present, only **29%** of HR professionals believe that their organization's overall data quality is high or very high.

The seven characteristics of high-quality data are described in the following table. The rightmost column lists the percentage of HR professionals who agree their organization's data has the attribute to **"some or a great extent."**

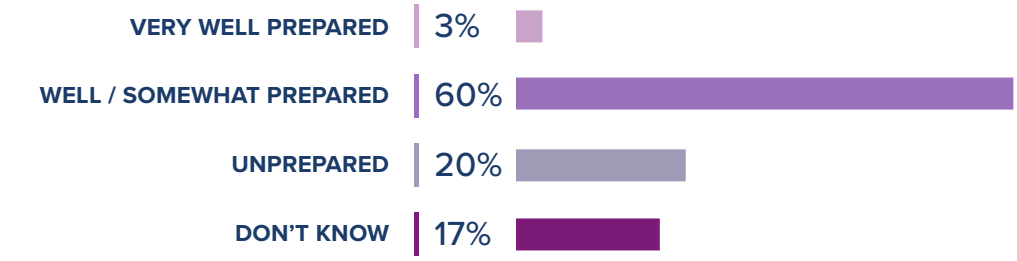
ATTRIBUTE	DESCRIPTION	EXAMPLE	%
Valid	The data comes from known sources and is a good measure of the relevant construct.	All information comes from the internal HR information system and is known to apply to current employees.	88%
Accurate	The data is correct and precise.	Employees are required to review their personal and contact information each year and update as needed.	80%
Timely	The data is current.	Employee exit surveys are compiled and analyzed monthly to capture current trends.	74%
Standardized	The data is stored in an appropriate and standardized format.	All data sources use month/day/four-digit year format consistently.	73%
Consistent	There is no conflicting data in or between datasets.	An employee's name is listed identically in all the organization's systems (e.g., either William Smith or Bill Smith).	64%
Complete	There is no missing data, and all required data is captured.	When a supervisor exits the company, data for the former person's direct reports is updated to show that they now report to their former supervisor's manager.	60%
Unique	There are no duplicate or redundant elements or data points.	Employees are assigned only one employee ID number, even if they have two positions or have left and been rehired.	57%

The declining percentages down the table indicate that data quality is a work in progress. Many organizations have means of collecting valid and accurate data through their existing human resources information systems. More challenging is ensuring the data is consistent, complete and unique.

MOST HR EXECUTIVES AGREE THEIR ORGANIZATION ...

Has processes to protect data quality

Can deal with data quality challenges



Amping up with AI

AI does not eliminate issues of poor data quality. The traditional causes of poor data quality still exist. They are compounded in AI-driven people analytics because AI is being applied in novel ways such as parsing text or interpreting an interviewee's body language. Errors in these processes are not easy to identify using traditional data-checking methods.

From insight to action

The quality of an analysis is only as good as the data used to generate that analysis. Having data-quality processes in place is a good start but is not sufficient for an organization to be highly prepared to deal with data-quality challenges. A comprehensive audit of your organization's data infrastructure, training, resources, governance systems and procedures is a top priority if your organization is seeking to advance its people analytics capabilities.

3

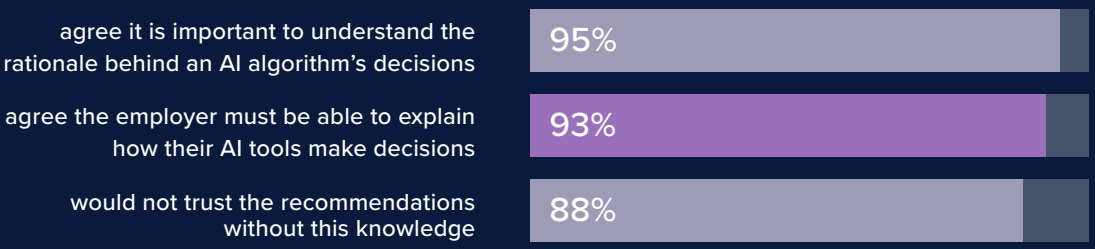
Understand and be prepared to explain how people analytics is used to make decisions

An organization must be transparent about and able to defend how it collects and uses data. This transparency promotes buy-in for decisions made using that data. It also reassures workers that employment-related decisions are being made fairly and rationally.

Amping up with AI

Explainable AI is the concept of understanding and being able to articulate exactly how the system generates output. For example, within a hiring context, organizations must be able to pinpoint the factors that led one person's application to be chosen over others. To a computer, data is data. It does not weigh demographic factors differently than knowledge, skills and experience without nuanced programming. An employer that relies on AI-driven recommendations without question could end up facing a discrimination complaint. Unfortunately, many vendors consider their AI algorithms proprietary secrets. Therefore, they are not transparent about how their people analytics systems process information. This is often referred to as the **black box problem**.

HR PROFESSIONALS UNDERSTAND THE IMPORTANCE OF EXPLAINABLE AI:



Yet, only **64%** of HR professionals say vendors are very transparent or somewhat transparent about how their AI people analytics tools make decisions. Without this knowledge, it is very difficult to identify whether processing errors are resulting in bias. There is no way to be certain that the AI tool is making fair, ethical and responsible decisions. This is why it is critical for government bodies to collaborate with employers to develop clear guidance on AI, specifically guidance for AI systems that focus on employment-related decisions.

How prepared are organizations to deal with the black box problem?

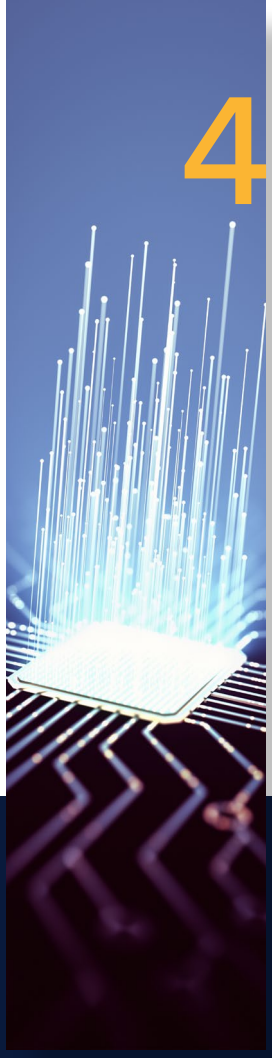
Among HR executives who use people analytics (with and without AI):

- **3%** are confident their organization is very well prepared.
- **40%** believe it is somewhat or well prepared.
- **39%** believe it is not at all prepared.
- **19%** are unsure.

This may be one reason why few organizations have adopted AI-driven people analytics to date.

From insight to action

If your organization is considering a third-party AI-driven people analytics software or program, prepare to be a knowledgeable and discerning consumer. Educate yourself about the implications of the black box problem and hold vendors accountable for providing explainable AI. After all, your organization, not the vendor, bears the burden of defending itself against an alleged violation of employment law.



4

Only implement fair, ethical and responsible uses of people analytics

An overwhelming **84%** of employees trust their employer to use their personal information ethically. However, **41%** do acknowledge concerns about how their employer might be using it. Similarly, **40%** say they would **probably or definitely quit** if they discovered their organization was misusing information about them (People Analytics, SHRM Research, 2021). The consequences for an employer that betrays employees' trust are clear: an exodus of employees and loss of morale and engagement among those employees who stay. In addition, the reputational damage to an organization if a disgruntled employee goes public with allegations of unfair treatment is incalculable.

Amping up with AI

As the cautionary tale on p. 10 reminds us, an AI algorithm based on inadvertently biased data can make biased decisions. In fact, **19%** of organizations that use automation or AI in hiring report that their tools have overlooked or screened out qualified applicants (Talent Trends, SHRM Research, 2022).

This concern has led New York City to mandate that by May 2023 companies that use AI in hiring decisions must audit their systems for bias. This regulation may be a sign of what is to come. Other states, cities and jurisdictions are likely to follow suit over time. Because this is a burgeoning topic across the legislative and regulatory landscape, organizations should consider the cost of third-party bias audits when selecting or building AI tools. With that being said, it is important to note that some companies are auditing and taking action voluntarily and will likely continue to do so regardless of the legislative and regulatory landscape.

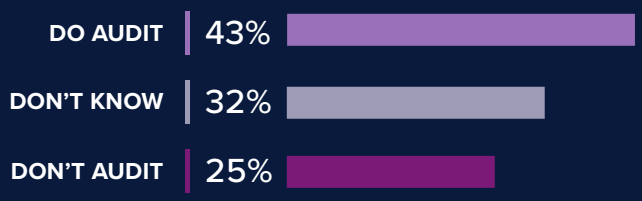
How AI Can Be Discriminatory

The Department of Justice has cautioned that careless use of AI may discriminate against people with disabilities. For example, a facial recognition algorithm that evaluates a candidate's emotions during an interview would "misread" a candidate who has facial paralysis. Chatbot screeners that require spoken responses are inaccessible to applicants who are deaf or have a speech disorder.

How confident are HR professionals in the AI tools they are relying on? Only **19%** are very confident that their AI-driven people analytics tools eliminate bias. Another **70%** are somewhat confident, while **11%** do not believe their tools are unbiased.

Perhaps more concerning is that only **43%** of HR professionals report their organization audits their AI tools for bias. Another **32% do not know** whether their organization does so. This suggests less than half of organizations are well prepared to defend themselves against a discrimination lawsuit or provide necessary evidence for an Equal Employment Opportunity Commission (EEOC) audit.

% of firms that audit their AI tools for bias



Nearly half of HR professionals **(43%)** report that their organization purchased its AI-driven people analytics program "off the shelf" from a vendor. Only a minority of these organizations are reviewing audit reports. Thus, most do not know whether the software is accurate and unbiased:

From insight to action

Any organization using people analytics must have oversight structures in place to ensure their use of employee data is justifiable to employees and compliant with current employment laws. Specific to AI-driven systems, the EEOC has issued technical guidance on how to ensure that applicant and employee evaluation tools remain compliant with the Americans with Disabilities Act. Further, in 2021 the World Economic Forum created an AI toolkit for HR professionals. These documents are must-reads for employers that use or are considering AI-based people analytics.

Surprisingly, SHRM Research data suggests that nearly half of HR professionals **(44%)** are very confident their organization knows the right questions to ask AI people analytics vendors. Another **51%** are somewhat or a little confident. Most organizations, therefore, have the knowledge base to be discerning consumers of AI-driven people analytics. If your organization purchases a third-party program, be prepared to hold the vendor accountable for maintaining an accurate and unbiased product.

5

Assess compliance and understand the legal risks associated with people analytics, especially when using AI

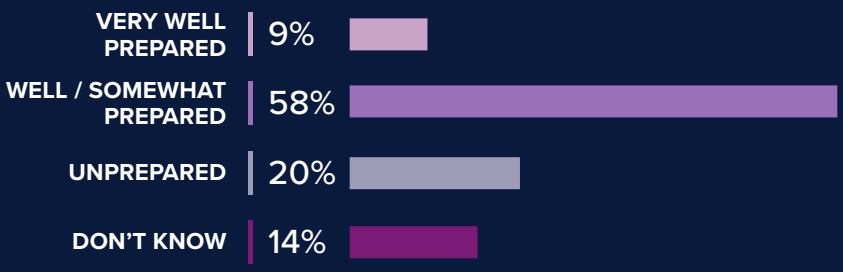
An organization's commitment to data-driven decision-making will probably result in more employee data being available to more individuals. It is vital that everyone understands appropriate and inappropriate uses of the data available at their fingertips. For example, many jurisdictions have banned hiring authorities from asking candidates about their salary history, because doing so continues historical pay inequities for women and people of color. If an existing employee applies for an internal promotion, it is no more appropriate to base a salary offer on the individual's earning history than to ask an external candidate for their salary history.

Amping up with AI

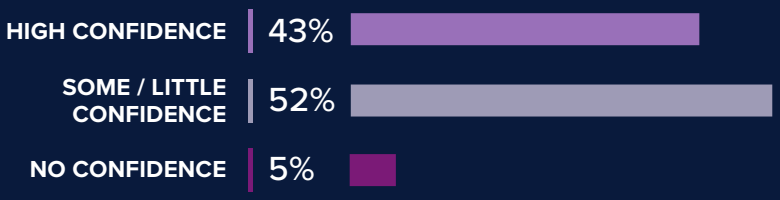
The federal government already heavily regulates use of AI-driven tools in other fields. A prominent example is bankers' use of AI analytics to determine a loan applicant's creditworthiness. The use of AI in HR contexts is more recent than in banking. Already, however, the EEOC has warned of the potentially disparate impact of AI tools. Subsequently, interest in regulating AI-driven people analytics is increasing at state and local levels.

Yet only **27%** of HR executives believe that using AI-based people analytics in a business context poses high legal risk. This is surprising since less than half **(43%)** of HR professionals are very confident their AI-driven people analytics tools are legally compliant. Moreover, few executives believe their organization is very well prepared to manage the legal risks of AI-driven people analytics, as the following charts illustrate.

HR executives' confidence in their organization's preparation to manage AI legal risks or compliance issues



HR professionals' confidence that their AI tools are legally compliant



From insight to action

From the outset of your organization's people analytics journey, establish policies and procedures governing the use of employee data. Ensure that anyone with access to this data receives training in those policies and procedures and knows the potential consequences of violating them. Multistate employers have an added responsibility for creating policies that comply with local regulations in any jurisdiction where they have employees.

Protect employee and applicant data

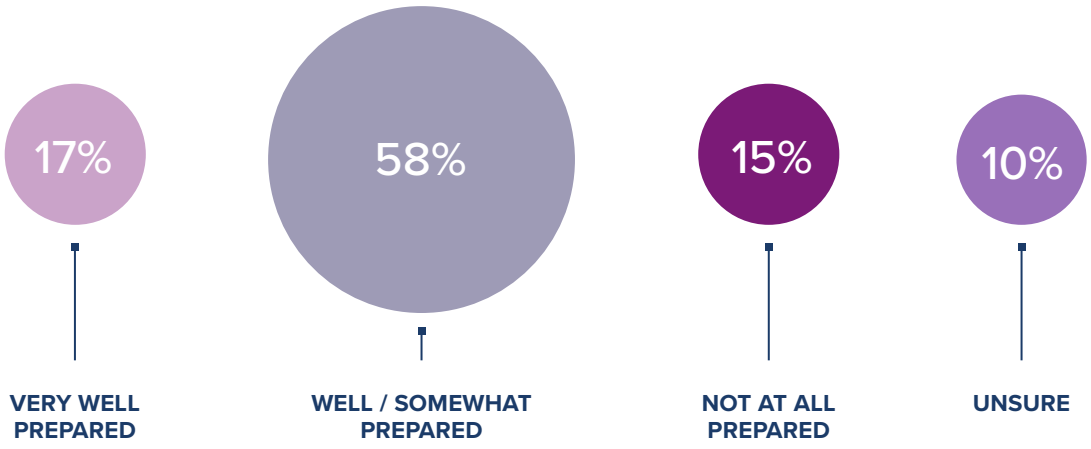
People analytics inherently requires collecting and storing employee data, including many types of protected personal information. With identity theft and large-scale cyberattacks increasing, employers bear a heavy responsibility to keep that data secure.

An overwhelming majority of U.S. workers are confident that their employer will protect their personal information (People Analytics, SHRM Research, 2021). If employee data is breached, the employer risks reputational damage, loss of employee trust and low workforce morale. Perhaps because they recognize the high stakes, HR executives are less confident in data privacy and security than the average worker is.

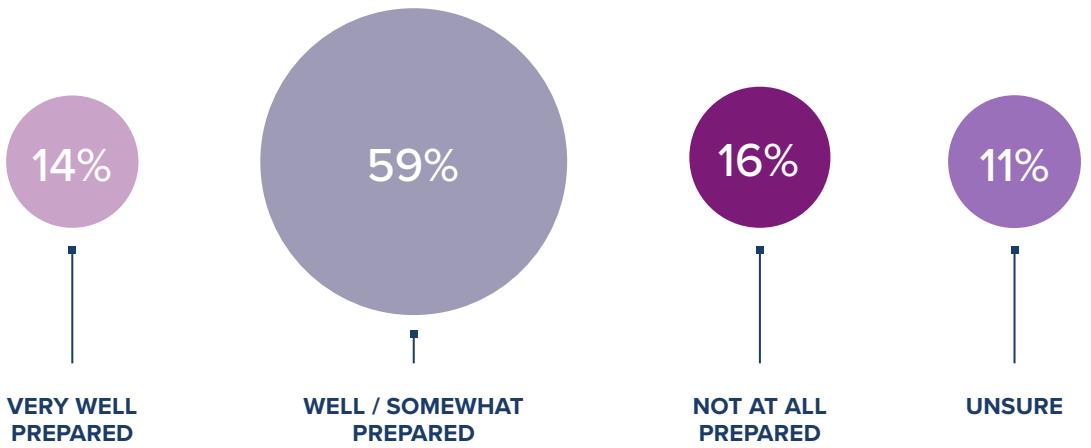
85% of U.S. workers say their employer protects their personal data

HR Executives Worry About Privacy and Cybersecurity

PREPARED TO DEAL WITH PRIVACY CONCERNS



PREPARED TO DEAL WITH CYBERSECURITY RISKS



Amping up with AI

Partnering with an external vendor for AI-driven analytics may entail sharing employee data with that external entity. Scrutinize contracts for potential information security risks, and ensure your organization is protected against breaches for which the vendor is responsible.

From insight to action

The importance of robust information security testing and protection of employee data is constantly increasing. This is a critical investment regardless of whether and how your organization uses people analytics.

7

Establish people analytics governance within your organization

A governance structure consists of audit schedules, policies and accountability to guide appropriate development and implementation of people analytics systems. The greater the use of and access to employee data, the more important oversight and guidance on ethical use become.

HR professionals in organizations using AI-based people analytics say

Amping up with AI

SHRM Research found that few employers established governance structures before investing in AI-based people analytics technology.

- **Oversight:** Only, **21%** report their organization has a steering committee that oversees the use of AI software. An additional **29%** are not sure whether their organization has any oversight mechanism.
- **Code of Ethics for AI:** A minority of organizations, **26%**, have a code of ethics specifically governing use of AI-driven people analytics. At **68%** of organizations, the code of ethics does not address AI-driven people analytics. Meanwhile, **4%** do not have a code of ethics at all, and **3%** don't know if their organization has a code of ethics.

From insight to action

A governance structure is a prerequisite for leveraging the promise of people analytics, with or without AI. When considering an investment in AI people analytics technology, review existing governance structures to determine the need for updates.

Realizing the Potential of People Analytics

Organizations use people analytics at varying levels of sophistication. At present, most collect data to look back on the road already traveled while a few analyze data to create predictive models that look to the road ahead. Regardless, people analytics must be built on high-quality data. That requires investments in HR information and applicant tracking systems, and in skilled employees to manage them. A system must record complete and accurate data about employees in a consistent format that allows for systematic comparisons. If it does not, the usefulness of the data is greatly reduced. Additionally, as increasing amounts of data are stored, the potential risk of a data breach escalates.

The most common current application of people analytics is in the area of retention and turnover (**82%** of organizations). In addition, **72%** of HR executives using people analytics say that this use adds the most value to their company. Turnover is an expensive drag on an organization's bottom line, especially in a tight labor market. In fact, HR professionals ranked labor shortages as the second largest challenge for their organizations in 2022 and retaining top talent as the No. 2 priority for 2023 *(2022-2023 SHRM State of the Workplace,* SHRM Research, 2023). Therefore, for organizations beginning their exploration of people analytics, SHRM findings suggest that turnover and retention would be the most productive jumping-off point.

A small minority of organizations are embarking on the use of AI-driven people analytics for HR functions. For these organizations, both the potential payoffs and the organizational risks of causing harm to employees are amplified. AI-based people analytics can power an organization's competitiveness and profits. First, however, the organization must commit to best practices that carry substantial cost. Ensuring that the use of AI is fair, ethical and responsible; well governed; and legally compliant is vital but also complex.

In sum, this report demonstrates that people analytics can be a powerful tool to drive business decisions, but not without investments in both data infrastructure and the knowledge to use analytics wisely.

Methodology

All HR professionals and executives who responded to these surveys work for organizations that use people analytics. All datasets are unweighted.

A total of 2,149 HR professionals who work for organizations using people analytics were surveyed. The professionals encompassed employees working in HR departments at the individual contributor, manager or director level. A portion of the professionals were recruited using the SHRM Voice of Work Research Panel from June 23 to July 6, 2022, and the remainder were recruited using the SHRM member database from Aug. 4 to Aug. 16, 2022.

A sample of 182 HR executives was surveyed using the SHRM Voice of Work Research Panel from June 23 to July 6, 2022. The HR executives held a title of vice president or above and were performing HR work in companies with at least 250 employees.

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